EMISSIONS TEST REPORT FOR A LOW POWER TRANSMITTER

I. GENERAL INFORMATION

Requirement: Federal Communications Commissions

Test Requirements: 15.205, 15.207, 15.209, 15.247

Applicant: Alvarion Ltd.

Product ID: **FCC ID:** LKT-IF-900

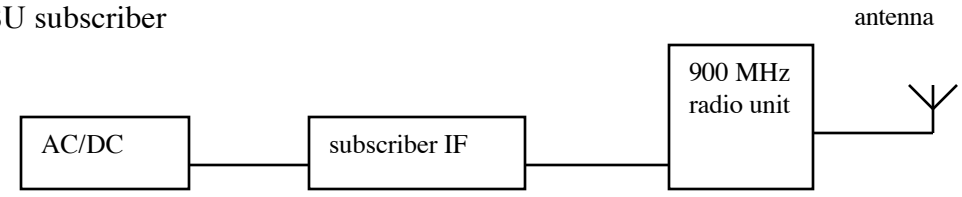
II. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

The EUT is a DTS transmitter operating under section 15.247 of FCC Rules. The EUT is a hybrid system, using a frequency hopping function along with digital modulation of the RF carrier.

RF Specifications

RF Frequency Band	904 – 926 MHz
RF Channels	Programmable in 1 MHz steps
Modulation Type	GFSK DTS/FHSS hybrid
Transmitter Output Power	24 dBm typical, variable in approx. 1 dB steps
Antennas	12.1 dBi vertical omni 9 dBi horizontal omni

Product test configuration:



The IF card delivers a 440 MHz modulated signal and DC power to the radio units. The IF card is identical to the ones used in other Alvarion 2.4 GHz and 5.7 GHz products.

The interface between the Outdoor and Indoor Units is identical to all of BreezeACCESS systems. The subscriber IF circuitry is the same as the base station IF circuitry.

Antennas are outdoor fixed mounted.

III. TEST LOCATION

All other FCC tests were performed at

Compliance Certification Services
571F Monterey Road
Morgan Hill, CA 95037

T.N. Cokenias 20 December 2003
EMC Consultant/Agent for Alvarion Ltd.

TEST PROCEDURES

Radiated emissions tests were performed in a 5m anechoic chamber. Frequency range examined was 1 – 9.28 GHz. Testing was performed in accordance with ANSI C63.4.

Radiated Emissions
Test Requirement: 15.109, 15.205, 15.209, 15.247

Measurement equipment used:

HP 8593 Spectrum Analyzer, 9 kHz-26.5 GHz
Chase Biconolog antenna
EMCO 3115 Horn antenna, 1-18 GHZ
Miteq 924341pre-amplifier, 1 – 26.5 GHz
High pass filter, fp = 1800 MHz

Test Procedures, 1- 26 GHz:

1. The EUT was placed on a wooden table resting on a turntable on the open air test site. The search antenna was placed 3m from the EUT. The EUT antenna was mounted vertically as per normal installation.

2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205.

3. Radiated emissions were investigated for a LOW channel, a MID channel, and HIGH channel. Emissions were investigated to the 10^{th} harmonic.

4. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

Radiated Test Set-up, 1-40 GHz

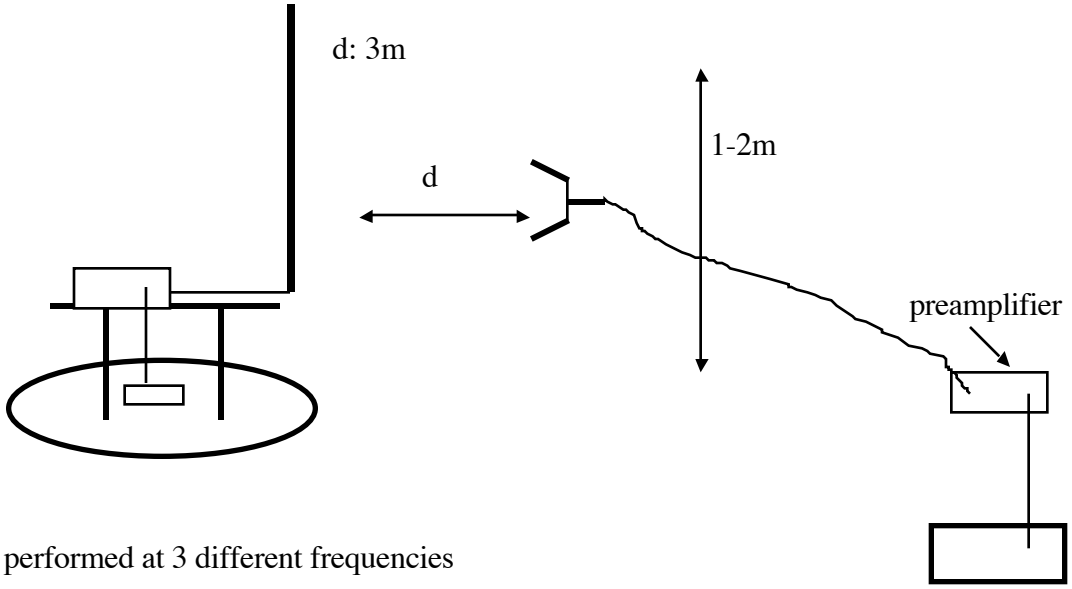


Figure 2

Testing was performed at 3 different frequencies

Channel	**Frequency, MHz**
Low	905
Mid	915
High	926

Radiated emissions were performed at each frequency for 3 different transmitter antennas.

