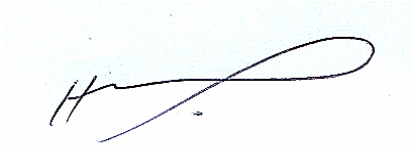
Nemko Test Report:	7465RUS1
Applicant:	Axiom Manufacturing 2841 Industrial Lane Garland, TX 75041
Equipment Under Test: (E.U.T.)	AXM042202 (434MHZ)
In Accordance With:	**FCC Part 15, Subpart C** For Low Power Transmitters Operating Periodically In The Band 40.66 - 40.77 MHz And Above 70 MHz
Tested By:	Nemko USA, Inc. 802 N. Kealy Lewisville, TX 75057-3136

TESTED BY: _____ **DATE:** **13 August 2007**



APPROVED BY: _____ **DATE:** **13th September 2007**

Harry Ward, Verifier

Total Number of Pages: 20

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Section 1. Summary of Test Results

Manufacturer: Axiom Manufacturing

Model No.: AXM042202 (434MHZ)

Serial No: None

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C, Paragraph 15.231. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

☒	New Submission	☐	Production Unit
☐	Class II Permissive Change	☒	Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.
See " Summary of Test Data".

NVLAP®
LAB CODE: 100426-0

Summary Of Test Data

Name of Test	Paragraph No.	Results
Transmission Requirements	15.231(a)	Complies
Radiated Emissions	15.231(b)	Complies
Occupied Bandwidth	15.231(c)	Complies
Frequency Tolerance	15.231(d)	NA
Alternate Field Strength Requirements	15.231(e)	Complies
Powerline Conducted Emissions	15.207	NA

Footnotes:

The device operates above 40.70 MHz

The device is battery powered.

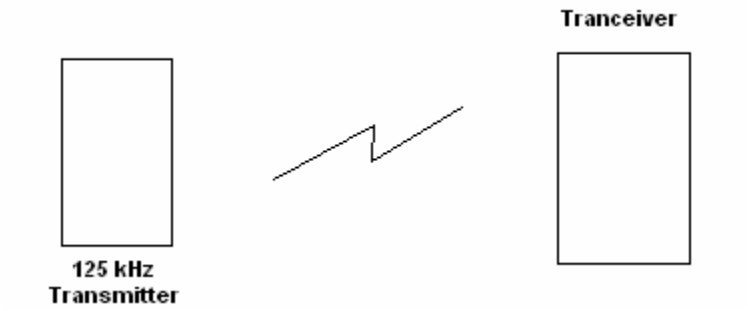
Section 2. Equipment Under Test (E.U.T.)

General Equipment Information

Frequency Range:	434 MHz fixed
Operating Frequency(ies) of Sample:	434 MHz
Type of Emission:	FSK
Supply Power Requirement:	3 Vdc
Duty Cycle Correction Factor:	None

Description of E.U.T.

Tire Pressure sensor and transmitter with integrated antenna. Module designed for small size and battery power, to fit in car wheel assembly. Application is is for evaluation of automotive safety system.



Section 3. Transmission Requirements

NAME OF TEST: Transmission Requirements	PARA. NO.: 15.231(a)
TESTED BY: David Light	DATE: 7/31/07

Minimum Standard:

15.231(a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231(a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds of activation.

15.231(a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling or supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231(a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm.

Test Results: Complies.

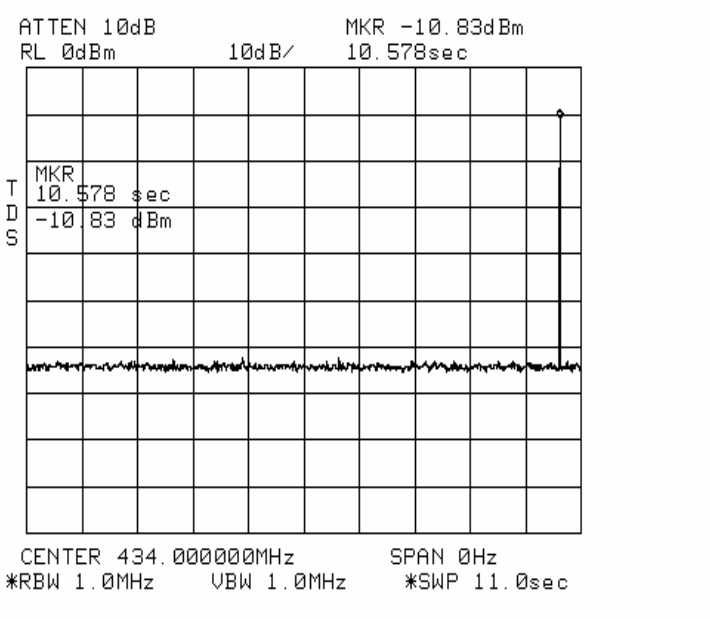
Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

