



**FCC CRF47 PART15 CERTIFICATION
CLASS II PERMISSIVE CHANGE
TEST REPORT**

For

**2.4GHz 802.11B CLIENT RADIO
DIRECT SEQUENCE SPREAD SPECTRUM DATA TRANSCEIVER
WITH ALTERNATE AC-DC ADAPTER**

FCC ID: MKZAZY2411BT

MODEL NO: AirEZY-2411-BT

REPORT NO: 02U1499-1

ISSUE DATE: SEPTEMBER 5, 2002

Prepared for
**OTC WIRELESS, INC.
48507 MILMONT DRIVE
FREMONT, CA. 94538 USA**

Prepared by
**COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD,
MORGAN HILL, CA. 95037, U.S.A.
TEL: (408) 463-0885**

NVLAP[®]
LAB CODE:200065-0

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1. VERIFICATION OF COMPLIANCE

COMPANY NAME : OTC WIRELESS, INC.
 48507 MILMONT DRIVE
 FREMONT, CA 94538

EUT DESCRIPTION : 2.4GHz 802.11b CLIENT RADIO DIRECT SEQUENCE
 SPREAD SPECTRUM DATA TRANSCEIVER WITH
 ALTERNATE AC-DC ADAPTER

MODEL NAME : AirEZY-2411-BT

DATE TESTED : 8/27/02

LIMIT APPLY TO: FCC PART 15 SECTION 15.247	
TECHNICAL LIMITS	Status
LIMIT APPLY TO: FCC PART 15 SECTION 15.207	
AC Line Conducted Emission	Tested
<p>The above equipment was tested by Compliance Engineering Services Inc. for compliance with the requirements set forth in CFR 47 PART 15 SUBPART C. The equipment in the configuration described in this report show that the measured emission levels emanating from the equipment do not exceed the specified limit.</p>	
<p>Tested By:</p> 	<p>Approved & Released For CCS By:</p> 
<hr/> <p>THANH NGUYEN EMC TECHNICIAN COMPLIANCE CERTIFICATION SERVICES</p>	<hr/> <p>THU CHAN SENIOR EMC ENGINEER COMPLIANCE CERTIFICATION SERVICES</p>

2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

CHASSIS TYPE	PLASTIC
Frequency Range	2412-2462 MHz
Local Osc./Location	20.0MHz Main / 24.7 MHz Top
Channel Spacing	5 MHz
Transmit Power	25mW
Modulation Technique	CCK
Radio Technique	Direct Sequence Spread Spectrum
Number of Channels	11
Operating Mode	Point-to-Point
Air Data Rate	11Mbps
Antenna	Permanently Attached (2dBi Gain)
DC voltage	5V Power Adaptor
External Interface	RJ45
Emission Type	F2D

3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The only change filed under this application is:

Change #1: Added an alternate AC-DC Adapter with the same electrical Rating, but different Manufacturer. The Manufacturer is Delta and Model Name ADP-10SB. The AC Input: 100-240Vac, 50-60Hz, 0.4A. The DC Output is +5V, 2A.

Therefore, it is the engineering justification to test only for FCC Rule 15.207 for this type of change.

4. TEST LOCATION

All emissions tests were performed at:

Compliance Engineering Services, Inc.
561F Monterey Road
Morgan Hill, CA 95037








CCS has site descriptions on file with the FCC for 10 and 3 meter site configurations. CCS is a NVLAP accredited facility.

Measurement Uncertainty.

