

FCC PART 15, SUBPART B and C
TEST REPORT
for
COMMUNICATOR (TRANSMITTER)
MODEL: IDF-201TX

Prepared for
TIME TRONICS, INC.
P.O. BOX 580
PINCHER CREEK, ALBERTA T0K 1W0

Prepared by: *Kyle Fujimoto*

KYLE FUJIMOTO

Approved by: *James Ross*

JAMES ROSS

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: FEBRUARY 6, 2006

	REPORT BODY	APPENDICES					TOTAL
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
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1	Plot Map And Layout of 3 Meter Radiated Test Site

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: Communicator (Transmitter)
Model: IDF-201TX
S/N: N/A

Product Description: See Expository Statement

Modifications: The EUT was not modified during the testing.

Manufacturer: Time Tronics, Inc.
P.O. Box 580
Pincher Creek, Alberta T0K 1W0

Test Dates: January 26 and 30, 2006

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 12 volts DC only and cannot be plugged into the AC public mains.
2	Radiated RF Emissions, 10 kHz – 4.4 GHz	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 Communicator (Transmitter) Model: IDF-201TX. 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

Time Tronics, Inc.

Eli D. Walter President

Compatible Electronics, Inc.

James Ross Test Engineer

Kyle Fujimoto Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to the initial test date of January 26, 2006.

2.5 Disposition of the Test Sample

The sample has not yet been returned to Time Tronics, Inc. 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	Model
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
TX	Transmit
RX	Receive
PCB	Printed Circuit Board

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 2003	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.

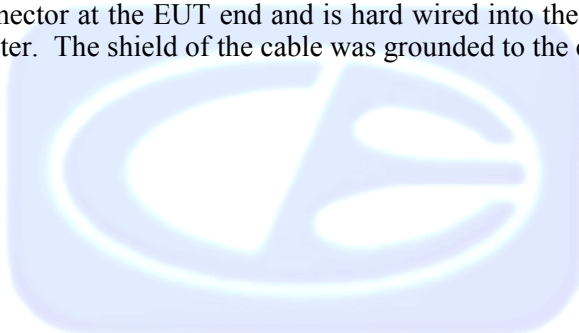
The Communicator (Transmitter) Model: IDF-201TX (EUT) was connected to an antenna and a DC Power supply via its antenna and power ports, respectively. The EUT was tested while it was continuously transmitting and with the EUT's antenna in the vertical and horizontal axis. The EUT has a reverse polarity SMA connector at the antenna port.

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

Cable 1 This is a 2-meter unshielded cable connecting the EUT to the DC Power Supply. The cable is hard wired at each end.

Cable 2 This is a 2-meter braid shielded cable connecting the EUT to the antenna. The cable has a reverse polarity SMA connector at the EUT end and is hard wired into the antenna. The cable was bundled to a length of 1 meter. The shield of the cable was grounded to the chassis via the connectors.



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

EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID
COMMUNICATOR (TRANSMITTER) (EUT)	TIME TRONICS, INC.	IDF-201TX	N/A	TPS-IDF201TX
DC POWER SUPPLY	SORENSEN	DCS 60-18	9714164	N/A

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 10, 2005	June 10, 2006
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22279	June 10, 2005	June 10, 2006
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	June 11, 2005	June 11, 2006
EMI Receiver	Rohde & Schwarz	ESIB40	100172	October 28, 2004	October 28, 2006
Preamplifier	Com Power	PA-102	1017	January 16, 2006	January 16, 2007
Microwave Preamplifier	Com-Power	PA-122	181917	January 20, 2006	January 20, 2007
Biconical Antenna	Com Power	AB-900	15227	March 11, 2005	Mar. 11, 2006
Log Periodic Antenna	Com Power	AL-100	16060	August 22, 2005	Aug. 22, 2006
Horn Antenna	Com Power	AH-118	10073	July 27, 2004	July 27, 2006
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Antenna Mast	EMCO	2090	9609-1176	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
Computer	Hewlett Packard	D5251A 888	US74458128	N/A	N/A
Monitor	Hewlett Packard	D5258A	DK74889705	N/A	N/A
Loop Antenna	Com Power	AL-130	17070	July 28, 2005	July 28, 2006

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 operates on 12 Volts DC only and 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 and EMI Receiver were used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com-Power Active Loop Antenna Model: AL-130 was used for frequencies from 9 kHz to 30 MHz, 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 from 1 GHz to 4.4 GHz. The spectrum analyzer and EMI Receiver were used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer or EMI Receiver records the highest measured reading over all the sweeps.