Refer to plots on page 8

Rationale for Compliance with Transmission Requirements

15.231(a)(1) **15.231(a)(2) :**	☐ Manual activation ☒ Automatic activation	TX deactivation time:
15.231(a)(3) :	☒ Regular, predetermined transmissions ☐ Polling or supervisory transmissions	TX rate and duration:
15.231(a)(4) :	☐ Alarm device operating during the pendancy of alarm condition ☒ Non-alarm device	

Transmitter release time less than on second.



Section 4. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.231(b)
TESTED BY: David Light	DATE: 7/31/07

Minimum Standard:

Permissible Field Strength Limits (Momentarily Operated Devices

Fundamental Frequency (MHz)	Field Strength of Fundamental Microvolts/Meter at 3 meters; (watts)	Field Strength of Unwanted Emissions Microvolts/Meter at 3 meters; (watts)
40.66 - 40.70	2,250	225
70-130	1, 250	125
130-174	1,250 to 3,750*	125 to 375
174-260 (note 1)	3,750	375
260-470 (note 1)	3,750 to 12,500*	375 to 1,250
Above 470	12,500	1,250

Notes:

# Use quasi-peak or averaging meter. ** Linear interpolation with frequency F in MHz*	*For 130 - 174 MHz: FS (microvolts/m) = (56.82 x F) - 6136* *For 260 - 470 MHz: FS (microvolts/m) = (41.67 x F) - 7083*

Any emissions that fall within the restricted bands of 15.205 shall not exceed the following limits:

Frequency (MHz)	Field Strength (µV/m @ 3m)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results: Complies. The worst-case emission level is 72.5 dBµV/m @ 3m at 434 MHz. This is 0.4 dB below the specification limit.

Test Data: See attached table.

Above 1 GHz a spectrum analyzer and low noise amplifier are used to measure emission levels. The spectrum analyzer resolution bandwidth was set to 1 MHz and video bandwidth was 1 MHz.

In the case of handheld equipment, the E.U.T. is rotated in three planes to obtain worst-case results.

Test Data - Radiated Emissions

Radiated Emissions Data

Complete	X			Job # :	4930
Preliminary				Page	1
Test # :	REHE-01				
of	1				

Client Name :	Axiom						
EUT Name :	REIMS TPMS Modules						
EUT Model # :	EVB435MXPY8300						
EUT Part # :	AXM0422-02						
EUT Serial # :	none						
EUT Config. :	Tx Continuous						
Specification :	15.231 / 15.209			Reference :	CFR 47		
Rod. Ant. #:		Temp. (deg. C) :	23		Date :	07/31/07	
Bicon Ant.#:	760	Humidity (%) :	45		Time :	1:00	
Log Ant.#:	759	EUT Voltage :	3		Staff :	D. Light	
Bilog Ant.#:		EUT Frequency :	dc		Photo ID:		
Dipole Ant.#:		Phase:			Peak Bandwidth:	100 KHz	
Cable#:	1514	Location:	BOATS		Video Bandwidth	100 KHz	
Preamp#:	1554	Distance:	3 meters		QP Bandwidth:	120 KHz	
Limiter#:	na	Barometric pressure:	1016				
Atten #:	na						
Detector#:	1659						

Meas. Freq. (MHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
434	V	0	75.6	16	6.0	25.1	72.5	72.9	-0.4	Pass	Carrier
434	H	0	74.8	16	6.0	25.1	71.7	72.9	-1.2	Pass	Carrier
630	V	0	41	19.1	7.4	25.2	42.3	52.9	-10.6	Pass	
630	H	0	39	19.1	7.4	25.2	40.3	52.9	-12.6	Pass	
945	V	0	27.6	23.8	9.2	25.1	35.5	52.9	-17.4	Pass	
945	H	0	34.9	23.8	9.2	25.1	42.8	52.9	-10.1	Pass	
868	V	0	37	21.9	9.0	25.2	42.7	52.9	-10.2	Pass	
868	H	0	33.3	21.9	9.0	25.2	39.0	52.9	-13.9	Pass	

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Spectrum searched from 30 to 1000 MHz.

