FCC PART 15, SUBPART B and C
TEST REPORT

for

TIRE PRESSURE MONITOR TRANSMITTER

MODEL NUMBER: TPM-W2

Prepared for

HCI CORPORATION
11245 – 183RD STREET #168
CERRITOS, CALIFORNIA 90703

Prepared by:_____

JAMES ROSS

Approved by:_____

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DATE: JULY 16, 2004

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP, NIST or any other agency of the U.S. Government.

Device Tested:	Tire Pressure Monitor Transmitter Model Number: TPM-W2 S/N: N/A
Product Description:	See Expository Statement.
Modifications:	The EUT was not modified in order to meet the specifications.
Manufacturer:	HCI Corporation 11245 – 183rd Street #168 Cerritos, California 90703
Test Date:	June 24 and 28, 2004
Test Specifications:	EMI requirements CFR Title 47, Part 15 Subpart B; and Subpart C, Sections 15.205, 15.209, and 15.231
Test Procedure:	ANSI C63.4
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz - 30 MHz	This test was not performed because the EUT operates on DC power only and cannot be plugged into the AC public mains.
2	Radiated RF Emissions, 10 kHz - 4340 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Tire Pressure Monitor Transmitter Model Number: TPM-W2. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

HCI Corporation

Steve Wong President

Compatible Electronics, Inc.

James Ross Test Engineer
Michael Christensen Sr. Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to its qualification testing of June 24, 2004.

2.5 Disposition of the Test Sample

The test sample has not yet been returned to HCI Corporation as of the date of this report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
PCB	Printed Circuit Board
TX	Transmit
RX	Receive

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI 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

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

Setup and operation of the equipment under test.

Specifics of the EUT and Peripherals Tested

The Tire Pressure Monitor Transmitter Model Number: TPM-W2 (EUT) was tested as a stand-alone device. The EUT was tested in three orthogonal axis. The EUT was continuously transmitting. The antenna is custom made by HCI Corporation and is soldered onto the PCB.

The final radiated data was taken in the mode above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

There are no external cables connected to the EUT.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIALNUMBER	FCC ID
TIRE PRESSURE MONITOR TRANSMITTER (EUT)	HCI CORPORATION	TPM-W2	N/A	P2E03TPMW2

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiate Emissions Data Capture Program	Compatible Electronics	2.0	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08784	June 16, 2004	June 16, 2005
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22279	June 16, 2004	June 16, 2005
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	June 16, 2004	June 16, 2005
Preamplifier	Com Power	PA-103	1582	March 11, 2004	March 11, 2005
Microwave Preamplifier	Com-Power	PA-122	25196	March 4, 2004	March 4, 2005
Loop Antenna	Com-Power	AL-130	17070	July 8, 2003	July 8, 2004
Biconical Antenna	Com Power	AB-900	15226	April 21, 2004	April 21, 2005
Log Periodic Antenna	Com Power	AL-100	16202	February 18, 2004	February 18, 2005
Horn Antenna	Com-Power	AH-118	10085	January 8, 2004	January 8, 2005
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.

7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer was used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-103 was used for frequencies from 30 MHz to 1 GHz, and the Com-Power Microwave Preamplifier Model: PA-122 was used for frequencies above 1 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps.

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 4.34 GHz	1 MHz	Horn Antenna

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results. The loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.

Radiated Emissions (Spurious and Harmonics) Test (con't)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance to obtain final test data. The final qualification data sheets are located in Appendix E.

7.2 Bandwidth of the Fundamental

The -20 dB bandwidth was checked to see that it was within 0.25% of the fundamental frequency for the EUT. Photos of the –20 dB bandwidth are located in Appendix E.

8. CONCLUSIONS

The Tire Pressure Monitor Transmitter Model Number: TPM-W2 meets all of the Class B specification limits defined in CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.

