



FCC PART 15, SUBPART C TEST REPORT

for

TRANSMITTER Model: A250107 FCC ID: LLP-P250111

Prepared for

GREER COMPANY 1918 E. GLENWOOD PLACE SANTA ANA, CA 92705

Prepared by:	
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COMPATIBLE ELECTRONICS INC. 2337 TROUTDALE DRIVE AGOURA, CALIFORNIA 91301 (818) 597-0600

DATE: NOVEMBER 04, 2002

	REPORT	APPENDICES			TOTAL		
	BODY	A	В	С	D	E	
PAGES	17	2	2	2	10	14	47

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GENERAL REPORT SUMMARY

This electromagnetic emission 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 in any form except in full, without the written permission of Compatible Electronics.

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

Device Tested: Transmitter

Model: A250107 S/N: T02212248

Product Description: This is a battery operated transmitter used on a crane to sense unsafe conditions via a switch.

The unit transmits data to the receiver located in the computer in the crane's cab.

Modifications: The EUT was not modified during the testing.

Manufacturer: Greer Company

1918 East Glenwood Pl. Santa Ana, CA 92705

Test Date: September 11, 2002

Test Specifications: EMI requirements

FCC CFR Title 47, Part 15 Subpart C Test Procedure: ANSI C63.4: 2000.

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Radiated RF Emissions, 10.00 KHz to 9165 MHz	Complies with the limits of FCC CFR Title 47, Part 15 Subpart C 15.205 and 15.249.

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1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Greer Company Transmitter Model: A250107. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2000. 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 specification limits defined in FCC CFR Title 47, Part 15 Subpart C (15.205 and 15.249).

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2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 2337 Troutdale Drive, Agoura, California 91301.

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

Greer Company

Mark Simon Consultant Simon Worboys Senior Design Engineer

Compatible Electronics Inc.

Andre D. Khan Test Technician Ruby A. Hall Lab Manager

2.4 Date Test Sample was Received

The test sample was received on September 11, 2002.

2.5 Disposition of the Test Sample

The test sample remains at Compatible Electronics, Inc.

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



3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC CFR Title 47, Part 15 Subpart C.	FCC Rules – Intentional Radiators.
CISPR 16 1993	Specification for radio disturbance and immunity measuring apparatus and methods.
ANSI C63.4 2000	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

The EUT was set-up in a tabletop configuration in the mounted position. The EUT was continuously transmitting during the testing.

The highest emissions were found when the EUT was running in the above configuration. The final radiated data was taken in this mode of operation. All initial investigations were performed with the spectrum analyzer in manual mode scanning the frequency range continuously. The EUT was setup and tested as shown in the photographs in Appendix D.



4.1.1 Cable Construction and Termination

There are no external cables connected to the EUT.

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- 5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT
- **5.1 EUT and Accessory List**

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER
TRANSMITTER (EUT)	GREER COMPANY	A250107	T02212248



5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU- FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Spectrum Analyzer	Hewlett Packard	8566A	1904A00188	Jan. 28, 2002	Jan. 28, 2003
Quasi-Peak Adapter	Hewlett Packard	85650A	2043A00276	Jan. 28, 2002	Jan. 28, 2003
Preamplifier	Com Power	CPPA-102	01249	Mar. 25, 2002	Mar. 25, 2003
Biconical Antenna	Com Power	AB-100	01535	Mar. 26, 2002	Mar. 26, 2003
Log Periodic Antenna	Com Power	AL-100	01116	Mar. 06, 2002	Mar. 06, 2003
Horn Antenna	A. R. A.	DRG 118/A	1015	Dec. 18, 2001	Dec. 18, 2002
Microwave Amplifier	Com Power	PA-122	181915	Jun. 12, 2002	Jun. 12, 2003
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-106A	N/A	N/A	N/A
Computer	Hewlett Packard	Pavilion 4530	US91912022	N/A	N/A
Printer	Hewlett Packard	C6427B	MY066160TW	N/A	N/A
(Software) Radiated Emissions Transmitter Data Program	Compatible Electronics	DOC No: EMI_PART15 TX-B-0-50	Rev. A	N/A	N/A
Loop Antenna	Com Power	AL-130	17067	Mar. 12, 2002	Mar. 12, 2003

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- 6. TEST SITE DESCRIPTION
- 6.1 Test Facility Description

Please refer to section 2.1 and 7.1.2 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.