All readings are peak unless otherwise noted.

Test Data - Radiated Emissions

Freq MHz	Rdng dBµV	Pre-A dB	Cable Horn dB	Cable Duty dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1302.0	54.3		+0.2	+1.6		+0.0	48.4	54.0	-5.6	Vert
		-31.4	+23.7	+0.0						
1736.0	53.8		+0.7	+2.0		+0.0	51.1	54.0	-2.9	Vert
		-31.8	+26.4	+0.0						
2170.0	48.0		+0.6	+2.2		+0.0	46.6	54.0	-7.4	Vert
		-32.9	+28.7	+0.0						
2604.0	52.8		+0.8	+2.6		+0.0	52.6	54.0	-1.4	Vert
		-32.8	+29.2	+0.0						
3038.0	53.0		+0.8	+2.6		+0.0	53.5	74.0	-20.5	Vert
		-32.6	+29.7	+0.0						
3038.0	53.0		+0.8	+2.6		+0.0	49.4	54.0	-4.6	Vert
		-32.6	+29.7	-4.1						
3472.0	51.5		+0.7	+2.8		+0.0	52.1	74.0	-21.9	Vert
		-32.8	+29.9	+0.0						
3472.0	51.5		+0.7	+2.8		+0.0	48.0	54.0	-6.0	Vert
		-32.8	+29.9	-4.1						
3906.0	46.2		+0.9	+2.9		+0.0	48.9	54.0	-5.1	Vert
		-32.4	+31.3	+0.0						
4340.0	51.2		+1.0	+3.0		+0.0	55.1	74.0	-18.9	Vert
		-32.0	+31.9	+0.0						
4340.0	51.2		+1.0	+3.0		+0.0	51.0	54.0	-3.0	Vert
		-32.0	+31.9	-4.1						
1302.0	53.7		+0.2	+1.6		+0.0	47.8	54.0	-6.2	Horiz
		-31.4	+23.7	+0.0						
1736.0	51.7		+0.7	+2.0		+0.0	49.0	54.0	-5.0	Horiz
		-31.8	+26.4	+0.0						
2170.0	46.8		+0.6	+2.2		+0.0	45.4	54.0	-8.6	Horiz
		-32.9	+28.7	+0.0						
2604.0	53.0		+0.8	+2.6		+0.0	52.8	74.0	-21.2	Horiz
		-32.8	+29.2	+0.0						
2604.0	53.0		+0.8	+2.6		+0.0	48.7	54.0	-5.3	Horiz
		-32.8	+29.2	-4.1						
3038.0	45.7		+0.8	+2.6		+0.0	46.2	54.0	-7.8	Horiz
		-32.6	+29.7	+0.0						
3472.0	45.7		+0.7	+2.8		+0.0	46.3	54.0	-7.7	Horiz
		-32.8	+29.9	+0.0						
3906.0	44.2		+0.9	+2.9		+0.0	46.9	54.0	-7.1	Horiz
		-32.4	+31.3	+0.0						
4340.0	45.0		+1.0	+3.0		+0.0	48.9	54.0	-5.1	Horiz
		-32.0	+31.9	+0.0						

RBW=VBW=1 MHz
All readings are PEAK unless otherwise specified.

Section 5. Occupied Bandwidth

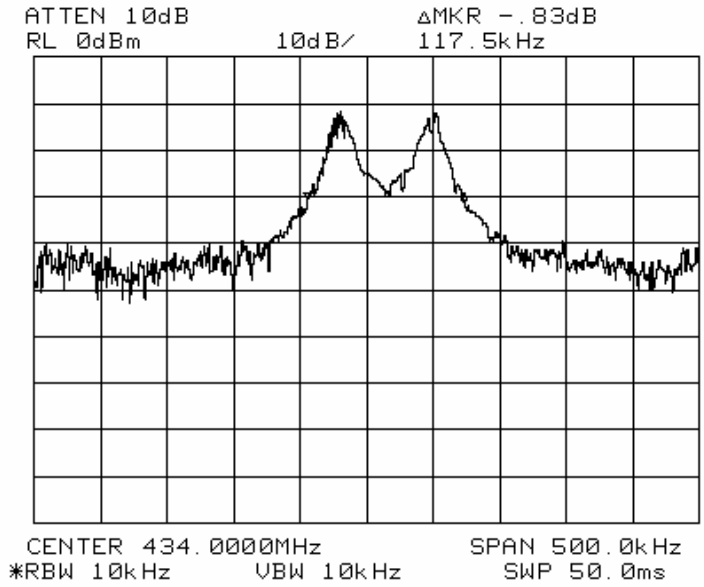
NAME OF TEST: Occupied Bandwidth	PARA. NO.: 15.231(c)
TESTED BY: David Light	DATE: 7/31/07

Minimum Standard: 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.

