

APPLICATION FOR PART 90 TYPE CERTIFICATION

Com-Net Ericsson Critical Radio Systems, Inc.
1 Mountain View Road
Room 2725
Lynchburg, VA 24502
804-592-6202 (Michael Fulk)

MODEL: EDACS 300P
FCC ID: OWDTR0001-E

February 15, 2000

This report concerns (check one):		Original Grant: ☒	Class II Change:
Equipment Type: Transmitter			
Deferred grant requested per 47 CFR 0.457 (d) (1) (ii)?		Yes:	No: ☒
If yes, defer until:		_____	
		<i>Date</i>	
Company name agrees to notify the Commission by: _____ (date) of the intended date of announcement of the product so that the grant can be issued on that date.			

REPORT PREPARED BY:

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Rhein Tech Laboratories, Inc.

Document Number: 2000043 / QRTL00-230

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CLIENT: COM-NET ERICSSON CRITICAL RADIO SYSTEMS, INC.
EUT: EDACS-300P
CLIENT REFERENCE NUMBER: QRTL00-230
WORK ORDER NUMBER: 2000043
FCC ID: OWDTR0001-E

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1.0 GENERAL INFORMATION

The following application for Certification of an FCC Part 90 Type Certification, is prepared on behalf of Com-Net Ericsson Critical Radio Systems, Inc. in accordance with Part 2, and Part 90, of the Federal Communications Commissions rules and regulations. The Equipment Under Test (EUT) was the EDACS-300P. The test results reported in this document relate only to the item that was tested.

All measurements contained in this application were conducted in accordance with CFR 47, Part 90, ANSI C63.4 Methods of Measurement of Radio Noise Emissions, 1992. The instrumentation utilized for the measurements conforms to the ANSI C63.4 standard for EMI and Field Strength Instrumentation. Some accessories are used to increase sensitivity and prevent overloading of the measuring instruments. These are explained in the appendix of this report. Calibration checks are performed regularly on the instruments, and all accessories including the high pass filter, preamplifier and cables.

All radiated and conducted emissions measurement were performed manually at Rhein Tech, Incorporated. The radiated emissions measurements required by the rules were performed on the three meter, open field, test range maintained by Rhein Tech Laboratories, Inc., 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. Complete description and site attenuation measurement data have been placed on file with the Federal Communications Commission. The power line conducted emission measurements were performed in a shielded enclosure also located at the Herndon, Virginia facility. Rhein Tech Laboratories, Inc. is on the FCC accepted lab list as a facility available to do measurement work for others on a contract basis.

1.1 TEST METHODOLOGY

All tests were performed according to the procedures in FCC Part 90 and FCC Part 2. Field strength of spurious radiation testing was performed at an antenna to EUT distance of 3 meters. Additionally, RF power output, spurious emissions at antenna terminal, occupied bandwidth, frequency stability versus temperature and modulated characteristics were measured per FCC Rules and Regulations: CFR 47, part 90, October 1, 1997 and Part 2, October 1, 1997.

1.2 TEST FACILITY

The open area test site and conducted measurement facility used to collect the radiated data is located on the parking lot of Rhein Tech Laboratories, Inc. 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report dated March 3, 1994, submitted to and approved by the Federal Communication Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 1992).

1.3 RELATED SUBMITTAL(S)/GRANT(S)

N/A. This is an original submission for Certification.



