Sub-part 2.1033 (c):

Equipment Identification

FCC ID: OJYKAG12

Date of Report

Wednesday, April 07, 2004

Supervised By: Thomas J. Funk
RD:kg

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.

Table of Contents

List of General Information Required for Type Acceptance

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to
Part 24 sub-part E

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: OJYKAG12

2.924 Model No: RBS1130, RBS1131, RBS1140

Technical Description:

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

2.1033(c)(5) Frequency Range, MHz: 1930 MHz
1990 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 = 8.6 Amp per RF Stage
Collector Voltage, Vdc = 48VDC
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:

21	Domestic Public Radio Services	___
24	Personal Communications Services	X
22E	Broadband PCS	___
22.901 (d)	Special Provisions for Alternative Cellular Technologies and and Auxiliary Services	___
23	International Fixed Public Radio Communications Service	___
74	Experimental, Auxiliary & Special Broadcast and Other Program Distribution Services	___
74H	Low Power Auxiliary Stations	___
80	Stations in the Maritime Service	___
80.209 (5)(I)	Transmitter Frequency Tolerances, 156–162 MHz, Coast Stations	___
80K	Private Coast Stations & Marine Utility Stations	___
80S	Compulsory R/T Installations for Small Passenger Boats	___
80T	Radio Telegraph Installation Required for Vessels on the Great Lakes	___
80U	Radio Telegraph Installation Required by the Bridge–to–Bridge Act	___
87	Aviation Services	___
90	Private Land Mobile Radio Services	___
94	Private Operational–Fixed microwave Services	___
95	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 ± 5° C
Room Humidity	= 20–50%
D.C. Supply Voltage, Vdc	= -48VDC or 24VDC
A.C. Supply Voltage, Vac	= 110 Vac or 220 Vac
A.C. Supply Frequency, Hz	= 60/50Hz

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

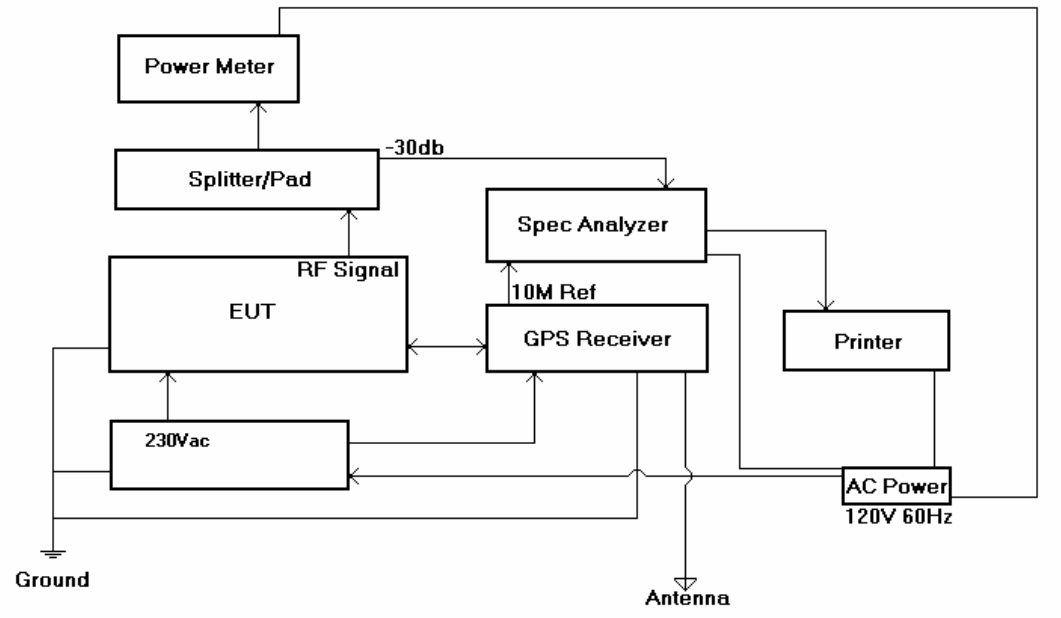
Measurement Procedures

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.