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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 RF Emissions

7.1.1 Conducted Emissions Test

The Spectrum Analyzer was used as a measuring meter along with the quasi-peak adapter. The data was collected with the Spectrum Analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the Spectrum Analyzer input stage, and the Spectrum Analyzer offset was adjusted accordingly to read the actual data measured. The LISN output was read by the Spectrum Analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for the conducted emissions test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 2000. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The initial test data was taken in manual mode while scanning the frequency ranges of 0.15 MHz to 1.6 MHz, 1.6 MHz to 5 MHz and 5 MHz to 30 MHz. The conducted emissions from the EUT were maximized for operating mode as well as cable placement. Once a predominant frequency (within 12 dB of the limit) was found, it was more closely examined with the spectrum analyzer span adjusted to 1 MHz.

The EUT does not connect directly to AC mains therefore this test was deemed unnecessary.

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7.1.2 Radiated Emissions Test

The spectrum analyzer was used as a measuring meter along with a quasi-peak adapter. A Preamplifier was used to increase the sensitivity of the instrument. 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. This final reading is then recorded into the a Computer data recording program, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. The quasi-peak was used only for those readings, which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was 120 kHz.

Broadband loop, biconical, log periodic and horn antennas were used as transducers during the measurement. The loop antenna was used from 10 KHz to 30 MHz, the biconical antenna was used from 30 MHz to 300 MHz, the log periodic antenna was used from 300 MHz to 1 GHz and the horn antenna was used from 1 GHz to 9.165 GHz. The frequency spans were wide (1 to 30Mhz, 30 MHz to 88 MHz, 88 MHz to 216 MHz, 216 to 300 MHz, 300 MHz to 1 GHz and 1 GHz to 9.165 GHz) during preliminary investigations. The final data was taken with a frequency span of 1 MHz. Furthermore, the frequency span was reduced during the preliminary investigations as deemed necessary.

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: 2000. 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 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 test distance of 3 meters to obtain final test data. The test data is located in Appendix E.

Preliminary Testing and Monitoring:

Preliminary testing was done at a distance of 1 meter instead of 3 meters to determine the predominant harmonics and spurious emission frequencies. An open field test site was used for the preliminary investigations. Broadband antennas were used to scan large frequency bands. If and when any frequency was found to be above 30 microvolts/meter level (at a 1 meter distance), this frequency was recorded as a significant frequency. All significant frequencies were further examined carefully at a frequency span on the spectrum analyzer while changing the antenna height and EUT orientation. The EUT was tested again at a test distance of 3 meters to obtain the final test data. The bandwidth of the spectrum analyzer was varied to ensure that pulse desensitization did not occur.

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7.1.3 RF Emissions Test Results

The fundamental and up to the 10th harmonic emissions are within the specifications.

GREER COMPANY TRANSMITTER

RADIATED EMISSIONS - SPURIOUS

The following bands were specifically scanned. Frequency Band 10 KHz – 9.165 GHz

Spurious Emissions see Appendix E.

RF Energy From Transmitter in MHz at 3 meters ($\mu V/m$)

2.1735-2.1905	< 50	37.5-38.25	<100
4.125-1.128	< 50	73-74.6	<100
4.17725-4.17775	< 50	74.8-75.2	<100
4.20725-4.20775	< 50	108-121.94	<100
6.215-6.218	< 50	123-138	<150
6.26775-6.26825	< 50	149.9-150.05	<150
6.31175-6.31225	< 50	156.52-156.52	<150
8.291-8.294	< 50	162.01-167.17	<150
8.362-8.366	< 50	167.72-173.2	<150
8.37625-8.38675	< 50	240-285	< 200
8.41425-8.41475	< 50	322-335.4	< 200
12.29-12.293	< 50	399.9-410	< 200
12.51975-12.52025	< 50	608-614	< 200
12.57675-12.57725	< 50	960-1240	< 500
13.36-13.41	< 50	1300-1427	< 500
16.42-16.423	< 50	1435-1626.5	< 500
16.69475-16.69525	< 50	1645.5-1646.5	< 500
16.80425-16.80475	< 50	1660-1710	< 500
25.5-25.67	< 50	1718.8-1722.2	< 500



