

Straubing, 04 May 2005

**TEST - REPORT**

**No. 56109-050142-1**

**for**

**CL4424-100**

**RF Transceiver**

Applicant: AEROCOMM, Inc.

Purpose of testing: To show compliance with

FCC Code of Federal Regulations,  
Part 15 Subpart C, Section 15.247  
for a Class II Permissive Change for  
additional antennas

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Note:

The test data of this report relate only to the individual item which has been tested.  
This report shall not be reproduced except in full extent without the written approval of  
the testing laboratory.

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**1. Administrative Data**

<b>Test item (EUT)</b>	
Type designation	CL4424-100
Serial number(s):	001
Type of equipment:	RF Transceiver
FCC-ID:	KQL-AC4424-100
<b>Technical data</b>	
Frequency range	2400 - 2483.5 MHz
Operational frequencies	FHSS
Type of modulation	N/A
Pulse frequency	N/A
Pulse width	N/A
Antenna	<ul style="list-style-type: none"><li>- Nearson S152AM-2450S (4.0 dBi gain)</li><li>- Nearson S171AH-2450S (7.0 dBi gain)</li><li>- Linx Technologies ANT-DB1-RMS-RPS</li><li>- ANTENNA FACTOR ANT-DB2-916/2.4-RP-SMA (2.5 dBi gain)</li><li>- ANTENNA FACTOR ANT—2.4-YG12-N (12 dBi gain)</li></ul>
Power supply	6.0 V DC
<b>Applicant:</b> (full address)	AEROCOMM, Inc. 11160 Thompson Avenue Lenexa, KS 66219, USA
Contact person:	John Talley
Manufacturer:	Applicant
<b>Application details</b>	
Receipt of EUT:	14 March 2005
Date of test:	April 2005
Note:	---
Responsible for testing:	Johann Roidt
Responsible for test report:	Johann Roidt

## 2. Identification of Test Laboratory

DETAILS OF THE TEST LABORATORY	
COMPANY NAME:	Senton GmbH EMI/EMC Test Center
ADDRESS:	Aeussere Fruehlingsstrasse 45 D-94315 Straubing Germany
LABORATORY ACCREDITATION:	DAR-Registration No. TTI-P-G 062/94-01
FCC TEST SITE LISTING	90926
INDUSTRY CANADA TEST SITE REGISTRATION	IC 3050
NAME FOR CONTACT PURPOSES:	Mr. Johann Roidt
TELEPHONE: (+49) (0)9421 5522-0	FAX: (+49) (0)9421 5522-99

PERSONNEL INVOLVED IN THIS TEST REPORT	
LABORATORY MANAGER:	 Mr. Johann Roidt
RESPONSIBLE FOR TESTING:	Mr. Johann Roidt
RESPONSIBLE FOR TEST REPORT:	Mr. Johann Roidt

SUMMARY OF TEST RESULTS
The tested sample complies with the requirements set forth in the <b>Code of Regulations Part 15 Subpart C, Section 15.247</b> <b>of the Federal Communication Commission (FCC).</b>

### 3. Operation Mode of EUT

Transmitter operating continuously.  
Full radiated spurious emission tests were performed on lowest, middle and highest RF channel.

#### 4. Configuration

Configuration of the EUT
A full test setup was supplied by the applicant

Cables connected to the EUT
Not applicable

Peripheral devices connected to the EUT
Not applicable

## 5. Measuring Methods

### 5.1. Maximum Transmitter Power

#### 5.1.1. Conducted Maximum Transmitter Power

Rules and Specifications:	RSS-210, Issue 5
Guide:	ANSI C63.4-2003

#### Measurement Procedure:

A spectrum analyzer / EMI test receiver is connected to the output of the transmitter power amplifier (conducted measurement) via dummy load while EUT was operating in transmit mode using the assigned frequency.

The trace mode of the spectrum analyzer was set to max hold with:

RBW = 100 kHz, VBW = 100 kHz, span = 1 MHz, sweep = 20 ms (auto mode)

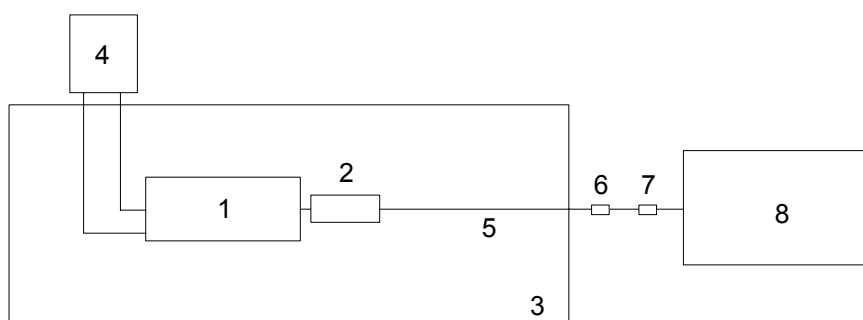


Figure 1: Measurement setup for testing on antenna connector

Test instruments used:

No.	Type	Model	Serial Number	Manufacturer
01	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
08	Power Meter	NRVS	836856/015	Rohde & Schwarz
09	Power Sensor	NRV-Z52	837901/030	Rohde & Schwarz
18	Attenuator 20 dB	4776-20	9503	Narda
19	Attenuator 10 dB	4776-10	9412	Narda

### **5.1.2. Radiated Maximum Transmitter Power**

Radiated Maximum Transmitter Power was measured with detector-function of the spectrum analyzer set to positive peak and trace mode max hold:

RBW = 100 kHz, VBW = 100 kHz, span = 1 MHz, sweep = 15 s

For measurement setup and procedure see section 5.2



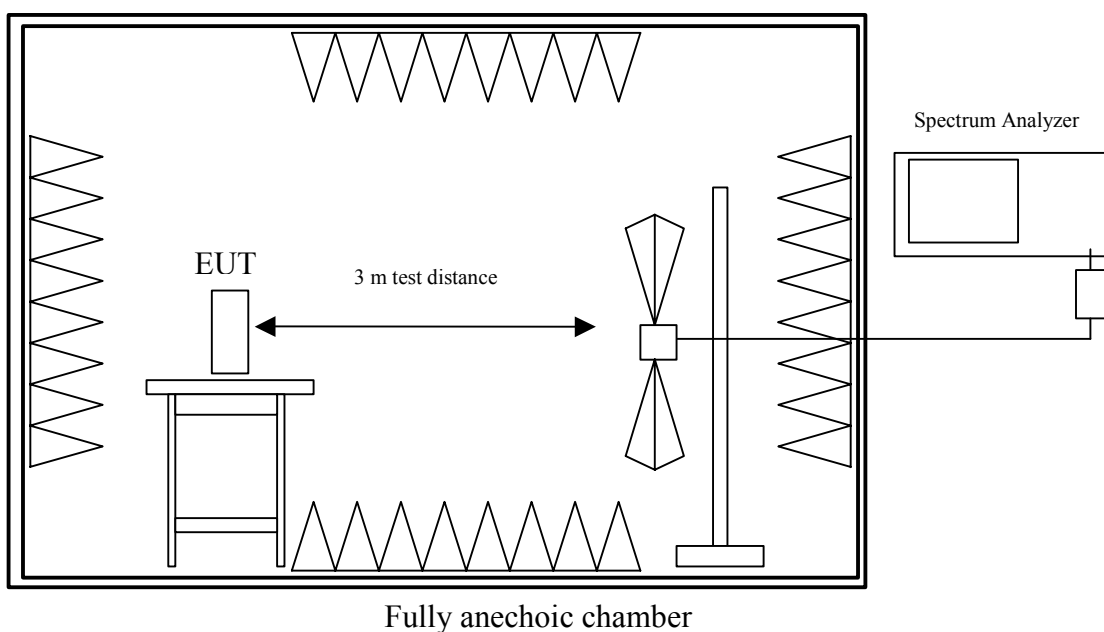
## 5.2. Mean power of emissions 30 MHz – 1 GHz

Rules and Specifications:	RSS-210, Issue 5
Guide:	ANSI C63.4-2003

### Measurement Procedure:

Radiated emissions are measured over the frequency range from 30 MHz to 1 GHz.

Measurements were made in both the horizontal and vertical planes of polarization in a fully anechoic room using a spectrum analyzer with the detector function set to peak and resolution bandwidth set to 100 kHz. All tests were performed at a test-distance of 3 meters. Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing.



### Test instruments used:

No.	Type	Model	Serial Number	Manufacturer
01	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
113	Preamplifier	CPA9231A	3393	Schaffner
141	Trilog broadband antenna	VULB 9163	9163-188	Schwarzbeck
003	Fully anechoic room	No. 2	1452	Albatross Projects

### 5.3. Radiated Emission > 1 GHz

Rules and Specifications:	RSS-210, Issue 5
Guide:	ANSI C63.4-2003

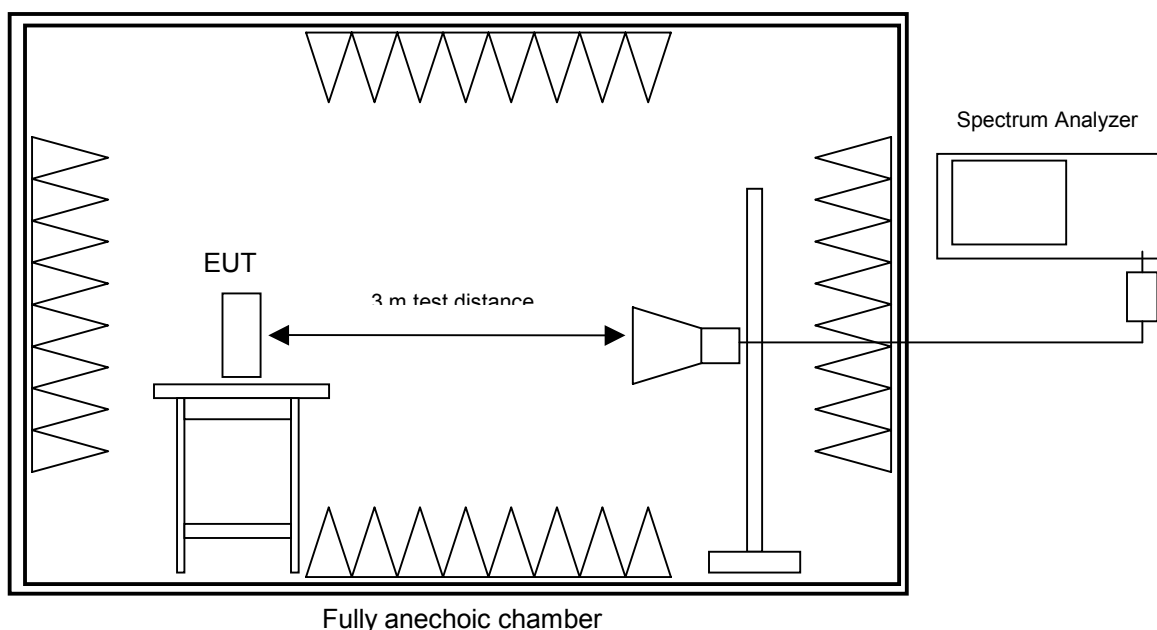
#### Measurement Procedure:

Radiated emissions are measured in the frequency range 1 GHz to 25 GHz. Resolution and video bandwidth of the spectrum analyzer are set to 1 MHz. Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing. Additional measurements are performed at critical frequencies with reduced span.

