FCC PART 15, SUBPART B AND C
TEST METHOD: ANSI C63.4-1992

for

900 MHz INDUSTRIAL CONTROLLER - Tx

Model: RE6900T

Prepared for

ROWE ELECTRONICS
P.O. BOX 1301
DES MOINES, IOWA 50305-1301

Prepared by: Kyle Fujimoto

KYLE FUJIMOTO

Approved by: Scott McCutchan

SCOTT McCUTCHAN

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BREA, CALIFORNIA 92823
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DATE: NOVEMBER 12, 1999

	REPORT	APPENDICES				TOTAL
	BODY	*A*	*B*	*C*	*D*	
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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 in any form unless done so in full with 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:	900 MHz Industrial Controller - Tx Model: RE6900T S/N: N/A
Product Description:	See Expository Statement.
Modifications:	The EUT was not modified during the testing.
Manufacturer:	Rowe Electronics P.O. Box 1301 Des Moines, Iowa 50305-1301
Test Date:	November 11, 1999
Test Specifications:	EMI requirements CFR Title 47, Part 15 Subpart C, Sections 15.205 and 15.249
Test Procedure:	ANSI C63.4: 1992
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 450 kHz - 30 MHz	This test was not performed because the battery charge circuit operates on a 7500 Hz oscillator and it disables the rest of the circuit when it is connected to the charging transformer. Only the battery charge circuit is operational when the charging transformer is plugged in, with all other functions (including the transmitter) turned off.
2	Radiated RF Emissions, 9 kHz - 4200 MHz	Complies with the limits of CFR Title 47, Part 15, Subpart B and Subpart C, sections 15.205 and 15.249

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the 900 MHz Industrial Controller - Tx Model: RE6900T. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 1992. 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 by CFR Title 47, Part 15, Subpart B and Subpart C, sections 15.205 and 15.249.

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

Rowe Electronics

Rick McIntosh	Engineer
Steven D. Rowe	President

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
Scott McCutchan	Lab Manager

2.4 Date Test Sample was Received

The test sample was received on November 10, 1999

2.5 Disposition of the Test Sample

The test sample was returned to Rowe Electronics on November 12, 1999.

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
CFR Title 47, Subpart C.	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
ANSI C63.4 1992	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 900 MHz Industrial Controller - Tx Model: RE6900T (EUT) was tested as a stand alone unit. The EUT is powered by two internal batteries. The EUT was tested in three orthogonal axis and was transmitting data on a continuous basis. The antenna and connector on the PCB have a reverse SMA connector.

Note: The EUT has a port that usually connects to an AC Adapter. This port is only to charge the internal batteries and plugging an AC Adapter into the port causes all circuitry except for the battery charge circuit to shut off. The battery charge circuit highest operating frequency is only 7.5 kHz and thus is exempt from FCC testing.

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

4.1.1 Cable Construction and Termination

Cable 1 This is a 6 foot unshielded cable connecting the EUT to the AC Adapter. It has a power connector at the EUT end and is hard wired into the AC Adapter.

Note: The cable described above was not attached to the EUT during the testing. This is because the AC Adapter is only used to charge the internal batteries and causes the EUT to shut off all circuitry except for the battery charging circuit. The battery charging circuit's highest operating frequency is only 7.5 kHz and thus is exempt from FCC testing.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
900 MHz INDUSTRIAL CONTROLLER - Tx (EUT)	ROWE ELECTRONICS	RE6900T	N/A	**OOPRE6900T**
AC ADAPTER	CUI STACK	DV-1250	N/A	**N/A**

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Spectrum Analyzer	Hewlett Packard	8566B	3638A08768	Dec. 11, 1998	Dec. 11, 1999
Preamplifier	Com Power	PA-102	1017	Jan. 16, 1999	Jan. 16, 2000
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	July 14, 1999	July 14, 2000
Biconical Antenna	Com Power	AB-100	1548	Oct. 14, 1999	Oct. 14, 2000
Log Periodic Antenna	Com Power	AL-100	16039	Oct. 14, 1999	Oct. 14, 2000
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Hewlett Packard	HP98561A	2522A05178	N/A	N/A
Printer	Hewlett Packard	2225A	2925S33268	N/A	N/A
Plotter	Hewlett Packard	7440A	8726K38417	N/A	N/A
Microwave Preamplifier	Hewlett Packard	8449B	3008A008766	Jan. 30, 1999	Jan. 30, 2000
Horn Antenna	Antenna Research	DRG-118/A	1053	Dec. 8, 1995	N/A
Loop Antenna	Com-Power	AL-130	25309	April 13, 1999	April 13, 2000

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-102 was used for frequencies from 30 MHz to 1 GHz, and the Hewlett Packard Microwave Preamplifier Model: 8449B 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 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 1 Hz and slowing the sweep time to keep the amplitude reading calibrated. 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 9.3 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: 1992. 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 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.

7.2 Band Edge Plots of the Low and High Channels

Spectral plots of both the low and high channels were taken of the EUT to show that the emissions at the band edges (902 and 928 MHz) were attenuated by at least 50 dB below the level of the fundamental or to the general radiated emissions limits in FCC Title 47, Subpart C, section 15.209, whichever is the lesser attenuation. Please see Appendix D for the spectral plots and data sheets.

The spectral plots were taken at a distance of 3 meters, using the PA-102 Preamplifier to boost the signal level of any potential emissions outside the band edges. The data sheets will show the readings at 902 MHz and 928 MHz corrected for factors.

8. CONCLUSIONS

The 900 MHz Industrial Controller - Tx Model: RE6900T meets all of the specification limits defined in CFR Title 47, Part 15, Subpart C, sections 15.205 and 15.249.

APPENDIX A

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.249 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.

Modifications:

No modifications were made to the EUT.