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7.1.4 RF Emissions Test Results (Continued)

RF Energy From Transmitter in MHz at 3 meters ($\mu V/m$)

2200-2300	< 500	4500-5150	< 500
2310-2390	< 500	5350-5460	< 500
2483.5-2500	< 500	7250-7750	< 500
2655-2900	< 500	8025-8500	< 500
3260-3267	< 500	9000-9200	< 500
3332-3339	< 500		
3345.8-3358	< 500		
3600-4400	< 500		

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8. CONCLUSIONS

The Greer Company Transmitter Model: A250107 meets all of the requirements of the FCC CFR, Title 47, Part 15, Subpart C 15.205 and 15.249.



APPENDIX A

LABORATORY ACCREDITATIONS



LABORATORY ACCREDITATIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200063-0

Voluntary Control Council for Interference - Registration Numbers: R-826, C-862, R-653 and C-

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

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

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)

Conformity Assessment Body for the EMC directive under the US/EU MRA appointed by NIST.



APPENDIX B

MODIFICATIONS TO THE EUT



MODIFICATIONS TO THE EUT

There were no modifications made to the EUT during the test.



APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT



ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

TRANSMITTER Model: A250107

There were no additional models covered under this report.



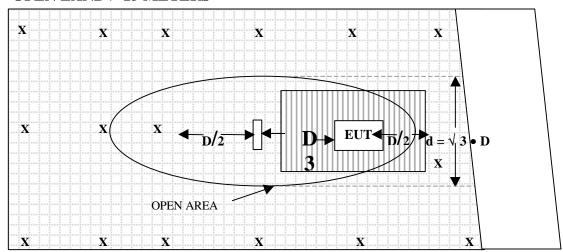
APPENDIX D

DIAGRAMS, CHARTS AND PHOTOS



FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

T = GROUND RODS = GROUND SCREEN

T = GROUND SCREEN

T = WOOD COVER



COM-POWER AL-130

ACTIVE LOOP ANTENNA

S/N: 17067

CALIBRATION DATE: MARCH 12, 2002

FREQUENCY	FACTOR	FREQUENCY	FACTOR
(MHz)	(dB)	(MHz)	(dB)
0.009	11.3	1	10.8
0.01	11.3	2	11.2
0.02	10.5	3	10.9
0.03	12.1	4	10.8
0.04	11.6	5	11.4
0.05	10.2	6	11.4
0.06	10.6	7	11.1
0.07	10.3	8	10.9
0.08	10.0	9	11.5
0.09	9.9	10	11.0
0.1	9.9	12	10.3
0.2	7.5	14	10.2
0.3	10.0	15	10.1
0.4	10.0	16	10.1
0.5	10.0	18	10.2
0.6	10.1	20	10.3
0.7	10.1	25	9.7
0.8	10.1	30	8.5
0.9	10.3		



COM-POWER AB-100

BICONICAL ANTENNA

S/N: 1535

CALIBRATION DATE: MARCH 26, 2002

FREQUENCY	FACTOR	FREQUENCY	FACTOR
(MHz)	(dB)	(MHz)	(dB)
30	13.8	120	9.3
35	12.9	125	11.0
40	12.5	140	12.2
45	12.2	150	12.4
50	12.5	160	13.0
60	10.5	175	14.5
70	8.5	180	14.9
80	8.0	200	15.0
90	7.9	250	16.2
100	8.5	300	19.0



COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 01116

CALIBRATION DATE: MARCH 6, 2002

FREQUENCY	FACTOR	FREQUENCY	FACTOR
(MHz)	(dB)	(MHz)	(dB)
300	11.70	700	19.80
400	11.80	800	22.40
500	15.90	900	22.20
600	17.30	1000	23.60