APPENDIX A

LABORATORY RECOGNITIONS

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200528-0

Voluntary Control Council for Interference - Registration Numbers: R-983, C-1026, R-984 and C-1027

Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

Compatible Electronics is recognized or on file with the following agencies:

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.231 or FCC Class B specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

Modification:

- Resistor R1 was changed to 150 kΩ

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	Tire Pressure Monitor Transmitter Model Number: TPM-W2 S/N: N/A

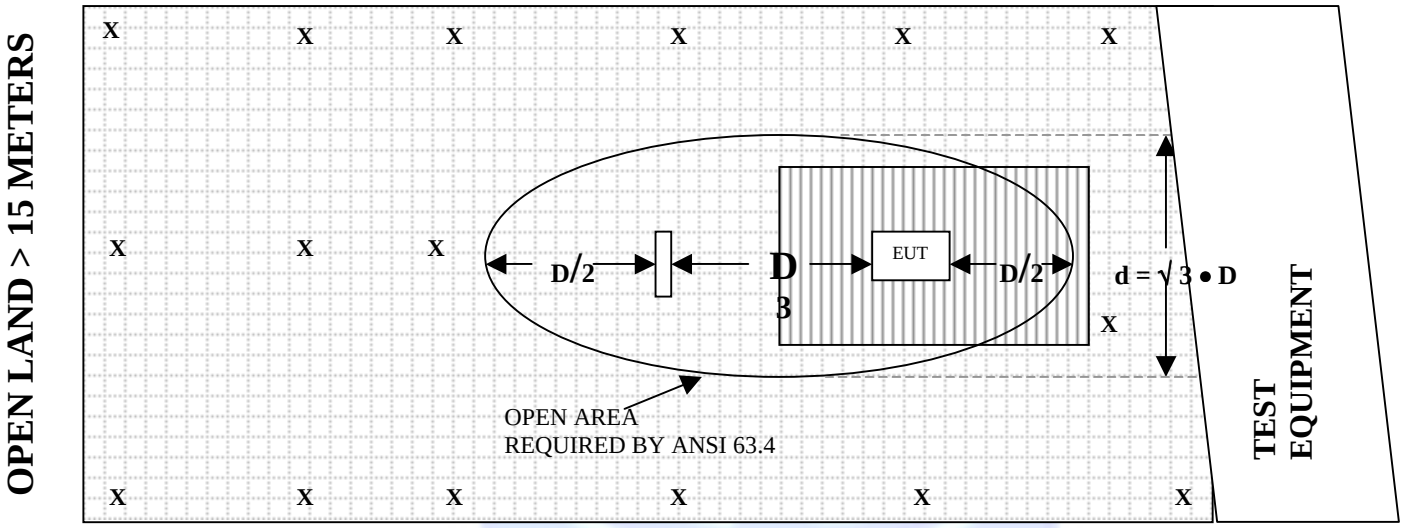
There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED TEST SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

X = GROUND RODS	= GROUND SCREEN
D = TEST DISTANCE (meters)	= WOOD COVER

COM-POWER AL-130

LOOP ANTENNA

S/N: 17070

CALIBRATION DATE: JULY 8, 2003

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-40.0	11.5
0.01	-40.1	11.4
0.02	-41.3	10.2
0.05	-41.7	9.8
0.07	-41.3	10.2
0.1	-41.5	10.0
0.2	-43.8	7.7
0.3	-41.4	10.1
0.5	-41.3	10.2
0.7	-41.2	10.3
1	-40.8	10.7
2	-40.3	11.2
3	-40.6	10.9
4	-40.7	10.8
5	-40.1	11.4
10	-40.5	11.0
15	-41.3	10.2
20	-41.1	10.4
25	-41.7	9.8
30	-43.1	8.4

COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15226

CALIBRATION DATE: APRIL 21, 2004

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	11.00	120	13.20
35	10.80	125	13.30
40	11.20	140	12.50
45	9.00	150	12.10
50	11.40	160	12.80
60	10.30	175	15.60
70	8.10	180	15.70
80	5.80	200	16.40
90	7.80	250	14.90
100	11.10	300	24.60

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16202

CALIBRATION DATE: FEBRUARY 18, 2004

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.90	700	19.60
400	14.40	800	21.80
500	17.40	900	20.50
600	18.90	1000	22.70