EUT is rotated all around and receiving antenna is raised and lowered to find the maximum levels of emission. The cables and equipment are placed and moved within the range of position likely to find their maximum emissions.

All tests are performed in a fully-anechoic chamber with a test-distance of 3 meters.

If required preamplifiers are used for the whole frequency range. Special care is taken to avoid overload in transmit mode (using appropriate attenuators and filters if necessary).



#### Test instruments used:

No.	Type	Model	Serial Number	Manufacturer
01	Spectrum Analyzer	FSP 30	100063	Rohde & Schwarz
143	Log. periodic antenna	3147	9112-1054	EMCO
145	Horn antenna	3115	9508-4553	EMCO
146	Horn antenna set	3160-03/-09	9112-1003	EMCO
114	Preamplifier 1-8 GHz	AFS3-00100800-32-LN	847743	Miteq
115	Preamplifier 8-18 GHz	ACO/180-3530	32641	CTT
003	Fully anechoic room	No. 2	1452	Albatross Projects

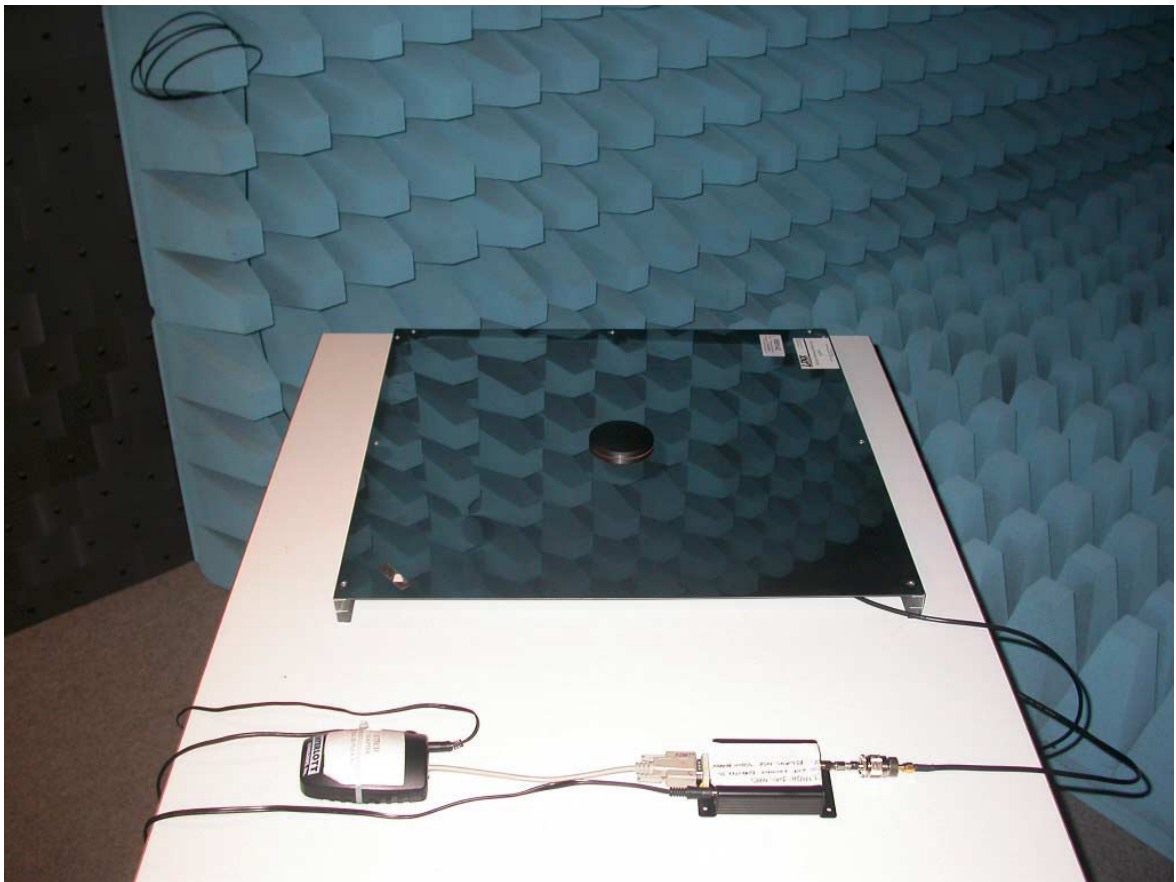
## 6. Photographs Taken During Testing

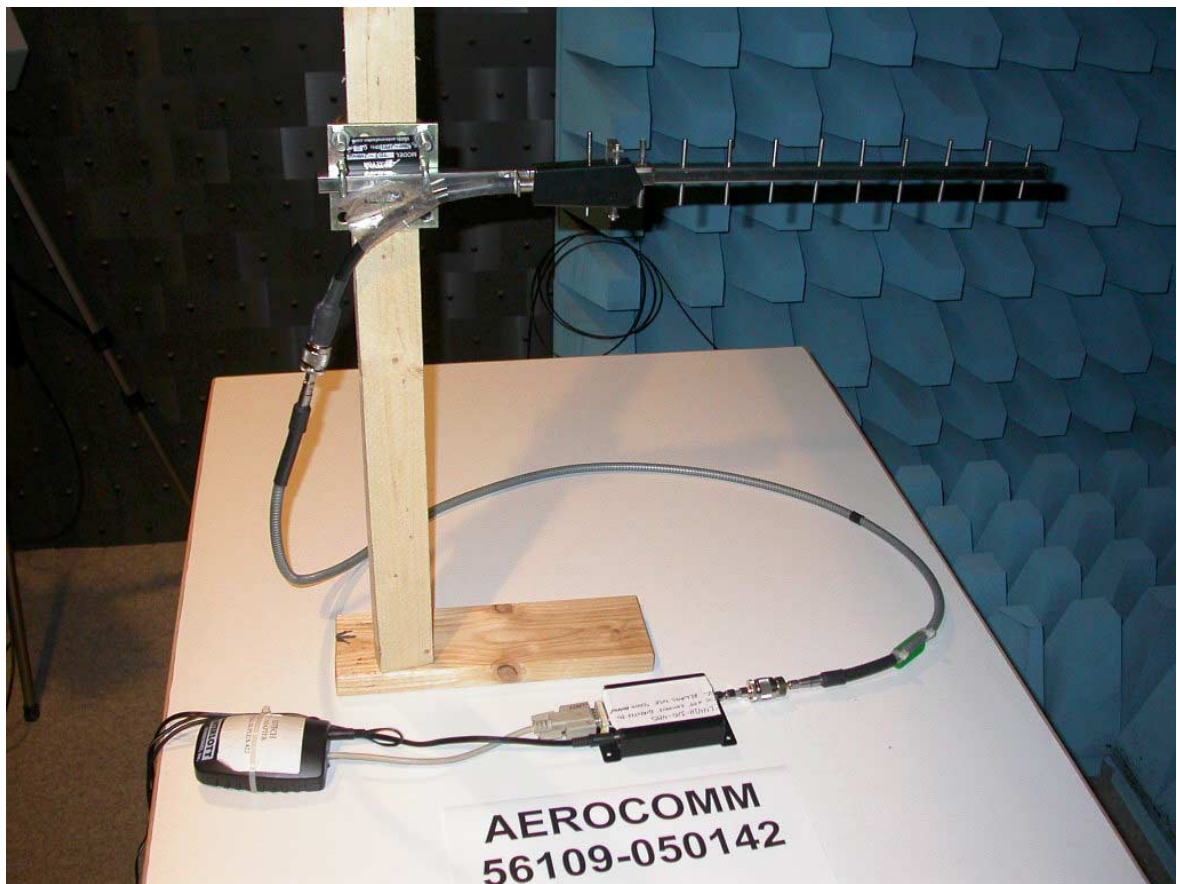