COM-POWER PA-102

PREAMPLIFIER

S/N: 1249

CALIBRATION DATE: MARCH 25, 2002

FREQUENCY	FACTOR	FREQUENCY	FACTOR
(MHz)	(dB)	(MHz)	(dB)
30	36.7	300	36.0
40	36.8	350	35.9
50	36.7	400	36.0
60	36.6	450	35.5
70	36.5	500	35.7
80	36.7	550	36.2
90	36.6	600	35.4
100	36.6	650	35.7
125	36.4	700	36.3
150	36.4	750	35.0
175	36.2	800	35.1
200	36.2	850	35.1
225	36.2	900	33.5
250	36.1	950	32.7
275	36.0	1000	32.3



COM-POWER PA-122

PREAMPLIFIER

S/N: 181915

CALIBRATION DATE: JUNE 12, 2002

FREQUENCY	FACTOR	FREQUENCY	FACTOR
(MHz)	(dB)	(MHz)	(dB)
1000	32.8	7000	32.8
1100	32.8	7500	32.7
1200	32.7	8000	32.2
1300	32.6	8500	31.4
1400	32.7	9000	32.3
1500	32.8	9500	31.4
1600	32.5	10000	31.4
1700	32.2	11000	33.2
1800	27.0	12000	33.6
1900	29.2	13000	32.2
2000	29.7	14000	32.8
2500	33.0	15000	32.0
3000	33.3	16000	33.0
3500	33.6	17000	33.5
4000	33.3	18000	33.4
4500	33.3		
5000	33.1		
5500	33.0		
6000	33.1		
6500	32.8		



A.R.A DRG-118/A

HORN ANTENNA

S/N: 1015

CALIBRATION DATE: DECEMBER 18, 2001

FREQUENCY	FACTOR	FREQUENCY	FACTOR
(MHz)	(dB)	(MHz)	(dB)
1000	25.8	10000	41.3
1500	26.9	10500	42.1
2000	30.9	11000	42.2
2500	30.2	11500	43.6
3000	31.8	12000	44.0
3500	32.4	12500	42.2
4000	31.9	13000	40.7
4500	31.6	13500	40.9
5000	33.3	14000	39.7
5500	31.8	14500	44.7
6000	38.2	15000	42.4
6500	38.2	15500	45.1
7000	38.3	16000	42.8
7500	38.4	16500	42.6
8000	39.5	17000	45.9
8500	38.8	17500	49.2
9000	40.9	18000	42.4
9500	40.2		





FRONT VIEW

GREER COMPANY TRANSMITTER Model: A250107

FCC CLASS B RADIATED EMISSIONS – 9-11-02

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS





REAR VIEW

GREER COMPANY TRANMSITTER Model: A250107

FCC CLASS B - RADIATED EMISSIONS – 9-11-02

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



APPENDIX E

DATA SHEETS



RADIATED EMISSIONS

COMPANY NAME: Greek Com	Pany DATE: 9-11-02
`	EUT S/N:
'	LOCATION: BREA SILVERADO AGOURA
SPECIFICATION: FC CLASS	: B test distance: 3M lab: F
,	☐ HORN POLARIZATION: ☐ VERT ☐ HORIZ
☐ QUALIFICATION ☐ ENGINEERING ☐ MF	G. AUDIT ENGINEER: A Kham
NOTES: 3.58MHZ 14.318M+	

Frequency	Peak Reading	Quasi- Peak	Antenna Height	Azimuth	Delta *	Corrected Limit	Comments
(MHz)		(dBuV/m)		(degrees)	(dB)	(dBuV/m)	
		<u> </u>	((5)	()	(0201)	
NOE	M155	,075	For	lone	10 Kt	12-30	MHZ
					-		
				-			
			···		34.4		
	:						