COM-POWER AH-118

HORN ANTENNA

S/N: 10085

CALIBRATION DATE: JANUARY 8, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.5	10.0	38.7
1.5	26.7	10.5	39.2
2.0	30.8	11.0	39.2
2.5	30.3	11.5	40.3
3.0	30.3	12.0	41.2
3.5	30.7	12.5	41.7
4.0	31.3	13.0	41.5
4.5	32.6	13.5	41.7
5.0	33.9	14.0	41.6
5.5	34.3	14.5	44.2
6.0	34.3	15.0	47.6
6.5	39.4	15.5	42.5
7.0	37.1	16.0	42.3
7.5	38.6	16.5	41.7
8.0	39.4	17.0	43.9
8.5	39.3	17.5	48.7
9.0	38.7	18.0	52.4
9.5	38.7		

COM-POWER PA-103

PREAMPLIFIER

S/N: 1582

CALIBRATION DATE: MARCH 11, 2004

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	32.4	300	32.3
40	32.4	350	32.2
50	32.4	400	32.2
60	32.5	450	32.0
70	32.4	500	32.0
80	32.3	550	31.8
90	32.3	600	31.7
100	32.3	650	31.7
125	32.4	700	31.7
150	32.2	750	31.9
175	32.4	800	31.4
200	32.4	850	31.4
225	32.5	900	31.0
250	32.3	950	31.4
275	32.1	1000	31.4