Antenna tested:

Antenna Type	**Gain**	**Antenna Manufacturer**	**Model Number**
vertical omni	12.2 dBi (10 dBd)	Antel International	BCD-85010
horizontal omni	9 dBi	Pacific Wireless Inc.	PAWSAH9-9

Test Results: Worst case results are presented. Refer to attachedExcel spread sheet files.

Test Engr:William Zhuang
Project #:
Company Name:ALVARIUN LTD.
EUT Descrip.:Outdoor Radio Unit w/ PAWSAH9-9 Omni Vertical
EUT M/N:FCC ID: LKT-IF-900
Test Target:15.209
Mode Oper:CONT TX Max Pwr 8FSK

Test Equipment:

EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
T73; S/N: 6717 @1m	T86 Miteq 924341	HP 8593EM Analyzer	

Hi Frequency Cables

b (2 ft) e (2 ~ 3 ft) e (4 ~ 6 ft) b (12 ft)

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
1.807	9.8	48.0	35.4	27.7	1.3	-44.1	0.0	1.0	33.9	21.3	74.0	54.0	-40.1	-32.7	Low Ch H
1.807	9.8	48.0	35.4	27.7	1.3	-44.1	0.0	1.0	33.9	21.3	74.0	54.0	-40.1	-32.7	Low Ch V
2.715	9.8	48.6	36.2	30.7	1.9	-44.0	0.0	1.0	38.2	25.9	74.0	54.0	-35.8	-28.1	Low Ch H
2.715	9.8	48.5	36.2	30.7	1.9	-44.0	0.0	1.0	38.1	25.8	74.0	54.0	-35.9	-28.2	Low Ch V
1.830	9.8	47.6	35.3	27.8	1.3	-44.1	0.0	1.0	33.7	21.3	74.0	54.0	-40.3	-32.7	Mid Ch V
1.830	9.8	47.6	35.3	27.8	1.3	-44.1	0.0	1.0	33.6	21.3	74.0	54.0	-40.4	-32.7	Mid Ch H
2.745	9.8	49.1	36.4	30.8	1.9	-44.0	0.0	1.0	38.8	26.1	74.0	54.0	-35.2	-27.9	Mid Ch V
2.745	9.8	48.7	36.5	30.8	1.9	-44.0	0.0	1.0	38.4	26.2	74.0	54.0	-35.6	-27.8	Mid Ch H
1.852	9.8	48.7	35.4	27.9	1.4	-44.1	0.0	1.0	34.9	21.5	74.0	54.0	-39.1	-32.5	High Ch H
1.852	9.8	47.8	35.4	27.9	1.4	-44.1	0.0	1.0	34.0	21.5	74.0	54.0	-40.0	-32.5	High Ch V
2.778	9.8	49.5	36.8	30.9	1.9	-44.0	0.0	1.0	39.4	26.6	74.0	54.0	-34.6	-27.4	High Ch V
2.778	9.8	49.1	36.5	30.9	1.9	-44.0	0.0	1.0	39.0	26.4	74.0	54.0	-35.0	-27.6	High Ch H
All of above are noise floor, and no signal found up to 10 GHz								1.0							
								1.0							V
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f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

01/04/04 **High Frequency Measurement**

Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:William Zhuang
Project #:
Company Name:ALVARIUN LTD.
EUT Descrip.:Outdoor Radio Unit w/ PAWSAH9-9 Omni Horizontal
EUT M/N:FCC ID: LKT-IF-900
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1.807	9.8	48.8	36.4	27.7	1.3	-44.1	0.0	1.0	34.7	22.3	74.0	54.0	-39.3	-31.7	Low Ch H
1.807	9.8	49.2	37.2	27.7	1.3	-44.1	0.0	1.0	35.1	23.1	74.0	54.0	-38.9	-30.9	Low Ch V
2.715	9.8	46.9	36.4	30.7	1.9	-44.0	0.0	1.0	36.6	26.0	74.0	54.0	-37.4	-28.0	Low Ch H
2.715	9.8	50.0	37.0	30.7	1.9	-44.0	0.0	1.0	39.6	26.6	74.0	54.0	-34.4	-27.4	Low Ch V
1.830	9.8	48.3	42.3	27.8	1.3	-44.1	0.0	1.0	34.4	28.4	74.0	54.0	-39.6	-25.6	Mid Ch V
1.830	9.8	47.8	43.1	27.8	1.3	-44.1	0.0	1.0	33.9	29.1	74.0	54.0	-40.1	-24.9	Mid Ch H
2.745	9.8	50.1	36.9	30.8	1.9	-44.0	0.0	1.0	39.8	26.6	74.0	54.0	-34.2	-27.4	Mid Ch V
2.745	9.8	49.8	36.8	30.8	1.9	-44.0	0.0	1.0	39.5	26.5	74.0	54.0	-34.5	-27.5	Mid Ch H
1.852	9.8	47.9	35.5	27.9	1.4	-44.1	0.0	1.0	34.0	21.7	74.0	54.0	-40.0	-32.3	High Ch H
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2.778	9.8	49.3	36.8	30.9	1.9	-44.0	0.0	1.0	39.1	26.7	74.0	54.0	-34.9	-27.3	High Ch V
2.778	9.8	50.0	38.0	30.9	1.9	-44.0	0.0	1.0	39.8	27.8	74.0	54.0	-34.2	-26.2	High Ch H
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