

Sub-part 2.1033 (c):

Equipment Identification

FCC ID: OJYKAG9

Date of Report

Tuesday, September 10, 2002

Supervised By:
RD:kg

Thomas J. Funk

The applicant has been cautioned as to the following:

15.21 Information to User.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27 (a) Special Accessories.

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

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List of General Information Required for Type Acceptance

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to
Part 22 sub-part H

Sub-part

2.1033 (c)(1) Name and Address of Applicant:

Ericsson Wireless Communications
6210 Spine Rd.
Boulder, CO 80301

Vendor:

Applicant

2.1033(c)(2): FCC ID: OJYKAG9

2.924 Model No RBS1127XXYY
XX= Cabinet type
YY=Input Voltage type

Technical Description:

2.1033(c)(4): Type of Emission: 1M25F9W

2.1033(c)(5) Frequency Range, MHz: 800 MHz
880 MHz

2.1033(c)(6) Power Rating, Watts: 1, 20

Switchable _____ Adjustable x _____ N/A _____

2.1033(c)(7) Maximum Power Rating, Watts: 20

2.1033(c)(8) Voltages & Currents in all Elements in Final R.F. Stage,
Including Final Transistor or Solid State Device:
Collector Current, A = per manual
Collector Voltage, Vdc = per manual
Supply Voltage, Vac = N/A

Exhibits

2.1033 Block Diagram:
Please see Attached Exhibit 1

2.1033 Circuit Diagram:
Please see Attached Exhibit 2

2.1033 Parts List:
Please see Attached Exhibit 3

2.1033 Manual:
Please see Attached Exhibit 4

2.1033 Photographs:
Please see Attached Exhibits 5

2.1033 Tune-Up Procedure/Alignment Procedure:
Please see Attached Exhibit 6

2.1033 Label Information:
Please see Attached Exhibit 7

2.1033(c)(14) **Test Report:**

Test Report Follows

Sub-part

2.1033 (c) :

Test and Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2, Sub-part J, Sections 2.1046, 2.1049, 2.1051, 2.1053, 2.1055 and the following individual Parts:

<u>21</u>	Domestic Public Radio Services	—
<u>24</u>	Personal Communications Services	—
<u>22E</u>	Broadband PCS	—
22.901 (d)	Special Provisions for Alternative Cellular Technologies and and Auxiliary Services	X—
<u>23</u>	International Fixed Public Radio Communications Service	—
<u>74</u>	Experimental, Auxiliary & Special Broadcast and Other Program Distribution Services	—
<u>74H</u>	Low Power Auxiliary Stations	—
<u>80</u>	Stations in the Maritime Service	—
<u>80.209 (5)(I)</u>	Transmitter Frequency Tolerances, 156–162 MHz, Coast Stations	—
<u>80K</u>	Private Coast Stations & Marine Utility Stations	—
<u>80S</u>	Compulsory R/T Installations for Small Passenger Boats	—
<u>80T</u>	Radio Telegraph Installation Required for Vessels on the Great Lakes	—
<u>80U</u>	Radio Telegraph Installation Required by the Bridge-to-Bridge Act	—
<u>87</u>	Aviation Services	—
<u>90</u>	Private Land Mobile Radio Services	—
<u>94</u>	Private Operational-Fixed microwave Services	—
<u>95</u>	General Mobile Radio Service	—

General Information

1. Spurious radiation was measured at three (3) meters.

2. The normal modes of modulation are:
 - (a) Voice _____
 - (b) Wideband Data _____
 - (c) SAT _____
 - (d) ST _____
 - (e) SAT + Voice _____
 - (f) SAT + DTMF _____
 - (g) 64-Ary Orthogonal CDMA X
 - (h) Pi/4 DQPSK _____
 - (i) NAMPS Voice _____
 - (j) NAMPS DSAT _____
 - (k) NAMPS ST _____

Standard Test Conditions
and
Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

Room Temperature	= $25 \pm 5^\circ \text{C}$
Room Humidity	= 20–50%
D.C. Supply Voltage, Vdc	= -48VDC or 24VDC
A.C. Supply Voltage, Vac	= 230 Vac
A.C. Supply Frequency, Hz	= 60Hz

Prior to testing, the E.U.T. was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing.