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Radiated Emission	
30MHz – 200 MHz	+/- 3.3dB
200MHz – 1000MHz	+4.5/-2.9dB
1000MHz – 2000MHz	+4.6/-2.2dB
Power Line Conducted Emission	
150kHz – 30MHz	+/-2.9

5. LABORATORY ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	NVLAP*	FCC Part 15, CISPR 22, AS/NZS 3548, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, CNS 13438	 200065-0
USA	FCC	3/10 meter Open Area Test Sites to perform FCC Part 15/18 measurements	 1300
Japan	VCCI	CISPR 22 Two OATS and one conducted Site	 R-1014, R-619, C-640
Norway	NEMKO	EN50081-1, EN50081-2, EN50082-1, EN50082-2, IEC61000-6-1, IEC61000-6-2, EN50083-2, EN50091-2, EN50130-4, EN55011, EN55013, EN55014-1, EN55104, EN55015, EN61547, EN55022, EN55024, EN61000-3-2, EN61000-3-3, EN60945, EN61326-1	 ELA 117
Norway	NEMKO	EN60601-1-2 and IEC 60601-1-2, the Collateral Standards for Electro-Medical Products. MDD, 93/42/EEC, AIMD 90/385/EEC	 ELA-171
Taiwan	BSMI	CNS 13438	 SL2-IN-E-1012
Canada	Industry Canada	RSS210 Low Power Transmitter and Receiver	 IC2324 A,B,C, and F

*No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government

6. SUPPORT/ TEST EQUIPMENT**SUPPORT EQUIPMENT**

TEST PERIPHERALS				
Device Type	Manufacturer	Model Number	Serial Number	FCC ID
LAPTOP	NOTEBOOK	N340S8	PB344S811902382	N/A
MODEM	ACEEX	1414	9013537	IFAXDM1414
PRINTER	HP	2225C	2930S52614	DSI6XU2225

TEST EQUIPMENT

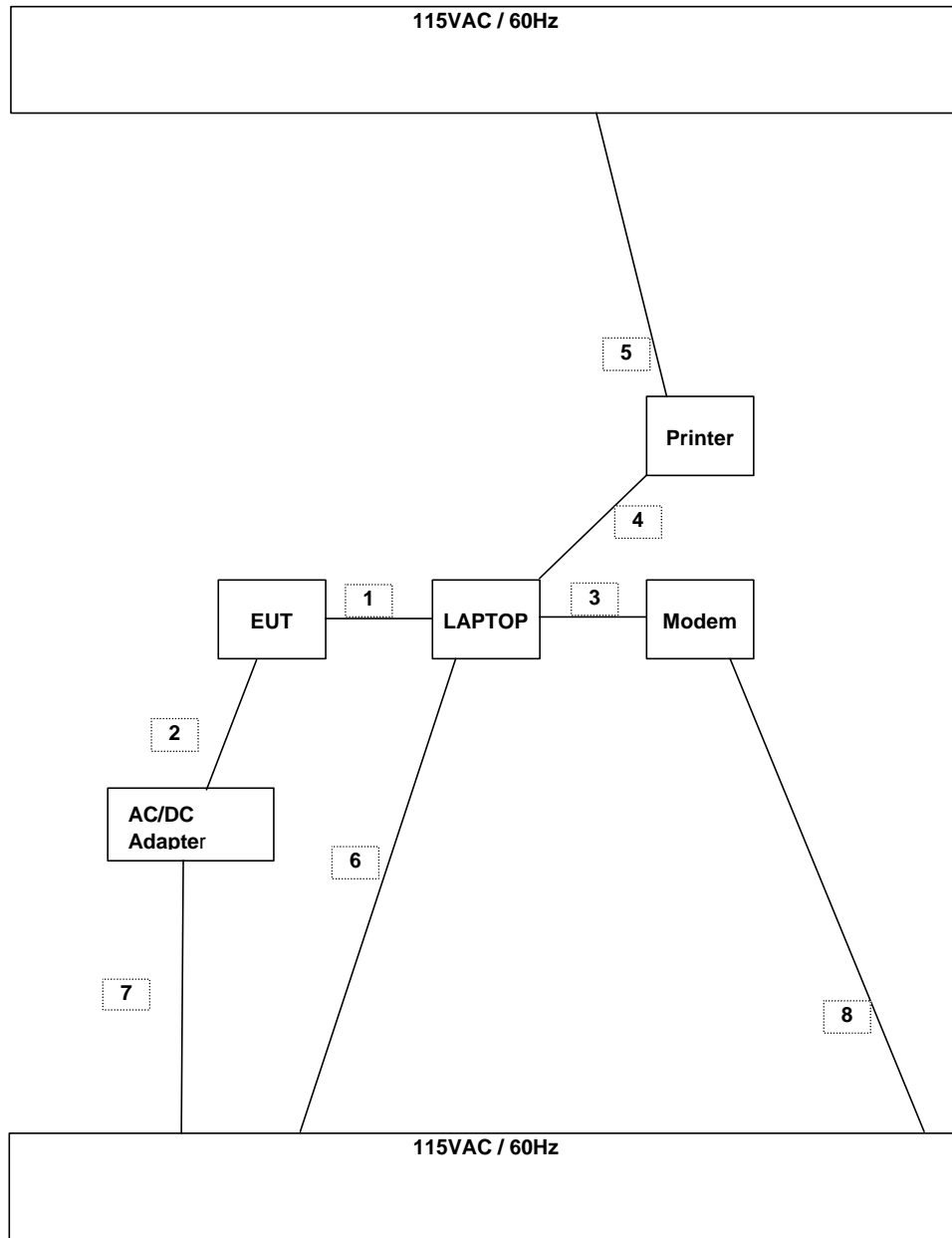
TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
EMI Test Receiver	Rohde & Schwarz	ESHS 20	827129/006	4/17/03
LISN	Fischer 9k - 100MHz	C-LISN-50/250-2	114	4/22/03
Line Filter	Lindgren 10k - 10GHz	LMF-3489	497	N.C.R.
LISN	Solar Elec. Co.	012-50-R-24-BN	837990	4/22/03