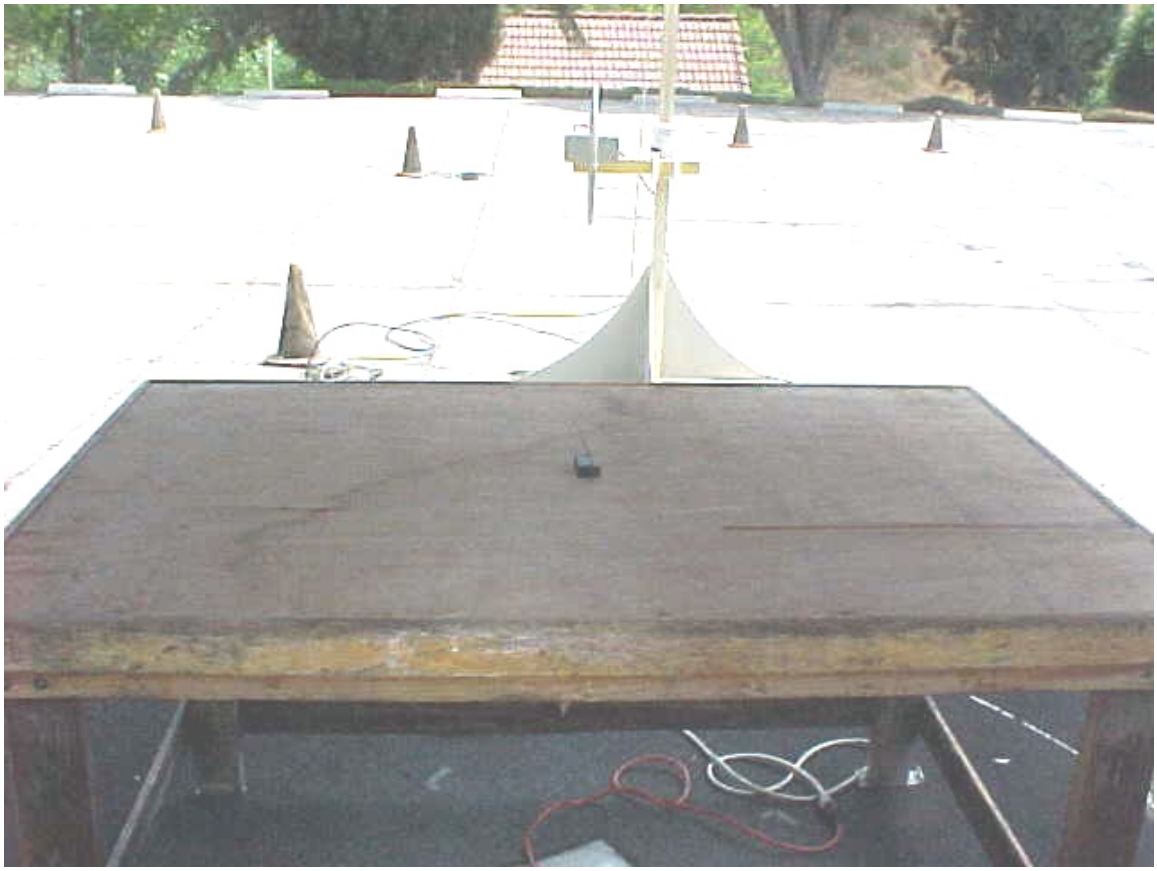
COM-POWER PA-122

MICROWAVE PREAMPLIFIER

S/N: 25196

CALIBRATION DATE: MARCH 4, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	32.1	6.0	28.9
1.1	32.0	6.5	29.3
1.2	31.8	7.0	29.7
1.3	31.6	7.5	29.8
1.4	31.5	8.0	29.9
1.5	31.4	8.5	30.2
1.6	31.2	9.0	30.3
1.7	31.0	9.5	29.9
1.8	30.8	10.0	29.3
1.9	30.7	11.0	28.5
2.0	30.5	12.0	30.5
2.5	30.0	13.0	31.1
3.0	29.7	14.0	29.9
3.5	29.2	15.0	29.8
4.0	28.6	16.0	29.1
4.5	28.4	17.0	28.0
5.0	28.3	18.0	26.0
5.5	28.5		



FRONT VIEW

HCI CORPORATION
TIRE PRESSURE MONITOR TRANSMITTER
MODEL NUMBER: TPM-W2
FCC SUBPART B AND C - RADIATED EMISSIONS – 06-24-04 and 06-28-04

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

HCI CORPORATION
FLATBED WIRELESS BALELOADER - TRANSMITTER
MODEL NUMBER: TPM-W2
FCC SUBPART B AND C - RADIATED EMISSIONS – 06-24-04 and 06-28-04

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	6/24/04
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	50 %
MODEL	**TPM-W2**	**PEAK TO AVG**	-6.02059991 dB
S/N	**N/A**	**TEST DIST.**	3 Meters
TEST ENGINEER	**James Ross**	**LAB**	A

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
433.9900	63.1	57.1 A	H	1.0	90	X	LOW	15.4	4.6		0.0		**77.1**	**-3.7**	**80.8**	
433.9900	62.0	56.0 A	H	1.0	270	Y	LOW	15.4	4.6		0.0		**76.0**	**-4.8**	**80.8**	
433.9900	65.9	59.9 A	H	1.0	90	Z	LOW	15.4	4.6		0.0		**79.9**	**-0.9**	**80.8**	
433.9900	60.1	54.1 A	V	1.3	135	X	LOW	15.4	4.6		0.0		**74.1**	**-6.7**	**80.8**	
433.9900	59.8	53.8 A	V	1.0	225	Y	LOW	15.4	4.6		0.0		**73.8**	**-7.0**	**80.8**	
433.9900	54.0	48.0 A	V	3.0	45	Z	LOW	15.4	4.6		0.0		**68.0**	**-12.8**	**80.8**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	**6/24/04**
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	**50 %**
MODEL	**TPM-W2**	**PEAK TO AVG**	**-6.02059991 dB**
S/N	**N/A**	**TEST DIST.**	**3 Meters**
TEST ENGINEER	**James Ross**	**LAB**	**A**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
867.9800	56.8	50.8 A	H	1.0	90	X	LOW	20.9	6.2	31.3	0.0		**46.6**	**-14.2**	**60.8**	
867.9800	52.0	46.0 A	H	1.0	270	Y	LOW	20.9	6.2	31.3	0.0		**41.8**	**-19.0**	**60.8**	
867.9800	56.6	50.6 A	H	1.0	270	Z	LOW	20.9	6.2	31.3	0.0		**46.4**	**-14.4**	**60.8**	
867.9800	54.4	48.4 A	V	1.0	0	X	LOW	20.9	6.2	31.3	0.0		**44.2**	**-16.6**	**60.8**	
867.9800	58.0	52.0 A	V	1.0	180	Y	LOW	20.9	6.2	31.3	0.0		**47.8**	**-13.0**	**60.8**	
867.9800	48.8	42.8 A	V	1.8	180	Z	LOW	20.9	6.2	31.3	0.0		**38.6**	**-22.2**	**60.8**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	6/24/04
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	50 %
MODEL	**TPM-W2**	**PEAK TO AVG**	-6.02059991 dB
S/N	**N/A**	**TEST DIST.**	3 Meters
TEST ENGINEER	**James Ross**	**LAB**	A