The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets.

The frequencies above 1 GHz were averaged manually by narrowing the video filter down to 10 Hz and putting the sweep time on AUTO on the EMI Receiver to keep the amplitude reading calibrated.

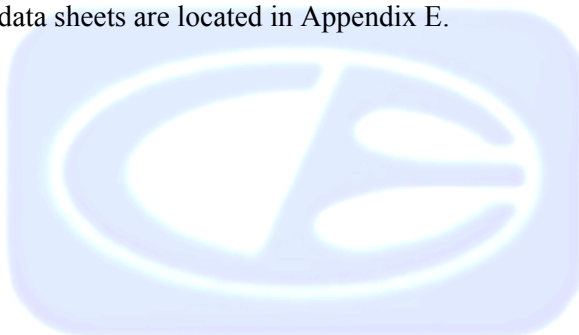
The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 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 4.4 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 Communicator (Transmitter)led 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.

7.2 Radiated Emissions (Spurious and Harmonics) Test (Continued)

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.

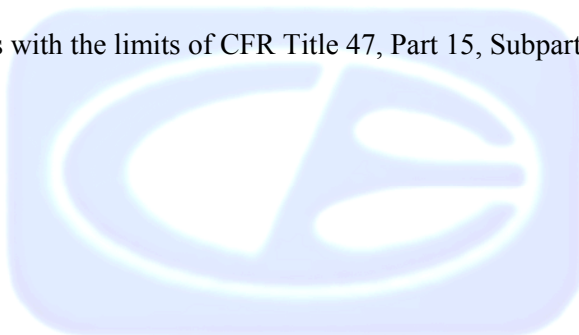


7.3 Bandwidth of the Fundamental

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

Test Results:

The EUT complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.231 [c].



8. CONCLUSIONS

The Communicator (Transmitter) Model: IDF-201TX 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.

No modifications were made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Communicator (Transmitter)

Model: IDF-201TX

S/N: N/A

There are no additional models covered under this report.