Measurement results, unless otherwise noted, are worst case measurements.

Name of Test: R.F. Power Output & Occupied Bandwidth

Paragraph: 47 CFR 2.1046 & 2.1049

Guide: EIA Standard RS 152B, Paragraph 3.3

Test Condition: Standard Temperature & Humidity

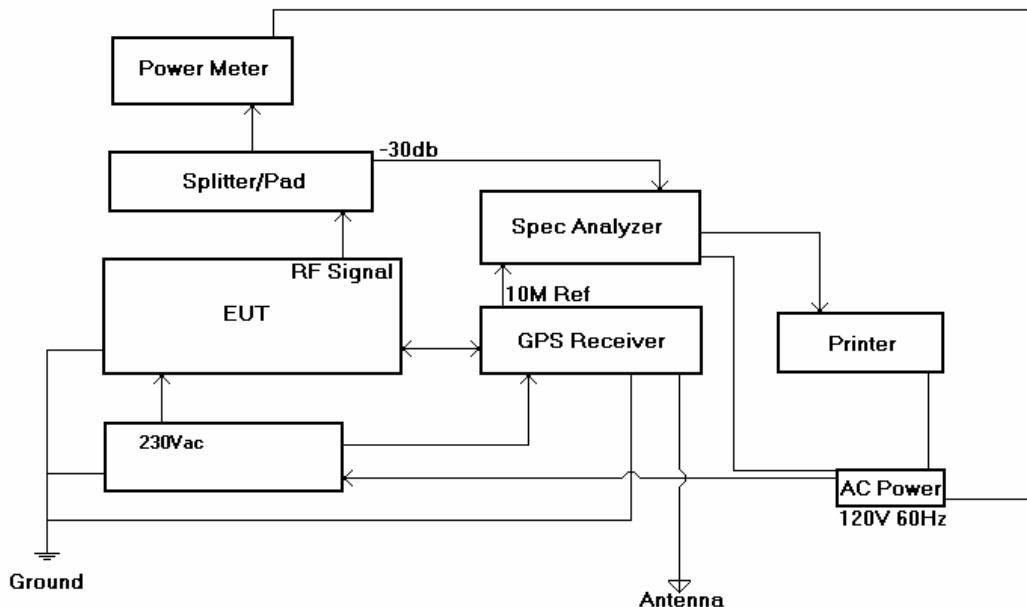
Test Equipment: As per Attached Appendix J

Measurement Procedures

1. The E.U.T. was connected to a directional coupler and a resistive coaxial attenuator of normal load impedance, and the modulated output power was measured by means of an R.F. power meter.
2. Measurement accuracy is $\pm 3\%$.

Measurement Results

Nominal, MHz	Channel	Band	R.F. Power Output, Watts	
			Low Power	High Power
869.700	1013		1.0	20.0
880.680	356		1.0	20.0
893.310	777		1.0	20.0



Marker 1 [T1]