APPENDIX B

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

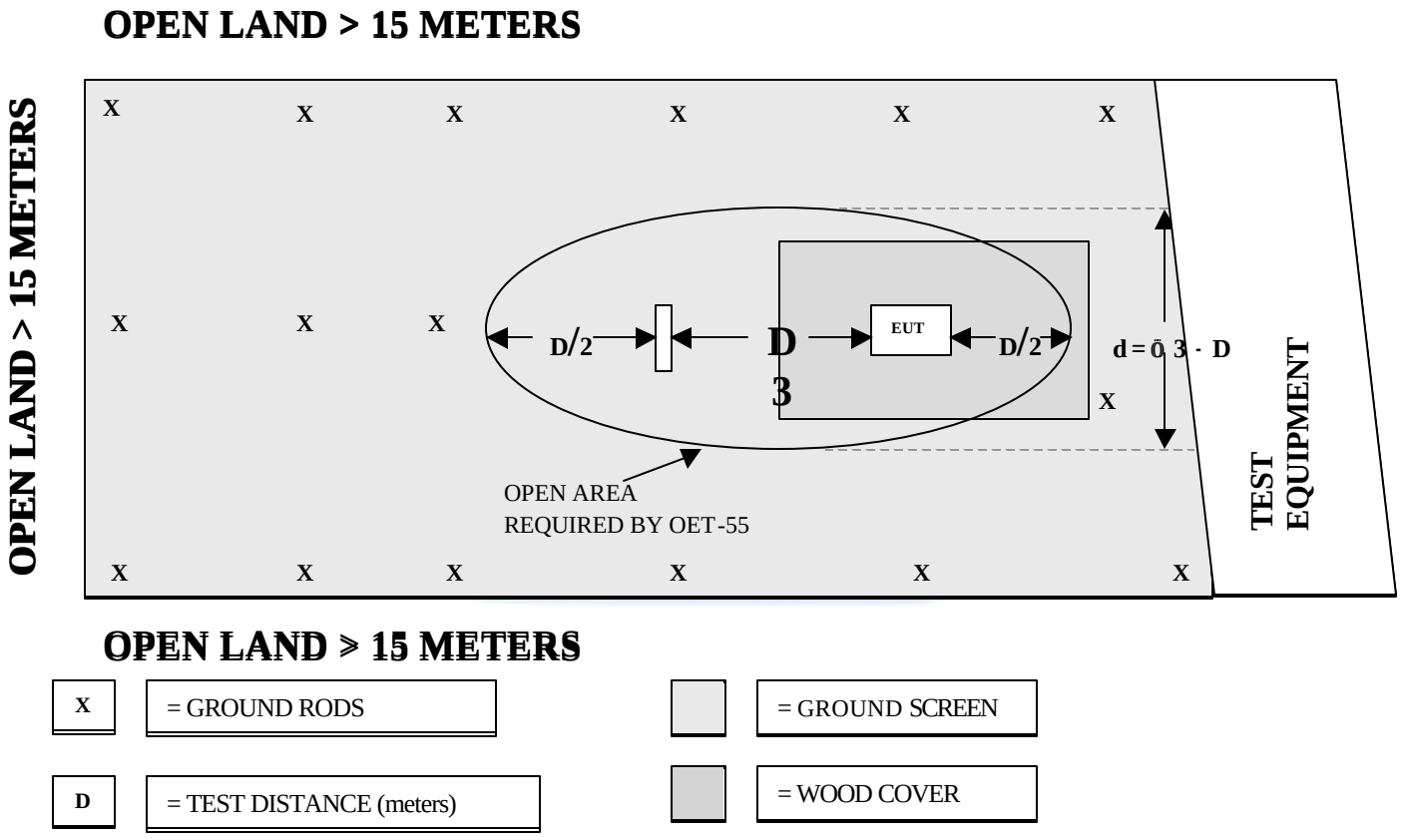
USED FOR THE PRIMARY TEST	900 MHz Industrial Controller - Tx Model: RE6900T S/N: N/A

There were no additional models covered under this report.

APPENDIX C

DIAGRAMS, CHARTS AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE



FRONT VIEW

ROWE ELECTRONICS
900 MHz INDUSTRIAL CONTROLLER - Tx
MODEL: RE6900T
FCC SUBPART C - RADIATED EMISSIONS – 11-11-99

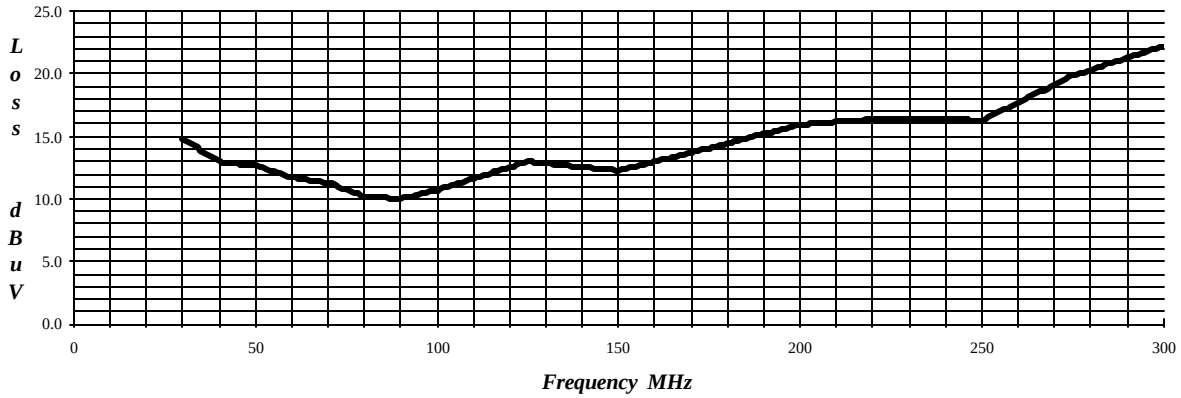
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

