



Electromagnetic Compatibility Test Report

Tests Performed on a Grayhill, Inc.

Transmitter Module, Model Tbird

Radiometrics Document RP-5304



Product Detail:

FCC ID: **NMA-WM09STDB0001**

Equipment type: 903 to 927 MHz Frequency Hopping Transmitter

Test Standards:

US CFR Title 47, Chapter I, FCC Part 15 Subpart C

FCC Part 15 CFR Title 47: 2002

This report concerns: Original Grant for Certification

FCC Part 15.247

Tests Performed For:

Grayhill, Inc.

561 Hillgrove Ave.

La Grange, IL 60525-5997

Test Facility:

Radiometrics Midwest Corporation

12 East Devonwood

Romeoville, IL 60446

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Test Date(s): (Month-Day-Year)

August 13 through 23, 2004

Document RP-5304 Revisions:

Rev.	Issue Date	Affected Pages	Revised By	Authorized Signature for Revision
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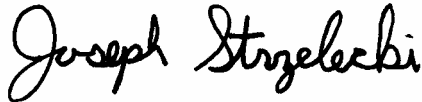
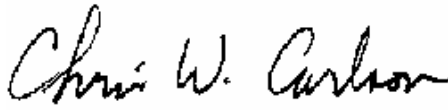
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1 ADMINISTRATIVE DATA

<i>Equipment Under Test:</i> A Grayhill, Inc., Transmitter Module Model: Tbird, Serial Number: e This will be referred to as the EUT in this Report	
<i>Date EUT Received at Radiometrics: (Month-Day-Year)</i> August 12, 2004	<i>Test Date(s): (Month-Day-Year)</i> August 13 through 23, 2004
<i>Test Report Written By:</i> Joseph Strzelecki Senior EMC Engineer NARTE EMC-000877-NE	<i>Test Witnessed By:</i> Chris Anderson Grayhill, Inc.
<i>Radiometrics' Personnel Responsible for Test:</i> 	<i>Test Report Approved By</i> 
Joseph Strzelecki Senior EMC Engineer NARTE EMC-000877-NE	Chris W. Carlson Director of Engineering NARTE EMC-000921-NE

2 TEST SUMMARY AND RESULTS

The EUT (Equipment Under Test) is a Transmitter Module, Model Tbird, manufactured by Grayhill, Inc. The detailed test results are presented in a separate section. The following is a summary of the test results.

Emissions Tests Results			
Environmental Phenomena	Frequency Range	Basic Standard	Test Result
RF Radiated Emissions	30-9300 MHz	FCC Part 15	Pass
Conducted Emissions, AC Mains	0.15 - 30 MHz	FCC Part 15	Pass*
Occupied Bandwidth Test	Fundamental Freq.	FCC Part 15	Pass*

*Grayhill, Incorporated's EMC laboratory performed these tests. The test results are presented in a separate test.

3 EQUIPMENT UNDER TEST (EUT) DETAILS

3.1 EUT Description

The EUT is a Transmitter Module, Model Tbird, manufactured by Grayhill, Inc. Nine antennas can be used the EUT. The EUT was in good working condition during the tests, with no known defects. A complete description is in a separate exhibit.

3.1.1 FCC Section 15.203 & RSS-210 Section 5.5 Antenna Requirements

This device must be professionally installed. Professionals adhering to the guidelines established in the device manual must do the installation.

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3.2 Related Submittals

Grayhill, Inc. is not submitting any other products simultaneously for equipment authorization related to the EUT.

4 TESTED SYSTEM DETAILS

4.1 Tested System Configuration

The system was configured for testing in a typical fashion. The EUT was placed on an 80-cm high, nonconductive test stand. The testing was performed in conditions as close as possible to installed conditions. Wiring was consistent with manufacturer's recommendations.

In order to disable the Hopping functions and test individual functions, the EUT was operated in a diagnostic test mode during the tests. This was accomplished with a serial interface to a PC. Once the EUT was set to the desired operating mode, the serial interface was disconnected from the EUT.

The EUT was tested as a stand-alone device. Power was supplied at 115 VAC, 60 Hz single-phase to its external power supply.

The identification for all equipment, plus descriptions of all cables used in the tested system, are:

EUT Circuit Boards

EUT Circuit Board Description	Part Number
Interface Board	WLYY4097-1

Tested System Configuration List

Item	Description	Type*	Manufacturer	Model Number	Serial Number
1	Transmitter Module	E	Grayhill, Inc.	Tbird	e
2	Power Supply	E	Grayhill, Inc.	WL-PWR-9V	None

* Type: E = EUT, P = Peripheral, S = Support Equipment; H = Host Computer

List of Antennas

Abbreviation	Antenna Type	Manufacturer	Manufacturer Part No.	Grayhill Part No.	Gain (dBi)	EIRP (dBm)
MR Yagi	Yagi	Maxrad	BMOY8905	WL-ANT-Y9A	11.51	35.01
LM Yagi	Yagi	LM	BYSS-090=09-01	WL-ANT-Y9LA	11.51	35.01
MR Patch	Patch	Maxrad	BPAS85-090-08-11SW	WL-ANT-P9LA	10.51	34.01
MR Omni	Patch	Maxrad	MP8068	WLHH1434-1	10.41	33.91
MR Omni	Omni	Maxrad	MFB9157	WL-AND-MN7A	9.51	33.01
MR Whip	Whip	Maxrad	MEXE902	WL-ANT-W9MA	2.51	26.01
GH Whip	Whip	Grayhill, Inc.	¼ Wave	WLHH1457-1	0.01	23.51
Centurion	PCB Dipole	Centurion	Revie PRO	01HH5222-2	2.51	26.01

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List of System Cables

QTY	Length (m)	Cable Description	Connected to	Shielded?
1	2	DC input cable; Two wire	Power Supply to interface board	No
1	20 cm	Unterminated interface cable	Interface board	No

4.2 Special Accessories

No special accessories were used during the tests in order to achieve compliance.

4.3 Equipment Modifications

No modifications were made to the EUT at Radiometrics' test facility in order to comply with the standards listed in this report.

5 TEST SPECIFICATIONS AND RELATED DOCUMENTS

Document	Date	Title
FCC CFR Title 47	2002	Code of Federal Regulations Title 47, Chapter 1, Federal Communications Commission, Part 15 - Radio Frequency Devices
ANSI C63.4-2001	2001	Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
FCC DA 00-705	2000	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems
ANSI C12.1	2001	Electricity Meters Code For Electricity Metering

The test procedures used are in accordance with the FCC DA 00-75 and ANSI document C63.4-2001 "Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz". The specific procedures are described herein. Radiated testing was performed at an antenna to EUT distance of 3 meters. The antenna was raised and lowered from 1 to 4 meters.

6 RADIOMETRICS' TEST FACILITIES

The results of these tests were obtained at Radiometrics Midwest Corp. in Romeoville, Illinois, USA. Radiometrics is accredited by A2LA (American Association for Laboratory Accreditation) to conform to ISO/IEC 17025: 1999 "General Requirements for the Competence of Calibration and Testing Laboratories". Radiometrics' Lab Code is 121191 and Certification Number is 1495.01. Radiometrics' scope of accreditation includes all of the test methods listed herein. A copy of the accreditation can be accessed on our web site (www.radiomet.com). Radiometrics accreditation status can be verified at A2LA's web site (www.a2la2.org).

The following is a list of shielded enclosures located in Romeoville, Illinois:

Chamber A: Is an anechoic chamber that measures 24' L X 12' W X 12' H. The walls and ceiling are fully lined with ferrite absorber tiles. The floor has a 10' x 10' section of ferrite absorber tiles in the located in the center. Panashield of Rowayton, Connecticut manufactured the chamber. The enclosure is NAMAS certified.