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
1301.9700	50.8	44.8 A	H	1.0	90	X	LOW	25.8	3.1	31.6	0.0		**42.1**	**-11.9**	**54.0**	
1301.9700	43.6	37.6 A	H	1.6	90	Y	LOW	25.8	3.1	31.6	0.0		**34.9**	**-19.1**	**54.0**	
1301.9700	48.9	42.9 A	H	1.5	90	Z	LOW	25.8	3.1	31.6	0.0		**40.2**	**-13.8**	**54.0**	
1301.9700	44.1	38.1 A	V	1.9	45	X	LOW	25.8	3.1	31.6	0.0		**35.4**	**-18.6**	**54.0**	
1301.9700	51.7	45.7 A	V	1.1	180	Y	LOW	25.8	3.1	31.6	0.0		**43.0**	**-11.0**	**54.0**	
1301.9700	47.0	41.0 A	V	3.0	180	Z	LOW	25.8	3.1	31.6	0.0		**38.3**	**-15.7**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	HCI CORPORATION	DATE	6/24/04
EUT	Tire Pressure Monitor Transmitter	DUTY CYCLE	50 %
MODEL	TPM-W2	PEAK TO AVG	-6.02059991 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	James Ross	LAB	A

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
1735.9600		A	H			X	LOW	28.6	6.3	30.9	0.0				60.8	No Emission Found
1735.9600		A	H			Y	LOW	28.6	6.3	30.9	0.0				60.8	No Emission Found
1735.9600		A	H			Z	LOW	28.6	6.3	30.9	0.0				60.8	No Emission Found
1735.9600	42.3	36.3 A	V	1.6	270	X	LOW	28.6	6.3	30.9	0.0		40.3	-20.5	60.8	
1735.9600	43.8	37.8 A	V	3.0	180	Y	LOW	28.6	6.3	30.9	0.0		41.8	-19.0	60.8	
1735.9600		A	V			Z	LOW	28.6	6.3	30.9	0.0				60.8	No Emission Found

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

114 OLINDA DRIVE, BREA, CALIFORNIA 92823 PHONE: (714) 579-0500 FAX: (714) 579-1850

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	**6/24/04**
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	**50 %**
MODEL	**TPM-W2**	**PEAK TO AVG**	**-6.02059991 dB**
S/N	**N/A**	**TEST DIST.**	**3 Meters**
TEST ENGINEER	**James Ross**	**LAB**	**A**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2169.9500		A	H			X	LOW	30.6		30.3	0.0				**60.8**	**No Emission Found**
2169.9500		A	H			Y	LOW	30.6		30.3	0.0				**60.8**	**No Emission Found**
2169.9500		A	H			Z	LOW	30.6		30.3	0.0				**60.8**	**No Emission Found**
2169.9500		A	V			X	LOW	30.6		30.3	0.0				**60.8**	**No Emission Found**
2169.9500		A	V			Y	LOW	30.6		30.3	0.0				**60.8**	**No Emission Found**
2169.9500		A	V			Z	LOW	30.6		30.3	0.0				**60.8**	**No Emission Found**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	HCI CORPORATION	DATE	6/24/04
EUT	Tire Pressure Monitor Transmitter	DUTY CYCLE	50 %
MODEL	TPM-W2	PEAK TO AVG	-6.02059991 dB
S/N	N/A	TEST DIST.	3 Meters
TEST ENGINEER	James Ross	LAB	A

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2603.9400		A	H			X	LOW	30.3		29.9	0.0				60.8	No Emission Found
2603.9400		A	H			Y	LOW	30.3		29.9	0.0				60.8	No Emission Found
2603.9400		A	H			Z	LOW	30.3		29.9	0.0				60.8	No Emission Found
2603.9400		A	V			X	LOW	30.3		29.9	0.0				60.8	No Emission Found
2603.9400		A	V			Y	LOW	30.3		29.9	0.0				60.8	No Emission Found
2603.9400		A	V			Z	LOW	30.3		29.9	0.0				60.8	No Emission Found