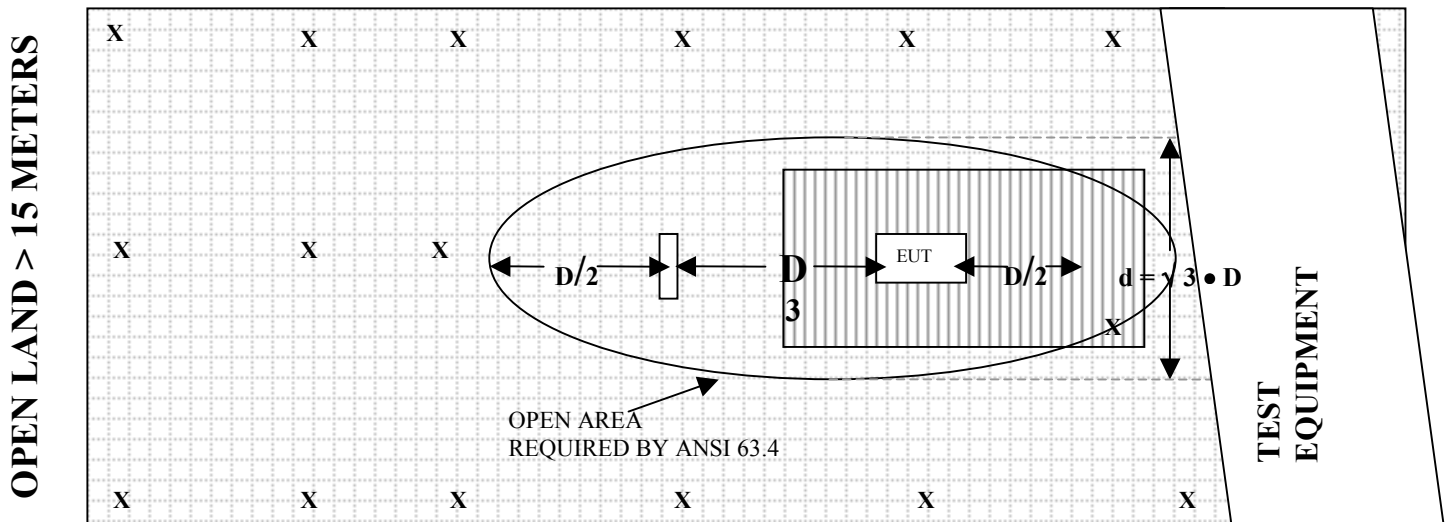


APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF 3 METER RADIATED TEST SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

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

COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15227

CALIBRATION DATE: MARCH 11, 2005

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	11.10	120	13.20
35	10.80	125	12.60
40	11.10	140	12.10
45	10.50	150	11.90
50	11.70	160	13.10
60	10.70	175	15.40
70	7.70	180	14.50
80	6.30	200	16.00
90	8.00	250	16.10
100	10.00	300	19.70

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16060

CALIBRATION DATE: AUGUST 22, 2005

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.73	700	19.72
400	13.38	800	20.49
500	15.12	900	21.31
600	16.27	1000	24.25

COM-POWER PA-102**PREAMPLIFIER**

S/N: 1017

CALIBRATION DATE: JANUARY 19, 2006

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	38.3	300	38.4
40	38.4	350	38.4
50	38.3	400	38.0
60	38.4	450	38.1
70	38.5	500	37.5
80	38.4	550	38.0
90	38.4	600	38.0
100	38.4	650	37.7
125	38.1	700	37.7
150	38.5	750	37.7
175	38.4	800	37.0
200	38.3	850	37.2
225	38.3	900	36.6
250	38.1	950	36.3
275	38.3	1000	36.3

COM-POWER AL-130**LOOP ANTENNA**

S/N: 17070

CALIBRATION DATE: JULY 28, 2005

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-43.3	8.16
0.01	-44.1	7.41
0.02	-44.0	7.54
0.05	-42.7	8.8
0.07	-42.0	9.53
0.1	-41.7	9.84
0.2	-43.6	7.87
0.3	-40.9	10.6
0.5	-41.0	10.7
0.7	-40.5	10.97
1	-40.5	11.04
2	-40.5	11.03
3	-40.6	10.9
4	-42.9	8.63
5	-44.3	7.23
10	-53.7	-2.7
15	-62.6	-11.14
20	-58.9	-7.3
25	-51.5	-11.6
30	-63.1	8.9

COM-POWER AH-118**HORN ANTENNA**

S/N: 10073

CALIBRATION DATE: JULY 27, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	25.3	10.0	39.8
1.5	28.3	10.5	38.6
2.0	31.5	11.0	38.5
2.5	31.2	11.5	40.4
3.0	30.4	12.0	42.0
3.5	30.5	12.5	41.7
4.0	30.9	13.0	41.9
4.5	32.0	13.5	43.7
5.0	34.1	14.0	45.5
5.5	33.7	14.5	45.8
6.0	34.2	15.0	40.5
6.5	35.1	15.5	41.8
7.0	37.1	16.0	41.5
7.5	40.4	16.5	40.2
8.0	39.8	17.0	43.3
8.5	38.4	17.5	46.6
9.0	37.5	18.0	47.1
9.5	42.4		