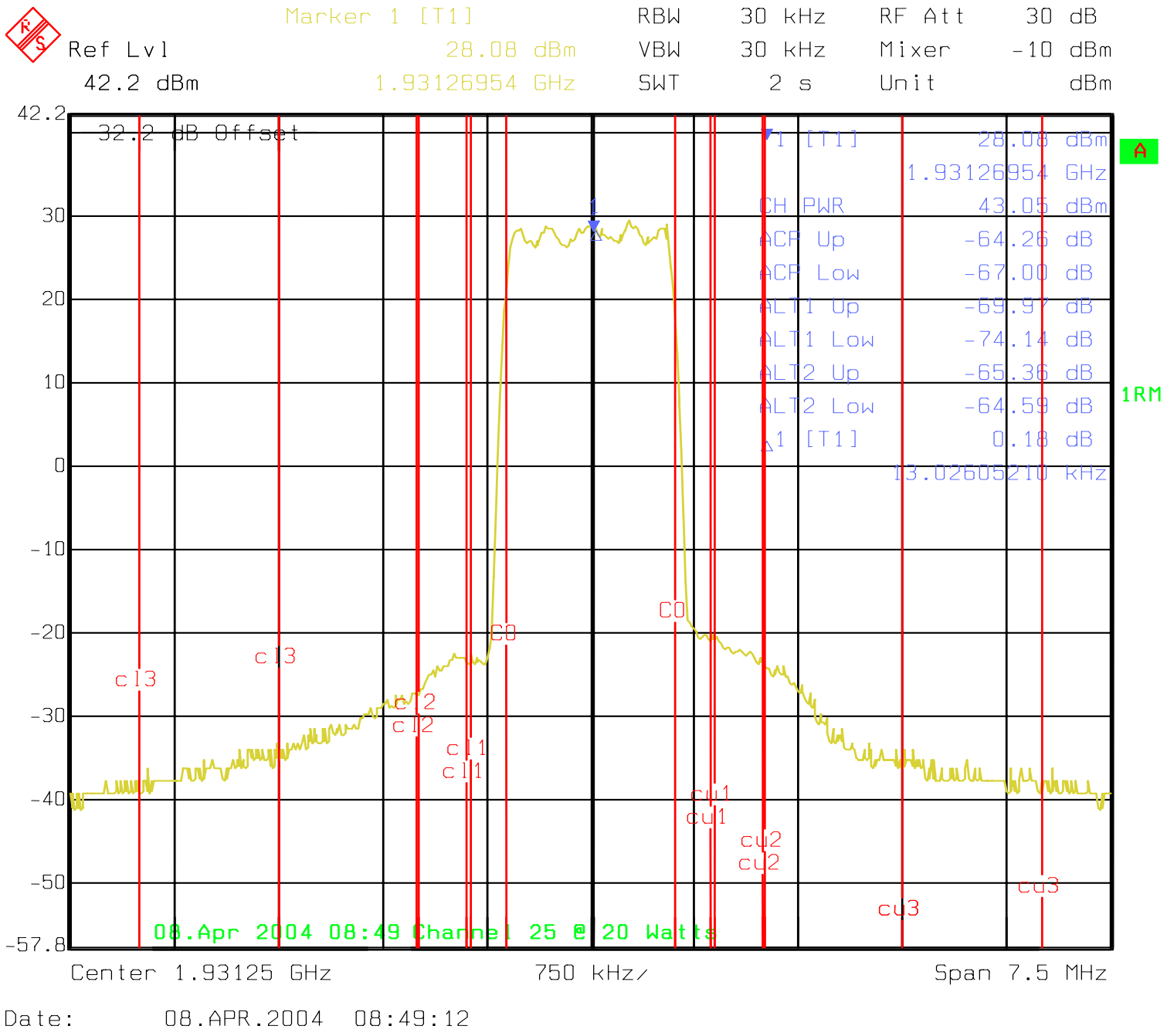
2. Measurement accuracy is ±3%.

Measurement Results

Nominal, MHz	Channel	Band	R.F. Power Output, Watts	
			Low Power	High Power
1931.250	25	A	1.0	20.0
1964.950	699	B	1.0	20.0
1988.750	1175	C	1.0	20.0



Supervised By: Thomas Funk



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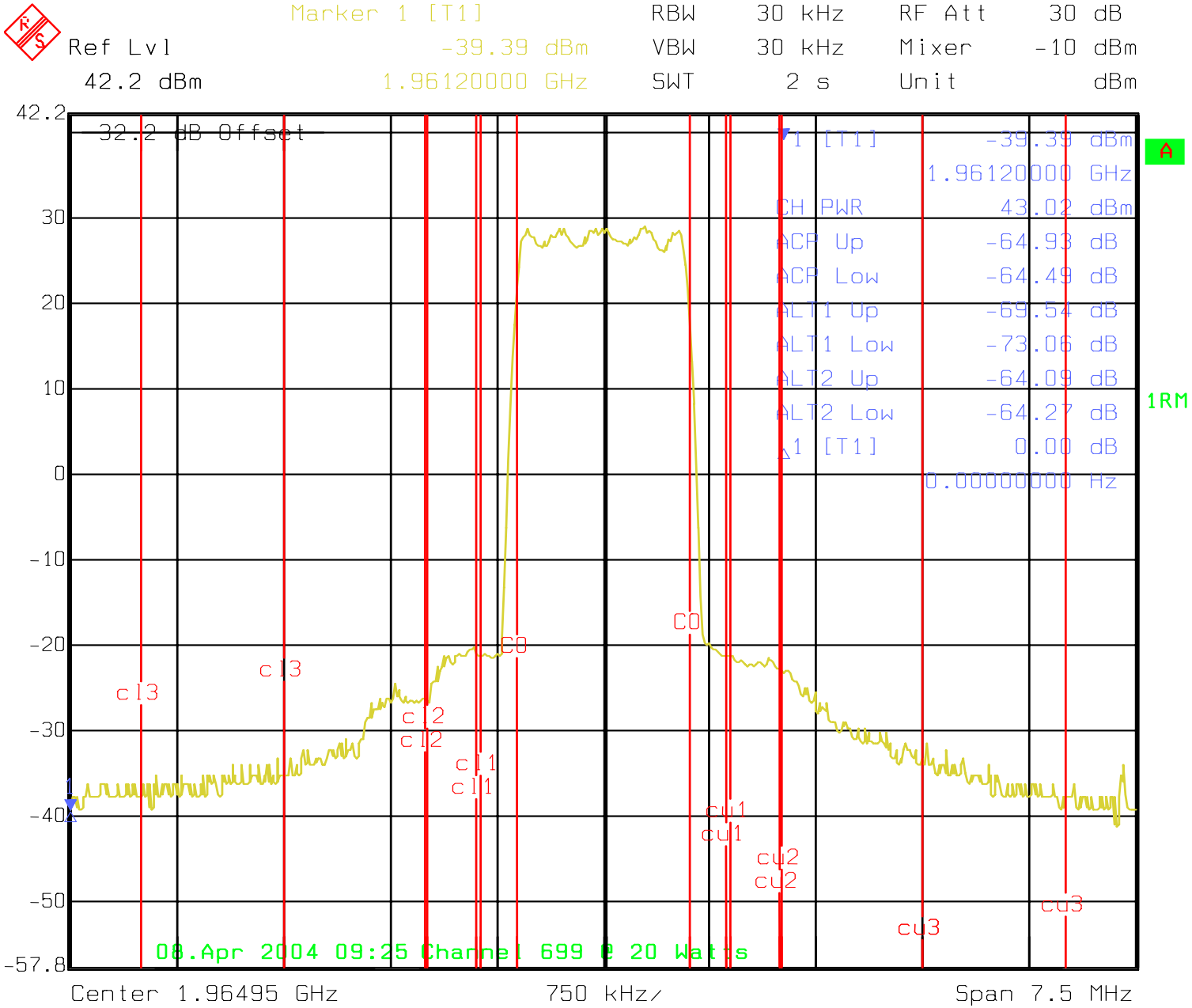