28.12 dBm

OJYKAG9

RBW

30 kHz

RF Att

30 dB

VBW

300 kHz

Mixer

-10 dBm

Ref Lvl

40.7 dBm

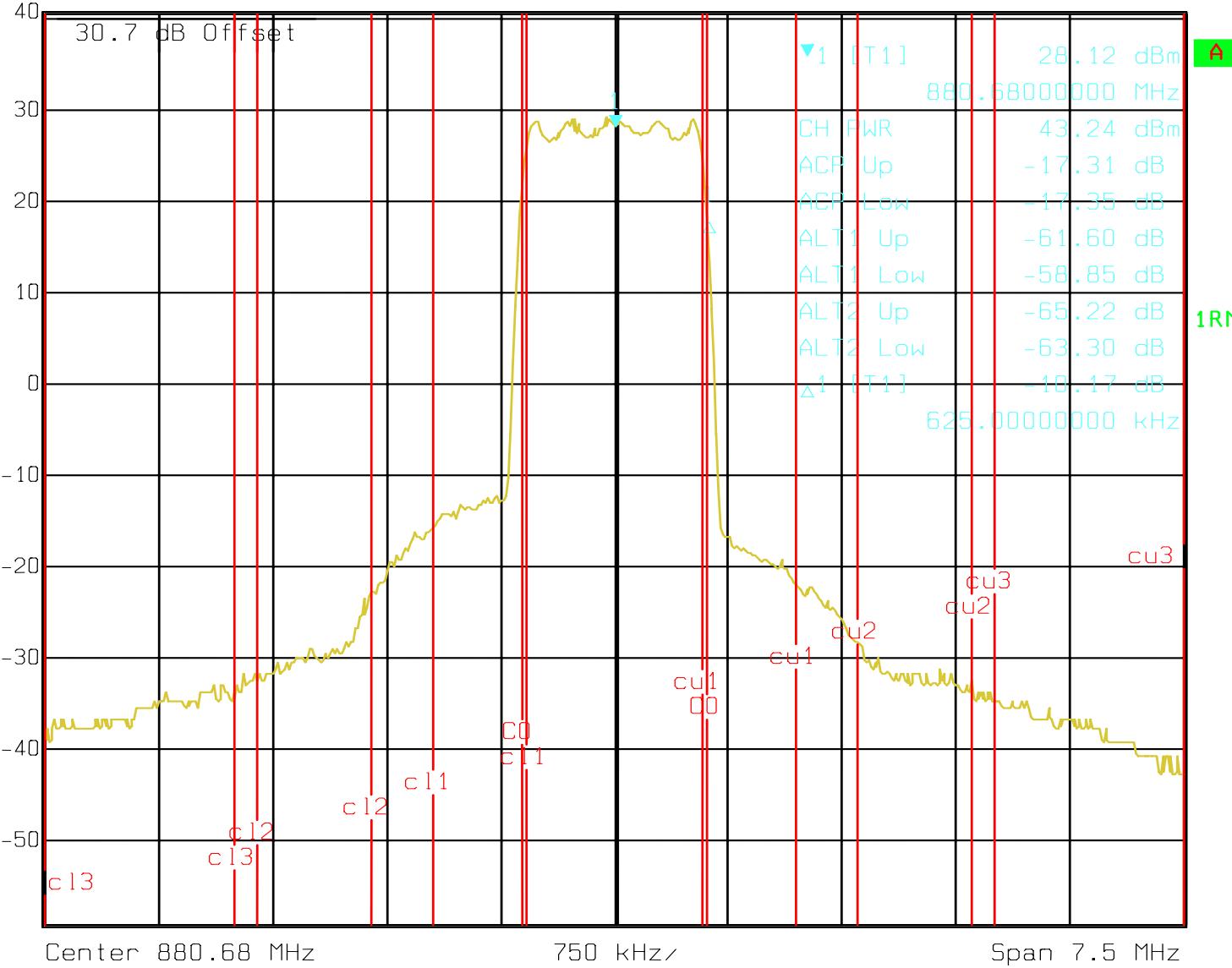
880.680000000 MHz

SWT

2 s

Unit

dBm



1RM



Marker 1 [T1]