The measuring equipment which was utilized in performing the tests documented herein has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment which is traceable to recognized national standards.

I/O CABLE CONFIGURATION

TEST I / O CABLES								
Cable No	I/O Port	# of I/O Port	Connector Type	Type of Cable	Cable Length	Data Traffic	Bundled	Remark
1	Ethernet	1	RJ45	Unshielded	1m	Yes	No	N/A
2	AC/DC	1	DC Power	Unshielded	1.5m	No	No	N/A
3	Serial	1	DB9	Shielded	2m	Yes	Yes	N/A
4	Parallel	1	DB25	Shielded	2m	Yes	Yes	N/A
5	AC	1	US 115V	Un-shielded	2m	No	No	N/A
6	AC	1	US 115V	Un-shielded	2m	No	No	N/A
7	AC	1	US 115V	Un-shielded	2m	No	No	N/A
8	AC	1	US 115V	Un-shielded	2m	No	No	N/A

TEST CONFIGURATION DIAGRAM



7. TEST PROCEDURES AND TEST RESULTS

AC LINE CONDUCTED EMISSIONS TEST REQUIREMENT: 15.207

Section 15.207 Conducted limits.

(a) For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 450 kHz to 30 MHz shall not exceed 250 microvolts. Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

Conducted Emission Limits	
Frequency range(MHz)	FCC Limits (dBuV)
.45-5	48
5-30	48

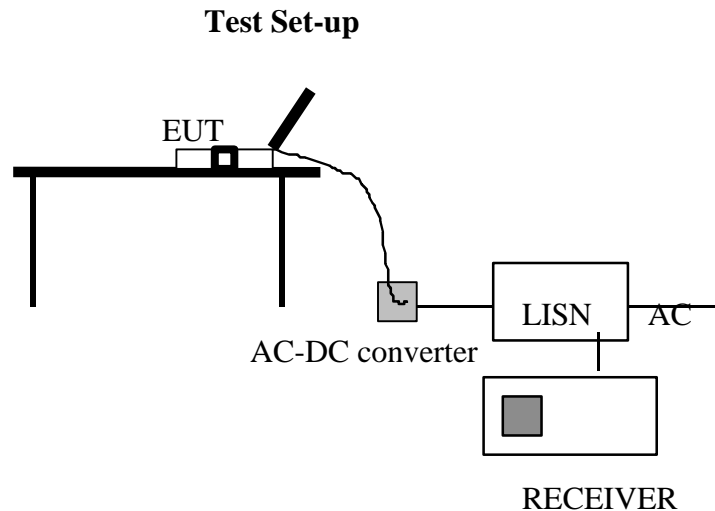


Fig. 2

Test Procedure

1. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in a normal mode.
2. Line conducted data was recorded for both NEUTRAL and HOT lines.