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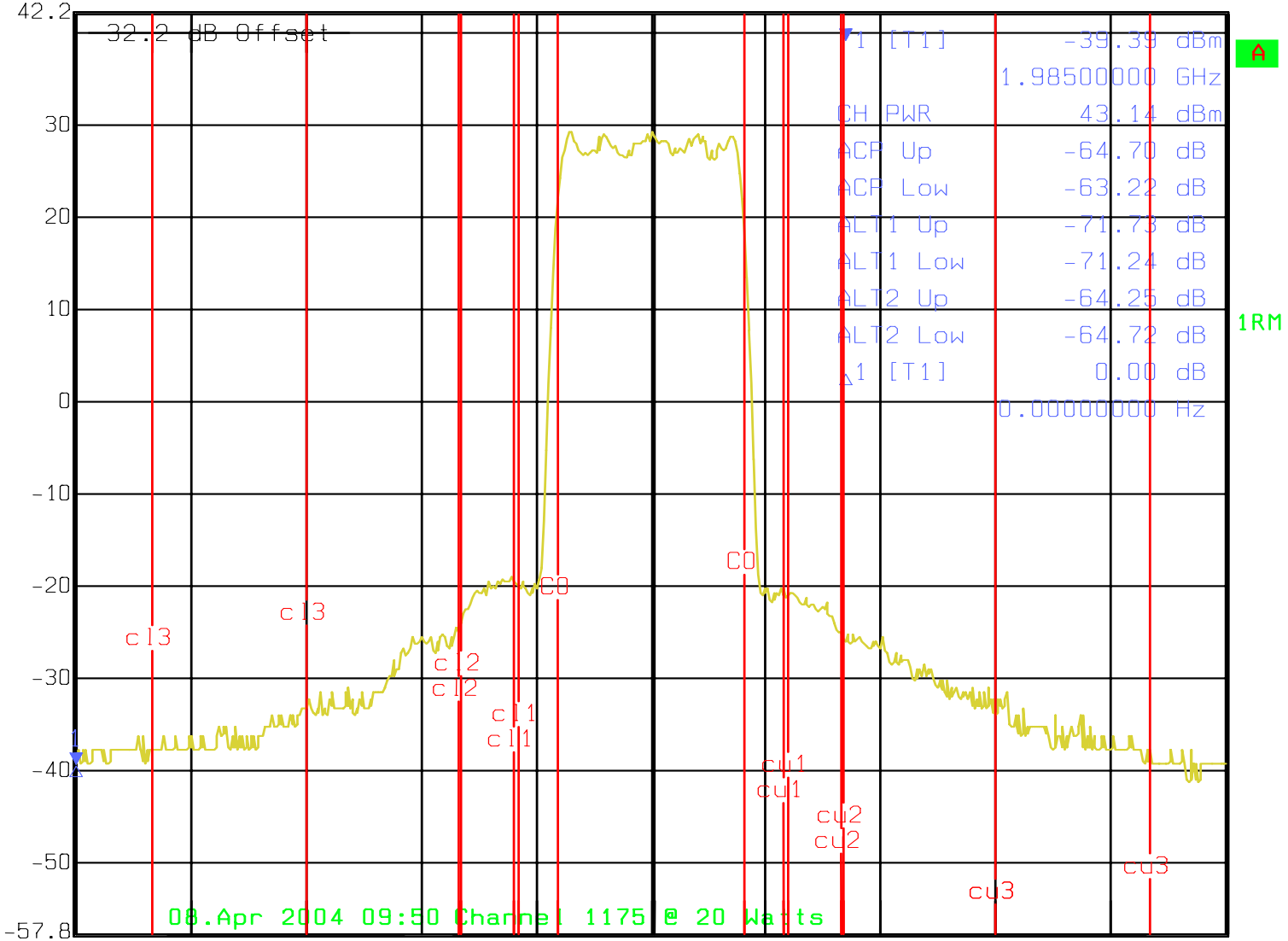
Marker 1 [T1]		RBW	30 kHz	RF Att	30 dB
Ref Lvl	-39.39 dBm	VBW	30 kHz	Mixer	-10 dBm
42.2 dBm	1.98500000 GHz	SWT	2 s	Unit	dBm



Center 1.98875 GHz 750 kHz/ Span 7.5 MHz

Date: 08.APR.2004 09:50:10

Name of Test: Spurious Emissions at Antenna Terminals

Paragraph: 47 CFR 2.1051, 22.917(e)