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1.4 EMISSIONS EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. LAB
PRE-AMPLIFIER	HEWLETT PACKARD	11975A	2304A00348	TEST EQUITY
PRE-AMPLIFIER	HEWLETT PACKARD			TEST EQUITY
PRE-AMPLIFIER (S/A 1)	RHEIN TECH	PR-1040	00001	RTL
PRE-AMPLIFIER (S/A 2)	RHEIN TECH	RTL2	900723	RTL
PRE-AMPLIFIER (S/A 3)	RHEIN TECH	8447F	2944A03783	RTL
PRE-AMPLIFIER (S/A 4)	RHEIN TECH	8447D	2727A05397	RTL
BICONICAL/LOG ANTENNA 1	ANTENNA RESEARCH	LPB-2520	1037	LIBERTY LABS
BICONICAL/LOG ANTENNA 2	ANTENNA RESEARCH	LPB-2520	1036	LIBERTY LABS
FIELD SITE SOURCE	EMCO	4610	9604-1313	RTL
FILTER (ROOM 1)	SOLAR	8130	947305	RTL
FILTER (ROOM 2)	SOLAR	8130	947306	RTL
HARMONIC MIXER 1	HEWLETT PACKARD	11970K	2332A00563	TELOGY
HARMONIC MIXER 2	HEWLETT PACKARD	11970A	2332A01199	TELOGY
HORN ANTENNA 1	EMCO	3160-10	9606-1033	EMCO
HORN ANTENNA 2	EMCO	3160-9	9605-1051	EMCO
HORN ANTENNA 3	EMCO	3160-7	9605-1054	EMCO
HORN ANTENNA 4	EMCO	3160-8	9605-1044	EMCO
HORN ANTENNA 5	EMCO	3160-03	9508-1024	EMCO
LISN (ROOM 1/L1)	SOLAR	7225-1	900727	ACUCAL
LISN (ROOM 1/L2)	SOLAR	7225-1	900726	ACUCAL
LISN (ROOM 2/L1)	SOLAR	7225-1	900078	ACUCAL
LISN (ROOM 2/L2)	SOLAR	7225-1	900077	ACUCAL
PRE-AMPLIFIER	HEWLETT PACKARD	8449B OPT	3008A00505	TELOGY
QUASI-PEAK ADAPTER (S/A 1)	HEWLETT PACKARD	85650A	3145A01599	ACUCAL
QUASI-PEAK ADAPTER (S/A 2)	HEWLETT PACKARD	85650A	2811A01276	ACUCAL
QUASI-PEAK ADAPTER (S/A 3)	HEWLETT PACKARD	85650A	2521A00473	ACUCAL
QUASI-PEAK ADAPTER (S/A 4)	HEWLETT PACKARD	85650A	2521A01032	ACUCAL
RF PRESELECTOR (S/A 1)	HEWLETT PACKARD	85685A	3146A01309	ACUCAL
SIGNAL GENERATOR (HP)	HEWLETT PACKARD	8660C	1947A02956	ACUCAL
SIGNAL GENERATOR (WAVETEK)	WAVETEK	3510B	4952044	ACUCAL
SPECTRUM ANALYZER 1	HEWLETT PACKARD	8566B	3138A07771	ACUCAL
EMI RECEIVER	HEWLETT PACKARD	8546A	3325A00159	ACUCAL
SPECTRUM ANALYZER 2	HEWLETT PACKARD	8567A	2841A00614	ACUCAL
SPECTRUM ANALYZER 4	HEWLETT PACKARD	8567A	2727A00535	ACUCAL
TUNABLE DIPOLE	EMCO	3121	274	LIBERTY LABS
HARMONIC MIXER	HEWLETT PACKARD	11970A	2332A01199	ACUCAL
HARMONIC MIXER	HEWLETT PACKARD	11970K	2332A00563	ACUCAL



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1.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FI(\text{dBuV/m}) = SAR(\text{dBuV}) + SCF(\text{dB/m})$$

FI = Field Intensity

SAR = Spectrum Analyzer Reading

SCF = Site Correction Factor

The Site Correction Factor (SCF) used in the above equation is determined empirically, and is expressed in the following equation:

$$SCF(\text{dB/m}) = -PG(\text{dB}) + AF(\text{dB/m}) + CL(\text{dB})$$

SCF = Site Correction Factor

PG = Pre-amplifier Gain

AF = Antenna Factor

CL = Cable Loss

The field intensity in microvolts per meter can then be determined according to the following equation:

$$FI(\text{uV/m}) = 10^{FI(\text{dBuV/m})/20}$$

For example, assume a signal at a frequency of 125 MHz has a received level measured as 49.3 dBuV. The total Site Correction Factor (antenna factor plus cable loss minus preamplifier gain) for 125 MHz is -11.5 dB/m. The actual radiated field strength is calculated as follows:

$$49.3 \text{ dBuV} - 11.5 \text{ dB/m} = 37.8 \text{ dBuV/m}$$

$$10^{37.8/20} = 10^{1.89} = 77.6 \text{ uV/m}$$



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1.6 Radiated measurement

Before final measurements of radiated emissions were made on the open-field three/ten meter range, the EUT was scanned indoors at one meter and three meter distances if necessary in order to determine its emissions spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to insure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three-meter, open-field test site. The EUT was placed on a nonconductive turntable approximately 0.8 meters above the ground plane. The spectrum was examined from 30 MHz to 1000 MHz using a Hewlett Packard 8566B spectrum analyzer, a Hewlett Packard 85650A quasi-peak adapter, and an Antenna Research bilog antenna. In order to gain sensitivity, an RTL PR-1040 preamplifier was connected in series between the antenna and the input of the spectrum analyzer.

At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters in order to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations.

Note: Rhein Tech Laboratories, Inc. has implemented procedures to minimize errors that occur from test instruments, calibration, procedures, and test setups. Test instrument and calibration errors are documented from the manufacturer or calibration lab. Other errors have been defined and calculated within the Rhein Tech quality manual, section 6.1. Rhein Tech implements the following procedures to minimize errors that may occur: yearly as well as daily calibration methods, technician training, and emphasis to employees on avoiding error.



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2.0 STANDARD REQUIREMENTS

TYPE CERTIFICATION FCC PART 90: PRIVATE LAND MOBILE RADIO SERVICES SUBPART I : GENERAL TECHNICAL STANDARDS AND FCC PART 2 SUBPART J: EQUIPMENT AUTHORIZATION PROCEDURES

2.1 FCC PART 90.210(B): Emission Mask B.

For transmitters that are equipped with an audio low-pass filter pursuant to § 90.211(a), the power of any emission must be below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
- (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

2.2 PART 2.987(D): MODULATION REQUIREMENTS AND CHARACTERISTICS

The curve provided in Section 5.1, shows that the equipment met the modulation requirements of the rules under which the equipment is to be licensed.



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2.3 FCC PART 2.985: RF OUTPUT POWER

2.3.1 Method of Measurement

Transmitter antenna port connected to EMI receiver Power Meter.

2.4 FCC PART 2.989(B) AND ANSI C63.4, SECTION 13.1.7: OCCUPIED BANDWIDTH

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable:

Other keyed transmitters—when keyed at the maximum machine speed.

2.5 FCC PART 2.997(A)(1): FREQUENCY SPECTRUM TO BE INVESTIGATED

(a) In all of the measurements set forth in 2.991 and 2.993, the spectrum shall be investigated from the lowest radio frequency signal generated in the equipment, without going below 9kHz, up to at least the frequency shown below:

(1) If the equipment operates below 10GHz: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.



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2.6 FCC Part 2.991 and Part 90.217(a): Spurious Emissions at Antenna Terminals

2.6.1 Method of measurement:

The transmitter was properly loaded with a 50 Ohm termination and operated under normal condition in its intended use. That is the maximum rated conditions under which the equipment will be operated.

For measuring emissions up to and including 50kHz from the edge of the authorized bandwidth, the resolution bandwidth was adjusted to 100Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps was measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must no be less than the instrument resolution bandwidth. For frequencies more that 50kHz removed from the edge of the authorized bandwidth a resolution of at least 10 kHz was used for frequencies below 1000 MHz. Above 1000 MHz the resolution bandwidth of the instrumentation was at least 1 MHz.

For equipment designed to operate with a 25 kHz channel bandwidth, the sum of the bandwidth occupied by the emitted signal plus the bandwidth required for frequency stability shall be adjusted so that any emission appearing on a frequency 40 kHz or more removed from the assigned frequency is attenuated at least 30dB below the unmodulated carrier.



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2.7 FCC PART 2.993 AND PART 90.217(a): FIELD STRENGTH OF SPURIOUS RADIATION

2.7.1 Method of measurement:

A 50 Ohm dummy load is used to terminate the transmitter antenna output port. A second antenna is placed adjacent to the device under test and is connected to a signal generator providing a reference power level. The requirement assumes that all emissions are radiated from half-wave dipole antennas.