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	**6/24/04**
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	**50 %**
MODEL	**TPM-W2**	**PEAK TO AVG**	**-6.02059991 dB**
S/N	**N/A**	**TEST DIST.**	**3 Meters**
TEST ENGINEER	**James Ross**	**LAB**	**A**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3037.9300		A	H			X	LOW	30.3		29.7	0.0				**60.8**	**No Emission Found**
3037.9300		A	H			Y	LOW	30.3		29.7	0.0				**60.8**	**No Emission Found**
3037.9300		A	H			Z	LOW	30.3		29.7	0.0				**60.8**	**No Emission Found**
3037.9300		A	V			X	LOW	30.3		29.7	0.0				**60.8**	**No Emission Found**
3037.9300		A	V			Y	LOW	30.3		29.7	0.0				**60.8**	**No Emission Found**
3037.9300		A	V			Z	LOW	30.3		29.7	0.0				**60.8**	**No Emission Found**

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	6/24/04
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	50 %
MODEL	**TPM-W2**	**PEAK TO AVG**	-6.02059991 dB
S/N	**N/A**	**TEST DIST.**	3 Meters
TEST ENGINEER	**James Ross**	**LAB**	A

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3471.9200		A	H			X	LOW	30.7		29.2	0.0				60.8	No Emission Found
3471.9200		A	H			Y	LOW	30.7		29.2	0.0				60.8	No Emission Found
3471.9200		A	H			Z	LOW	30.7		29.2	0.0				60.8	No Emission Found
3471.9200		A	V			X	LOW	30.7		29.2	0.0				60.8	No Emission Found
3471.9200		A	V			Y	LOW	30.7		29.2	0.0				60.8	No Emission Found
3471.9200		A	V			Z	LOW	30.7		29.2	0.0				60.8	No Emission Found

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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	**6/24/04**
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	**50 %**
MODEL	**TPM-W2**	**PEAK TO AVG**	**-6.02059991 dB**
S/N	**N/A**	**TEST DIST.**	**3 Meters**
TEST ENGINEER	**James Ross**	**LAB**	**A**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3905.9100		A	H			X	LOW	31.2		28.7	0.0				**54.0**	**No Emission Found**
3905.9100		A	H			Y	LOW	31.2		28.7	0.0				**54.0**	**No Emission Found**
3905.9100	42.2	36.2 A	H	1.7	270	Z	LOW	31.2	6.7	28.7	0.0		**45.4**	**-8.6**	**54.0**	
3905.9100		A	V			X	LOW	31.2		28.7	0.0				**54.0**	**No Emission Found**
3905.9100		A	V			Y	LOW	31.2		28.7	0.0				**54.0**	**No Emission Found**
3905.9100		A	V			Z	LOW	31.2		28.7	0.0				**54.0**	**No Emission Found**

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RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**HCI CORPORATION**	**DATE**	**6/24/04**
EUT	**Tire Pressure Monitor Transmitter**	**DUTY CYCLE**	**50 %**
MODEL	**TPM-W2**	**PEAK TO AVG**	**-6.02059991 dB**
S/N	**N/A**	**TEST DIST.**	**3 Meters**
TEST ENGINEER	**James Ross**	**LAB**	**A**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	Distance Factor (dB)	Mixer Factor (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
4339.9000		A	H			X	LOW	32.2		28.5	0.0				**54.0**	**No Emission Found**
4339.9000		A	H			Y	LOW	32.2		28.5	0.0				**54.0**	**No Emission Found**
4339.9000		A	H			Z	LOW	32.2		28.5	0.0				**54.0**	**No Emission Found**
4339.9000		A	V			X	LOW	32.2		28.5	0.0				**54.0**	**No Emission Found**
4339.9000		A	V			Y	LOW	32.2		28.5	0.0				**54.0**	**No Emission Found**
4339.9000		A	V			Z	LOW	32.2		28.5	0.0				**54.0**	**No Emission Found**