* DELTA = METER READING - CORRECTED LIMIT



Test Location : Compatible Electronics Page : 1/1

Customer : MARK SIMON Date : 09/11/2002
Manufacturer : GREER Time : 10:31:00 AM

Eut name : TRANSMITTER Lab : F

Model : A250107 Test Distance : 3.00 Meters

Serial # : T02212248

Specification : FCC Pt. 15 - Class B

Distance correction factor (20 * log(test/spec)) : 0.00

Test Mode : CL0CKS:14.318, 3.58 MHz

Pol	Freq	Reading	Cable loss	factor	Amplifier gain	rdg = R	Limit = L	Delta R-L
	MHz	d₿uV	₫₿	dB	dB	dBuV/m	dBuV/m	d₿
lv	43.018	48.10	1.47	75・37	36.77	25.11	40.00	-14-89
57	57.208	48.30	3-67	77.05	36-63	24.37	40.00	-15-63
٩V	71.518	48.70	1.92	8.42	36.53	22.50	40.00	-17.50
47	85-820	45-20	5 · GP	7.94	36-64	18.56	40.00	-21-44
5V	100-130	40.50	5.50	8.51	36.60	14.61	43.50	-28.89
۴V	114.436	48-90	2.38	9.09	36.48	23.89	43.50	-19.61
77	143-028	42.50	2.65	75-5P	36-40	57.07	43.50	-22.49
۵V	171.624	42.90	3.05	14-17	36 - 53	23.90	43-50	-19-60
9H	42.930	41.00	1.46	75.35	36.77	18.01	40-00	-21.99
1 0H	57-204	42.30	1.67	11.05	36-63	18.37	40.00	-53.63
11H	71-481	45.10	1.92	8-42	36.53	18.91	40.00	-21.09
75H	85-846	48.20	5 • OP	7.94	36.64	21.56	40.00	-18.44
73H	100.09L	43.50	5.50	8 - 50	3P·PO	17.61	43.50	-25.69
14 H	114-406	47.20	2·38	9.09	36.48	55.74	43.50	-51.37
15H	750 - OOP	43.10	2.45	9.30	36.44	18.41	43.50	-25.09
36H	143.045	44.30	2.65	75.5P	36.40	55.97	43.50	-20.69
17H	171-634	42.40	3.05	14.17	36.53	23.40	43.50	-20.10
187	314-647	43.20	4.59	11.72	35.97	23.53	46.00	-22.47
197	343-274	40-20	4.92	11.75	35-91	20 - 9L	46-00	-25-04
50H	314-680	42.10	4.59	11.72	35.97	22.43	46.00	-23.57
57H	343.232	38.80	4.92	11.75	35.91	19-56	46.00	-26.44

EUT AND LAB INFORMATION

COMPANY:	Greer Company	
EUT NAME:	916.5 MHz TX	
EUT MODEL:	A250107	
EUT S/N:	T02212248	
EUT MODE:	TRANSMIT	
LOW CHANNEL (MHz):	916.5	
MEDIUM CHANNEL (MHz):		
HIGH CHANNEL (MHz):		
FULL BANDWIDTH (MHz):		
DUTY CYCLE %	0	ENTER "0" IF THERE IS NO DUTY CYCLE PERCENTAGE
LEAVE BLANK FOR 3 AXIS	0	ENTER "0" IF TESTING ONLY ONE AXIS
LAB:	F	
TEST DATE:	9/11/02	
DATA SHEET TITLE:	RADIATED EMISSIONS (FCC SECTION 15.249 & 15.205)	
TEST ENGINEER:	Andre D. Khan	
TEST DISTANCE:	3 METERS	

LAB FACTORS (CHANNEL 1)

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LAB FACTORS (CHANNEL 3)