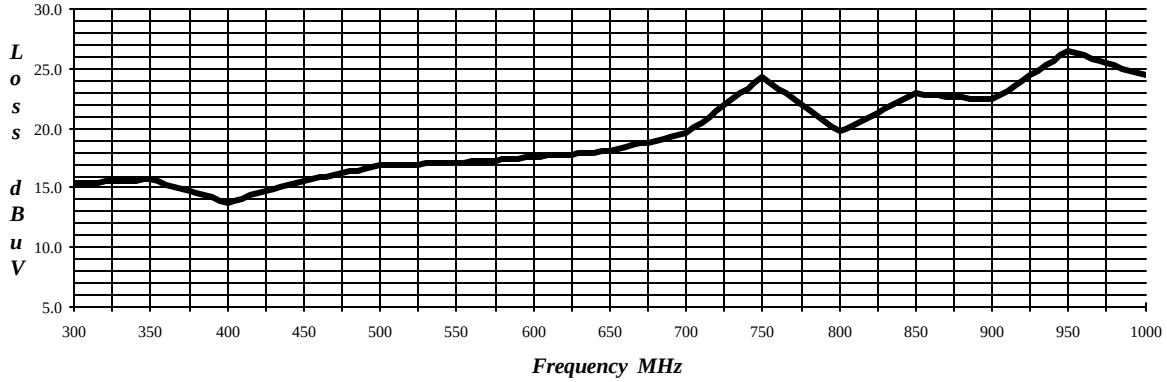
ROWE ELECTRONICS
900 MHz INDUSTRIAL CONTROLLER - Tx
MODEL: RE6900T
FCC SUBPART C - RADIATED EMISSIONS – 11-11-99

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

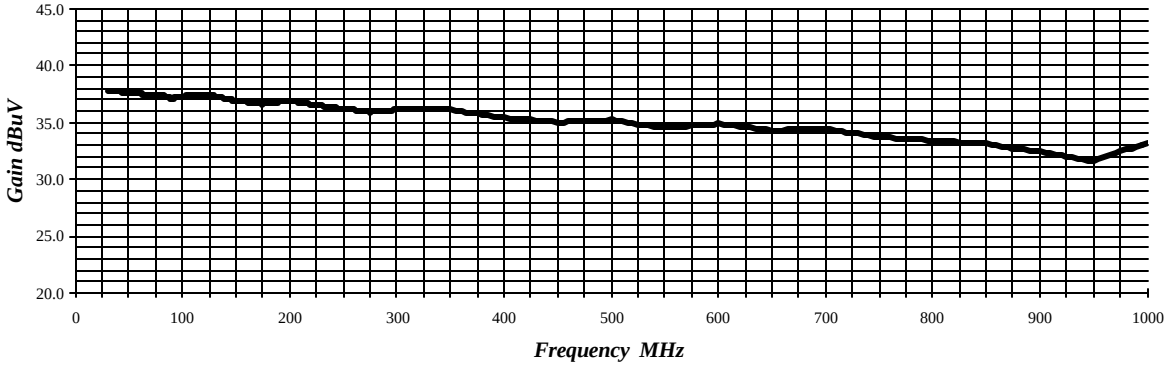
LAB "D" BICONICAL ANTENNA AB-100 S/N 01548 Cal: 10-14-99



LAB "D" LOG PERIODIC ANTENNA AL-100 S/N 16039 Cal: 10-14-99



PREAMPLIFIER EFFECTIVE GAIN AT 3 METERS PA-102 S/N: 1017 Lab "D"
Effective 1-16-99



HEWLETT PACKARD 8449B

MICROWAVE PREAMPLIFIER

S/N: 3008A008766

CALIBRATION DATE: JANUARY 30, 1999

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	36.9	10.5	34.1
1.1	36.3	11.0	33.7
1.2	36.4	11.5	34.0
1.3	36.2	12.0	33.9
1.4	36.3	12.5	34.4
1.5	35.7	13.0	32.9
1.6	35.9	13.5	31.6
1.7	35.7	14.0	31.8
1.8	35.6	14.5	31.9
1.9	35.5	15.0	32.2
2.0	35.4	15.5	32.8
2.5	35.6	16.0	32.4
3.0	35.2	16.5	32.1
3.5	35.2	17.0	32.3
4.0	34.3	17.5	30.3
4.5	34.1	18.0	31.5
5.0	34.3	18.5	31.2
5.5	33.0	19.0	32.2
6.0	34.1	19.5	32.0
6.5	34.5	20.0	32.0
7.0	34.3	20.5	33.2
7.5	33.9	21.0	30.9
8.0	34.5	22.0	32.1
8.5	34.5	23.0	32.8
9.0	34.4	24.0	32.9
9.5	34.3	25.0	32.3
10.0	33.7	26.0	32.6

ANTENNA RESEARCH ASSOCIATES, INC.
11317 Frederick Avenue, Beltsville, MD 20705

E-FIELD ANTENNA FACTOR CALIBRATION

E(dB V/m) = Vo(dB V) + AFE(dB/m)

Model number : DRG-118/A

Frequency GHz	AFE dB/m	Gain dBi
1	22.3	8.0
2	26.7	9.5
3	29.7	10.1
4	29.5	12.8
5	32.3	12.0
6	32.4	13.4
7	36.1	11.0
8	37.4	10.9
9	36.8	12.5
10	39.5	10.7
11	39.6	11.5
12	39.8	12.0
13	39.7	12.8
14	41.8	11.3
15	41.9	11.9
16	38.1	16.3
17	41.0	13.9
18	46.5	8.9

Serial number : 1053
Job number : 96-092
Remarks : 3 meter calibration
Standards : LPD-118/A, TE-1000

Temperature : 72° F
Humidity : 56 %
Traceability : A01887
Date : December 08, 1995

Calibrated By

Com-Power Corporation

(949) 587-9800

Antenna Calibration

Antenna Type:	Loop Antenna
Model:	AL-130
Serial Number:	25309
Calibration Date:	4/13/99