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Chamber B: Is a shielded enclosure that measures 24' L X 12' W X 8' H. Erik A. Lindgren & Associates of Chicago, Illinois manufactured the enclosure.

Chamber C: Is a shielded enclosure that measures 20' L X 10' W X 8' H. Lindgren RF Enclosures Inc. of Addison, Illinois manufactured the enclosure.

Chamber D: Is a fully anechoic chamber that measures 22' L X 10' W X 10' H. The walls, ceiling and floor are fully lined with ferrite absorber tiles. Braden Shielding Systems of Tulsa, Oklahoma manufactured the chamber.

Chamber E: Is a custom made anechoic chamber that measures 52' L X 30' W X 18' H. The walls and ceiling are fully lined with RF absorber. Pro-shield of Collinsville, Oklahoma manufactured the chamber.

A separate ten-foot long, brass plated, steel ground rod attached via a 6 inch copper braid grounds each of the above chambers. Each enclosure is also equipped with low-pass power line filters.

Open Area Test Site (OATS): Is located on 8625 Helmar Road in Newark, Illinois, USA and measures 56' L X 24' W X 17' H. The entire open field test site has a metal ground screen. The FCC has accepted these sites as test site number 31040/SIT 1300F2. The FCC test site Registration Number is 90897. Details of the site characteristics are on file with the Industry Canada as file number IC3124.

A complete list of the test equipment is provided herein. The calibration due dates are indicated on the equipment list. The equipment is calibrated in accordance to ANSI/NCSL Z540-1 with traceability to the National Institute of Standards and Technology (NIST).

7 DEVIATIONS AND EXCLUSIONS FROM THE TEST SPECIFICATIONS

There were no deviations or exclusions from the test specifications.

8 CERTIFICATION

Radiometrics Midwest Corporation certifies that the data contained herein was taken under conditions that meet or exceed the requirements of the test specification. The results relate only to the EUT listed herein. Any modifications made to the EUT subsequent to the indicated test date will invalidate the data and void this certification.

9 TEST EQUIPMENT TABLE

RMC ID	Manufacturer	Description	Model No.	Serial No.	Frequency Range	Cal Period	Cal Date
AMP-05	RMC/Celeritek	Pre-amplifier	MW110G	1001	1.0-12GHz	12 Mo.	11/27/03
AMP-12	MITEQ	Pre-amplifier	AM-1431	530935	0.01-1000MHz	12 Mo.	12/31/03
AMP-22	Anritsu	Pre-amplifier	MH648A	M23969	0.1-1200MHz	12 Mo.	11/25/03
ANT-06	EMCO	Log-Periodic Ant.	3146	1248	200-1000MHz	24 mo	11/17/03
ANT-13	EMCO	Horn Antenna	3115	2502	1.0-18GHz	24 Mo.	09/30/02
ANT-25	ARA	Super Log Antenna	LPB-2520/A	1116	20-2000MHz	24 Mo.	01/06/04
ANT-42	EMCO	Bicon Antenna	3104C	9512-4713	25-300MHz	12 Mo.	12/02/03
HPF-02	Microwave Cir.	High Pass Filter	H2G09G02	HPF-2	1.5-11 GHz	24 Mo.	05/01/03
LSN-03	Farnell	LISN	1EXLSN30B	000314	0.01-30MHz	24 Mo.	04/08/03
REC-08	Hewlett Packard	Spectrum Analyzer	8566B	2648A13481 2209A01436	30Hz-22GHz	12 Mo.	05/26/04

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REC-03	Anritsu	Spectrum Analyzer	MS2601B	MT94589	0.01-2200MHz	12 Mo.	10/21/03
THM-01	Extech Inst.	Temp/Humid Meter	4465CF	001106557	N/A	12 Mo.	01/28/04

Note: All calibrated equipment is subject to periodic checks.

NCR – No Calibration Required. Device monitored by calibrated equipment. N/A: Not Applicable.

10 TEST SECTIONS

10.1 Spurious Radiated Emissions

Radiated emission measurements in the Restricted bands were performed with linearly polarized broadband antennas. The results obtained with these antennas can be correlated with results obtained with a tuned dipole antenna. Below 1 GHz, when a radiated emission is detected approaching the specification limit, the measurement of the emission is repeated using a tuned dipole antenna with a Roberts Balun. A 10 dB linearity check is performed prior to start of testing in order to determine if an overload condition exists.

From 30 to 1000 MHz, an Anritsu Spectrum analyzer and a MITEQ AM-1431 amplifier with a 10 dB attenuator connected to the input were used. The out of band emissions and the ambient emissions were below the level of input overload (80 dBuV).

For tests from 1 to 9.3 GHz, an HP8566A spectrum analyzer was used with a Celeritek uWave amplifier. The out of band emissions and the ambient emissions were below the level of input overload (72 dBuV). In addition, a high pass filter was used to reduce the fundamental emission.

Radiated emission measurements are performed with linearly polarized broadband antennas. Measurements were performed using two antenna polarizations, (vertical and horizontal). The worst case emissions were recorded.

Final radiated emissions measurements were performed in the open area test site at a test distance of 3 meters. The entire frequency range from 30 to 9300 MHz was slowly scanned and the emissions in the restricted frequency bands were recorded. Measurements were performed using the peak detector function. The detected emission levels were maximized by rotating the EUT, adjusting the positions of all cables, and by scanning the measurement antenna from 1 to 4 meters above the ground. The open area test site used to collect the radiated data is located on 8625 Helmar Road in Newark, Illinois. The open field test site has a metal ground screen. All other tests are performed at 12 East Devonwood Ave. Romeoville, Illinois EMI test lab.

10.1.1 Radiated Emissions Field Strength Sample Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and by subtracting the Amplifier Gain from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG + HPF$$

Where: FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

AG = Amplifier Gain

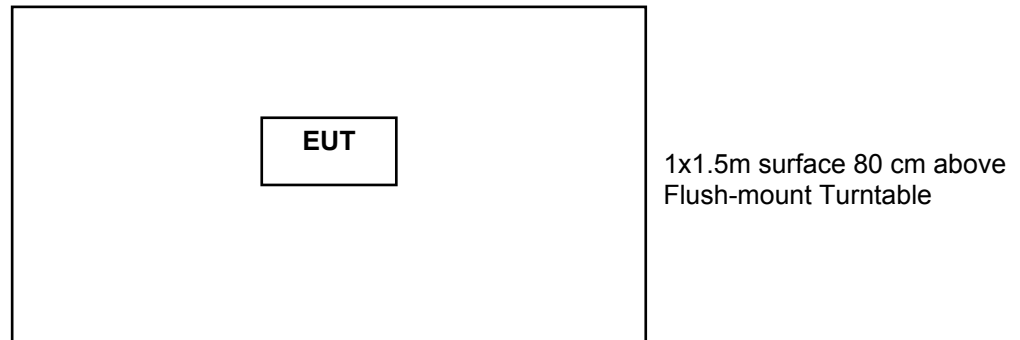
HPF = High pass filter Loss

Assume a receiver reading of 49.5 dBuV is obtained. The Antenna Factor of 18.1, High pass filter loss of 0.5 and a Cable Factor of 1.7 is added. The Amplifier Gain of 29.3 dB is subtracted, giving a field strength of 40.5 dBuV/m. The 40.9 dBuV/m can be mathematically converted to its corresponding level in uV/m.

$$FS = 49.5 + 18.1 + 1.7 - 29.3 + 0.5 = 40.5 \text{ dBuV/m}$$

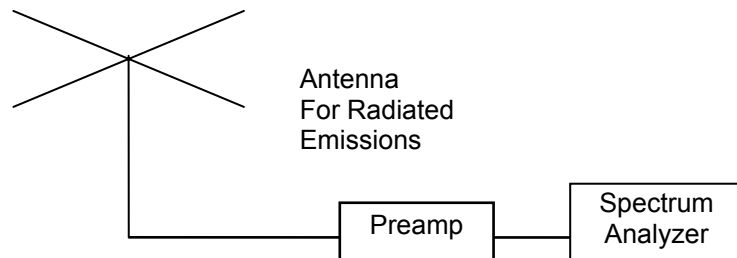
$$\text{Level in uV/m} = \text{Common Antilogarithm} [(40.5 \text{ dBuV/m})/20] = 106 \text{ uV/m}$$

Figure 1. Drawing of Radiated Emissions Setup



Notes:

- AC outlet with low-pass filter at the base of the turntable
- Antenna height varied from 1 to 4 meters
- Distance from antenna to EUT is 3 meters
- AC cables are not shown
- Not to Scale



10.1.2 Spurious Radiated Emissions Test Results (Restricted Band)

The following spectrum analyzer settings were used.