Test Results

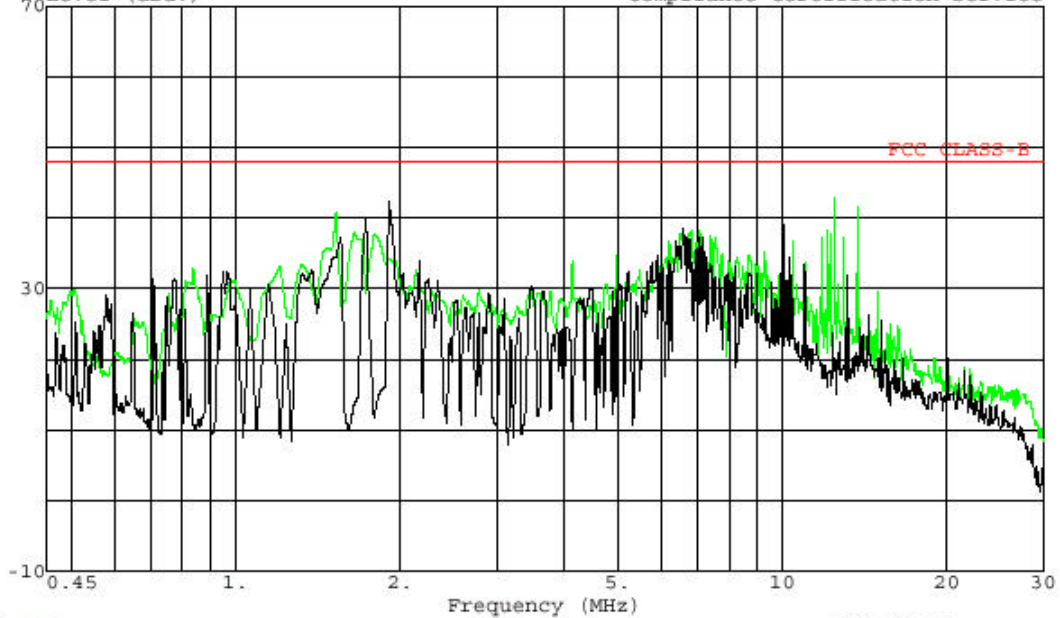
Refer to attached graph

CONDUCTED EMISSIONS DATA (115VAC 60Hz)										
Freq. (MHz)	Reading			Class (dB)	Limit QP	FCC_B		Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)			AV	QP (dB)	AV (dB)		
10.20	44.50		--	0.00	48.00	--	-27.62	--	L1	
1.92	45.19		--	0.00	48.00	--	-10.88	--	L1	
6.59	42.64		--	0.00	48.00	--	-19.74	--	L1	
12.47	43.02		--	0.00	48.00	--	-27.92	--	L2	
13.74	41.52		--	0.00	48.00	--	-28.16	--	L2	
1.53	40.72		--	0.00	48.00	--	-22.02	--	L2	
6 Worst Data										



561F Monterey Road, San Jose, CA 95037 USA
Tel: (408) 463-0885
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Data#: 8 File#: OTC1499.EMI Date: 08-27-2002 Time: 15:21:14
Level (dBuV) Compliance Certification Service



Trace: 15 Project #: 02U1499-1 Test Engineer: Thanh Nguyen Company: OTC WIRELESS, INC. EUT: 2.4GHz 802.11b CLIENT RADIO With Alternative AC-DC ADAPTER Test Config.: EUT ,LapTop Mode of Op.: Normal Operation L1: Peak (Black), L2: Peak (Green) 120Vac, 60Hz

8. TEST SETUP PHOTO

CONDUCTED EMISSION SETUP PHOTOS



END OF REPORT