28.54 dBm

OJYKAG9

RBW

30 kHz

RF Att

30 dB

VBW

300 kHz

Mixer

-10 dBm

Ref Lvl

40.7 dBm

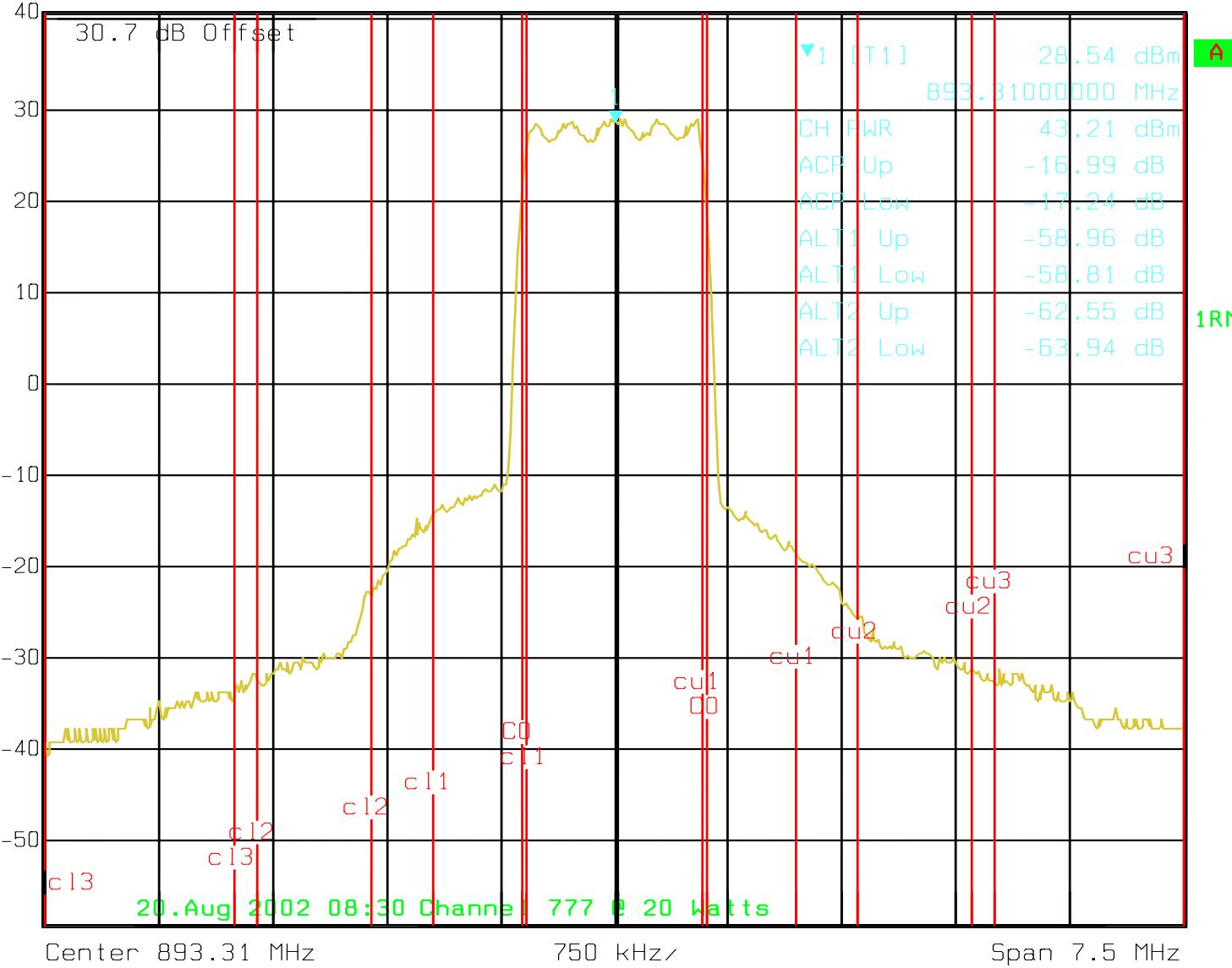
893.310000000 MHz

SWT

2 s

Unit

dBm



A

1RM



Marker 1 [T1]