## Test setup for radiated emission measurement 30 MHz – 25 GHz (fully anechoic room)













## 7. List of Measurements

FCC Part 15 Subpart C			
Section(s):	Test	Page(s)	Result
	<b>Transmitter:</b>		
15.205	Restricted Bands	---	Pass
15.247 (a) (1)	Channel Bandwidth	---	N/A
15.247 (a) (1)	Hopping channel separation	---	N/A
15.247 (a) (1) (iii)	Number of Hopping Frequencies used	---	N/A
15.247 (a) (1) (iii)	Dwell Time of each frequency within a 10 Second Period of Time	---	N/A
15.247 (b) (2)	Maximum Peak Output Power	20	Pass
15.247 (c)	Spurious emissions - conducted	---	N/A
15.247 (c) 15.209	Spurious emissions - radiated	22	Pass
15.247 (g)	Compliance with applicable requirements for FHSS	---	
15.247 (h)	Limitation on avoidance on hopping in occupied channel	---	
15.203	Antenna Requirement	---	N/A
2.1093	RF Exposure Requirement	27	Pass
15.207	Conducted AC Powerline Emissions	---	N/A
	<b>Receiver</b>		
15.111	Spurious emissions on antenna port	---	N/A
15.109	Radiated Emissions	---	N/A