Guide: EIA Standard RS 152B, Paragraph 17

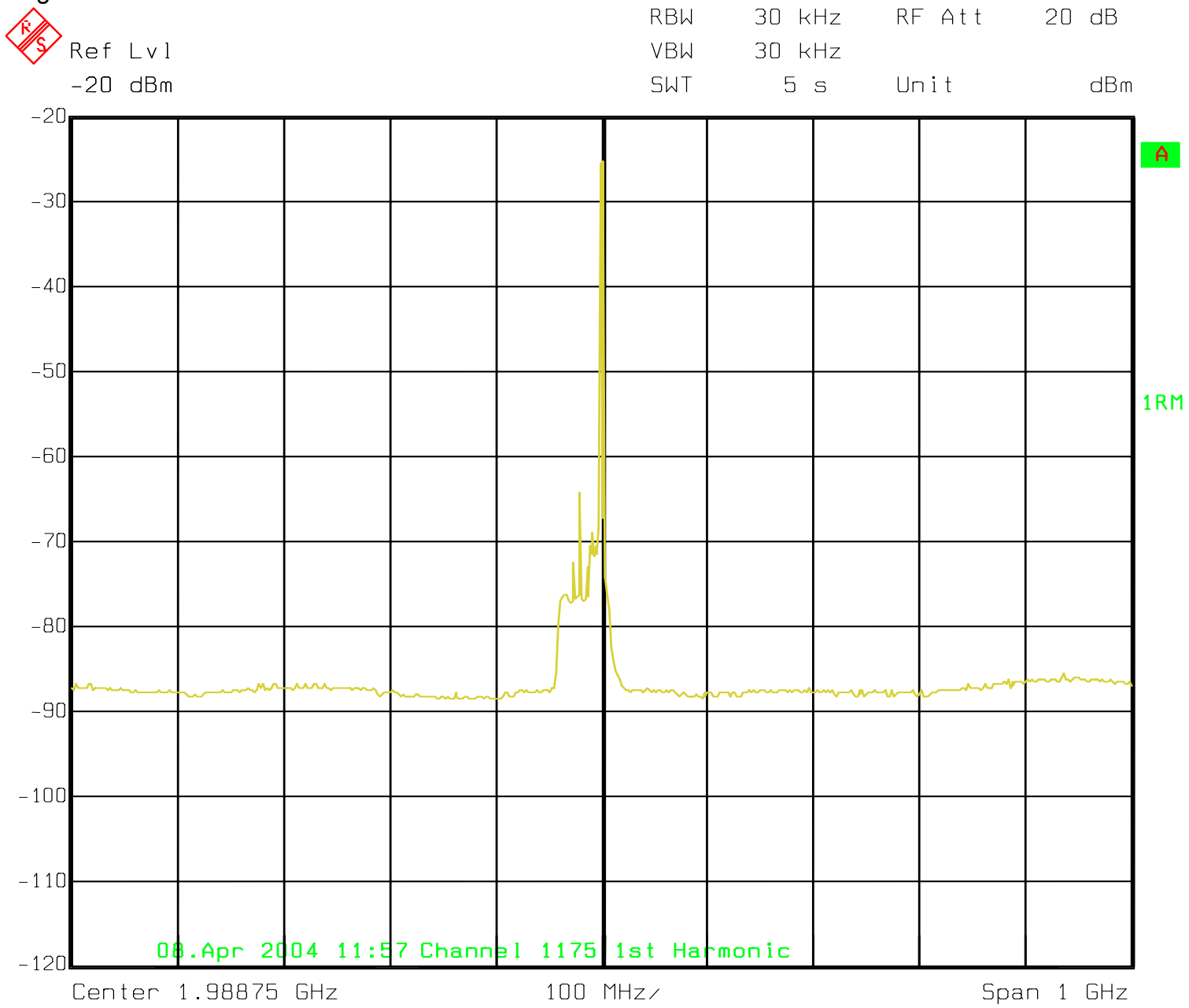
Test Condition: Standard Temperature & Humidity

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*.**

OJYKAG12



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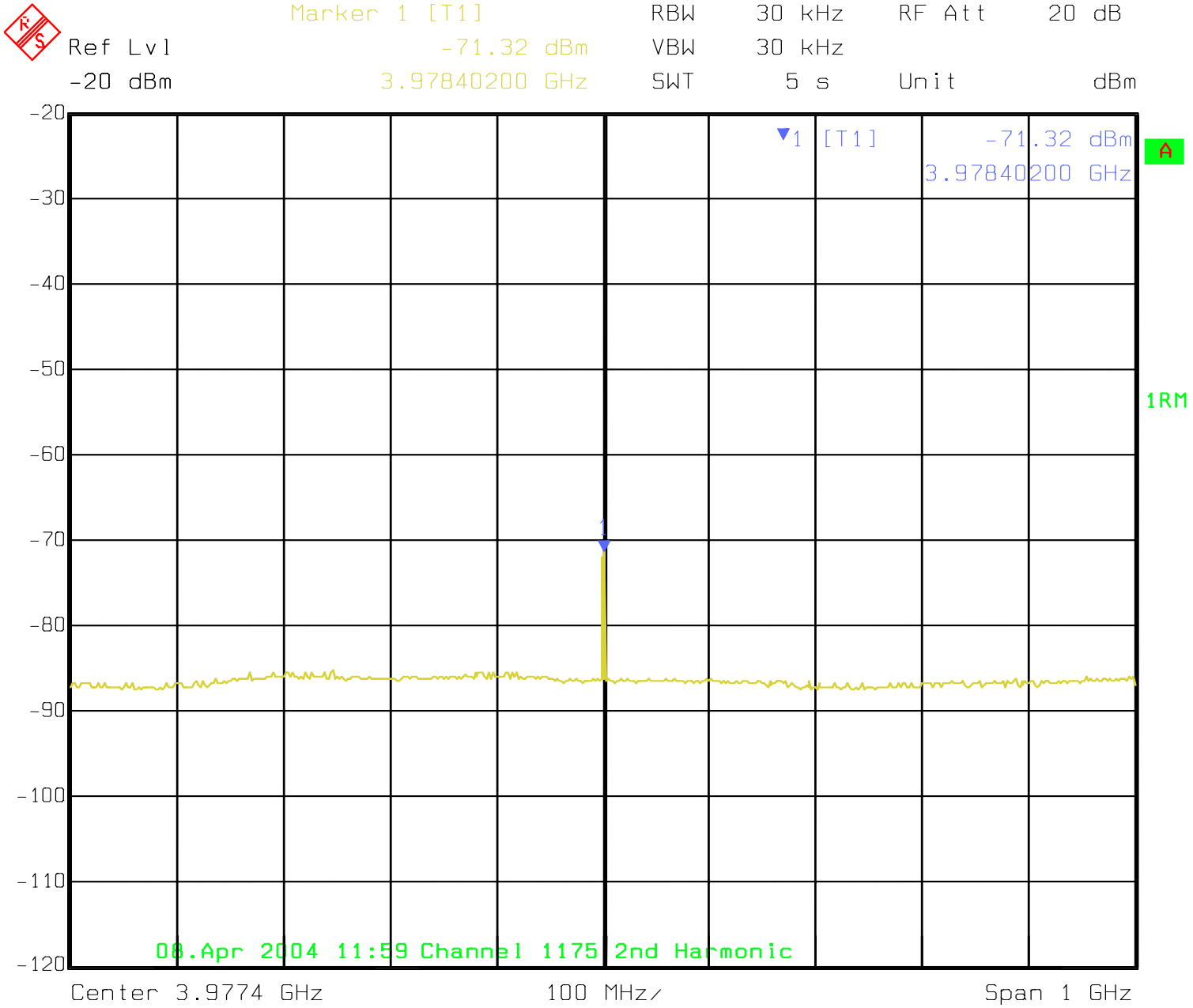