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1 \text{ GHz}$, 100 kHz for $f < 1 \text{ GHz}$

VBW \geq RBW

Sweep = auto

Detector function = peak

Trace = max hold

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A Video Bandwidth of 10 Hz was used for Average measurements above 1 GHz.

The peak emissions did not exceed the average by more than 20 dB.

Manufacturer	Grayhill, Inc.	Specification	FCC Part 15 Subpart C & RSS-210
Model	Tbird	Test Date	6/23/2004
Serial Number	e	Test Distance	3 Meters
Abbreviations	Pol = Antenna Polarization; V = Vertical; H = Horizontal; P = peak; Q = QP		

Emissions above 1 GHz

EUT Antenna	Tx Freq	Detector Function	Emission Freq. MHz	Ant Pol.	dBuV/m	Limit	Margin under limit
Centurion	902.4	Ave.	2707.3	H	44.1	54.0	9.9
Centurion	902.4	Ave.	3609.7	H	46.2	54.0	7.8
Centurion	902.4	Ave.	4512.6	H	38.7	54.0	15.3
Centurion	902.4	Ave.	5414.9	H	41.5	54.0	12.5
Centurion	902.4	Ave.	8120.7	H	43.7	54.0	10.3
Centurion	902.4	Ave.	9022.6	H	46.6	54.0	7.4
Centurion	902.4	Ave.	2707.4	V	47.0	54.0	7.0
Centurion	902.4	Ave.	3609.8	V	48.2	54.0	5.8
Centurion	902.4	Ave.	4512.6	V	41.3	54.0	12.7
Centurion	902.4	Ave.	5415.0	V	42.1	54.0	11.9
Centurion	902.4	Ave.	8120.6	V	44.2	54.0	9.8
Centurion	902.4	Ave.	9022.9	V	46.9	54.0	7.1
Centurion	915	Ave.	2745.3	H	41.8	54.0	12.2
Centurion	915	Ave.	3659.8	H	41.6	54.0	12.4
Centurion	915	Ave.	4575.4	H	42.4	54.0	11.6
Centurion	915	Ave.	8234.0	H	42.5	54.0	11.5
Centurion	915	Ave.	9150.9	H	47.7	54.0	6.3
Centurion	915	Ave.	2745.3	V	49.1	54.0	4.9
Centurion	915	Ave.	3659.8	V	42.4	54.0	11.6
Centurion	915	Ave.	4575.4	V	42.9	54.0	11.1
Centurion	915	Ave.	8234.0	V	42.8	54.0	11.2
Centurion	915	Ave.	9149.0	V	47.7	54.0	6.3
Centurion	927.6	Ave.	2782.7	H	43.9	54.0	10.1
Centurion	927.6	Ave.	3710.7	H	44.5	54.0	9.5
Centurion	927.6	Ave.	4638.4	H	46.6	54.0	7.4
Centurion	927.6	Ave.	8349.1	H	42.7	54.0	11.3
Centurion	927.6	Ave.	2783.1	V	47.6	54.0	6.4
Centurion	927.6	Ave.	3710.8	V	47.2	54.0	6.8
Centurion	927.6	Ave.	4638.4	V	44.1	54.0	9.9
Centurion	927.6	Ave.	8347.4	V	42.6	54.0	11.4
MR OMNI	902.4	Ave.	2707.4	H	36.7	54.0	17.3
MR OMNI	902.4	Ave.	3610.0	H	43.0	54.0	11.0
MR OMNI	902.4	Ave.	4512.5	H	40.4	54.0	13.6
MR OMNI	902.4	Ave.	5413.7	H	42.0	54.0	12.0
MR OMNI	902.4	Ave.	8122.4	H	45.7	54.0	8.3
MR OMNI	902.4	Ave.	9025.2	H	47.5	54.0	6.5
MR OMNI	902.4	Ave.	2707.5	V	41.8	54.0	12.2
MR OMNI	902.4	Ave.	3609.1	V	47.2	54.0	6.8
MR OMNI	902.4	Ave.	4512.4	V	41.2	54.0	12.8

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EUT Antenna	Tx Freq	Detector Function	Emission Freq. MHz	Ant Pol.	dBuV/m	Limit	Margin under limit
MR OMNI	902.4	Ave.	5414.8	V	37.4	54.0	16.6
MR OMNI	902.4	Ave.	8122.5	V	43.7	54.0	10.3
MR OMNI	902.4	Ave.	9022.8	V	46.5	54.0	7.5
MR OMNI	915	Ave.	2745.4	H	44.5	54.0	9.5
MR OMNI	915	Ave.	3659.8	H	38.4	54.0	15.6
MR OMNI	915	Ave.	4575.5	H	40.2	54.0	13.8
MR OMNI	915	Ave.	8234.1	H	43.0	54.0	11.0
MR OMNI	915	Ave.	9151.2	H	48.4	54.0	5.6
MR OMNI	915	Ave.	2745.3	V	45.2	54.0	8.8
MR OMNI	915	Ave.	3660.6	V	40.8	54.0	13.2
MR OMNI	915	Ave.	4574.5	V	40.3	54.0	13.7
MR OMNI	915	Ave.	8234.1	V	42.4	54.0	11.6
MR OMNI	915	Ave.	9149.1	V	47.3	54.0	6.7
MR OMNI	927.6	Ave.	2783.2	H	45.1	54.0	8.9
MR OMNI	927.6	Ave.	3710.8	H	42.2	54.0	11.8
MR OMNI	927.6	Ave.	4637.5	H	42.9	54.0	11.1
MR OMNI	927.6	Ave.	8347.6	H	44.9	54.0	9.1
MR OMNI	927.6	Ave.	2782.6	V	48.5	54.0	5.5
MR OMNI	927.6	Ave.	3710.6	V	46.8	54.0	7.2
MR OMNI	927.6	Ave.	4638.5	V	44.3	54.0	9.7
MR OMNI	927.6	Ave.	8349.3	V	43.6	54.0	10.4
LM Patch	902.4	Ave.	2707.5	H	41.9	54.0	12.1
LM Patch	902.4	Ave.	3609.9	H	44.2	54.0	9.8
LM Patch	902.4	Ave.	4511.4	H	38.4	54.0	15.6
LM Patch	902.4	Ave.	5415.2	H	37.5	54.0	16.5
LM Patch	902.4	Ave.	8120.7	H	42.5	54.0	11.5
LM Patch	902.4	Ave.	9025.0	H	47.5	54.0	6.5
LM Patch	902.4	Ave.	2707.1	V	48.4	54.0	5.6
LM Patch	902.4	Ave.	3609.1	V	47.5	54.0	6.5
LM Patch	902.4	Ave.	4511.5	V	40.6	54.0	13.4
LM Patch	902.4	Ave.	5415.1	V	40.4	54.0	13.6
LM Patch	902.4	Ave.	8122.7	V	43.1	54.0	10.9
LM Patch	902.4	Ave.	9022.6	V	46.9	54.0	7.1
LM Patch	915	Ave.	2745.4	H	45.5	54.0	8.5
LM Patch	915	Ave.	3659.6	H	36.6	54.0	17.4
LM Patch	915	Ave.	4574.4	H	36.3	54.0	17.7
LM Patch	915	Ave.	8233.6	H	42.3	54.0	11.7
LM Patch	915	Ave.	9149.1	H	48.5	54.0	5.5
LM Patch	915	Ave.	2744.7	V	44.8	54.0	9.2
LM Patch	915	Ave.	3659.6	V	42.7	54.0	11.3
LM Patch	915	Ave.	4575.3	V	41.7	54.0	12.3
LM Patch	915	Ave.	8234.4	V	42.4	54.0	11.6
LM Patch	915	Ave.	9149.0	V	50.2	54.0	3.8
LM Patch	927.6	Ave.	2783.0	H	51.4	54.0	2.6
LM Patch	927.6	Ave.	3710.6	H	45.2	54.0	8.8
LM Patch	927.6	Ave.	4638.4	H	41.0	54.0	13.0
LM Patch	927.6	Ave.	8349.4	H	44.1	54.0	9.9
LM Patch	927.6	Ave.	2782.5	V	51.9	54.0	2.1
LM Patch	927.6	Ave.	3710.7	V	48.0	54.0	6.0