2.8 FCC PART 90.213 AND PART 2.995(A): FREQUENCY STABILITY FUNCTION OF TEMPERATURE

2.8.1 Method of Measurement:

The transmitter is set in operation with the maximum rated output power specified by the manufacturer. A Thermotron temperature chamber is used to perform the test. The transmitter is exercised with a transmission mode providing a continuous stream of data.

The ambient temperature is varied from -30° to +50°C. The device under test is operated for 15 minutes prior to testing. A sufficient period of time (about 30 minutes) before any measurements was observed to stabilize all the transmitter components for each temperature level.



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3.0 SYSTEM TEST CONFIGURATION

3.1 JUSTIFICATION

The EUT was tested in all three orthogonal planes in order to determine worst case emission. The EUT was investigated and tested from 9 kHz to 9 GHz.

3.2 EUT EXERCISE DESCRIPTION

The EUT was exercised using external modulation through a TQ-0613 into the UDC port. The TQ-0613 provides a switch for Push To Talk (PTT) and a speaker which is also switchable to an external speaker

3.3 SPECIAL ACCESSORIES

N/A.

3.4 TEST SYSTEM DETAILS

The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system (including inserted cards, which have grants) are:

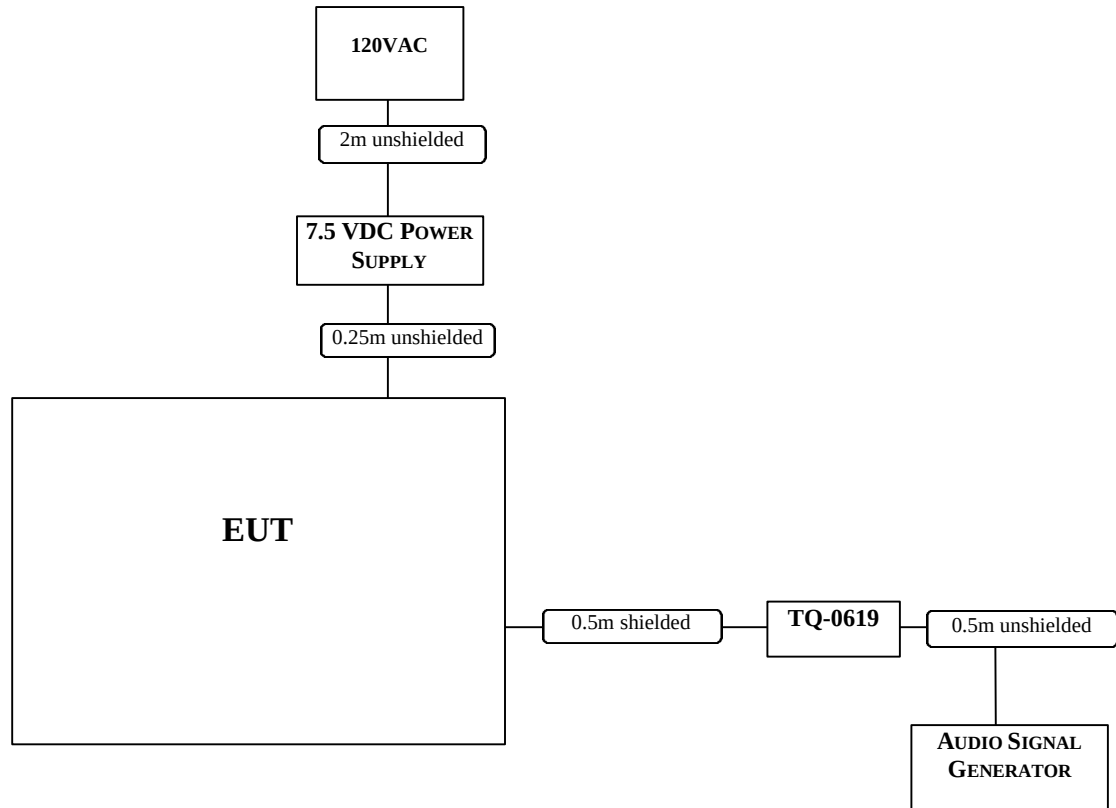
TABLE 1: TEST SYSTEM DETAILS

PART	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID	CABLE DESCRIPTION	RTL BAR CODE
POWER SUPPLY	HEWLETT PACKARD	6291	1928A05385	N/A	UNSHIELDED POWER	900773
CONTROL BOX	ERICSSON	TQ0613	N/A	N/A		011447
BATTERY	EDACS	CABLES INSIDE	MAKESHIFT	N/A		011449
CABLE	ERICSSON	SERIAL CABLE	N/A	N/A	SHIELDED I/O	011448
BATTERY	EDACS	NM-145C	N/A	N/A		011443
ANTENNA	ERICSSON	1/4 WAVE ANTENNA	806-869 MHZ	SAMPLE		011580
ANTENNA	EDACS	N/A	N/A	N/A		011445
AUDIO SIGNAL GENERATOR	TEKTRONIX	ASG 100	B032374	N/A	UNSHIELDED POWER; UNSHIELDED I/O	900927
RADIO (EUT)	ERICSSON	EDACS 300P	0019	OWDTR0001-E		011475
RADIO (EUT)	EDACS	EDACS 300P	0010	OWDTR0001-E		011440