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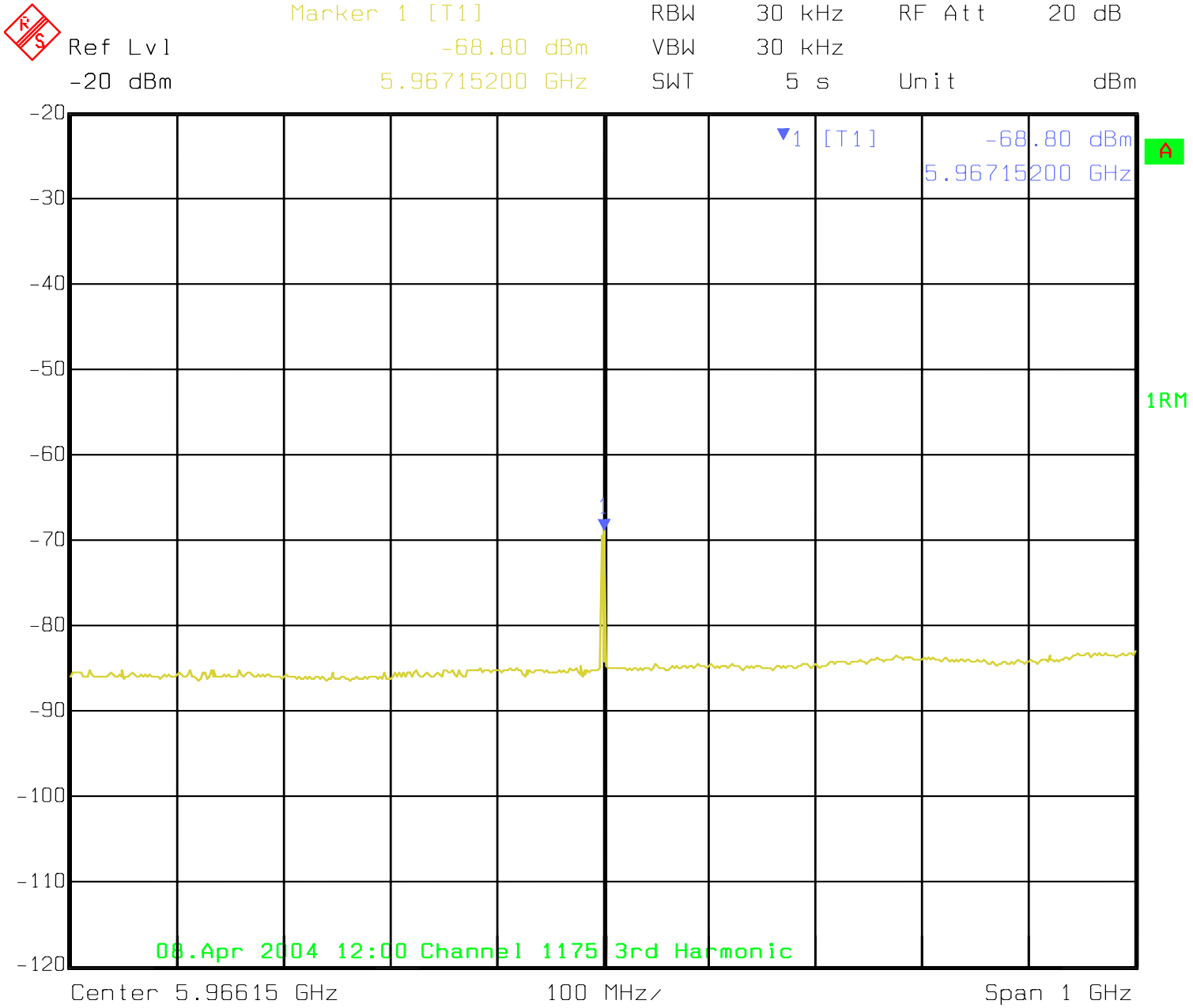