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Testing of the Grayhill, Inc., Model Tbird, Transmitter Module

EUT Antenna	Tx Freq	Detector Function	Emission Freq. MHz	Ant Pol.	dBuV/m	Limit	Margin under limit
LM Patch	927.6	Ave.	4638.5	V	44.5	54.0	9.5
LM Patch	927.6	Ave.	8347.6	V	46.1	54.0	7.9
MR Yagi	902.4	Ave.	2707.4	H	44.2	54.0	9.8
MR Yagi	902.4	Ave.	3610.0	H	48.9	54.0	5.1
MR Yagi	902.4	Ave.	4511.5	H	36.3	54.0	17.7
MR Yagi	902.4	Ave.	5414.9	H	37.0	54.0	17.0
MR Yagi	902.4	Ave.	8120.8	H	42.4	54.0	11.6
MR Yagi	902.4	Ave.	9022.9	H	47.1	54.0	6.9
MR Yagi	902.4	Ave.	2707.4	V	43.3	54.0	10.7
MR Yagi	902.4	Ave.	3609.8	V	46.3	54.0	7.7
MR Yagi	902.4	Ave.	4512.4	V	39.9	54.0	14.1
MR Yagi	902.4	Ave.	5413.6	V	41.1	54.0	12.9
MR Yagi	902.4	Ave.	8122.4	V	43.5	54.0	10.5
MR Yagi	915	Ave.	2744.8	H	45.4	54.0	8.6
MR Yagi	915	Ave.	3659.5	H	38.9	54.0	15.1
MR Yagi	915	Ave.	4574.5	H	41.3	54.0	12.7
MR Yagi	915	Ave.	8233.7	H	42.1	54.0	11.9
MR Yagi	915	Ave.	9150.1	H	47.0	54.0	7.0
MR Yagi	915	Ave.	2745.2	V	46.1	54.0	7.9
MR Yagi	915	Ave.	3659.7	V	40.9	54.0	13.1
MR Yagi	915	Ave.	4574.4	V	43.4	54.0	10.6
MR Yagi	915	Ave.	8233.7	V	42.2	54.0	11.8
MR Yagi	915	Ave.	9149.1	V	48.0	54.0	6.0
MR Yagi	927.6	Ave.	2783.1	H	46.4	54.0	7.6
MR Yagi	927.6	Ave.	3710.8	H	43.8	54.0	10.2
MR Yagi	927.6	Ave.	4637.6	H	40.6	54.0	13.4
MR Yagi	927.6	Ave.	8347.2	H	42.8	54.0	11.2
MR Yagi	927.6	Ave.	2783.2	V	48.1	54.0	5.9
MR Yagi	927.6	Ave.	3710.7	V	48.3	54.0	5.7
MR Yagi	927.6	Ave.	4637.5	V	45.5	54.0	8.5
MR Yagi	927.6	Ave.	8347.9	V	42.8	54.0	11.2
MR Patch	902.4	Ave.	2707.4	H	41.8	54.0	12.2
MR Patch	902.4	Ave.	3610.0	H	47.7	54.0	6.3
MR Patch	902.4	Ave.	4511.6	H	35.4	54.0	18.6
MR Patch	902.4	Ave.	5414.8	H	36.7	54.0	17.3
MR Patch	902.4	Ave.	8120.7	H	42.9	54.0	11.1
MR Patch	902.4	Ave.	9022.8	H	46.8	54.0	7.2
MR Patch	902.4	Ave.	2707.4	V	42.6	54.0	11.4
MR Patch	902.4	Ave.	3609.1	V	48.2	54.0	5.8
MR Patch	902.4	Ave.	4512.6	V	39.6	54.0	14.4
MR Patch	902.4	Ave.	5414.8	V	42.7	54.0	11.3
MR Patch	902.4	Ave.	8120.8	V	46.9	54.0	7.1
MR Patch	902.4	Ave.	9025.1	V	48.3	54.0	5.7
MR Patch	915	Ave.	2744.8	H	44.3	54.0	9.7
MR Patch	915	Ave.	3659.5	H	39.7	54.0	14.3
MR Patch	915	Ave.	4575.4	H	35.3	54.0	18.7
MR Patch	915	Ave.	8232.5	H	42.2	54.0	11.8
MR Patch	915	Ave.	9148.7	H	47.0	54.0	7.0
MR Patch	915	Ave.	2745.2	V	45.8	54.0	8.2