Test Results: Complies. .

Test Data: See attached graph.

Test Data – Occupied Bandwidth



Limit = 0.25% of CF = 1.085 MHz

Section 6. Periodic Alternate Field Strength Requirements

NAME OF TEST: Periodic Alternate Field Strength Requirements	PARA. NO.: 15.231(e)
TESTED BY: David Light	DATE: 7/31/07

Minimum Standard: 15.231(e) Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section and may be employed for any type of operation, including operation prohibited in paragraph (a) of this section, provided the intentional radiator complies with the provisions of paragraphs (b) through (d) of this section, except the field strength table in paragraph (b) of this section is replaced by the following.

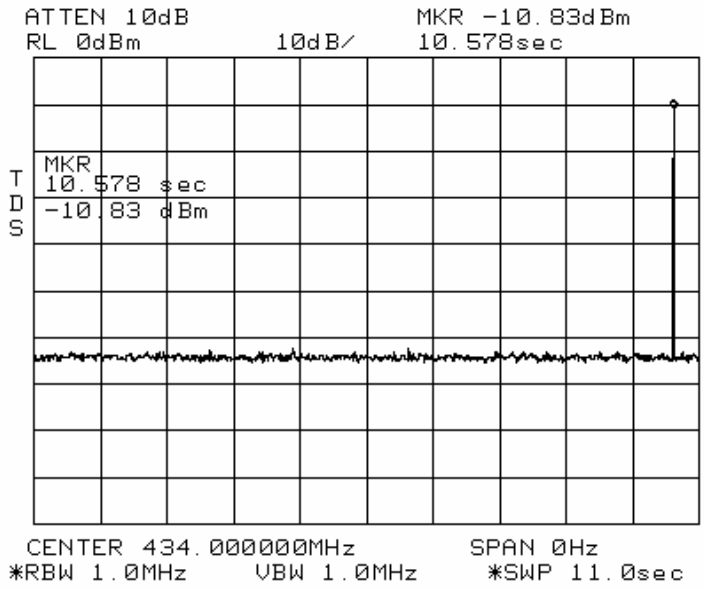
Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolts/meter)	Field Strength of Spurious Emissions (microvolts/meter)
40.66 - 40.70	1,000	100
70 - 130	500	50
130 - 174	500 to 1,500	50 to 150
174 - 260	1,500	150
260-470	1,500 to 5,000	150 to 500
Above 470	5,000	500

In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

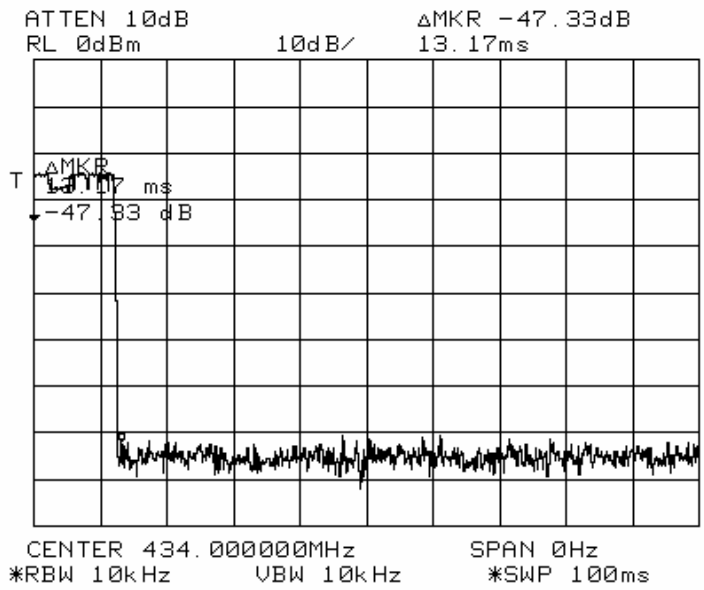
Test Results: Complies.