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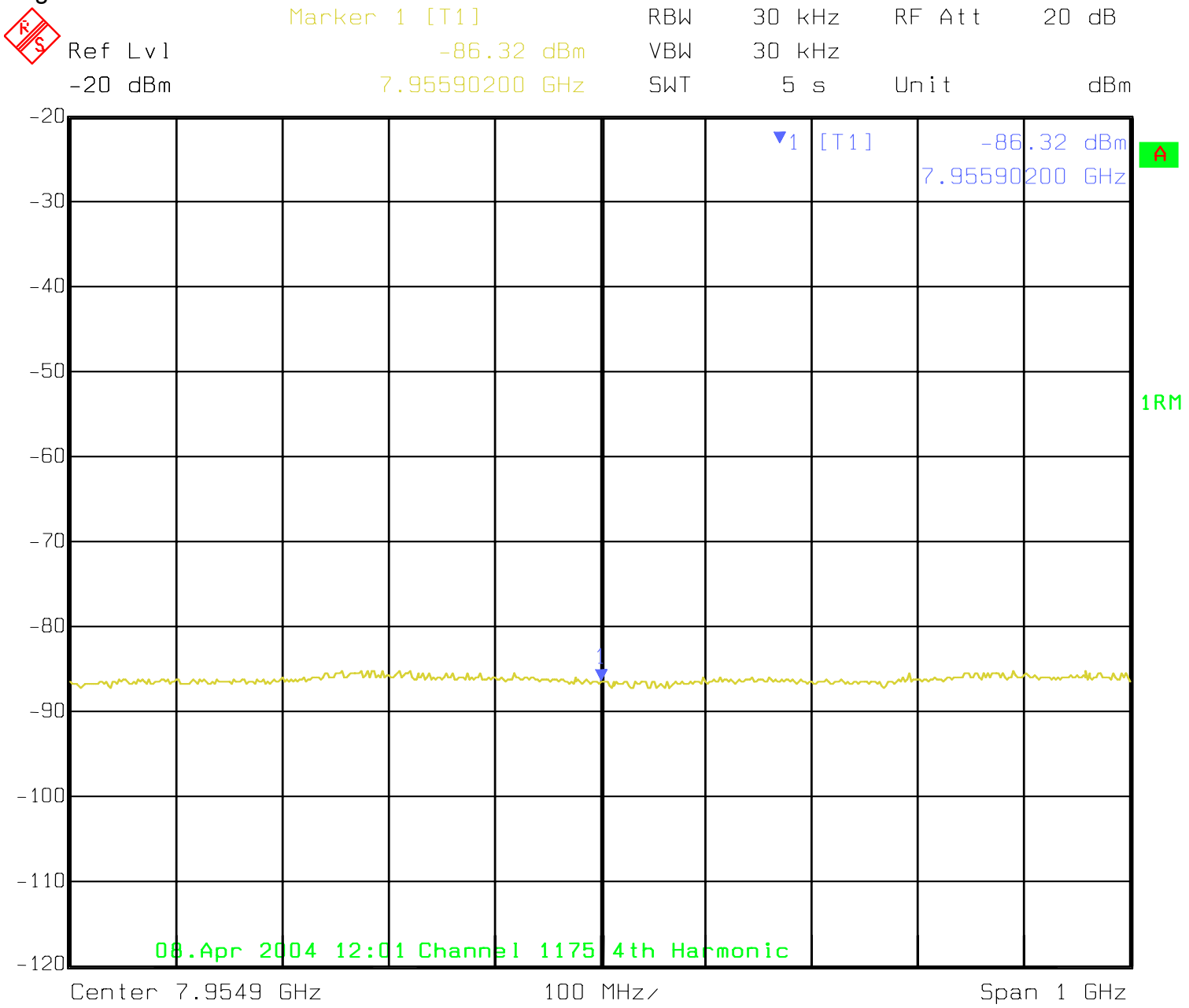

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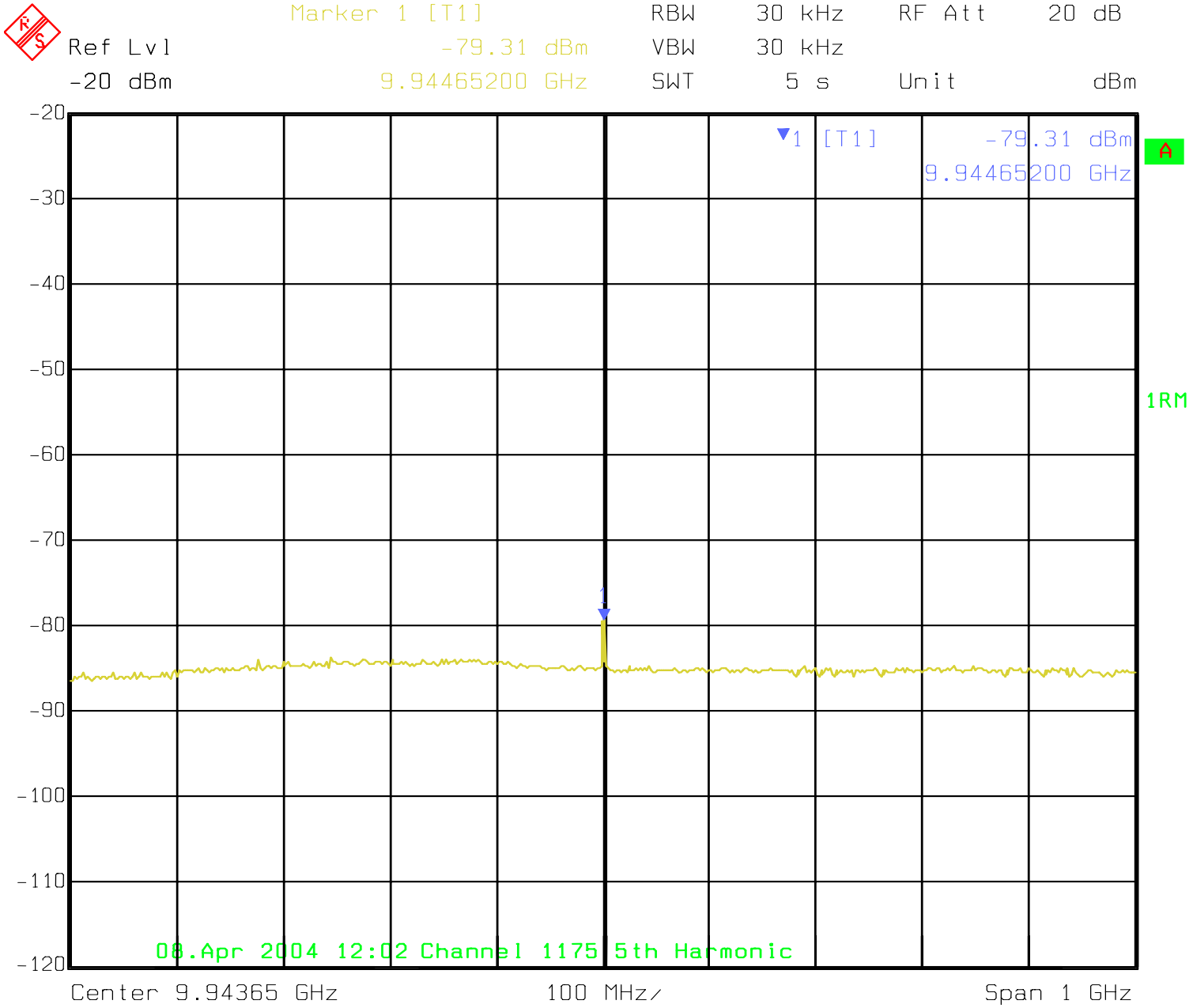