Frequency MHz	Magnetic (dB/m)	Electric dB/m
0.01	-40.6	10.9
0.02	-41.5	10.0
0.03	-39.9	11.6
0.04	-40.2	11.3
0.05	-41.5	10.0
0.06	-41.1	10.4
0.07	-41.3	10.2
0.08	-41.6	9.9
0.09	-41.7	9.8
0.1	-41.7	9.8
0.2	-44.0	7.5
0.3	-41.6	9.9
0.4	-41.6	9.9
0.5	-41.7	9.8
0.6	-41.5	10.0
0.7	-41.4	10.1
0.8	-41.5	10.0
0.9	-41.6	9.9
1	-41.2	10.3
2	-40.5	11.0
3	-40.8	10.7
4	-41.0	10.5
5	-40.5	11.0
6	-40.5	11.0
7	-40.7	10.8
8	-40.8	10.7
9	-40.1	11.4
10	-40.4	11.1
12	-41.0	10.5
14	-42.1	9.4
15	-42.3	9.2
16	-42.7	8.8
18	-41.0	10.5
20	-41.1	10.4
25	-43.4	8.1
30	-45.3	6.2

Trans. Antenna Height	2 meter
Receiving Antenna Height	2 meter

APPENDIX D

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

Test location: Compatible Electronics
Customer : ROWE ELECTRONICS
Manufacturer : ROWE ELECTRONICS
EUT name : 900 MHz INDUSTRIAL CONTROLLER - TX
Specification: Fcc_B Test distance: 3.0 mtrs
Distance correction factor(20*log(test/spec)) :
Test Mode : TEMPERATURE 65 DEGREES F.
RELATIVE HUMIDITY 75%
TESTED BY: Kyle Fujimoto
KYLE FUJIMOTO

Date : 11/11/1999
Time : 14.10
Model: RE6900T
Lab: D
0.00

NO SPURIOUS EMISSIONS FOUND FOR THE TRANSMITTER
FROM 9 kHz TO 9300 MHz IN EITHER POLARIZATION

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
903.3000	56.3	56.2 A	H	1.0	90	X	LOW	22.7	5.0	0.0	83.9	-10.1	94.0	
903.3000	49.9	49.8 A	H	1.0	180	Y	LOW	22.7	5.0	0.0	77.5	-16.5	94.0	
903.3000	50.8	50.7 A	H	1.5	90	Z	LOW	22.7	5.0	0.0	78.4	-15.6	94.0	
903.3000	50.2	50.1 A	V	2.5	90	X	LOW	22.7	5.0	0.0	77.8	-16.2	94.0	
903.3000	51.0	50.9 A	V	1.0	0	Y	LOW	22.7	5.0	0.0	78.6	-15.4	94.0	
903.3000	56.7	56.6 A	V	1.5	90	Z	LOW	22.7	5.0	0.0	84.3	-9.7	94.0	
912.4000	54.2	54.1 A	H	1.0	90	X	MID	23.4	4.9	0.0	82.4	-11.6	94.0	
912.4000	47.5	47.4 A	H	2.0	180	Y	MID	23.4	4.9	0.0	75.7	-18.3	94.0	
912.4000	53.7	53.6 A	H	1.5	270	Z	MID	23.4	4.9	0.0	81.9	-12.1	94.0	
912.4000	46.3	46.2 A	V	1.0	90	X	MID	23.4	4.9	0.0	74.5	-19.5	94.0	
912.4000	54.8	54.7 A	V	1.0	0	Y	MID	23.4	4.9	0.0	83.0	-11.0	94.0	
912.4000	52.7	52.6 A	V	1.5	180	Z	MID	23.4	4.9	0.0	80.9	-13.1	94.0	
921.3000	47.0	46.9 A	H	1.5	180	X	HI	24.2	4.8	0.0	75.9	-18.1	94.0	
921.3000	46.7	46.6 A	H	2.0	0	Y	HI	24.2	4.8	0.0	75.6	-18.4	94.0	
921.3000	44.1	44.0 A	H	1.5	270	Z	HI	24.2	4.8	0.0	73.0	-21.0	94.0	
921.3000	45.4	45.3 A	V	1.0	270	X	HI	24.2	4.8	0.0	74.3	-19.7	94.0	
921.3000	51.0	50.9 A	V	1.0	0	Y	HI	24.2	4.8	0.0	79.9	-14.1	94.0	
921.3000	45.5	45.4 A	V	1.0	270	Z	HI	24.2	4.8	0.0	74.4	-19.6	94.0	

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

** DELTA = SPEC LIMIT - CORRECTED READING

COMPATIBLE ELECTRONICS

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
1806.6000	57.2	55.8 A	H	1.0	270	X	LOW	24.5	3.5	35.6	48.2	-5.8	54.0	
1806.6000	58.9	58.2 A	H	1.5	270	Y	LOW	24.5	3.5	35.6	50.6	-3.4	54.0	
1806.6000	54.1	52.5 A	H	3.0	180	Z	LOW	24.5	3.5	35.6	44.9	-9.1	54.0	
1806.6000	56.8	55.7 A	V	1.0	90	X	LOW	24.5	3.5	35.6	48.1	-5.9	54.0	
1806.6000	59.0	58.2 A	V	1.0	90	Y	LOW	24.5	3.5	35.6	50.6	-3.4	54.0	
1806.6000	58.2	57.3 A	V	1.0	90	Z	LOW	24.5	3.5	35.6	49.7	-4.3	54.0	
1824.8000	58.5	57.7 A	H	1.5	0	X	MID	24.5	3.5	35.6	50.1	-3.9	54.0	
1824.8000	57.9	57.1 A	H	1.5	0	Y	MID	24.5	3.5	35.6	49.5	-4.5	54.0	
1824.8000	57.5	56.4 A	H	2.5	180	Z	MID	24.5	3.5	35.6	48.8	-5.2	54.0	
1824.8000	60.8	59.9 A	V	1.0	0	X	MID	24.5	3.5	35.6	52.3	-1.7	54.0	
1824.8000	60.8	60.1 A	V	2.0	0	Y	MID	24.5	3.5	35.6	52.5	-1.5	54.0	
1824.8000	61.2	60.6 A	V	1.0	180	Z	MID	24.5	3.5	35.6	53.0	-1.0	54.0	
1842.6000	56.7	55.3 A	H	2.0	180	X	HI	24.5	3.5	35.6	47.7	-6.3	54.0	
1842.6000	60.8	60.2 A	H	2.0	180	Y	HI	24.5	3.5	35.6	52.6	-1.4	54.0	
1842.6000	58.6	57.9 A	H	1.0	180	Z	HI	24.5	3.5	35.6	50.3	-3.7	54.0	
1842.6000	60.4	59.7 A	V	1.0	180	X	HI	24.5	3.5	35.6	52.1	-1.9	54.0	
1842.6000	59.6	58.6 A	V	1.5	90	Y	HI	24.5	3.5	35.6	51.0	-3.0	54.0	
1842.6000	59.5	57.7 A	V	1.0	0	Z	HI	24.5	3.5	35.6	50.1	-3.9	54.0	