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EUT Antenna	Tx Freq	Detector Function	Emission Freq. MHz	Ant Pol.	dBuV/m	Limit	Margin under limit
MR Patch	915	Ave.	3660.4	V	41.3	54.0	12.7
MR Patch	915	Ave.	4574.5	V	40.4	54.0	13.6
MR Patch	915	Ave.	8234.1	V	42.6	54.0	11.4
MR Patch	915	Ave.	9150.7	V	47.3	54.0	6.7
MR Patch	927.6	Ave.	2782.5	H	47.1	54.0	6.9
MR Patch	927.6	Ave.	3710.7	H	41.5	54.0	12.5
MR Patch	927.6	Ave.	4637.5	H	41.3	54.0	12.7
MR Patch	927.6	Ave.	8347.5	H	43.3	54.0	10.7
MR Patch	927.6	Ave.	2783.1	V	46.8	54.0	7.2
MR Patch	927.6	Ave.	3710.7	V	45.7	54.0	8.3
MR Patch	927.6	Ave.	4638.4	V	47.3	54.0	6.7
MR Patch	927.6	Ave.	8347.5	V	45.3	54.0	8.7
MR Whip	902.4	Ave.	2707.3	H	40.3	54.0	13.7
MR Whip	902.4	Ave.	3609.9	H	44.0	54.0	10.0
MR Whip	902.4	Ave.	4512.4	H	42.6	54.0	11.4
MR Whip	902.4	Ave.	5415.1	H	39.1	54.0	14.9
MR Whip	902.4	Ave.	8122.3	H	43.0	54.0	11.0
MR Whip	902.4	Ave.	9024.9	H	49.2	54.0	4.8
MR Whip	902.4	Ave.	2707.3	V	41.6	54.0	12.4
MR Whip	902.4	Ave.	3610.0	V	46.5	54.0	7.5
MR Whip	902.4	Ave.	4512.5	V	43.0	54.0	11.0
MR Whip	902.4	Ave.	5414.9	V	39.6	54.0	14.4
MR Whip	902.4	Ave.	8120.7	V	42.5	54.0	11.5
MR Whip	902.4	Ave.	9024.9	V	50.1	54.0	3.9
MR Whip	915	Ave.	2745.2	H	41.9	54.0	12.1
MR Whip	915	Ave.	3660.3	H	37.7	54.0	16.3
MR Whip	915	Ave.	4574.7	H	38.5	54.0	15.5
MR Whip	915	Ave.	8233.2	H	42.0	54.0	12.0
MR Whip	915	Ave.	9148.8	H	46.6	54.0	7.4
MR Whip	915	Ave.	2745.3	V	48.6	54.0	5.4
MR Whip	915	Ave.	3659.5	V	45.3	54.0	8.7
MR Whip	915	Ave.	4575.4	V	48.2	54.0	5.8
MR Whip	915	Ave.	8235.7	V	43.4	54.0	10.6
MR Whip	915	Ave.	9148.8	V	48.9	54.0	5.1
MR Whip	927.6	Ave.	2782.6	H	41.4	54.0	12.6
MR Whip	927.6	Ave.	3710.7	H	42.6	54.0	11.4
MR Whip	927.6	Ave.	4638.4	H	39.0	54.0	15.0
MR Whip	927.6	Ave.	8348.5	H	42.6	54.0	11.4
MR Whip	927.6	Ave.	2783.1	V	46.9	54.0	7.1
MR Whip	927.6	Ave.	3710.7	V	44.6	54.0	9.4
MR Whip	927.6	Ave.	4638.3	V	47.9	54.0	6.1
MR Whip	927.6	Ave.	8347.5	V	43.5	54.0	10.5
GH Whip	902.4	Ave.	2707.6	H	38.9	54.0	15.1
GH Whip	902.4	Ave.	3610.0	H	44.9	54.0	9.1
GH Whip	902.4	Ave.	4509.9	H	37.5	54.0	16.5
GH Whip	902.4	Ave.	5413.6	H	40.4	54.0	13.6
GH Whip	902.4	Ave.	8120.8	H	42.1	54.0	11.9
GH Whip	902.4	Ave.	9023.0	H	47.2	54.0	6.8
GH Whip	902.4	Ave.	2707.5	V	42.4	54.0	11.6

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EUT Antenna	Tx Freq	Detector Function	Emission Freq. MHz	Ant Pol.	dBuV/m	Limit	Margin under limit
GH Whip	902.4	Ave.	3610.0	V	48.5	54.0	5.5
GH Whip	902.4	Ave.	4511.5	V	39.4	54.0	14.6
GH Whip	902.4	Ave.	5413.9	V	38.7	54.0	15.3
GH Whip	902.4	Ave.	8122.4	V	46.2	54.0	7.8
GH Whip	902.4	Ave.	9024.9	V	47.5	54.0	6.5
GH Whip	915	Ave.	2745.1	H	36.2	54.0	17.8
GH Whip	915	Ave.	3659.7	H	38.6	54.0	15.4
GH Whip	915	Ave.	4575.2	H	34.3	54.0	19.7
GH Whip	915	Ave.	8233.9	H	42.4	54.0	11.6
GH Whip	915	Ave.	9150.5	H	48.0	54.0	6.0
GH Whip	915	Ave.	2745.3	V	45.8	54.0	8.2
GH Whip	915	Ave.	3659.5	V	41.8	54.0	12.2
GH Whip	915	Ave.	4575.8	V	41.3	54.0	12.7
GH Whip	915	Ave.	8233.9	V	42.6	54.0	11.4
GH Whip	915	Ave.	9149.0	V	48.4	54.0	5.6
GH Whip	927.6	Ave.	2782.4	H	42.8	54.0	11.2
GH Whip	927.6	Ave.	3710.7	H	44.1	54.0	9.9
GH Whip	927.6	Ave.	4637.4	H	37.2	54.0	16.8
GH Whip	927.6	Ave.	8349.1	H	43.2	54.0	10.8
GH Whip	927.6	Ave.	2783.1	V	47.4	54.0	6.6
GH Whip	927.6	Ave.	3710.8	V	48.7	54.0	5.3
GH Whip	927.6	Ave.	4637.6	V	45.6	54.0	8.4
GH Whip	927.6	Ave.	8347.0	V	43.0	54.0	11.0
LM Yagi	902.4	Ave.	2707.4	H	44.4	54.0	9.6
LM Yagi	902.4	Ave.	3609.9	H	48.0	54.0	6.0
LM Yagi	902.4	Ave.	4512.3	H	39.0	54.0	15.0
LM Yagi	902.4	Ave.	5413.8	H	36.0	54.0	18.0
LM Yagi	902.4	Ave.	8122.4	H	45.0	54.0	9.0
LM Yagi	902.4	Ave.	9024.8	H	50.1	54.0	3.9
LM Yagi	902.4	Ave.	2707.4	V	47.6	54.0	6.4
LM Yagi	902.4	Ave.	3609.8	V	47.7	54.0	6.3
LM Yagi	902.4	Ave.	4512.5	V	46.1	54.0	7.9
LM Yagi	902.4	Ave.	5413.7	V	43.2	54.0	10.8
LM Yagi	902.4	Ave.	8122.3	V	49.7	54.0	4.3
LM Yagi	902.4	Ave.	9024.8	V	52.1	54.0	1.9
LM Yagi	915	Ave.	2744.8	H	43.3	54.0	10.7
LM Yagi	915	Ave.	3659.5	H	37.0	54.0	17.0
LM Yagi	915	Ave.	4575.6	H	38.1	54.0	15.9
LM Yagi	915	Ave.	8233.9	H	42.4	54.0	11.6
LM Yagi	915	Ave.	2745.2	V	48.6	54.0	5.4
LM Yagi	915	Ave.	3660.4	V	40.7	54.0	13.3
LM Yagi	915	Ave.	4575.5	V	45.7	54.0	8.3
LM Yagi	915	Ave.	8234.1	V	46.7	54.0	7.3
LM Yagi	915	Ave.	9151.0	V	49.0	54.0	5.0
LM Yagi	927.6	Ave.	2782.6	H	45.2	54.0	8.8
LM Yagi	927.6	Ave.	3711.0	H	43.8	54.0	10.2
LM Yagi	927.6	Ave.	4637.4	H	41.3	54.0	12.7
LM Yagi	927.6	Ave.	8349.3	H	43.0	54.0	11.0
LM Yagi	927.6	Ave.	2782.5	V	46.7	54.0	7.3

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EUT Antenna	Tx Freq	Detector Function	Emission Freq. MHz	Ant Pol.	dBuV/m	Limit	Margin under limit
LM Yagi	927.6	Ave.	3710.8	V	49.4	54.0	4.6
LM Yagi	927.6	Ave.	4638.5	V	48.9	54.0	5.1
LM Yagi	927.6	Ave.	8347.7	V	45.7	54.0	8.3