COM-POWER PA-122**MICROWAVE PREAMPLIFIER**

S/N: 181917

CALIBRATION DATE: JANUARY 20, 2006

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	34.697	10.0	36.558
1.5	33.817	10.5	35.048
2.0	33.587	11.0	33.258
2.5	33.804	11.5	32.960
3.0	33.850	12.0	33.312
3.5	33.943	12.5	33.836
4.0	34.399	13.0	34.178
4.5	34.847	13.5	34.197
5.0	35.172	14.0	33.769
5.5	35.383	14.5	33.392
6.0	35.539	15.0	33.387
6.5	34.802	15.5	34.038
7.0	33.793	16.0	34.884
7.5	33.511	16.5	35.740
8.0	33.910	17.0	35.341
8.5	34.907	17.5	34.729
9.0	36.036	18.0	33.760
9.5	36.661		



FRONT VIEW

TIME TRONICS, INC.
COMMUNICATOR (TRANSMITTER)
Model: IDF-201TX

FCC SUBPART B AND C – RADIATED EMISSIONS – LAB D – 10 kHz to 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

TIME TRONICS, INC.
COMMUNICATOR (TRANSMITTER)
Model: IDF-201TX

FCC SUBPART B AND C – RADIATED EMISSIONS – LAB D – 10 kHz to 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
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Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



FRONT VIEW

TIME TRONICS, INC.
COMMUNICATOR (TRANSMITTER)
Model: IDF-201TX

FCC SUBPART B AND C – RADIATED EMISSIONS – LAB B – ABOVE 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

TIME TRONICS, INC.
COMMUNICATOR (TRANSMITTER)
Model: IDF-201TX

FCC SUBPART B AND C – RADIATED EMISSIONS – LAB B – ABOVE 1 GHz

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

APPENDIX E

DATA SHEETS

FCC 15.231

Time Tronics Inc.
Communicator (Transmitter)
Model: IDF-201TX
Configuration: Transmit Mode

Date: 01/26/06
Lab: B
Tested By: James Ross

Duty Cycle: -7.237

Antenna in the X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	72.93	V	100.2	-27.27	Peak	1	270	
418	65.693	V	80.2	-14.507	Avg	1	270	
836	36.48	V	80.2	-43.72	Peak	1	315	
836	29.243	V	60.2	-30.957	Avg	1	315	
1254		V	74	-74	Peak			No harmonic found
1254	-7.237	V	54	-61.237	Avg			
1672	37.83	V	74	-36.17	Peak	2.68	0	
1672	30.593	V	54	-23.407	Avg	2.68	0	
2090	44.13	V	80.2	-36.07	Peak	1.13	45	
2090	36.893	V	60.2	-23.307	Avg	1.13	45	
2508		V	80.2	-80.2	Peak			No harmonic found
2508	-7.237	V	60.2	-67.437	Avg			
2926	40.21	V	80.2	-39.99	Peak	2.29	0	
2926	32.973	V	60.2	-27.227	Avg	2.29	0	
3344	42.25	V	80.2	-37.95	Peak	1	35	
3344	35.013	V	60.2	-25.187	Avg	1	35	
3762	42.15	V	74	-31.85	Peak	2	35	
3762	34.913	V	54	-19.087	Avg	2	35	
4180		V	74	-74	Peak			No harmonic found
4180	-7.237	V	54	-61.237	Avg			

FCC 15.231

Time Tronics Inc.
Communicator (Transmitter)
Model: IDF-201TX
Configuration: Transmit Mode

Date: 01/26/06
Lab: B
Tested By: James Ross

Duty Cycle: -7.237

Antenna in the X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	87.23	H	100.2	-12.97	Peak	1	180	
418	79.993	H	80.2	-0.207	Avg	1	180	
836	50.28	H	80.2	-29.92	Peak	1	0	
836	43.043	H	60.2	-17.157	Avg	1	0	
1254		H	74	-74	Peak			No harmonic found
1254	-7.237	H	54	-61.237	Avg			
1672	42.56	H	74	-31.44	Peak	1.21	25	
1672	35.323	H	54	-18.677	Avg	1.21	25	
2090	41.9	H	80.2	-38.3	Peak	3.19	25	
2090	34.663	H	60.2	-25.537	Avg	3.19	25	
2508		H	80.2	-80.2	Peak			No harmonic found
2508	-7.237	H	60.2	-67.437	Avg			
2926		H	80.2	-80.2	Peak			No harmonic found
2926	-7.237	H	60.2	-67.437	Avg			
3344		H	80.2	-80.2	Peak			No harmonic found
3344	-7.237	H	60.2	-67.437	Avg			
3762		H	74	-74	Peak			No harmonic found
3762	-7.237	H	54	-61.237	Avg			
4180		H	74	-74	Peak			No harmonic found
4180	-7.237	H	54	-61.237	Avg			