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3.5 BLOCK DIAGRAM OF TESTED SYSTEM





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3.6 CONFORMANCE STATEMENT

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this attached test record. No modifications were made to the equipment during testing in order to achieve compliance with these standards.

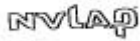
Furthermore, there was no deviation from, additions to or exclusions from the FCC Part 2 and FCC Part 90 Type Certification Transmitter VHF Manchester FSK test methodology.

Signature: 

Date: February 15, 2000

Typed/Printed Name: Desmond Fraser

Position: President
(NVLAP Signatory)



Accredited by the National Voluntary Accreditation Program for the specific scope of accreditation under Lab Code 20061-0.

Note: This report may not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



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4.0 TEST RESULTS

TABLE 2: RADIATED ERP

(Temperature: 52°F, Humidity: 94%)

Emission Frequency (MHz)	Antenna Polarity (H/V)	CL Ref. (dB)	S/G level (dBm)	TX Gain (dBi)	Corrected S/G level	ERP (mW)	Comments
806.020	H	0.2	20.0	2.15	22.35	171.7908	¼ wave antenna
806.020	V	0.2	20.0	2.15	22.35	171.7908	½ wave antenna
820.983	H	0.3	20.0	2.15	22.36	172.1869	¼ wave antenna
820.983	V	0.3	20.0	2.15	22.36	172.1869	½ wave antenna
851.025	V	0.4	20.2	2.15	22.75	188.3649	¼ wave antenna
851.025	V	0.4	20.2	2.15	22.75	188.3649	½ wave antenna
860.144	H	0.3	21.0	2.15	23.45	221.3095	¼ wave antenna
860.145	H	0.3	21.0	2.15	23.45	221.3095	½ wave antenna

Antenna: Roberts half wave dipole S/N

*Difference in gain between half-wave dipole and antenna used for the reference power level.

Sample calculation for 806.020 MHz

18.46 dBm = 125.46 dBuV = 1.875 V/m

$$\frac{1.875 \text{ V/m} \times 9\text{m}}{30 \times 1.21} = 0.465 \text{ W}$$

18.66 dBm=1.92 V/m 19.56 dBm=2.13 V/m

TEST PERSONNEL:

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EUT: EDACS-300P
CLIENT REFERENCE NUMBER: QRTL00-230
WORK ORDER NUMBER: 2000043
FCC ID: OWDTR0001-E