EUT Antenna	Tx Freq	Detector Function	Emission Freq. MHz	Ant Pol.	dBuV/m	Limit	Margin under limit
Centurion	902.4	Peak	2707	H	45.6	74	28.4
Centurion	902.4	Peak	3610	H	51.8	74	22.2
Centurion	902.4	Peak	4512	H	43.2	74	30.8
Centurion	902.4	Peak	5414	H	49.2	74	24.8
Centurion	902.4	Peak	8122	H	54.4	74	19.6
Centurion	902.4	Peak	9024	H	57.2	74	16.8
Centurion	902.4	Peak	2707	V	48.8	74	25.2
Centurion	902.4	Peak	3610	V	53.1	74	20.9
Centurion	902.4	Peak	4512	V	45.6	74	28.4
Centurion	902.4	Peak	5414	V	49.7	74	24.3
Centurion	902.4	Peak	8122	V	55.6	74	18.4
Centurion	902.4	Peak	9024	V	56.8	74	17.2
Centurion	915	Peak	2745	H	43.0	74	31.0
Centurion	915	Peak	3660	H	47.1	74	26.9
Centurion	915	Peak	4575	H	46.6	74	27.4
Centurion	915	Peak	8235	H	53.7	74	20.3
Centurion	915	Peak	9150	H	58.0	74	16.0
Centurion	915	Peak	2745	V	50.6	74	23.4
Centurion	915	Peak	3660	V	47.9	74	26.1
Centurion	915	Peak	4575	V	47.6	74	26.4
Centurion	915	Peak	8235	V	53.9	74	20.1
Centurion	915	Peak	9150	V	57.7	74	16.3
Centurion	927.6	Peak	2783	H	45.1	74	28.9
Centurion	927.6	Peak	3710	H	49.9	74	24.1
Centurion	927.6	Peak	4638	H	50.7	74	23.3
Centurion	927.6	Peak	8348	H	53.6	74	20.4
Centurion	927.6	Peak	2783	V	48.8	74	25.2
Centurion	927.6	Peak	3710	V	52.9	74	21.1
Centurion	927.6	Peak	4638	V	48.9	74	25.1
Centurion	927.6	Peak	8348	V	53.8	74	20.2
MR OMNI	902.4	Peak	2707	H	38.1	74	35.9
MR OMNI	902.4	Peak	3610	H	48.3	74	25.7
MR OMNI	902.4	Peak	4512	H	44.8	74	29.2
MR OMNI	902.4	Peak	5414	H	50.0	74	24.0
MR OMNI	902.4	Peak	8122	H	56.6	74	17.4
MR OMNI	902.4	Peak	9024	H	57.5	74	16.5

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MR OMNI	902.4	Peak	2707	V	43.8	74	30.2
MR OMNI	902.4	Peak	3610	V	52.2	74	21.8
MR OMNI	902.4	Peak	4512	V	45.8	74	28.2
MR OMNI	902.4	Peak	5414	V	45.1	74	28.9
MR OMNI	902.4	Peak	8122	V	54.9	74	19.1
MR OMNI	902.4	Peak	9024	V	57.2	74	16.8
MR OMNI	915	Peak	2745	H	46.1	74	27.9
MR OMNI	915	Peak	3660	H	44.0	74	30.0
MR OMNI	915	Peak	4575	H	44.3	74	29.7
MR OMNI	915	Peak	8235	H	53.6	74	20.4
MR OMNI	915	Peak	9150	H	59.0	74	15.0
MR OMNI	915	Peak	2745	V	46.8	74	27.2
MR OMNI	915	Peak	3660	V	46.2	74	27.8
MR OMNI	915	Peak	4575	V	44.9	74	29.1
MR OMNI	915	Peak	8235	V	53.0	74	21.0
MR OMNI	915	Peak	9150	V	57.6	74	16.4
MR OMNI	927.6	Peak	2783	H	47.0	74	27.0
MR OMNI	927.6	Peak	3710	H	47.9	74	26.1
MR OMNI	927.6	Peak	4638	H	47.0	74	27.0
MR OMNI	927.6	Peak	8348	H	56.2	74	17.8
MR OMNI	927.6	Peak	2783	V	50.5	74	23.5
MR OMNI	927.6	Peak	3710	V	52.1	74	21.9
MR OMNI	927.6	Peak	4638	V	49.0	74	25.0
MR OMNI	927.6	Peak	8348	V	54.4	74	19.6
LM Patch	902.4	Peak	2707	H	43.9	74	30.1
LM Patch	902.4	Peak	3610	H	49.1	74	24.9
LM Patch	902.4	Peak	4512	H	42.6	74	31.4
LM Patch	902.4	Peak	5414	H	45.2	74	28.8
LM Patch	902.4	Peak	8122	H	54.0	74	20.0
LM Patch	902.4	Peak	9024	H	58.2	74	15.8
LM Patch	902.4	Peak	2707	V	50.1	74	23.9
LM Patch	902.4	Peak	3610	V	52.3	74	21.7
LM Patch	902.4	Peak	4512	V	45.1	74	28.9
LM Patch	902.4	Peak	5414	V	47.9	74	26.1
LM Patch	902.4	Peak	8122	V	53.8	74	20.2
LM Patch	902.4	Peak	9024	V	57.6	74	16.4
LM Patch	915	Peak	2745	H	46.7	74	27.3
LM Patch	915	Peak	3660	H	41.8	74	32.2
LM Patch	915	Peak	4575	H	41.2	74	32.8
LM Patch	915	Peak	8235	H	53.5	74	20.5
LM Patch	915	Peak	9150	H	58.8	74	15.2
LM Patch	915	Peak	2745	V	46.2	74	27.8
LM Patch	915	Peak	3660	V	47.5	74	26.5
LM Patch	915	Peak	4575	V	45.8	74	28.2
LM Patch	915	Peak	8235	V	53.3	74	20.7

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LM Patch	915	Peak	9150	V	60.5	74	13.5
LM Patch	927.6	Peak	2783	H	53.2	74	20.8
LM Patch	927.6	Peak	3710	H	50.3	74	23.7
LM Patch	927.6	Peak	4638	H	45.9	74	28.1
LM Patch	927.6	Peak	8348	H	54.7	74	19.3
LM Patch	927.6	Peak	2783	V	53.2	74	20.8
LM Patch	927.6	Peak	3710	V	52.9	74	21.1
LM Patch	927.6	Peak	4638	V	49.4	74	24.6
LM Patch	927.6	Peak	8348	V	56.8	74	17.2
MR Yagi	902.4	Peak	2707	H	45.7	74	28.3
MR Yagi	902.4	Peak	3610	H	53.8	74	20.2
MR Yagi	902.4	Peak	4512	H	41.2	74	32.8
MR Yagi	902.4	Peak	5414	H	44.2	74	29.8
MR Yagi	902.4	Peak	8122	H	53.1	74	20.9
MR Yagi	902.4	Peak	9024	H	57.7	74	16.3
MR Yagi	902.4	Peak	2707	V	44.8	74	29.2
MR Yagi	902.4	Peak	3610	V	51.8	74	22.2
MR Yagi	902.4	Peak	4512	V	44.4	74	29.6
MR Yagi	902.4	Peak	5414	V	48.9	74	25.1
MR Yagi	902.4	Peak	8122	V	54.1	74	19.9
MR Yagi	915	Peak	2745	H	47.0	74	27.0
MR Yagi	915	Peak	3660	H	44.5	74	29.5
MR Yagi	915	Peak	4575	H	45.3	74	28.7
MR Yagi	915	Peak	8235	H	53.0	74	21.0
MR Yagi	915	Peak	9150	H	57.3	74	16.7
MR Yagi	915	Peak	2745	V	47.5	74	26.5
MR Yagi	915	Peak	3660	V	45.7	74	28.3
MR Yagi	915	Peak	4575	V	47.8	74	26.2
MR Yagi	915	Peak	8235	V	53.5	74	20.5
MR Yagi	915	Peak	9150	V	58.0	74	16.0
MR Yagi	927.6	Peak	2783	H	48.2	74	25.8
MR Yagi	927.6	Peak	3710	H	49.1	74	24.9
MR Yagi	927.6	Peak	4638	H	45.3	74	28.7
MR Yagi	927.6	Peak	8348	H	54.0	74	20.0
MR Yagi	927.6	Peak	2783	V	49.6	74	24.4
MR Yagi	927.6	Peak	3710	V	53.1	74	20.9
MR Yagi	927.6	Peak	4638	V	49.7	74	24.3
MR Yagi	927.6	Peak	8348	V	54.3	74	19.7
MR Patch	902.4	Peak	2707	H	43.0	74	31.0
MR Patch	902.4	Peak	3610	H	52.4	74	21.6
MR Patch	902.4	Peak	4512	H	39.6	74	34.4
MR Patch	902.4	Peak	5414	H	44.6	74	29.4
MR Patch	902.4	Peak	8122	H	54.0	74	20.0
MR Patch	902.4	Peak	9024	H	57.3	74	16.7
MR Patch	902.4	Peak	2707	V	44.7	74	29.3