FCC 15.231

Time Tronics Inc.
Communicator (Transmitter)
Model: IDF-201TX
Configuration: Transmit Mode

Date: 01/26/06
Lab: B
Tested By: James Ross

Duty Cycle: -7.237

Antenna in the Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	86.23	V	100.2	-13.97	Peak	1.25	135	
418	78.993	V	80.2	-1.207	Avg	1.25	135	
836	43.68	V	80.2	-36.52	Peak	1	315	
836	36.443	V	60.2	-23.757	Avg	1	315	
1254	35.42	V	74	-38.58	Peak	1.5	15	
1254	28.183	V	54	-25.817	Avg	1.5	15	
1672	40.6	V	74	-33.4	Peak	2.4	35	
1672	33.363	V	54	-20.637	Avg	2.4	35	
2090	43.45	V	80.2	-36.75	Peak	3.3	25	
2090	36.213	V	60.2	-23.987	Avg	3.3	25	
2508		V	80.2	-80.2	Peak			No harmonic found
2508	-7.237	V	60.2	-67.437	Avg			
2926	41.07	V	80.2	-39.13	Peak	1.6	35	
2926	33.833	V	60.2	-26.367	Avg	1.6	35	
3344	40.42	V	80.2	-39.78	Peak	2.1	25	
3344	33.183	V	60.2	-27.017	Avg	2.1	25	
3762	42.61	V	74	-31.39	Peak	1	5	
3762	35.373	V	54	-18.627	Avg	1	5	
4180		V	74	-74	Peak			No harmonic found
4180	-7.237	V	54	-61.237	Avg			

FCC 15.231

Time Tronics Inc.
Communicator (Transmitter)
Model: IDF-201TX
Configuration: Transmit Mode

Date: 01/26/06
Lab: B
Tested By: James Ross

Duty Cycle: -7.237

Antenna in the Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	74.73	H	100.2	-25.47	Peak	1.5	180	
418	67.493	H	80.2	-12.707	Avg	1.5	180	
836	35.68	H	80.2	-44.52	Peak	2	90	
836	28.443	H	60.2	-31.757	Avg	2	90	
1254	33.74	H	74	-40.26	Peak	1.6	0	
1254	26.503	H	54	-27.497	Avg	1.6	0	
1672	40.26	H	74	-33.74	Peak	1.7	45	
1672	33.023	H	54	-20.977	Avg	1.7	45	
2090	42.77	H	80.2	-37.43	Peak	1	350	
2090	35.533	H	60.2	-24.667	Avg	1	350	
2508		H	80.2	-80.2	Peak			No harmonic found
2508	-7.237	H	60.2	-67.437	Avg			
2926		H	80.2	-80.2	Peak			No harmonic found
2926	-7.237	H	60.2	-67.437	Avg			
3344		H	80.2	-80.2	Peak			No harmonic found
3344	-7.237	H	60.2	-67.437	Avg			
3762		H	74	-74	Peak			No harmonic found
3762	-7.237	H	54	-61.237	Avg			
4180		H	74	-74	Peak			No harmonic found
4180	-7.237	H	54	-61.237	Avg			

Configuration: Transmit Mode

Tested By: James Ross

Antenna in the X-Axis (worst case)

[illegible]