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

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2709.9000	46.7	40.8 A	H	1.5	90	X	LOW	28.2	4.5	35.6	37.9	-16.1	54.0	
2709.9000	50.0	47.3 A	H	2.5	90	Y	LOW	28.2	4.5	35.6	44.4	-9.6	54.0	
2709.9000	48.7	45.1 A	H	1.0	90	Z	LOW	28.2	4.5	35.6	42.2	-11.8	54.0	
2709.9000	47.3	42.2 A	V	1.0	90	X	LOW	28.2	4.5	35.6	39.3	-14.7	54.0	
2709.9000	46.4	41.1 A	V	2.5	90	Y	LOW	28.2	4.5	35.6	38.2	-15.8	54.0	
2709.9000	50.9	48.3 A	V	1.0	90	Z	LOW	28.2	4.5	35.6	45.4	-8.6	54.0	
2737.2000	54.1	51.1 A	H	1.0	0	X	MID	28.2	4.5	35.6	48.2	-5.8	54.0	
2737.2000	52.5	50.1 A	H	1.5	0	Y	MID	28.2	4.5	35.6	47.2	-6.8	54.0	
2737.2000	52.7	50.0 A	H	2.0	180	Z	MID	28.2	4.5	35.6	47.1	-6.9	54.0	
2737.2000	53.4	51.3 A	V	1.0	0	X	MID	28.2	4.5	35.6	48.4	-5.6	54.0	
2737.2000	54.2	52.0 A	V	1.5	180	Y	MID	28.2	4.5	35.6	49.1	-4.9	54.0	
2737.2000	54.4	51.6 A	V	2.0	180	Z	MID	28.2	4.5	35.6	48.7	-5.3	54.0	
2763.9000	48.8	45.1 A	H	3.0	90	X	HI	29.7	4.6	35.2	44.2	-9.8	54.0	
2763.9000	53.8	52.5 A	H	1.0	180	Y	HI	29.7	4.6	35.2	51.6	-2.4	54.0	
2763.9000	46.9	41.3 A	H	1.0	90	Z	HI	29.7	4.6	35.2	40.4	-13.6	54.0	
2763.9000	47.9	44.0 A	V	1.0	90	X	HI	29.7	4.6	35.2	43.1	-10.9	54.0	
2763.9000	50.5	47.4 A	V	1.0	90	Y	HI	29.7	4.6	35.2	46.5	-7.5	54.0	
2763.9000	49.8	46.1 A	V	1.0	180	Z	HI	29.7	4.6	35.2	45.2	-8.8	54.0	

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

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
3613.2000	49.6	46.7 A	H	2.0	90	X	LOW	29.6	5.0	35.2	46.1	-7.9	54.0	
3613.2000	49.8	47.3 A	H	2.0	180	Y	LOW	29.6	5.0	35.2	46.7	-7.3	54.0	
3613.2000	52.6	50.7 A	H	1.5	90	Z	LOW	29.6	5.0	35.2	50.1	-3.9	54.0	
3613.2000	48.1	44.3 A	V	1.5	180	X	LOW	29.6	5.0	35.2	43.7	-10.3	54.0	
3613.2000	48.3	43.7 A	V	1.5	180	Y	LOW	29.6	5.0	35.2	43.1	-10.9	54.0	
3613.2000	48.5	45.2 A	V	1.5	0	Z	LOW	29.6	5.0	35.2	44.6	-9.4	54.0	
3649.6000	54.0	51.8 A	H	2.0	90	X	MID	29.6	5.0	35.2	51.2	-2.8	54.0	
3649.6000	49.6	45.0 A	H	1.0	90	Y	MID	29.6	5.0	35.2	44.4	-9.6	54.0	
3649.6000	52.9	50.2 A	H	2.0	90	Z	MID	29.6	5.0	35.2	49.6	-4.4	54.0	
3649.6000	52.1	49.1 A	V	2.0	180	X	MID	29.6	5.0	35.2	48.5	-5.5	54.0	
3649.6000	54.6	51.4 A	V	2.0	0	Y	MID	29.6	5.0	35.2	50.8	-3.2	54.0	
3649.6000	52.6	49.9 A	V	2.0	180	Z	MID	29.6	5.0	35.2	49.3	-4.7	54.0	
3685.2000	51.6	49.7 A	H	3.0	90	X	HI	29.6	5.0	35.2	49.1	-4.9	54.0	
3685.2000	52.3	49.7 A	H	1.0	0	Y	HI	29.6	5.0	35.2	49.1	-4.9	54.0	
3685.2000	48.9	45.7 A	H	1.0	180	Z	HI	29.6	5.0	35.2	45.1	-8.9	54.0	
3685.2000	49.9	47.3 A	V	1.0	0	X	HI	29.6	5.0	35.2	46.7	-7.3	54.0	
3685.2000	54.6	53.3 A	V	1.5	0	Y	HI	29.6	5.0	35.2	52.7	-1.3	54.0	
3685.2000	50.1	47.7 A	V	1.0	0	Z	HI	29.6	5.0	35.2	47.1	-6.9	54.0	