Test Data: See attached plots.

Test Data - Periodic Alternate Field Strength Requirements



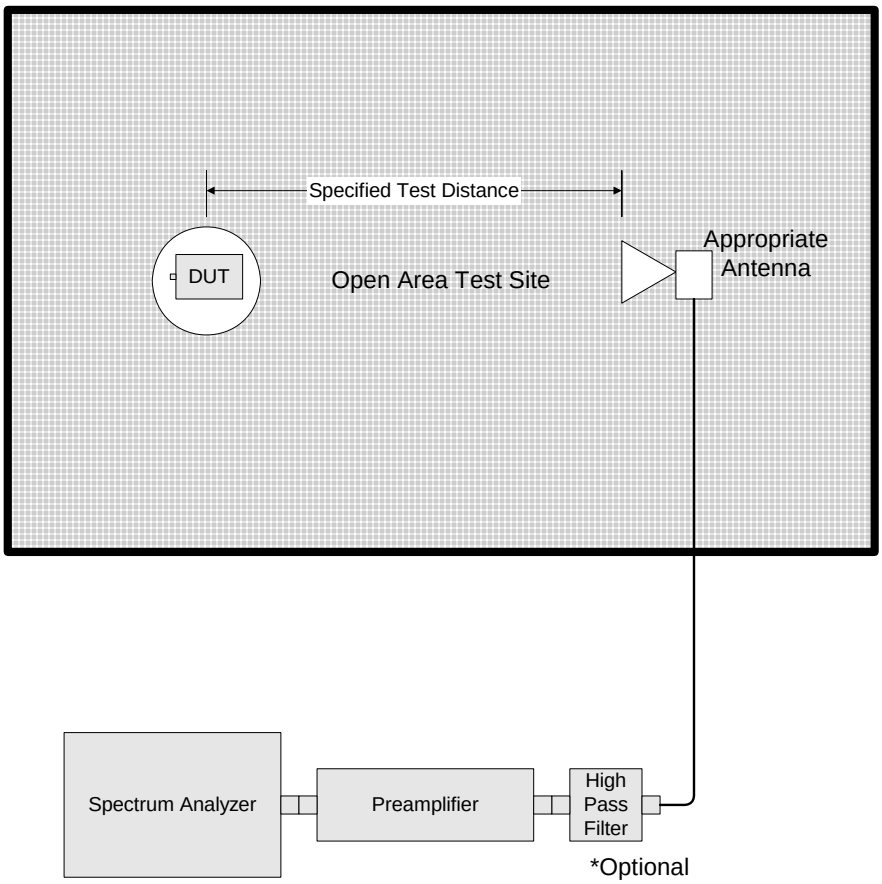
One transmission every 10.578 seconds.