-20 dB BANDWIDTH

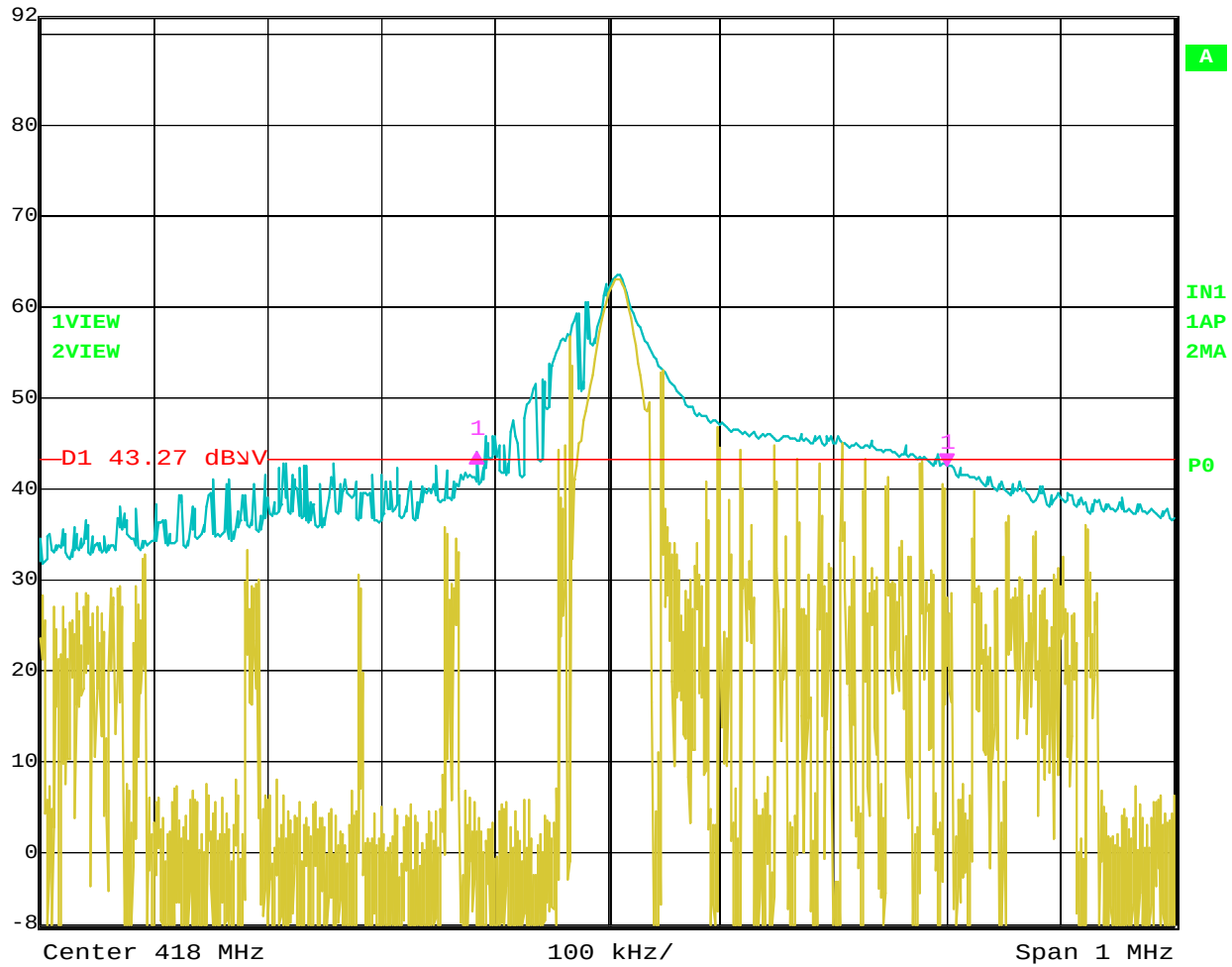
DATA SHEET



Ref Lvl
92 dBμV

Delta 1 [T2]
1.73 dB
-414.82965932 kHz

RBW 30 kHz RF Att 10 dB
VBW 100 kHz
SWT 5.5 ms Unit dBμV



Date: 30.JAN.2006 18:53:51

Bandwidth 20 dB for the Fundamental Frequency