FREQ.					CABLE	PREAMP	ANT.
(MHz)					LOSS	GAIN	FACTORS
.01-30	-				LUSS	GAIN	PACTORS
S/N							
CAL DUE							
30-300					RG-8/U	PA-102	AB-100
S/N					3548	1249	1535
CAL DUE					3/28/03	3/25/03	3/26/03
300-1000					RG-8/U	PA-102	AL-100
S/N					3548	1249	1116
CAL DUE					3/28/03	3/25/03	3/6/03
1G-13G					FSJ1-50	PA-122	DRG-118A
S/N					3567	3580	1015
CAL DUE					4/16/03	6/12/03	12/18/02
13G-18G					FSJ1-50	PA-122	DRG-118A
S/N CAL DUE					3567 4/16/03	3580 6/12/03	1015 12/18/02
18G-26.5G	DECED	CONTRA		CDEC	4/10/03	0/12/03	12/16/02
18G-26.5G S/N	RESTR	ICTED?	A or	SPEC LIMIT			
CAL DUE	PEAK	BAND	OP	(dBuV/m)			
916,50	0	0	QP	94.0	8.3	33,2	22.4
1833.00	0	0	A	54.0	5.7	27.7	29.6
2749.50	1	0	A	54.0	6.3	33.2	31.0
3666.00	1	0	A	54.0	7.7	33.5	32.2
4582.50	1	0	A	54.0	8.1	33.3	31.9
5499.00	0	0	A	54.0	10.4	33.0	31.8
6415.50	0	0	A	54.0	11.5	32.9	38.2
7332.00	1	0	A	54.0	11.7	32.7	38.4
8248.50	1	0	A	54.0	12.4	31.8	39.2
9165.00	1	0	A	54.0	13.4	32.0	40.7

FREQ.					CABLE	PREAMP	ANT.
(MHz)					LOSS	GAIN	FACTORS
.01-30					LOSS	OAIIV	TACTORS
S/N							
CAL DUE							
30-300							
S/N CAL DUE							
300-1000							
500-1000 S/N							
CAL DUE							
1G-13G							
S/N							
CAL DUE							
13G-18G							
S/N CAL DUE							
18G-26.5G	DESTR	ICTED?	A	SPEC			
S/N	KESTK	ICIED.	or	LIMIT			
CAL DUE	PEAK	BAND	QP	(dBuV/m)			
0.00	#N/A	#N/A	QP				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				

FREQ.					CABLE	PREAMP	ANT.
(MHz)					LOSS	GAIN	FACTORS
.01-30					LOSS	GAIN	TACTORS
S/N							
CAL DUE							
30-300							
S/N							
CAL DUE							
300-1000							
S/N							
CAL DUE							
1G-13G							
S/N CAL DUE							
13G-18G							
S/N							
CAL DUE							
18G-26.5G	RESTR	ICTED?	A	SPEC			
S/N			or	LIMIT			
CAL DUE	PEAK	BAND	QP	(dBuV/m)			
0.00	#N/A	#N/A	QP				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				
0.00	#N/A	#N/A	A				

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi- Peak (QP)	Polar.	Height	Azimuth		EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	**	Spec Limit (dBuV/m)	Comments
916.5000	96.0	95.7 QP	Н					22.4	8.3	33.2	93.2	-0.8	94.0	
916.5000	85.5	QP	V	1.0	190			22.4	8.3	33.2	83.0	-11.0	94.0	
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^{*} CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi- Peak (QP)	Polar.	Height	Azimuth	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	**	Spec Limit (dBuV/m)	Comments
1833.0000	43.5	31.1 A	Н	1.5	175		29.6	5.7	27.7	38.7	-15.3	54.0	
1833.0000	43.0	A	V	1.0	160		29.6	5.7	27.7	50.6	-3.4	54.0	
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^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency MHz	Peak Reading (dBuV)		asi-	Antenna Polar. (V or H)	Height	EUT Azimuth (degrees)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	**	Spec Limit (dBuV/m)	Comments
2749.5000	48.7	41.5	A	Н	1.5	180		31.0	6.3	33.2	45.7	-8.4	54.0	
2749.5000	49.6	45.2	A	V	1.0	170		31.0	6.3	33.2	49.4	-4.6	54.0	

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^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi- Peak (QP)	Polar.	Height	Azimuth	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	**	Spec Limit (dBuV/m)	Comments
3666.0000	45.2	36.1 A	Н	2.0	180		32.2	7.7	33.5	42.5	-11.5	54.0	
3666.0000	44.1	A	V	1.0	170		32.2	7.7	33.5	50.5	-3.5	54.0	