Pulse duration 13.17 mS

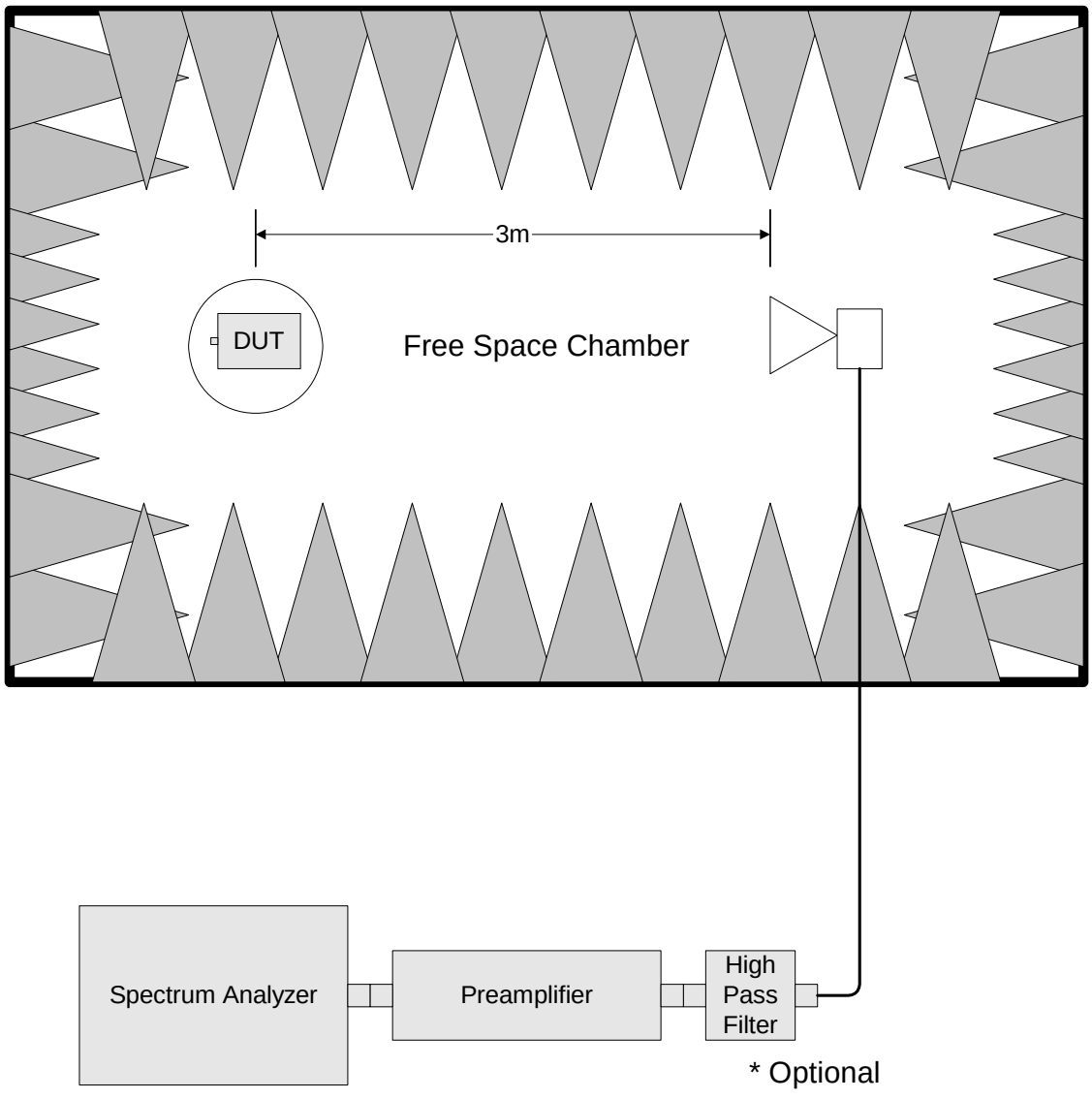
Section 7. Block Diagrams

Outdoor Test Site For Radiated Emissions



Radiated Emissions 30 MHz - 1 GHz

The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation.



Radiated Emissions above 1 GHz

Section 8. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
760	Antenna biconical	Electro Metrics MFC-25	477	01/19/07	01/19/08
759	ANTENNA, LOG PERIODIC	A.H. SYSTEMS SAS-200/510	556	03/30/07	03/29/08
1514	CABLE ASSY, LAB 2- B OATS	Nemko USA, Inc. SITE B OATS	N/A	06/08/07	06/08/08
1554	Amplifier, RF	RF Consultants LNA-25	0	09/29/06	09/29/07
993	Horn antenna	A.H. Systems SAS-200/571	XXX	08/01/05	08/02/07
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	05/01/07	04/30/08
1484	Cable	Storm PR90-010-072	N/A	05/02/07	05/01/08
1485	Cable	Storm PR90-010-216	N/A	05/02/07	05/01/08

ANNEX A - RESTRICTED BANDS

Annex A Restricted Bands of Operation

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.15
0.49 - 0.51	16.69475-16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425-16.80475	960-1240	7.25-7.75
3.020 - 3.026	25.5-25.67	1300-1427	8.025-8.5
4.125 - 4.128	37.5-38.25	1435-1626.6	9.0-9.2
4.17725 - 4.17775	73-74.6	1645.5-1646.5	9.3-9.5
4.20725 - 4.20775	74.8-75.2	1660-1710	10.6-12.7
6.215 - 6.218	108-121.94	1718.8-1722.2	13.25-13.4
6.31175 - 6.31225	123-138	2220-2300	14.47-14.5
8.291 - 8.294	149.9-150.05	2310-2390	15.35-16.2
8.362 - 8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625 - 8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425 - 8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29 - 12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975 - 12.52025	240-285	3345.8-3358	36.43-36.5
12.57675 - 12.57725	322-335.4	3600-4400	Above 38.6
13.36 - 13.41			