28.30 dBm

OJYKAG9

RBW

30 kHz

RF Att

30 dB

VBW

300 kHz

Mixer

-10 dBm

Ref Lvl

40.7 dBm

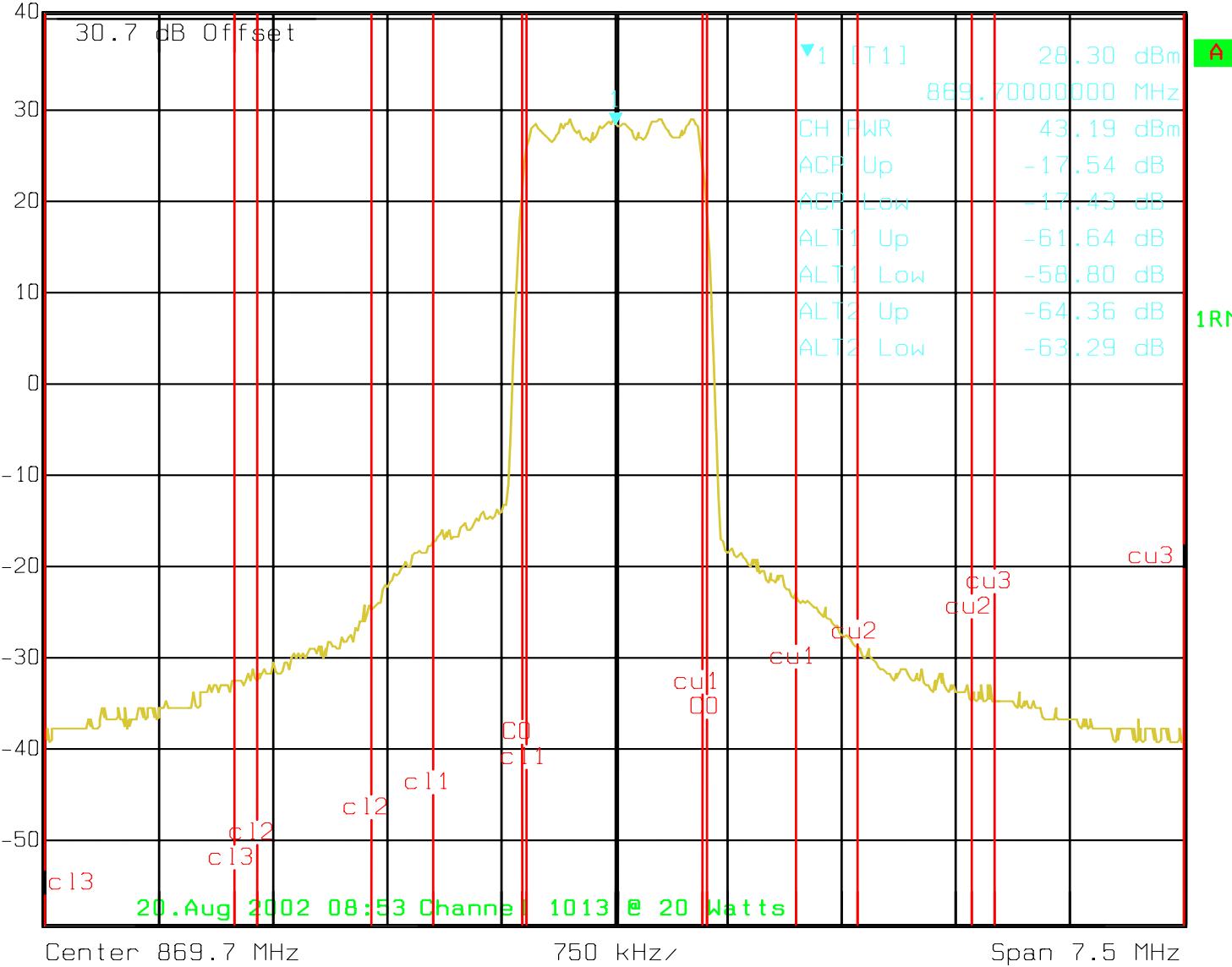
869.70000000 MHz

SWT

2 s

Unit

dBm



Date: 20.AUG.2002 9:01:15

Paragraph:

47 CFR 2.1051, 22.917(e)

Guide:

EIA Standard RS 152B, Paragraph 17

Test Condition:

Standard Temperature & Humidity

Test Equipment:

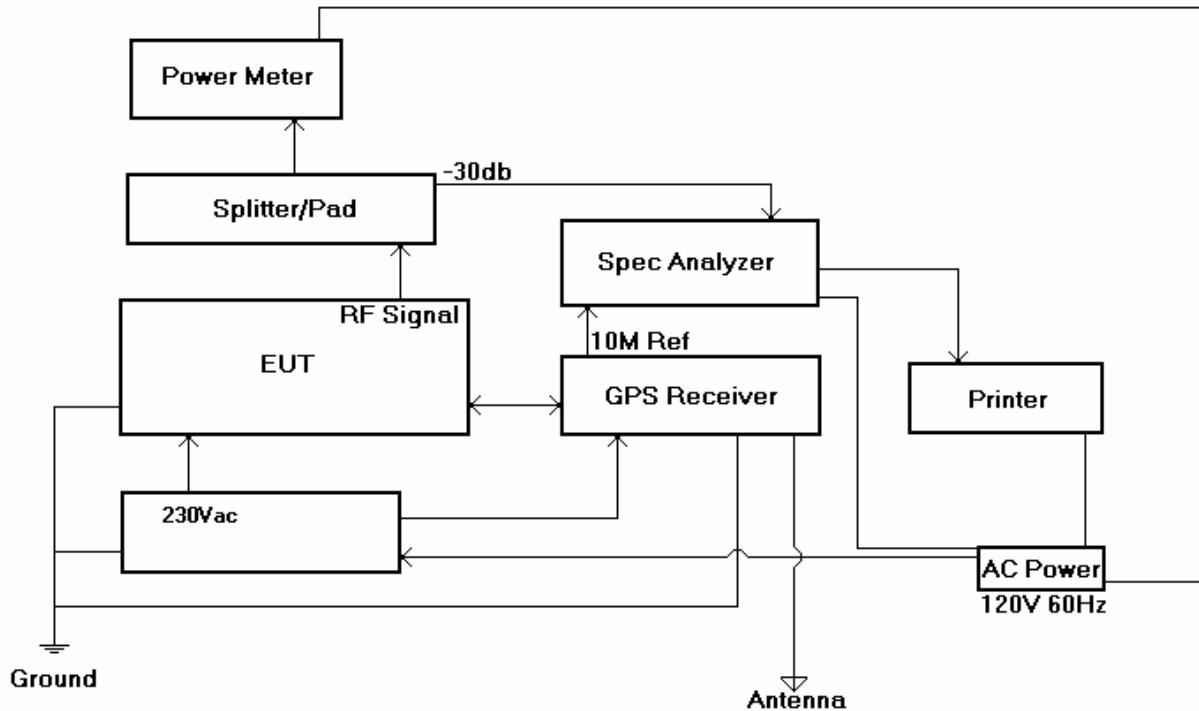
As per Attached Appendix J

Measurement Procedures

1. The E.U.T. was connected, through a directional coupler, a 30 dB coaxial attenuator then to a Rohde & Schwarz Spectrum Analyzer.
2. Measurements were made over the range from 1Ghz to 12 Ghz for the worst case modulation at the highest R.F. power settings.
3. All other emissions were 20 dB or more below the limit.
4. Spectrum analyzer bandwidth was set to section 22.917 (h)(1) & (2) as applicable.
5. Measurement Results: ***All emissions are 30dB below and more.***

Spurious Emissions at Antenna Terminals

Test 1: Spurious Emissions at Antenna Terminals



Name of Test: Field Strength of Spurious Radiation

Paragraph: 47 CFR 2.1053

Guide: See Measurement Procedure Below

Test Condition: Standard Temperature & Humidity

Test Equipment: As per Attached Appendix J

Measurement Procedures

1. A description of the measurement facilities was filed with the F.C.C. and was found to be in compliance with the requirements of Section 15.38, by letter from the F.C.C.
2. In the field, the test sample was placed on a turntable at ten and three meters away from the search antenna. The test sample was connected to an R.F. wattmeter and a 50 ohm dummy load, and adjusted to its rated output.

In order to obtain the maximum response at each spurious frequency, the turntable was rotated. Also, the Search Antennas were raised and lowered vertically, and all cables were oriented. Excess power lead was coiled above the system.

3. Measurement Results:

Frequency	dB μ V/M Reading	Signal down from carrier	Converted to dBm	Total Power	dBm down from Carrier
871.100 MHz	151.45 dBμV/m	00.00 μV/m	44.45 dBm	43.00 dBm	00.00 dB
1742.2	62.60 dB μ V/m	-88.85 μ V/m	-44.40 dBm	43.00 dBm	88.85 dB
2613.3	61.18 dB μ V/m	-90.27 μ V/m	-45.82 dBm	43.00 dBm	90.27 dB
3484.4	60.52 dB μ V/m	-90.93 μ V/m	-46.48 dBm	43.00 dBm	90.93 dB
4355.5	60.94 dB μ V/m	-90.51 μ V/m	-46.06 dBm	43.00 dBm	90.51 dB
5226.6	64.91 dB μ V/m	-86.54 μ V/m	-42.09 dBm	43.00 dBm	86.54 dB
6097.7	72.13 dB μ V/m	-79.32 μ V/m	-34.87 dBm	43.00 dBm	79.32 dB
6968.8	74.00 dB μ V/m	-77.45 μ V/m	-33.00 dBm	43.00 dBm	77.45 dB
7839.9	74.18 dB μ V/m	-77.27 μ V/m	-32.82 dBm	43.00 dBm	77.27 dB
8711	77.15 dB μ V/m	-74.30 μ V/m	-29.85 dBm	43.00 dBm	74.30 dB