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

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
4516.5000	48.9	45.5 A	H	1.5	90	X	LOW	30.9	5.6	34.1	47.9	-6.1	54.0	
4516.5000	50.8	48.1 A	H	1.5	90	Y	LOW	30.9	5.6	34.1	50.5	-3.5	54.0	
4516.5000	49.1	45.4 A	V	1.5	90	Z	LOW	30.9	5.6	34.1	47.8	-6.2	54.0	
4516.5000	50.8	48.1 A	V	1.5	90	X	LOW	30.9	5.6	34.1	50.5	-3.5	54.0	
4516.5000	49.1	45.4 A	V	1.5	90	Y	LOW	30.9	5.6	34.1	47.8	-6.2	54.0	
4516.5000	52.3	50.1 A	V	1.5	90	Z	LOW	30.9	5.6	34.1	52.5	-1.5	54.0	
4562.0000	46.7	41.1 A	H	2.5	0	X	MID	30.9	5.6	34.1	43.5	-10.5	54.0	
4562.0000	50.1	45.1 A	H	1.0	90	Y	MID	30.9	5.6	34.1	47.5	-6.5	54.0	
4562.0000	51.3	46.6 A	H	2.5	90	Z	MID	30.9	5.6	34.1	49.0	-5.0	54.0	
4562.0000	52.5	48.5 A	V	1.5	0	X	MID	30.9	5.6	34.1	50.9	-3.1	54.0	
4562.0000	51.9	48.8 A	V	2.0	180	Y	MID	30.9	5.6	34.1	51.2	-2.8	54.0	
4562.0000	50.5	46.2 A	V	2.5	0	Z	MID	30.9	5.6	34.1	48.6	-5.4	54.0	
4606.5000	47.4	43.4 A	H	2.0	90	X	HI	30.9	5.6	34.1	45.8	-8.2	54.0	
4606.5000	49.4	46.7 A	H	1.0	90	Y	HI	30.9	5.6	34.1	49.1	-4.9	54.0	
4606.5000	46.8	41.8 A	H	2.0	90	Z	HI	30.9	5.6	34.1	44.2	-9.8	54.0	
4606.5000	48.1	45.0 A	V	2.0	90	X	HI	30.9	5.6	34.1	47.4	-6.6	54.0	
4606.5000	46.7	42.3 A	V	1.0	180	Y	HI	30.9	5.6	34.1	44.7	-9.3	54.0	
4606.5000	46.5	41.3 A	V	1.0	180	Z	HI	30.9	5.6	34.1	43.7	-10.3	54.0	

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

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
5419.8000	44.5	38.8 A	H	2.0	90	X	LOW	32.4	6.0	33.0	44.2	-9.8	54.0	
5419.8000	48.4	44.4 A	H	2.0	90	Y	LOW	32.4	6.0	33.0	49.8	-4.2	54.0	
5419.8000	44.6	39.8 A	H	1.0	180	Z	LOW	32.4	6.0	33.0	45.2	-8.8	54.0	
5419.8000	47.4	43.2 A	V	1.5	90	X	LOW	32.4	6.0	33.0	48.6	-5.4	54.0	
5419.8000	44.9	38.3 A	V	2.0	180	Y	LOW	32.4	6.0	33.0	43.7	-10.3	54.0	
5419.8000	47.0	42.6 A	V	1.0	180	Z	LOW	32.4	6.0	33.0	48.0	-6.0	54.0	
5474.4000	45.0	37.1 A	H	1.0	90	X	MID	32.4	6.0	33.0	42.5	-11.5	54.0	
5474.4000	43.6	39.6 A	H	1.0	270	Y	MID	32.4	6.0	33.0	45.0	-9.0	54.0	
5474.4000	46.9	41.3 A	H	2.0	0	Z	MID	32.4	6.0	33.0	46.7	-7.3	54.0	
5474.4000	46.4	39.3 A	V	2.0	90	X	MID	32.4	6.0	33.0	44.7	-9.3	54.0	
5474.4000	46.5	37.6 A	V	2.0	0	Y	MID	32.4	6.0	33.0	43.0	-11.0	54.0	
5474.4000	45.5	36.9 A	V	2.5	270	Z	MID	32.4	6.0	33.0	42.3	-11.7	54.0	
5527.8000	45.2	39.2 A	H	2.5	90	X	HI	32.4	6.0	33.0	44.6	-9.4	54.0	
5527.8000	45.3	39.0 A	H	2.5	90	Y	HI	32.4	6.0	33.0	44.4	-9.6	54.0	
5527.8000	46.0	39.1 A	H	2.5	90	Z	HI	32.4	6.0	33.0	44.5	-9.5	54.0	
5527.8000	42.2	35.1 A	V	2.0	90	X	HI	32.4	6.0	33.0	40.5	-13.5	54.0	
5527.8000	40.3	33.6 A	V	1.0	180	Y	HI	32.4	6.0	33.0	39.0	-15.0	54.0	
5527.8000	45.4	38.3 A	H	1.0	180	Z	HI	32.4	6.0	33.0	43.7	-10.3	54.0	