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MR Patch	902.4	Peak	3610	V	53.4	74	20.6
MR Patch	902.4	Peak	4512	V	44.0	74	30.0
MR Patch	902.4	Peak	5414	V	50.2	74	23.8
MR Patch	902.4	Peak	8122	V	58.3	74	15.7
MR Patch	902.4	Peak	9024	V	58.2	74	15.8
MR Patch	915	Peak	2745	H	46.3	74	27.7
MR Patch	915	Peak	3660	H	44.7	74	29.3
MR Patch	915	Peak	4575	H	40.2	74	33.8
MR Patch	915	Peak	8235	H	53.1	74	20.9
MR Patch	915	Peak	9150	H	57.3	74	16.7
MR Patch	915	Peak	2745	V	47.0	74	27.0
MR Patch	915	Peak	3660	V	46.5	74	27.5
MR Patch	915	Peak	4575	V	44.7	74	29.3
MR Patch	915	Peak	8235	V	53.4	74	20.6
MR Patch	915	Peak	9150	V	57.4	74	16.6
MR Patch	927.6	Peak	2783	H	48.5	74	25.5
MR Patch	927.6	Peak	3710	H	46.6	74	27.4
MR Patch	927.6	Peak	4638	H	45.8	74	28.2
MR Patch	927.6	Peak	8348	H	54.4	74	19.6
MR Patch	927.6	Peak	2783	V	48.0	74	26.0
MR Patch	927.6	Peak	3710	V	50.9	74	23.1
MR Patch	927.6	Peak	4638	V	51.4	74	22.6
MR Patch	927.6	Peak	8348	V	56.6	74	17.4
MR Whip	902.4	Peak	2707	H	41.5	74	32.5
MR Whip	902.4	Peak	3610	H	49.3	74	24.7
MR Whip	902.4	Peak	4512	H	46.9	74	27.1
MR Whip	902.4	Peak	5414	H	47.2	74	26.8
MR Whip	902.4	Peak	8122	H	53.5	74	20.5
MR Whip	902.4	Peak	9024	H	59.2	74	14.8
MR Whip	902.4	Peak	2707	V	43.4	74	30.6
MR Whip	902.4	Peak	3610	V	51.4	74	22.6
MR Whip	902.4	Peak	4512	V	47.9	74	26.1
MR Whip	902.4	Peak	5414	V	47.6	74	26.4
MR Whip	902.4	Peak	8122	V	53.2	74	20.8
MR Whip	902.4	Peak	9024	V	60.6	74	13.4
MR Whip	915	Peak	2745	H	43.4	74	30.6
MR Whip	915	Peak	3660	H	43.2	74	30.8
MR Whip	915	Peak	4575	H	43.1	74	30.9
MR Whip	915	Peak	8235	H	52.7	74	21.3
MR Whip	915	Peak	9150	H	56.6	74	17.4
MR Whip	915	Peak	2745	V	50.1	74	23.9
MR Whip	915	Peak	3660	V	50.1	74	23.9
MR Whip	915	Peak	4575	V	52.2	74	21.8
MR Whip	915	Peak	8235	V	54.4	74	19.6
MR Whip	915	Peak	9150	V	59.5	74	14.5

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MR Whip	927.6	Peak	2783	H	43.2	74	30.8
MR Whip	927.6	Peak	3710	H	47.6	74	26.4
MR Whip	927.6	Peak	4638	H	43.4	74	30.6
MR Whip	927.6	Peak	8348	H	53.3	74	20.7
MR Whip	927.6	Peak	2783	V	48.7	74	25.3
MR Whip	927.6	Peak	3710	V	49.8	74	24.2
MR Whip	927.6	Peak	4638	V	52.1	74	21.9
MR Whip	927.6	Peak	8348	V	54.3	74	19.7
GH Whip	902.4	Peak	2707	H	40.9	74	33.1
GH Whip	902.4	Peak	3610	H	49.7	74	24.3
GH Whip	902.4	Peak	4512	H	41.5	74	32.5
GH Whip	902.4	Peak	5414	H	48.2	74	25.8
GH Whip	902.4	Peak	8122	H	53.2	74	20.8
GH Whip	902.4	Peak	9024	H	57.5	74	16.5
GH Whip	902.4	Peak	2707	V	44.2	74	29.8
GH Whip	902.4	Peak	3610	V	53.3	74	20.7
GH Whip	902.4	Peak	4512	V	43.5	74	30.5
GH Whip	902.4	Peak	5414	V	46.4	74	27.6
GH Whip	902.4	Peak	8122	V	57.2	74	16.8
GH Whip	902.4	Peak	9024	V	57.2	74	16.8
GH Whip	915	Peak	2745	H	37.7	74	36.3
GH Whip	915	Peak	3660	H	44.0	74	30.0
GH Whip	915	Peak	4575	H	38.7	74	35.3
GH Whip	915	Peak	8235	H	53.2	74	20.8
GH Whip	915	Peak	9150	H	58.6	74	15.4
GH Whip	915	Peak	2745	V	47.4	74	26.6
GH Whip	915	Peak	3660	V	47.3	74	26.7
GH Whip	915	Peak	4575	V	46.0	74	28.0
GH Whip	915	Peak	8235	V	53.5	74	20.5
GH Whip	915	Peak	9150	V	58.3	74	15.7
GH Whip	927.6	Peak	2783	H	44.5	74	29.5
GH Whip	927.6	Peak	3710	H	49.0	74	25.0
GH Whip	927.6	Peak	4638	H	41.4	74	32.6
GH Whip	927.6	Peak	8348	H	53.8	74	20.2
GH Whip	927.6	Peak	2783	V	48.7	74	25.3
GH Whip	927.6	Peak	3710	V	53.6	74	20.4
GH Whip	927.6	Peak	4638	V	49.9	74	24.1
GH Whip	927.6	Peak	8348	V	54.0	74	20.0
LM Yagi	902.4	Peak	2707	H	45.8	74	28.2
LM Yagi	902.4	Peak	3610	H	52.8	74	21.2
LM Yagi	902.4	Peak	4512	H	43.5	74	30.5
LM Yagi	902.4	Peak	5414	H	43.4	74	30.6
LM Yagi	902.4	Peak	8122	H	56.3	74	17.7
LM Yagi	902.4	Peak	9024	H	60.1	74	13.9
LM Yagi	902.4	Peak	2707	V	49.1	74	24.9