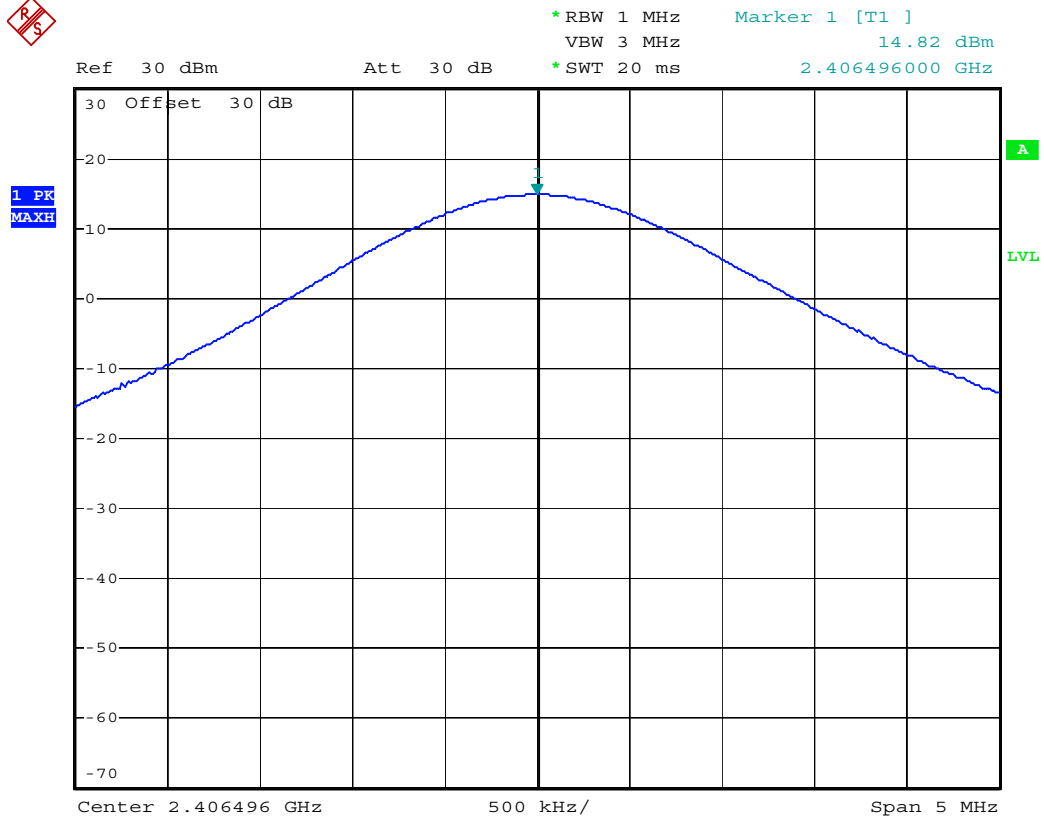
RSS 210, Issue 5			
Section(s):	Test	Page(s)	Result
	<b>Transmitter:</b>		
6.2.2 (o)			
(e3)	Restricted Bands	---	Pass
(a) (a1 / a3)	Channel Bandwidth	---	N/A
(a1 / a3)	Hopping channel separation	---	N/A
(a1 / a3)	Number of Hopping Frequencies used	---	N/A
(a1 / a3)	Dwell Time of each frequency within a 10 Second Period of Time	---	N/A
(a1 / a3)	Maximum Peak Output Power	20	Pass
(e1)	Spurious emissions - conducted	---	N/A
(e1)	Spurious emissions - radiated	22	Pass
(e2)	Antenna Requirement	---	N/A
14	RF Exposure Requirement	27	Pass
6.6	Conducted AC Powerline Emissions	---	N/A
	<b>Receiver</b>		
7.2	Spurious emissions on antenna port	---	N/A
7.3	Radiated Emissions	---	N/A

## Carrier Power Measurement

Rules and Specifications:	RSS-210, 6.2.2 (o) (a3)
Guide:	ANSI C63.4-2003
Limit:	For frequency hopping systems in the band 2400-2483.5 MHz employing at least 75 hopping channels, the output power shall not exceed 1.0 watt. For all other frequency hopping systems in this band 2400-2483.5 MHz, the transmitter output power shall not exceed 0.125 watt.

Test Site:	Radio Lab.
Distance:	Conducted Measurement
Date of Test:	27 February 2004

Frequency	Output Power in dBm	Output Power in W	Standard	Result
Low (2406 MHz)	14.82	0.03033	$\leq 0.125W$	Pass
Middle 2435 MHz	14.82	0.03033	$\leq 0.125W$	Pass
High 2472 MHz	14.86	0.03061	$\leq 0.125W$	Pass



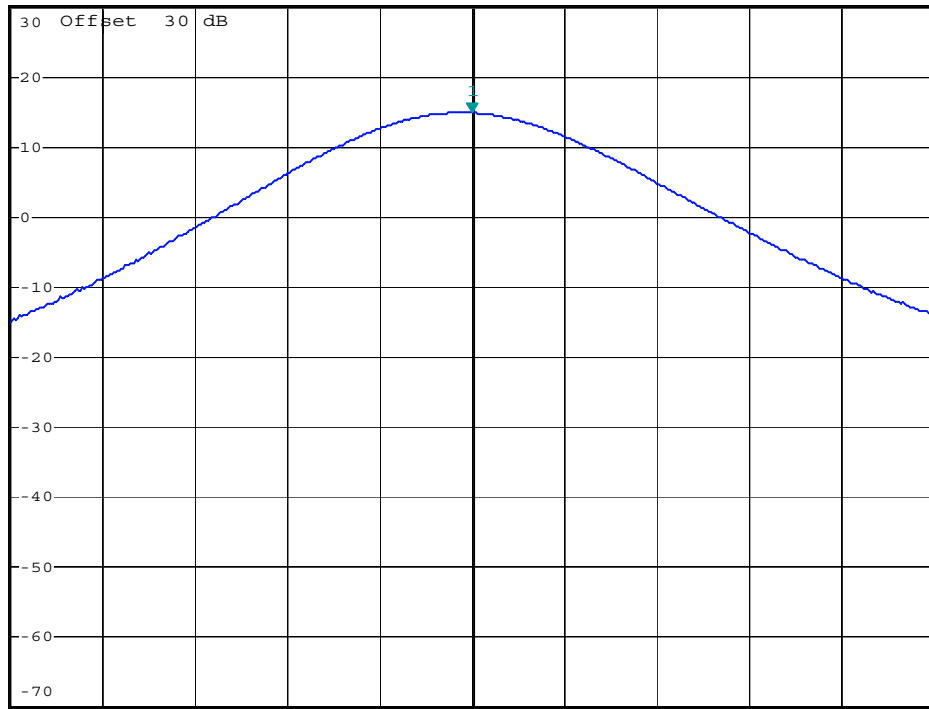


\*RBW 1 MHz      Marker 1 [T1 ]  
 VBW 3 MHz      14.82 dBm  
 \*SWT 20 ms      2.435100000 GHz