1. The field strength of spurious radiation over the above noted range measured 20 dB or more below the limit, except where noted.
2. Spurious emission bandwidth settings per 22.907 (j)(1) & (2) as applicable.

Name of Test: Frequency Stability – Temperature and Voltage Variation
Paragraph: 47 CFR 2.1055
Guide: EIA Standard RS 152B, Paragraph 10
Test Condition: Standard
Test Equipment: Fluke PM6681R

1. Measurement Results:

Temperature Stability:
 Channel 1013= 30Hz
 Channel 356 = 19Hz
 Channel 777= 22Hz

Voltage Stability:
 Channel 1013 = 9Hz
 Channel 356 = 9Hz
 Channel 777= 5Hz

	CHANNEL # 1013		CHANNEL # 356		CHANNEL # 777
	FREQUENCY @		FREQUENCY @		FREQUENCY @
TEMPERATURE	869.70000MHz		880.68000MHz		893.31000MHz
-40°C	869.7000450 MHz		880.6799986 MHz		893.3099973 MHz
-30°C	869.6999966 MHz		880.6799969 MHz		893.3099971 MHz
-20°C	869.6999972 MHz		880.6799980 MHz		893.3099981 MHz
-10°C	869.6999970 MHz		880.6799971 MHz		893.3099970 MHz
0°C	869.6999975 MHz		880.6799988 MHz		893.3099984 MHz
10°C	869.6999979 MHz		880.6799978 MHz		893.3099972 MHz
20°C	869.6999971 MHz		880.6799979 MHz		893.3099973 MHz
30°C	869.6999980 MHz		880.6799986 MHz		893.3099975 MHz
40°C	869.6999980 MHz		880.6799969 MHz		893.3099976 MHz
50°C	869.6999975 MHz		880.6799975 MHz		893.3099962 MHz
60°C					
VOLTAGE	FREQUENCY		FREQUENCY		FREQUENCY
187VAC	869.6999972 MHz		880.6799988 MHz		893.3099971 MHz
220VAC	869.6999979 MHz		880.6799979 MHz		893.3099973 MHz
265VAC	869.6999970 MHz		880.6799985 MHz		893.3099976 MHz

Name of Test: Necessary Bandwidth and Emission Bandwidth

Paragraph: 47 CFR 2.202 (g)

Modulation = CDMA (F9W)

Emission Bandwidth Calculation:

Necessary Bandwidth, kHz = 1250.00

Justification for CDMA bandwidth of 1.25 Mhz

Reference: TIA/EIA/IS-95

Chip rate is 1.228 Mhz (see page 6-10 of IS-95 {attached}). When we look 3 dB down from the signal we find 1.25 Mhz. Channel spacing is normally set at this 1.25 Mhz. Also, one can reference baseband filtering requirements for filtering frequency response limits.

Testimonial
and
Statement of Certification

This is to certify:

1. That the application was prepared either by, or under the direct supervision of, the undersigned.
2. That the technical data supplies with the application was taken under my direction and supervision.
3. That the data was obtained on representative units, randomly selected.
4. That, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.

Certifying Engineer:

Radio Frequency Radiation Exposure Limits

The device is installed in a permanent location. It is not operator accessible, and is contained in a secured environment that is accessible by field service engineers or installation engineers only. The ERP of the device is less than 1000 Watts. The Antenna's used on this device are a typical 16dB gain antenna, with this configuration and the maximum RF output of the device set to 20 Watts the exposure limit is less than 1000 Watts.