TABLE 3: FREQUENCY STABILITY: 806.0250 MHz

Voltage	Temperature (C)	Frequency	PPM	Level (dBuV)
6.375	-30	806.025632	0.784095	134.98
7.5	-30	806.025752	0.932974	135.05
8.625	-30	806.025707	0.877144	134.94
6.375	-20	806.025767	0.951583	135.03
7.5	-20	806.025737	0.914364	135.1
8.625	-20	806.025692	0.858534	135.05
6.375	-10	806.025737	0.914364	135.1
7.5	-10	806.025767	0.951583	135.08
8.625	-10	806.025797	0.988803	135.1
6.375	0	806.025572	0.709655	135.03
7.5	0	806.025632	0.784095	135.03
8.625	0	806.025647	0.802705	134.98
6.375	10	806.025407	0.504947	134.91
7.5	10	806.025452	0.560777	134.96
8.625	10	806.025422	0.523557	135.01
6.375	20	806.024895	-0.13027	134.82
7.5	20	806.024895	-0.13027	134.94
8.625	20	806.02491	-0.11166	134.94
6.375	30	806.02479	-0.26054	134.75
7.5	30	806.024895	-0.13027	134.7
8.625	30	806.024985	-0.01861	134.72
6.375	40	806.024775	-0.27915	134.84
7.5	40	806.024835	-0.20471	134.96
8.625	40	806.02485	-0.1861	134.05
6.375	50	806.024805	-0.24193	134.8
7.5	50	806.024775	-0.27915	134.89
8.625	50	806.0247	-0.3722	134.96

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TABLE 4: FREQUENCY STABILITY: 821.0125 MHz

Voltage	Temperature (C)	Frequency	PPM	Level (dBuV)
6.375	-30	821.013169	0.814848	134.96
7.5	-30	821.013259	0.924468	135.03
8.625	-30	821.013244	0.906198	135.1
6.375	-20	821.013154	0.796577	135.03
7.5	-20	821.013184	0.833118	135.13
8.625	-20	821.013184	0.833118	135.13
6.375	-10	821.013304	0.979279	134.94
7.5	-10	821.013259	0.924468	134.99
8.625	-10	821.013259	0.924468	135.06
6.375	0	821.013094	0.723497	134.87
7.5	0	821.013184	0.833118	135.01
8.625	0	821.013184	0.833118	135.13
6.375	10	821.012897	0.483549	134.87
7.5	10	821.012927	0.52009	134.94
8.625	10	821.012897	0.483549	134.99
6.375	20	821.01243	-0.08526	134.74
7.5	20	821.012475	-0.03045	134.96
8.625	20	821.012475	-0.03045	134.99
6.375	30	821.012445	-0.06699	134.89
7.5	30	821.01246	-0.04872	135.06
8.625	30	821.012445	-0.06699	135.1
6.375	40	821.012235	-0.32277	134.81
7.5	40	821.012325	-0.21315	135.03
8.625	40	821.01231	-0.23142	134.96
6.375	50	821.012295	-0.24969	134.67
7.5	50	821.012295	-0.24969	134.99
8.625	50	821.01231	-0.23142	134.83

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TABLE 5: FREQUENCY STABILITY: 858.1500 MHz

Voltage	Temperature (C)	Frequency	PPM	Level (dBuV)
6.375	-30	860.150849	0.987037	134.2
7.5	-30	860.150849	0.987037	134.36
8.625	-30	860.150864	1.004476	134.41
6.375	-20	860.150849	0.987037	132.95
7.5	-20	860.150774	0.899843	134.38
8.625	-20	860.150714	0.830088	134.36
6.375	-10	860.150819	0.95216	134.15
7.5	-10	860.150819	0.95216	134.34
8.625	-10	860.150864	1.004476	134.29
6.375	0	860.150699	0.812649	134.22
7.5	0	860.150729	0.847527	134.36
8.625	0	860.150729	0.847527	134.31
6.375	10	860.150412	0.478986	134.04
7.5	10	860.150382	0.444109	134.17
8.625	10	860.150367	0.42667	134.27
6.375	20	860.149915	-0.09882	134.04
7.5	20	860.150005	0.005813	134.22
8.625	20	860.150065	0.075568	134.22
6.375	30	860.149975	-0.02906	134.15
7.5	30	860.14996	-0.0465	134.36
8.625	30	860.14999	-0.01163	134.48
6.375	40	860.149885	-0.1337	134.22
7.5	40	860.149885	-0.1337	134.36
8.625	40	860.14987	-0.15114	134.36
6.375	50	860.149795	-0.23833	133.99
7.5	50	860.14981	-0.22089	134.2
8.625	50	860.149735	-0.30809	134.13