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

** DELTA = SPEC LIMIT - CORRECTED READING

COMPATIBLE ELECTRONICS

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
6323.1000	43.8	36.6 A	H	1.0	0	X	LOW	34.3	6.9	34.5	43.3	-10.7	54.0	
6323.1000	43.3	35.3 A	H	1.0	180	Y	LOW	34.3	6.9	34.5	42.0	-12.0	54.0	
6323.1000	43.6	35.9 A	H	1.0	90	Z	LOW	34.3	6.9	34.5	42.6	-11.4	54.0	
6323.1000	43.7	36.9 A	V	1.0	0	X	LOW	34.3	6.9	34.5	43.6	-10.4	54.0	
6323.1000	43.1	33.8 A	V	1.0	180	Y	LOW	34.3	6.9	34.5	40.5	-13.5	54.0	
6323.1000	44.0	36.6 A	V	1.0	180	Z	LOW	34.3	6.9	34.5	43.3	-10.7	54.0	
6386.8000	42.0	33.2 A	H	1.5	0	X	MID	34.3	6.9	34.5	39.9	-14.1	54.0	
6386.8000	40.1	31.3 A	H	1.0	90	X	MID	34.3	6.9	34.5	38.0	-16.0	54.0	
6386.8000	44.0	33.9 A	H	2.0	0	X	MID	34.3	6.9	34.5	40.6	-13.4	54.0	
6386.8000	45.4	35.6 A	V	2.0	180	X	MID	34.3	6.9	34.5	42.3	-11.7	54.0	
6386.8000	44.0	33.6 A	V	2.0	0	Y	MID	34.3	6.9	34.5	40.3	-13.7	54.0	
6386.8000	43.9	33.8 A	V	2.5	180	Z	MID	34.3	6.9	34.5	40.5	-13.5	54.0	
6449.1000	41.0	36.4 A	H	1.5	180	X	HI	34.3	6.9	34.5	43.1	-10.9	54.0	
6449.1000	40.2	33.3 A	H	1.0	180	Y	HI	34.3	6.9	34.5	40.0	-14.0	54.0	
6449.1000	40.3	32.5 A	H	1.0	180	Z	HI	34.3	6.9	34.5	39.2	-14.8	54.0	
6449.1000	42.7	31.6 A	V	1.0	90	X	HI	34.3	6.9	34.5	38.3	-15.7	54.0	
6449.1000	40.0	32.3 A	V	1.0	90	Y	HI	34.3	6.9	34.5	39.0	-15.0	54.0	
6449.1000	41.9	34.3 A	H	1.0	180	Z	HI	34.3	6.9	34.5	41.0	-13.0	54.0	

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

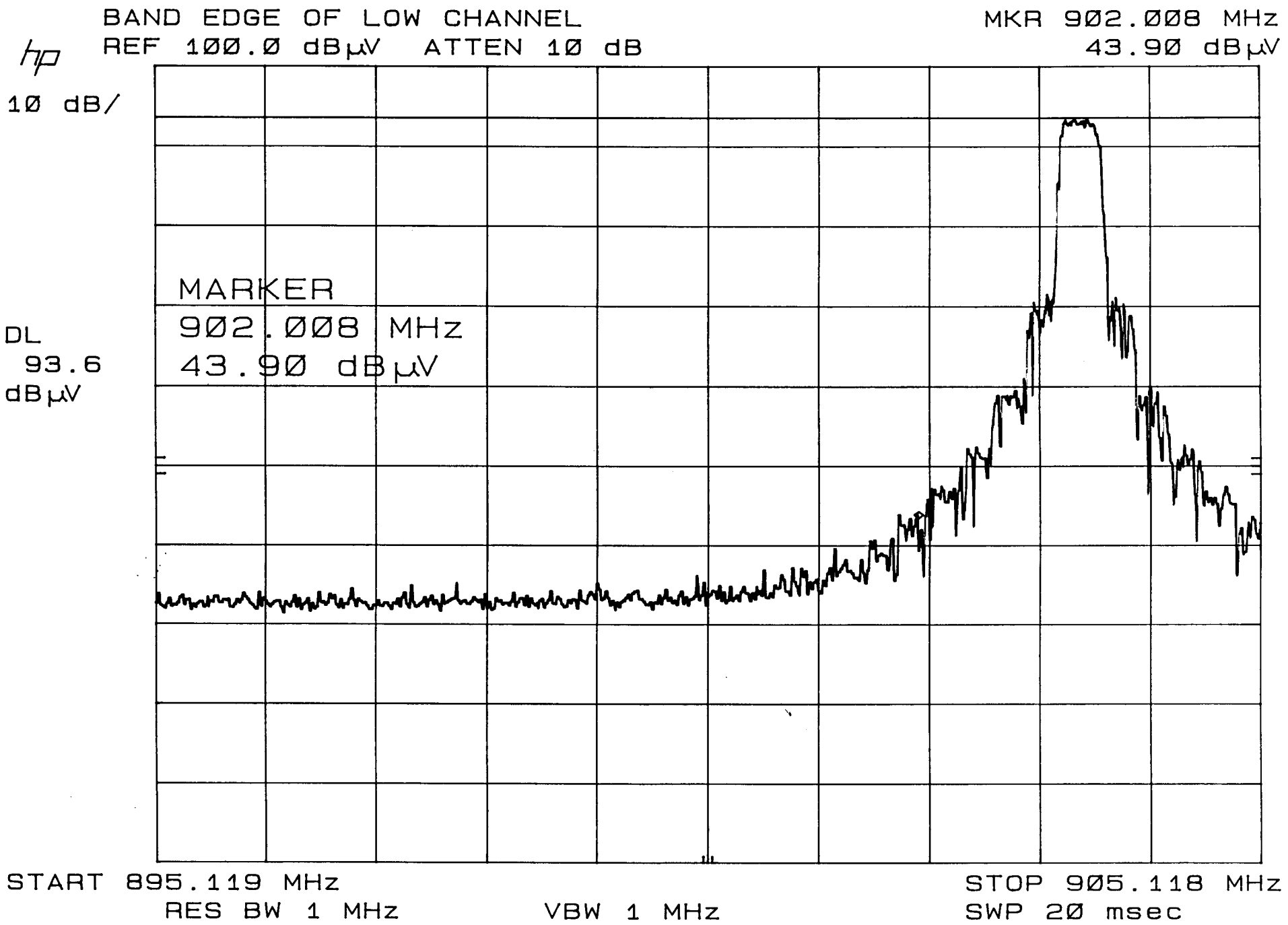
** DELTA = SPEC LIMIT - CORRECTED READING