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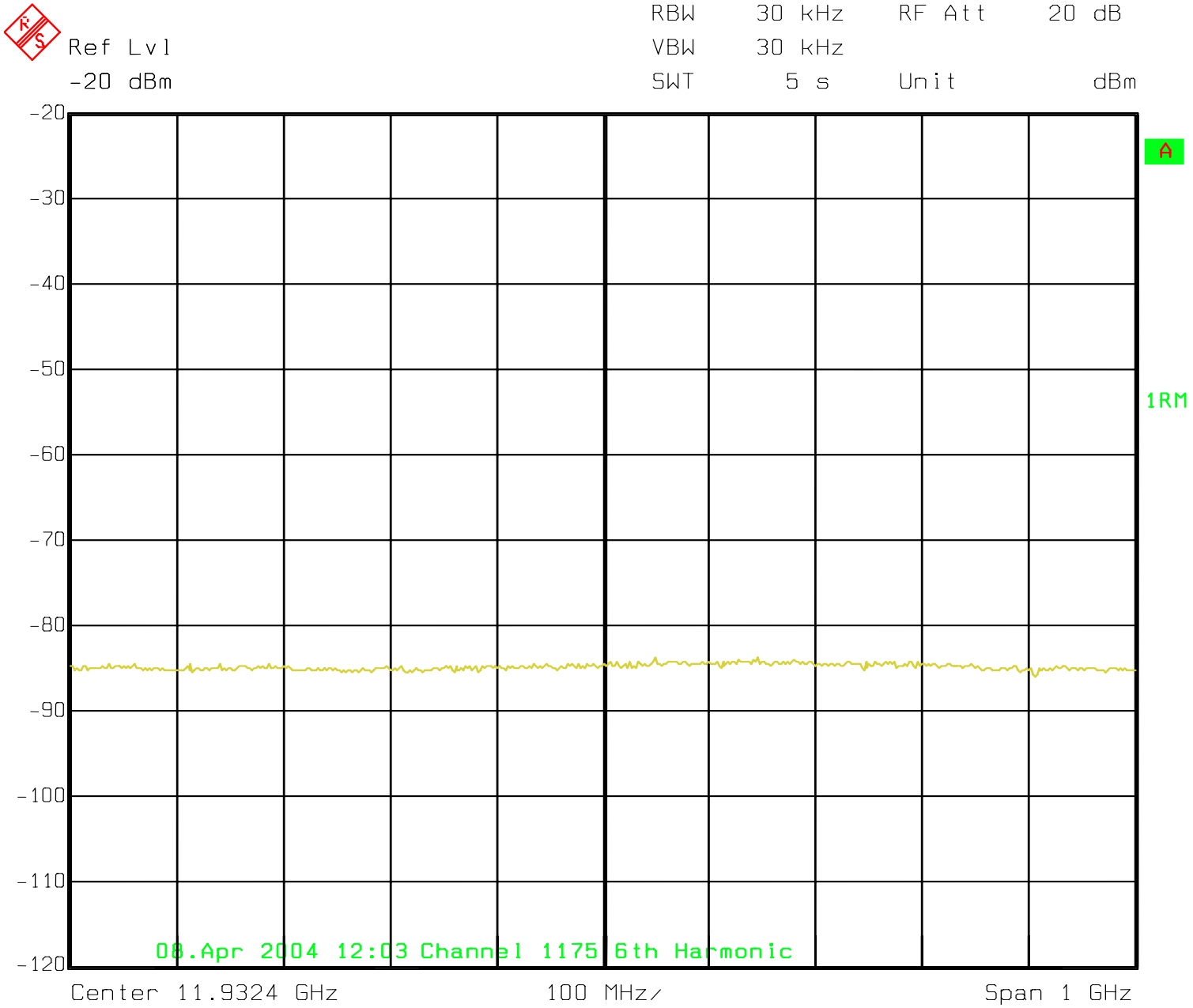