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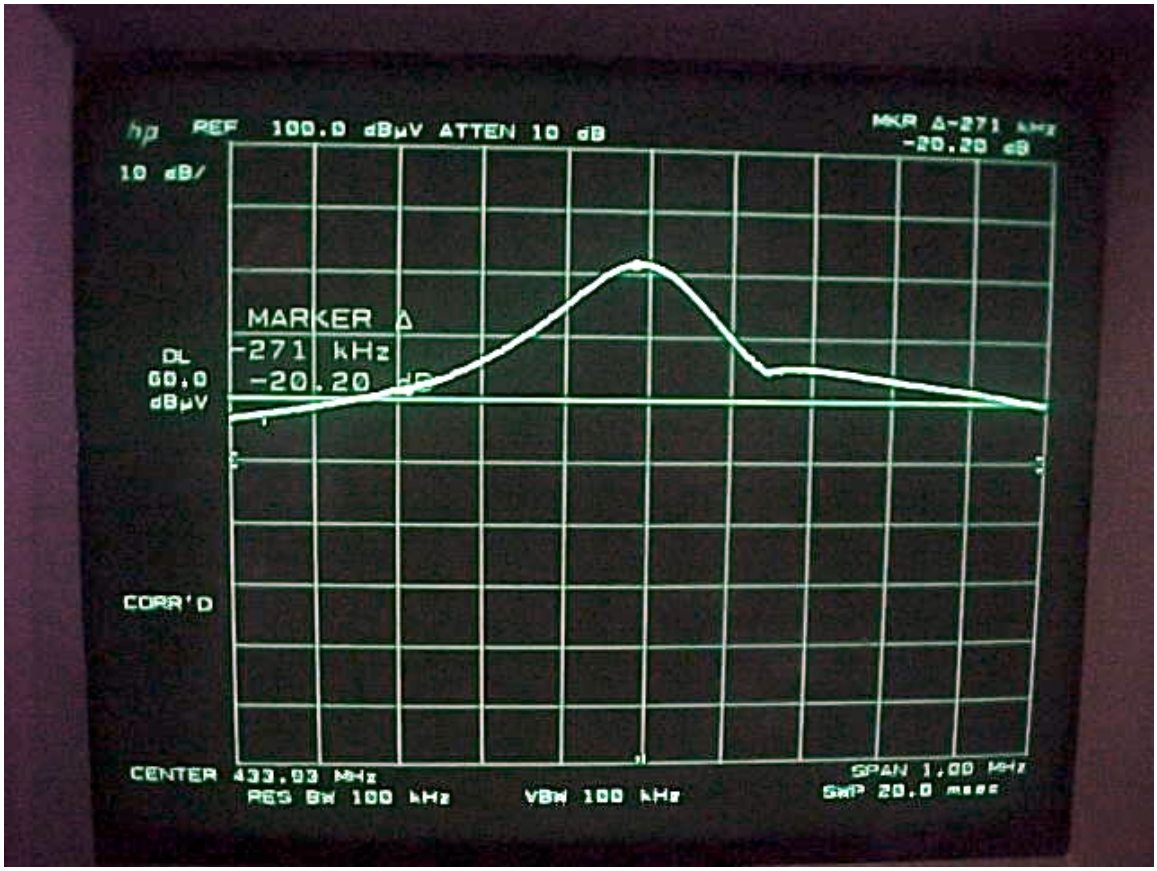
Test Location : Compatible Electronics Page : 1/1
Customer : HCI CORPORATION Date : 6/28/2004
Manufacturer : HCI CORPORATION Time : 12:07:26
Eut name : Tire Pressure Monitor Transmitter Lab : A
Model : TPM-W2 Test Distance : 3
Serial # : N/A
Specification : FCC Class B
Distance correction factor (20 * log(test/spec) : 0.00
Test Mode : Spurious Emissions Qualification Scan
Antenna(s): Loop, Biconical, Log, and Horn
10 kHz to 4.34 GHz - Vertical & Horizontal Polarties
Test Engineer: James Ross

Pol	Freq	Rdng	Cable loss	Ant factor	Amp gain	Cor'd rdg = R	Limit = L	Delta R-L
	MHz	dBuV	dB	dB	dB	dBuV	dBuV/m	dB