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TABLE 6: FCC PART 2.985: RF OUTPUT POWER

Termination	Frequency (MHz)	Output Power Low Power (W)	Output Power High Power (W)
50 ohm	806.0250	1.228	3.45
	820.9875	1.165	3.33
	821.0125	1.168	3.38
	858.1500	1.159	2.83

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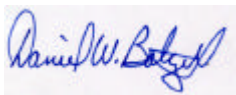
Date: March 27, 2000

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TABLE 7: FCC PART 90.213 AND PART 2.995(A): FREQUENCY STABILITY FUNCTION OF TEMPERATURE

Frequency (MHz)	Frequency Stability (ppm)
806.025797	0.99
821.013304	0.98
860.150864	1.00

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TABLE 8: RADIATED SPURIOUS: CHANNEL 1

Frequency (MHz)	Polarity	S/G (dBm)	CL	S/G corrected	Transmitter Antenna Gain	ref to 1/2 wave	Emission Level (dBuV/m)	Limit dBm	Margin
420.245	H	-77.2	0.2	-77			-77	-13	-64
442.3595	H	-82.6	0.2	-82.4			-82.4	-13	-69.4
805.719	V	-62.4	0.2	-62.2			-62.2	-13	-49.2
1611.452	H	-82.5	0.3	-82.2	6.9	4.75	-77.45	-13	-64.45
1612.05	H	-31.6	0.3	-31.3	6.9	4.75	-26.55	-13	-13.55
1735.67	V	-40	0.3	-39.7	6.9	4.75	-34.95	-13	-21.95
2418.1	V	-30.1	0.3	-29.8	7.2	5.05	-24.75	-13	-11.75
3224.13	H	-38.2	0	-38.2	8.3	6.15	-32.05	-13	-19.05
3222.9	V	-40.9	0.2	-40.7	8.3	6.15	-34.55	-13	-21.55
4030.13	V	-36.2	0.3	-35.9	8	5.85	-30.05	-13	-17.05
4431.45	V	-41.2	0.5	-40.7	9.1	6.95	-33.75	-13	-20.75
4834.293	V	-42.8	0.8	-42	9.1	6.95	-35.05	-13	-22.05
4836.188	H	-23.7	0.3	-23.4	9.1	6.95	-16.45	-13	-3.45
5237.17	H	-47.8	0.7	-47.1	8.9	6.75	-40.35	-13	-27.35
5642.147	V	-38.2	0.3	-37.9	8.7	6.55	-31.35	-13	-18.35
6448.138	V	-36.4	1	-35.4	9.8	7.65	-27.75	-13	-14.75
7254.238	V	-38.6	1.2	-37.4	9.7	7.55	-29.85	-13	-16.85
8060.263	V	-44.2	0.5	-43.7	10.6	8.45	-35.25	-13	-22.25

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TABLE 9: RADIATED SPURIOUS: CHANNEL 3

Frequency (MHz)	Polarity	S/G (dBm)	CL	S/G corrected	Transmitter Antenna Gain	ref to 1/2 wave	Emission Level (dBuV/m)	Limit dBm	Margin
820.6803	H	-55.9	0.2	-55.7			-55.7	-13	-42.7
979.0833	H	-46.9	0.2	-46.7			-46.7	-13	-33.7
1641.908	H	-27	0.3	-26.7	6.9	4.75	-21.95	-13	-8.95
2464.943	V	-41	0.3	-40.7	7.2	5.05	-35.65	-13	-22.65
2464.908	V	-29.6	0.3	-29.3	7.2	5.05	-24.25	-13	-11.25
3288.033	H	-39.2	0.2	-39	8.3	6.15	-32.85	-13	-19.85
3286.8	V	-39.4	0.2	-39.2	8.3	6.15	-33.05	-13	-20.05
4109.967	V	-31.9	0.5	-31.4	8.2	6.05	-25.35	-13	-12.35
4519.25	V	-45.8	0.8	-45	9.2	7.05	-37.95	-13	-24.95
4931.896	V	-33	0.8	-32.2	9.1	6.95	-25.25	-13	-12.25
5733.892	H	-41.5	0.7	-40.8	8.7	6.55	-34.25	-13	-21.25
6575.938	V	-46.4	1	-45.4	9.9	7.75	-37.65	-13	-24.65
7397.859	V	-46	1.2	-44.8	9.7	7.55	-37.25	-13	-24.25
8209.858	V	-42.9	0.5	-42.4	10.5	8.35	-34.05	-13	-21.05