Ref 30 dBm

Att 30 dB

1 PK  
MAXH

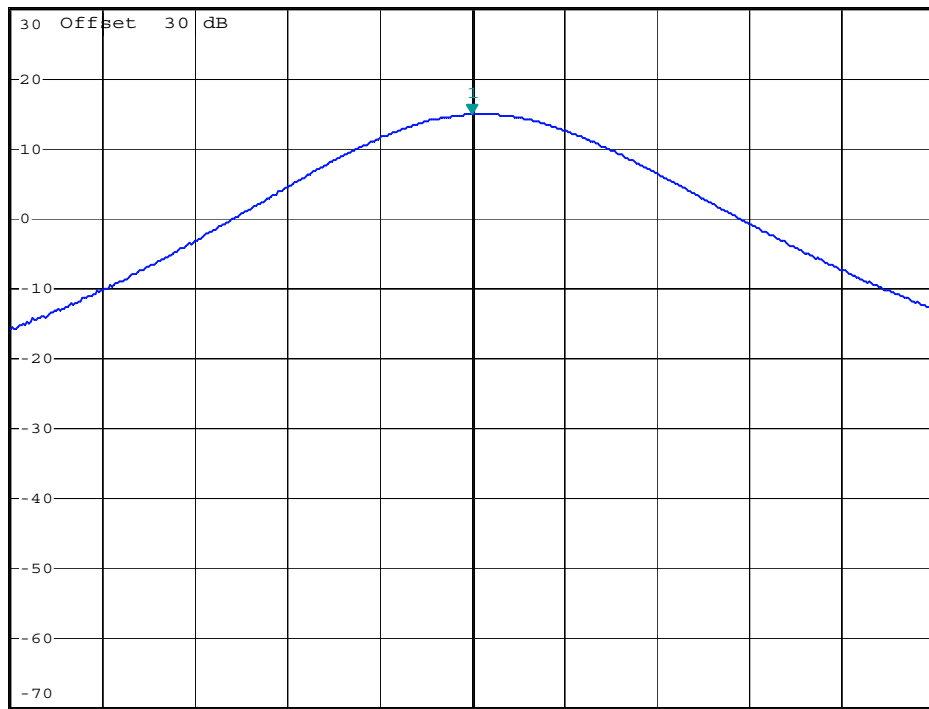


\*RBW 1 MHz      Marker 1 [T1 ]  
 VBW 3 MHz      14.86 dBm  
 \*SWT 20 ms      2.472560000 GHz

Ref 30 dBm

Att 30 dB

1 PK  
MAXH



## Spurious Emissions (NEARSON S152AM-2450S)

Rules and Specifications:	RSS-210, 6.2.2 (o) (e1) (e3), 6.3
Guide:	ANSI C63.4-2003
Limit:	In any 100 kHz bandwidth outside the operating frequency bands, between 30 MHz and 5 times the carrier frequency, the unwanted emissions spectral density shall be at least 20 dB below the inband spectral density, or shall not exceed the levels specified in in Table 3, whichever is less stringent.

Test Site:	Open Area Test Site (< 1GHz), Fully anechoic room (>1 GHz)
Distance:	Radiated Measurement
Date of Test:	22 April 2005

Frequency (MHz)	Antenna Polarisation	Meter Reading (dBμV)	Antenna Correction (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2406.5	Vertical	72.73	34.60	107.33	---	Fundamental
2435.0	Vertical	69.79	34.72	104.51	---	Fundamental
2472.0	Vertical	73.62	34.88	108.50	---	Fundamental
4812.6	Vertical	7.46	38.72	46.18	54.0	-7.82
4865.4	Vertical	12.03	38.93	50.97	54.0	-3.03

Frequencies < 1 GHz were measured with a quasi-peak detector

Frequencies > 1 GHz were measured with a peak detector

### Sample calculation of field strength values:

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{Analyzer Reading (dB}\mu\text{V)} + \text{Correction Factor (dB/m)}$$

## Spurious Emissions (NEARSON S171AH-2450S)

Rules and Specifications:	RSS-210, 6.2.2 (o) (e1) (e3), 6.3
Guide:	ANSI C63.4-2003
Limit:	In any 100 kHz bandwidth outside the operating frequency bands, between 30 MHz and 5 times the carrier frequency, the unwanted emissions spectral density shall be at least 20 dB below the inband spectral density, or shall not exceed the levels specified in in Table 3, whichever is less stringent.

Test Site:	Open Area Test Site (< 1GHz), Fully anechoic room (>1 GHz)
Distance:	Radiated Measurement
Date of Test:	22 April 2005

Frequency (MHz)	Antenna Polarisation	Meter Reading (dBμV)	Antenna Correction (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2406.5	Vertical	73.53	34.60	108.13	---	Fundamental
2435.0	Vertical	71.06	34.72	105.78	---	Fundamental
2472.0	Vertical	72.09	34.88	106.96	---	Fundamental
4812.6	Vertical	9.41	38.72	48.13	54.0	-5.87
4873.4	Vertical	12.02	28.93	50.96	54.0	-3.04
4940.8	Vertical	7.22	39.21	46.42	54.0	-7.58

Frequencies < 1 GHz were measured with a quasi-peak detector

Frequencies > 1 GHz were measured with a peak detector

### Sample calculation of field strength values:

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{Analyzer Reading (dB}\mu\text{V)} + \text{Correction Factor (dB/m)}$$

## Spurious Emissions (Linx Technologies ANT-DB1-RMS-RPS)

Rules and Specifications:	RSS-210, 6.2.2 (o) (e1) (e3), 6.3
Guide:	ANSI C63.4-2003
Limit:	In any 100 kHz bandwidth outside the operating frequency bands, between 30 MHz and 5 times the carrier frequency, the unwanted emissions spectral density shall be at least 20 dB below the inband spectral density, or shall not exceed the levels specified in in Table 3, whichever is less stringent.