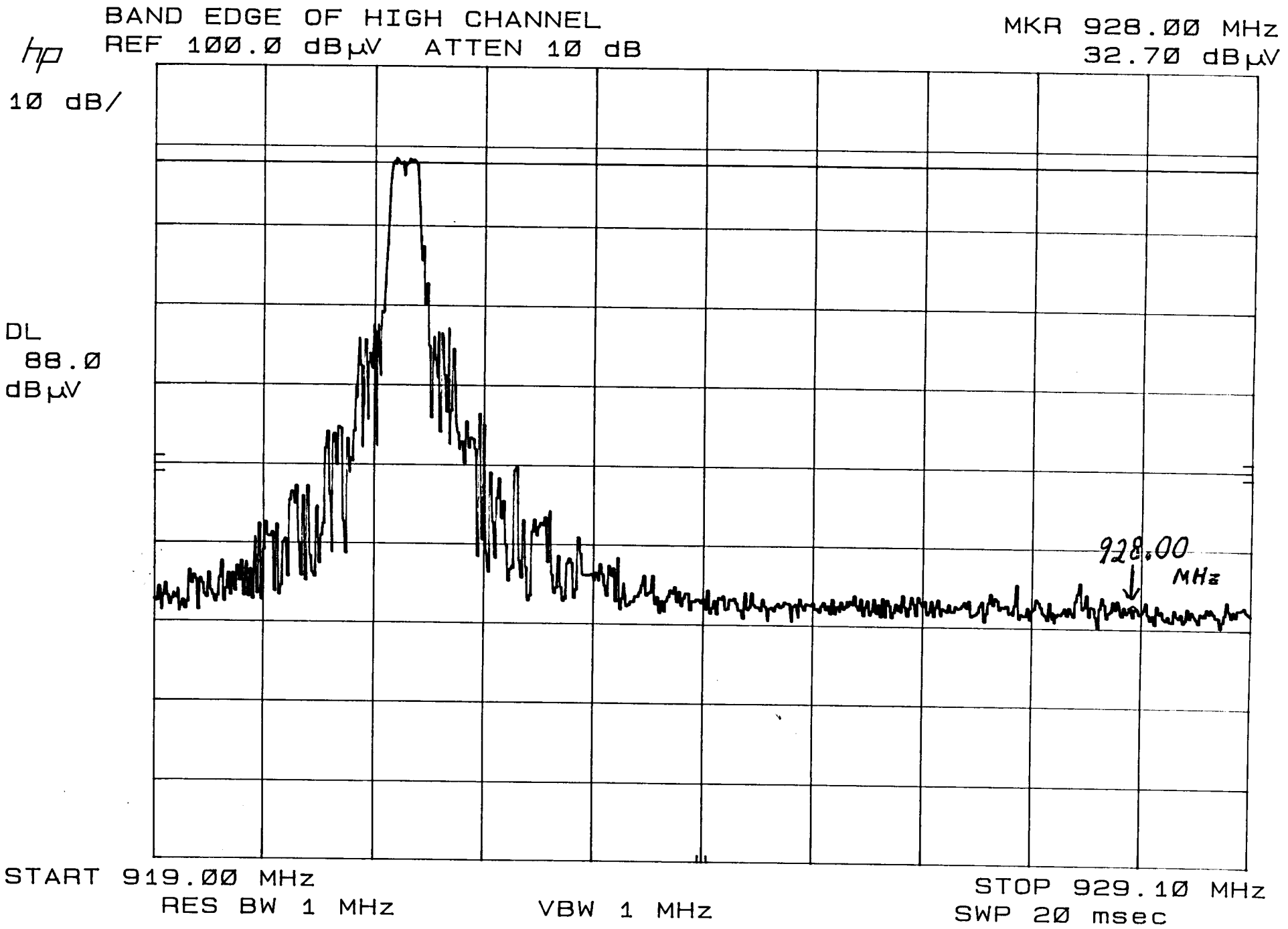
Note: No Harmonics Nor Emissions found after the 7th Hamrmonic

COMPATIBLE ELECTRONICS

BAND EDGES

DATA SHEETS


BAND EDGE OF LOW CHANNEL
MKR 902.008 MHz
REF 100.0 dBµV ATTEN 10 dB
43.90 dBµV
10 dB/
MARKER
902.008 MHz
43.90 dBµV
DL
93.6
dBµV
START 895.119 MHz
STOP 905.118 MHz
RES BW 1 MHz
VBW 1 MHz
SWP 20 msec


BAND EDGE OF HIGH CHANNEL
REF 100.0 dBµV ATTEN 10 dB
MKR 928.00 MHz
32.70 dBµV
10 dB/
DL
88.0
dBµV
928.00
MHz
START 919.00 MHz
RES BW 1 MHz
VBW 1 MHz
STOP 929.10 MHz
SWP 20 msec

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	ROWE ELECTRONICS	DATE	11/11/99
EUT	900 MHz INDUSTRIAL CONTROLLER - TX	DUTY CYCLE	N/A
MODEL	RE6900T	PEAK TO AVG	N/A
S/N	N/A	TEST DIST.	3 METERS
TEST ENGINEER	Kyle Fujimoto	LAB	D

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)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
902.0000	43.9	43.8 Q	V	1.0	90	X	LOW	22.6	5.0	37.4	34.0	-12.0	46.0	Band Edge at Low Channel
928.0000	32.7	32.6 Q	V	1.0	90	Y	HIGH	24.7	4.8	36.9	25.2	-20.8	46.0	Band Edge at High Channel
														Note: The Band Edges were
														taken at their worst case
														polarity and axis. The readings
														above represent the worst case

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

** DELTA = SPEC LIMIT - CORRECTED READING

COMPATIBLE ELECTRONICS