No spurious emissions found from 10 kHz to 4.34 GHz

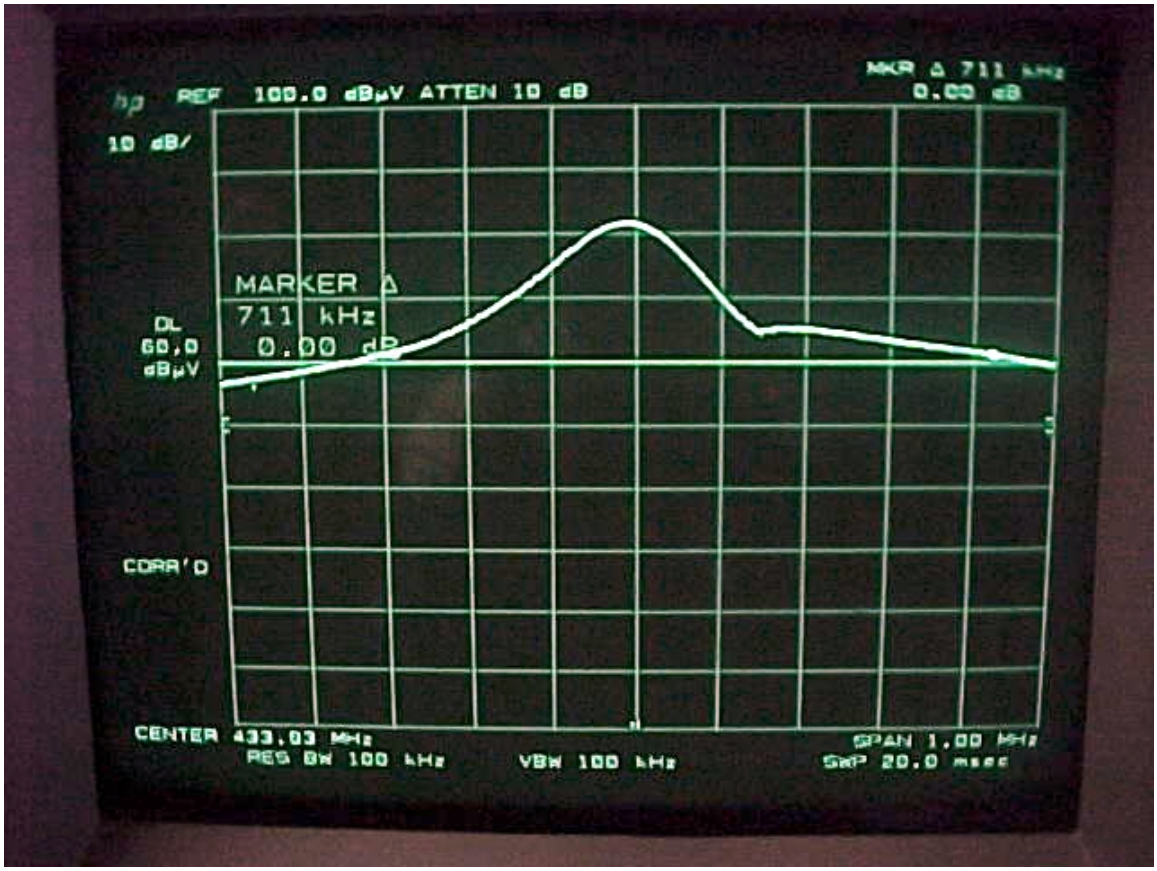
-20 dB BANDWIDTH

PHOTOS



HCI CORPORATION
TIRE PRESSURE MONITOR TRANSMITTER
MODEL NUMBER: TPM-W2
FCC SUBPART B AND C – -20 dB BANDWIDTH – 06-24-04

PHOTOGRAPH SHOWING THE –20 dB BANDWIDTH



REAR VIEW

HCI CORPORATION
TIRE PRESSURE MONITOR TRANSMITTER
MODEL NUMBER: TPM-W2
FCC SUBPART B AND C – -20 dB BANDWIDTH – 06-24-04

PHOTOGRAPH SHOWING THE –20 dB BANDWIDTH