Test Site:	Open Area Test Site (< 1GHz), Fully anechoic room (>1 GHz)
Distance:	Radiated Measurement
Date of Test:	22 April 2005

Frequency (MHz)	Antenna Polarisation	Meter Reading (dBμV)	Antenna Correction (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2406.5	Vertical	74.5	34.60	109.10	---	Fundamental
2435.0	Vertical	74.45	34.72	109.17	---	Fundamental
2472.0	Vertical	69.12	34.88	104.00	---	Fundamental
4812.6	Horizontal	6.52	38.72	45.24	54.0	-8.76
4873.4	Vertical	7.81	38.93	46.74	54.0	-7.26
4940.8	Vertical	6.60	39.21	45.81	54.0	-8.19

Frequencies < 1 GHz were measured with a quasi-peak detector

Frequencies > 1 GHz were measured with a peak detector

### Sample calculation of field strength values:

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{Analyzer Reading (dB}\mu\text{V)} + \text{Correction Factor (dB/m)}$$



## Spurious Emissions (ANTENNA FACTOR ANT-DB2-916/2.4-RP-SMA)

Rules and Specifications:	RSS-210, 6.2.2 (o) (e1) (e3), 6.3
Guide:	ANSI C63.4-2003
Limit:	In any 100 kHz bandwidth outside the operating frequency bands, between 30 MHz and 5 times the carrier frequency, the unwanted emissions spectral density shall be at least 20 dB below the inband spectral density, or shall not exceed the levels specified in in Table 3, whichever is less stringent.

Test Site:	Open Area Test Site (< 1GHz), Fully anechoic room (>1 GHz)
Distance:	Radiated Measurement
Date of Test:	22 April 2005

Frequency (MHz)	Antenna Polarisation	Meter Reading (dBμV)	Antenna Correction (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2406.5	Vertical	67.65	34.60	102.25	---	Fundamental
2435.0	Vertical	68.36	34.72	103.08	---	Fundamental
2472.0	Vertical	70.34	34.87	105.21	---	Fundamental
4812.6	Vertical	10.63	32.05	42.68	54.0	-11.32
4873.4	Vertical	6.56	38.93	45.50	54.0	-9.50
4940.8	Vertical	6.06	39.21	45.27	54.0	-8.73

Frequencies < 1 GHz were measured with a quasi-peak detector

Frequencies > 1 GHz were measured with a peak detector

### Sample calculation of field strength values:

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{Analyzer Reading (dB}\mu\text{V)} + \text{Correction Factor (dB/m)}$$

## Spurious Emissions (ANTENNA FACTOR ANT-2.4-YG12-N)

Rules and Specifications:	RSS-210, 6.2.2 (o) (e1) (e3), 6.3
Guide:	ANSI C63.4-2003
Limit:	In any 100 kHz bandwidth outside the operating frequency bands, between 30 MHz and 5 times the carrier frequency, the unwanted emissions spectral density shall be at least 20 dB below the inband spectral density, or shall not exceed the levels specified in in Table 3, whichever is less stringent.

Test Site:	Open Area Test Site (< 1GHz), Fully anechoic room (>1 GHz)
Distance:	Radiated Measurement
Date of Test:	22 April 2005

Frequency (MHz)	Antenna Polarisation	Meter Reading (dBμV)	Antenna Correction (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2406.5	Vertical	79.65	34.60	114.25	---	Fundamental
2435.0	Vertical	79.51	34.72	114.22	---	Fundamental
2472.0	Vertical	80.33	34.88	115.21	---	Fundamental
4812.6	Vertical	8.43	38.72	47.15	54.0	-6.85
4873.4	Vertical	8.97	38.93	47.90	54.0	-6.10
4940.0	Vertical	7.40	39.21	46.61	54.0	-7.39

Frequencies < 1 GHz were measured with a quasi-peak detector

Frequencies > 1 GHz were measured with a peak detector

### Sample calculation of field strength values:

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{Analyzer Reading (dB}\mu\text{V)} + \text{Correction Factor (dB/m)}$$

## RF Exposure (NEARSON S152AM-2450S)

Rules and Specifications:	RSS-210, 14
Guide:	OET Bulletin 65, Edition 97-01, RSS 102
Limit:	According to §15.247(b)(4) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### Limits for Maximum Permissible Exposure (MPE) General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
1500-15000	---	---	1.0	30

f = frequency in MHz

MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna relativ to an isotropic radiator

R = Distance to the center of radiation of the antenna

Maximum output power at antenna input terminal: **14.86 dBm = 30.3 mW**

Prediction distance: **20 cm**

Antenna gain: (Nearson S152AH-2450S) **4.0 dBi = 2.51 (numerical gain)**

Power density at 20 cm: **0.015 mW/cm<sup>2</sup>**

<b>Test Result:</b>	<b>Pass</b>	
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## RF Exposure (NEARSON S171AH-2450S)