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LM Yagi	902.4	Peak	3610	V	53.3	74	20.7
LM Yagi	902.4	Peak	4512	V	50.2	74	23.8
LM Yagi	902.4	Peak	5414	V	50.9	74	23.1
LM Yagi	902.4	Peak	8122	V	60.9	74	13.1
LM Yagi	902.4	Peak	9024	V	62.4	74	11.6
LM Yagi	915	Peak	2745	H	44.8	74	29.2
LM Yagi	915	Peak	3660	H	42.3	74	31.7
LM Yagi	915	Peak	4575	H	42.1	74	31.9
LM Yagi	915	Peak	8235	H	53.1	74	20.9
LM Yagi	915	Peak	2745	V	50.4	74	23.6
LM Yagi	915	Peak	3660	V	45.9	74	28.1
LM Yagi	915	Peak	4575	V	50.2	74	23.8
LM Yagi	915	Peak	8235	V	58.2	74	15.8
LM Yagi	915	Peak	9150	V	59.0	74	15.0
LM Yagi	927.6	Peak	2783	H	46.6	74	27.4
LM Yagi	927.6	Peak	3710	H	48.7	74	25.3
LM Yagi	927.6	Peak	4638	H	45.5	74	28.5
LM Yagi	927.6	Peak	8348	H	54.0	74	20.0
LM Yagi	927.6	Peak	2783	V	48.4	74	25.6
LM Yagi	927.6	Peak	3710	V	54.8	74	19.2
LM Yagi	927.6	Peak	4638	V	53.9	74	20.1
LM Yagi	927.6	Peak	8348	V	57.0	74	17.0

Pass by 1.9 dB

Restricted band emissions Below 1 GHz

EUT Antenna	Emission Freq. MHz	Detector Function	Ant Pol.	dBuV/m	Limit	Margin under limit
MR Whip	283.0	P	H	38.6	46.0	7.4
MR Whip	331.4	P	H	35.5	46.0	10.5
MR Whip	399.9	P	H	35.4	46.0	10.6
MR Whip	999.0	P	H	38.0	54.0	16.0
MR Whip	171.9	P	V	28.3	43.5	15.2
MR Whip	243.4	P	V	25.4	46.0	20.6
MR Whip	399.9	P	V	33.0	46.0	13.0
MR Whip	409.6	P	V	31.2	46.0	14.8
GH Whip	283.2	P	H	38.1	46.0	7.9
GH Whip	333.1	P	H	36.1	46.0	9.9
GH Whip	400.0	P	V	33.5	46.0	12.5
Centurion	243.5	P	H	34.1	46.0	11.9
Centurion	253.9	P	H	35.4	46.0	10.6
Centurion	263.5	P	H	33.8	46.0	12.2
Centurion	268.4	P	H	31.8	46.0	14.2
Centurion	282.8	P	H	39.1	46.0	6.9
Centurion	168.7	P	V	29.3	43.5	14.2
Centurion	244.0	P	V	32.4	46.0	13.6

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Testing of the Grayhill, Inc., Model Tbird, Transmitter Module

EUT Antenna	Emission Freq. MHz	Detector Function	Ant Pol.	dBuV/m	Limit	Margin under limit
Centurion	251.2	P	V	32.9	46.0	13.1
Centurion	259.1	P	V	29.9	46.0	16.1
Centurion	283.1	P	V	31.8	46.0	14.2
Omni	170.9	P	H	26.6	43.5	16.9
Omni	263.5	P	H	31.7	46.0	14.3
Omni	273.4	P	H	36.5	46.0	9.5
Omni	283.1	P	H	36.8	46.0	9.2
Omni	170.8	P	V	35.4	43.5	8.1
Omni	263.5	P	V	28.2	46.0	17.8
Omni	283.1	P	V	26.9	46.0	19.1
MR Yagi	70.9	P	H	29.1	40.0	10.9
MR Yagi	111.6	P	H	37.1	43.5	6.4
MR Yagi	170.6	Q	H	37.9	43.5	5.6
MR Yagi	175.7	P	H	37.6	43.5	5.9
MR Yagi	180.5	P	H	38.0	43.5	5.5
MR Yagi	185.4	P	H	36.4	43.5	7.1
MR Yagi	195.1	P	H	35.4	43.5	8.1
MR Yagi	204.7	P	H	34.3	43.5	9.2
MR Yagi	233.8	P	H	32.0	46.0	14.0
MR Yagi	243.7	P	H	33.3	46.0	12.7
MR Yagi	253.9	P	H	32.9	46.0	13.1
MR Yagi	263.5	P	H	32.4	46.0	13.6
MR Yagi	273.4	P	H	32.6	46.0	13.4
MR Yagi	283.1	P	H	35.1	46.0	10.9
MR Yagi	74.1	Q	V	26.5	40.0	13.5
MR Yagi	244.0	P	V	29.3	46.0	16.7
MR Yagi	257.8	P	V	30.8	46.0	15.2
LM Yagi	170.9	P	H	31.1	43.5	12.4
LM Yagi	243.5	P	H	32.3	46.0	13.7
LM Yagi	244.0	P	H	33.1	46.0	12.9
LM Yagi	253.9	P	H	30.2	46.0	15.8
LM Yagi	263.5	P	H	31.7	46.0	14.3
LM Yagi	283.1	P	H	33.8	46.0	12.2
LM Yagi	37.6	Q	V	31.5	40.0	8.5
LM Yagi	243.7	P	V	31.2	46.0	14.8
LM Yagi	253.9	P	V	31.8	46.0	14.2
LM Yagi	283.1	P	V	29.9	46.0	16.1
LM Yagi	409.5	P	V	33.0	46.0	13.0
MR Patch	109.4	P	H	37.2	43.5	6.3
MR Patch	112.1	P	H	38.0	43.5	5.5
MR Patch	131.4	P	H	30.4	43.5	13.1
MR Patch	137.0	P	H	27.5	43.5	16.0
MR Patch	205.2	P	H	28.2	43.5	15.3
MR Patch	233.6	P	H	29.8	46.0	16.2
MR Patch	243.7	P	H	32.4	46.0	13.6
MR Patch	263.5	P	H	29.4	46.0	16.6
MR Patch	273.4	P	H	29.9	46.0	16.1
MR Patch	283.1	P	H	35.6	46.0	10.4

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Testing of the Grayhill, Inc., Model Tbird, Transmitter Module

EUT Antenna	Emission Freq. MHz	Detector Function	Ant Pol.	dBuV/m	Limit	Margin under limit
MR Patch	321.8	P	H	32.2	46.0	13.8
MR Patch	37.5	P	V	33.2	40.0	6.8
MR Patch	110.3	P	V	38.8	43.5	4.7
MR Patch	134.3	P	V	34.1	43.5	9.4
MR Patch	136.9	P	V	33.4	43.5	10.1
MR Patch	141.6	P	V	25.7	43.5	17.8
MR Patch	170.2	P	V	30.1	43.5	13.4
LM Patch	134.5	P	H	29.5	43.5	14.0
LM Patch	135.8	P	H	30.0	43.5	13.5
LM Patch	175.7	P	H	26.3	43.5	17.2
LM Patch	243.7	P	H	27.6	46.0	18.4
LM Patch	253.9	P	H	26.8	46.0	19.2
LM Patch	273.4	P	H	32.0	46.0	14.0
LM Patch	283.1	P	H	34.7	46.0	11.3
LM Patch	331.5	P	H	31.5	46.0	14.5
LM Patch	75.0	Q	V	33.1	40.0	6.9
LM Patch	82.9	Q	V	34.5	40.0	5.5
LM Patch	238.2	P	V	36.2	46.0	9.8
LM Patch	244.0	P	V	27.5	46.0	18.5
LM Patch	267.9	P	V	29.2	46.0	16.8

Judgment: Passed by 4.7 dB