^{*} CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	•

Frequency MHz	Peak Reading (dBuV)	or Quasi-	Antenna Polar. (V or H)	Height	EUT Azimuth (degrees)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	**	Spec Limit (dBuV/m)	Comments
4582.5000	40.4	A	Н	2.0	175		31.9	8.1	33.3	47.2	-6.8	54.0	
4582.5000	40.5	A	V	1.0	180		31.9	8.1	33.3	47.3	-6.7	54.0	

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^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency	Peak Reading (dBuV)	or Quasi-	Antenna Polar. (V or H)	Height	EUT Azimuth (degrees)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	**	Spec Limit (dBuV/m)	Comments
5499.0000	41.0	A	Н	2.0	180		31.8	10.4	33.0	50.2	-3.8	54.0	
5499.0000	42.6	32.6 A	V	1.0	180		31.8	10.4	33.0	41.8	-12.2	54.0	

^{*} CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency	Peak	TITTEL CITY	Antenna			EUT	EUT	Antenna	Cable		*Corrected		Spec	
MHz	Reading (dBuV)		Polar.		Azimuth (degrees)		Tx Channel	Factor (dB)	Loss (dB)	Gain (dB)	Reading (dBuV/m)	** (dB)	Limit (dBuV/m)	Comments
	(ubuv)			(meters)	(degrees)	(A,1,L)	Chainlei	, ,			(ubu v/III)	(ub)		NO READINGS FOUND
6415.5000		A	Н					38.2	11.5	32.9			54.0	NO READINGS FOUND
6415.5000		A	V					38.2	11.5	32.9			54.0	NO READINGS FOUND
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^{*} CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency	Peak Reading		Antenna Polar.	EUT Azimuth	EUT Axis	EUT Tx	Antenna Factor	Cable Loss	Amplifier Gain	*Corrected Reading	Delta **	Spec Limit	
MHz	(dBuV)			(degrees)			(dB)	(dB)	(dB)	(dBuV/m)		(dBuV/m)	Comments
7332.0000		A	Н				38.4	11.7	32.7			54.0	NO READING FOUND
7332.0000		A	V				38.4	11.7	32.7			54.0	NO READING FOUND

^{*} CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency	Peak	TITCIAGO (TI)	Antenna			EUT	EUT	Antenna	Cable		*Corrected		Spec	
MHz	Reading (dBuV)		Polar. (V or H)		Azimuth (degrees)		Tx Channel	Factor (dB)	Loss (dB)	Gain (dB)	Reading (dBuV/m)	** (dB)	Limit (dBuV/m)	Comments
8248.5000	(ubu i)	A	H	(Meters)	(degrees)	(12, 2, 2)		39.2	12.4	31.8	(uzu (/iii)	(42)		NO READING FOUND
0210000								07.2	12	51.0				
8248.5000		A	V					39.2	12.4	31.8			54.0	NO READING FOUND

^{*} CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

^{**} DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	Greer Company	DATE	9/11/02	
EUT	916.5 MHz TX	DUTY CYCLE	0.00	%
MODEL	A250107	PEAK TO AVG	0	dB
S/N	T02212248	TEST DIST.	3 METERS	
TEST ENGINEER	Andre D. Khan	LAB	F	

Frequency	Peak	TITCIAGO (TI)	Antenna			EUT	EUT	Antenna	Cable		*Corrected		Spec	
MHz	Reading (dBuV)		Polar. (V or H)		Azimuth (degrees)		Tx Channel	Factor (dB)	Loss (dB)	Gain (dB)	Reading (dBuV/m)	** (dB)	Limit (dBuV/m)	Comments
9165.0000	(ubu i)	A	H	(Micres)	(degrees)	(12, 2, 2)		40.7	13.4	32.0	(uzu (/iii)	(42)	54.0	NO READING FOUND
7100000									10	52.0				
9165.0000		A	V					40.7	13.4	32.0			54.0	NO READING FOUND

^{*} CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

^{**} DELTA = SPEC LIMIT - CORRECTED READING