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TABLE 10: RADIATED SPURIOUS: CHANNEL 6

Frequency (MHz)	Polarity	S/G (dBm)	CL	S/G corrected	Transmitter Antenna Gain	ref to 1/2 wave	Emission Level (dBuV/m)	Limit dBm	Margin
805.7183	H	-56	0.2	-55.8			-55.8	-13	-42.8
1611.403	V	-67	0.3	-66.7	6.9	4.75	-61.95	-13	-48.95
1702.05	H	-28.6	0.2	-28.4	6.9	4.75	-23.65	-13	-10.65
2553.07	V	-31.3	0.3	-31	7.3	5.15	-25.85	-13	-12.85
3222.975	V	-42	0.2	-41.8	8.3	6.15	-35.65	-13	-22.65
3404.2	V	-37.7	0.3	-37.4	8.2	6.05	-31.35	-13	-18.35
4255.2	V	-28.8	0.4	-28.4	8.6	6.45	-21.95	-13	-8.95
4431.542	V	-40.9	0.5	-40.4	9.1	6.95	-33.45	-13	-20.45
4834.375	V	-43.1	0.8	-42.3	9.1	6.95	-35.35	-13	-22.35
5106.19	V	-25.8	0.7	-25.1	9	6.85	-18.25	-13	-5.25
5237.17	H	-46.1	0.7	-45.4	8.9	6.75	-38.65	-13	-25.65
5956.63	H	-36.1	0.7	-35.4	8.8	6.65	-28.75	-13	-15.75
6807.76	V	-37.6	1	-36.6	9.8	7.65	-28.95	-13	-15.95
7659.15	V	-37.1	1.2	-35.9	9.8	7.65	-28.25	-13	-15.25
8510.233	V	-38.7	0.6	-38.1	10.5	8.35	-29.75	-13	-16.75

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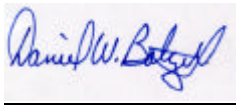


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TABLE 11: RADIATED SPURIOUS: CHANNEL 7

Frequency (MHz)	Polarity	S/G (dBm)	CL	S/G corrected	Transmitter Antenna Gain	ref to 1/2 wave	Emission Level (dBuV/m)	Limit dBm	Margin
814.8453	H	-60.1	0.2	-59.9			-59.9	-13	-46.9
1629.649	V	-60.8	0.3	-60.5	6.9	4.75	-55.75	-13	-42.75
1720.275	H	-29.1	0.2	-28.9	6.9	4.75	-24.15	-13	-11.15
2580.45	V	-35.7	0.3	-35.4	8.2	6.05	-29.35	-13	-16.35
3259.37	V	-35.7	0.2	-35.5	8.3	6.15	-29.35	-13	-16.35
3440.6	V	-32.7	0.3	-32.4	8.2	6.05	-26.35	-13	-13.35
4300.7	V	-33.8	0.4	-33.4	9	6.85	-26.55	-13	-13.55
4481.63	V	-42.6	0.4	-42.2	9.1	6.95	-35.25	-13	-22.25
5160.883	V	-24.8	0.7	-24.1	8.7	6.55	-17.55	-13	-4.55
6021.092	V	-40.5	0.8	-39.7	8.8	6.65	-33.05	-13	-20.05
6881.175	V	-40.7	1.1	-39.6	9.8	7.65	-31.95	-13	-18.95
7741.367	V	-40.3	1	-39.3	10.2	8.05	-31.25	-13	-18.25
8601.467	V	-49.4	0.6	-48.8	10.3	8.15	-40.65	-13	-27.65

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