Rules and Specifications:	RSS-210, 14
Guide:	OET Bulletin 65, Edition 97-01, RSS 102
Limit:	According to §15.247(b)(4) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### Limits for Maximum Permissible Exposure (MPE) General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
1500-15000	---	---	1.0	30

f = frequency in MHz

MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna relativ to an isotropic radiator

R = Distance to the center of radiation of the antenna

Maximum output power at antenna input terminal: **14.86 dBm = 30.3 mW**

Prediction distance: **20 cm**

Antenna gain: (Nearson S171AH-2450S) **7.0 dBi = 5.00 (numerical gain)**

Power density at 20 cm: **0.030 mW/cm<sup>2</sup>**

<b>Test Result:</b>	<b>Pass</b>	
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## RF Exposure (Linx Technologies ANT-DB1-RMS-RPS)

Rules and Specifications:	RSS-210, 14
Guide:	OET Bulletin 65, Edition 97-01, RSS 102
Limit:	According to §15.247(b)(4) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### Limits for Maximum Permissible Exposure (MPE) General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
1500-15000	---	---	1.0	30

f = frequency in MHz

MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna relativ to an isotropic radiator

R = Distance to the center of radiation of the antenna

Maximum output power at antenna input terminal: **14.86 dBm = 30.3 mW**

Prediction distance: **20 cm**

Antenna gain: (XXX) **3.0 dBi = 2.00 (numerical gain)**

Power density at 20 cm: **0.012 mW/cm<sup>2</sup>**

<b>Test Result:</b>	<b>Pass</b>	
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## RF Exposure (ANTENNA FACTOR ANT-DB2-916/2.4-RP-SMA)

Rules and Specifications:	RSS-210, 14
Guide:	OET Bulletin 65, Edition 97-01, RSS 102
Limit:	According to §15.247(b)(4) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### Limits for Maximum Permissible Exposure (MPE) General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
1500-15000	---	---	1.0	30

f = frequency in MHz

MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna relativ to an isotropic radiator

R = Distance to the center of radiation of the antenna

Maximum output power at antenna input terminal: **14.86 dBm = 30.3 mW**

Prediction distance: **20 cm**

Antenna gain: (ANT-DB2-916/2.4-RP-SMA) **3.0 dBi = 2.0 (numerical gain)**

Power density at 20 cm: **0.012 mW/cm<sup>2</sup>**

<b>Test Result:</b>	<b>Pass</b>	
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## RF Exposure (ANTENNA FACTOR ANT-2.4-YG12-N)

Rules and Specifications:	RSS-210, 14
Guide:	OET Bulletin 65, Edition 97-01, RSS 102
Limit:	According to §15.247(b)(4) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### Limits for Maximum Permissible Exposure (MPE) General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
1500-15000	---	---	1.0	30

f = frequency in MHz

MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna relativ to an isotropic radiator

R = Distance to the center of radiation of the antenna

Maximum output power at antenna input terminal: **14.86 dBm = 30.3 mW**

Prediction distance: **20 cm**

Antenna gain: (ANTENNA FACTOR ANT-YG12-N) **12.0 dBi = 15.84 (numerical gain)**

Power density at 20 cm: **0.095 mW/cm<sup>2</sup>**

<b>Test Result:</b>	<b>Pass</b>	
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## 8. Referenced Regulations

All tests were performed with reference to the following regulations and standards:

<input checked="" type="checkbox"/>	FCC Part 2	Code of Federal Regulations Part 2 Frequency allocation and radio treaty matters; General rules and regulations	October 01, 2001
<input checked="" type="checkbox"/>	FCC Part 15 Subpart A	Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC)	July 12, 2004
<input type="checkbox"/>	FCC Part 15 Subpart B	Code of Regulations Part 15 (Radio Frequency Devices), Subpart B (Unintentional Radiators) of the Federal Communication Commission (FCC)	July 12, 2004
<input checked="" type="checkbox"/>	FCC Part 15 Subpart C	Code of Regulations Part 15 (Radio Frequency Devices), Subpart C (Intentional Radiators) of the Federal Communication Commission (FCC)	July 12, 2004
<input type="checkbox"/>	FCC Part 74 Subpart H	Code of Regulations Part 15 (Radio Frequency Devices), Subpart H (Low Power Auxiliary Sta- tions) of the Federal Communication Commission (FCC)	July 12, 2004
<input type="checkbox"/>	CFR 47 Part 95 Subpart C/E	Code of Federal Regulations Part 95 (Personal Radio Services), Subpart C/E (Radio Con- trol(R/C) Radio Service) of the Federal Commu- nication Commission (FCC)	October 1, 1998
<input checked="" type="checkbox"/>	ANSI C63.4	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	December 11, 2003 (published Janu- ary 30, 2004)
<input checked="" type="checkbox"/>	RSS-210	Radio Standards Specification RSS-210 Issue 5 for Low Power Licence-Exempt Radiocommuni- cation Devices (All Frequency Bands) of Industry Canada	November 2001
<input type="checkbox"/>	CISPR 22	Third Edition of the International Special Commit- tee on Radio Interference (CISPR), Pub. 22, "In- formation Technology Equipment – Radio Distur- bance Characteristics – Limits and Methods of Measurement"	1997
<input type="checkbox"/>	TIA/EIA-603	Land Mobile FM or PM Communications Equip- ment Measurement and Performance Standards	February 1993
<input type="checkbox"/>	TIA/EIA-603-1	Addendum to TIA/EIA-603	March 4, 1998



### Charts taken during testing

Test Charts will be supplied in five separate supplements to this report.