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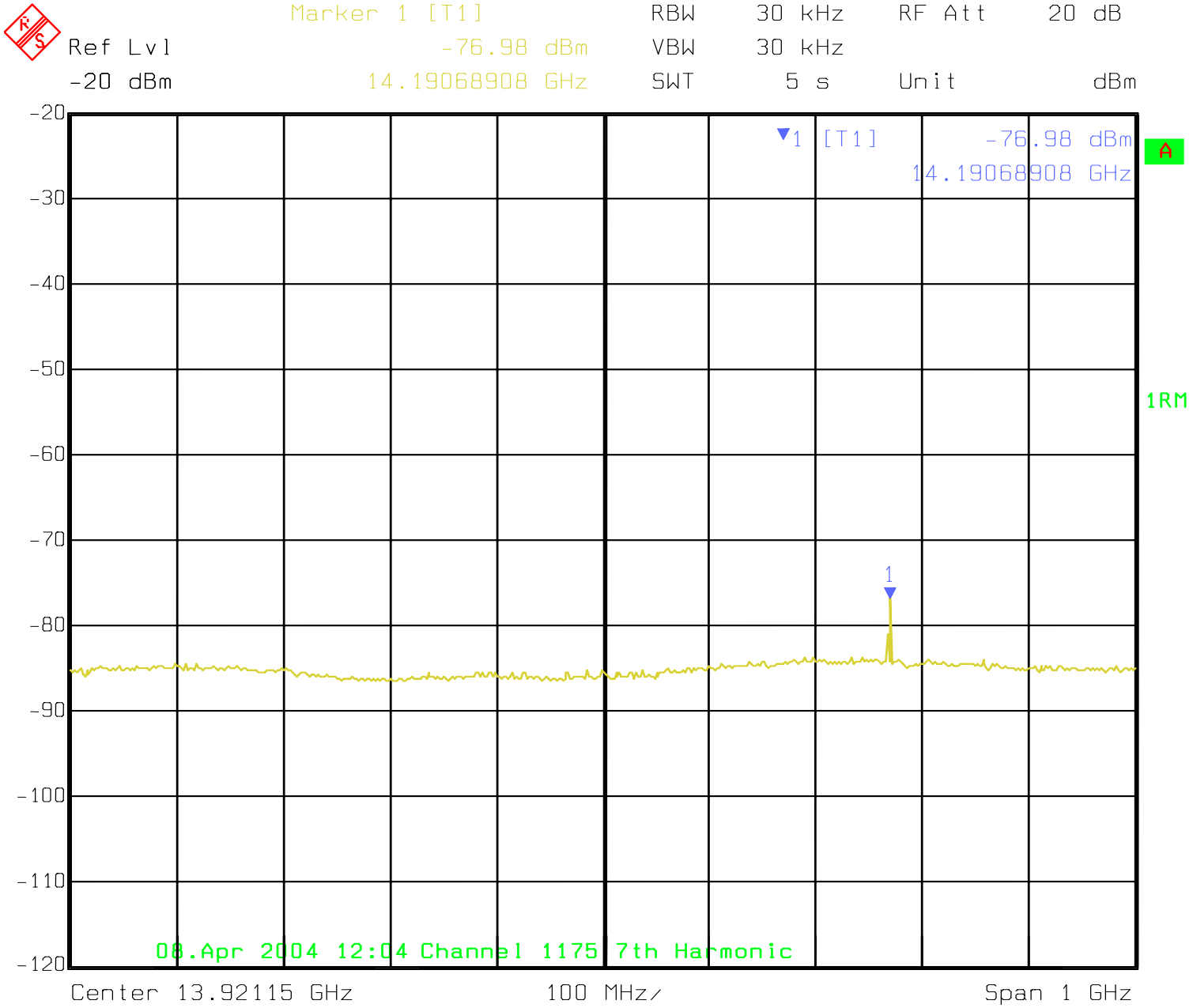

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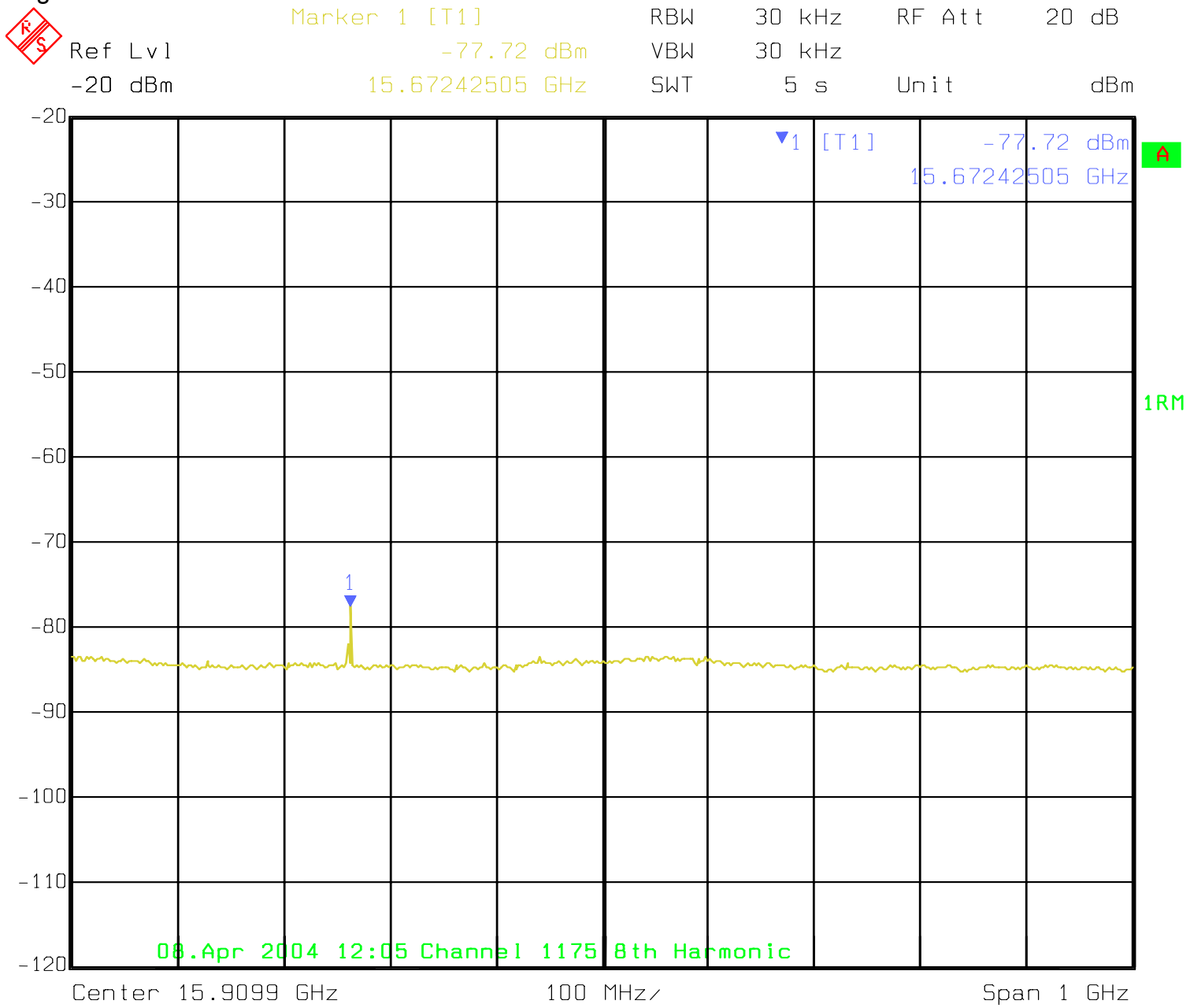

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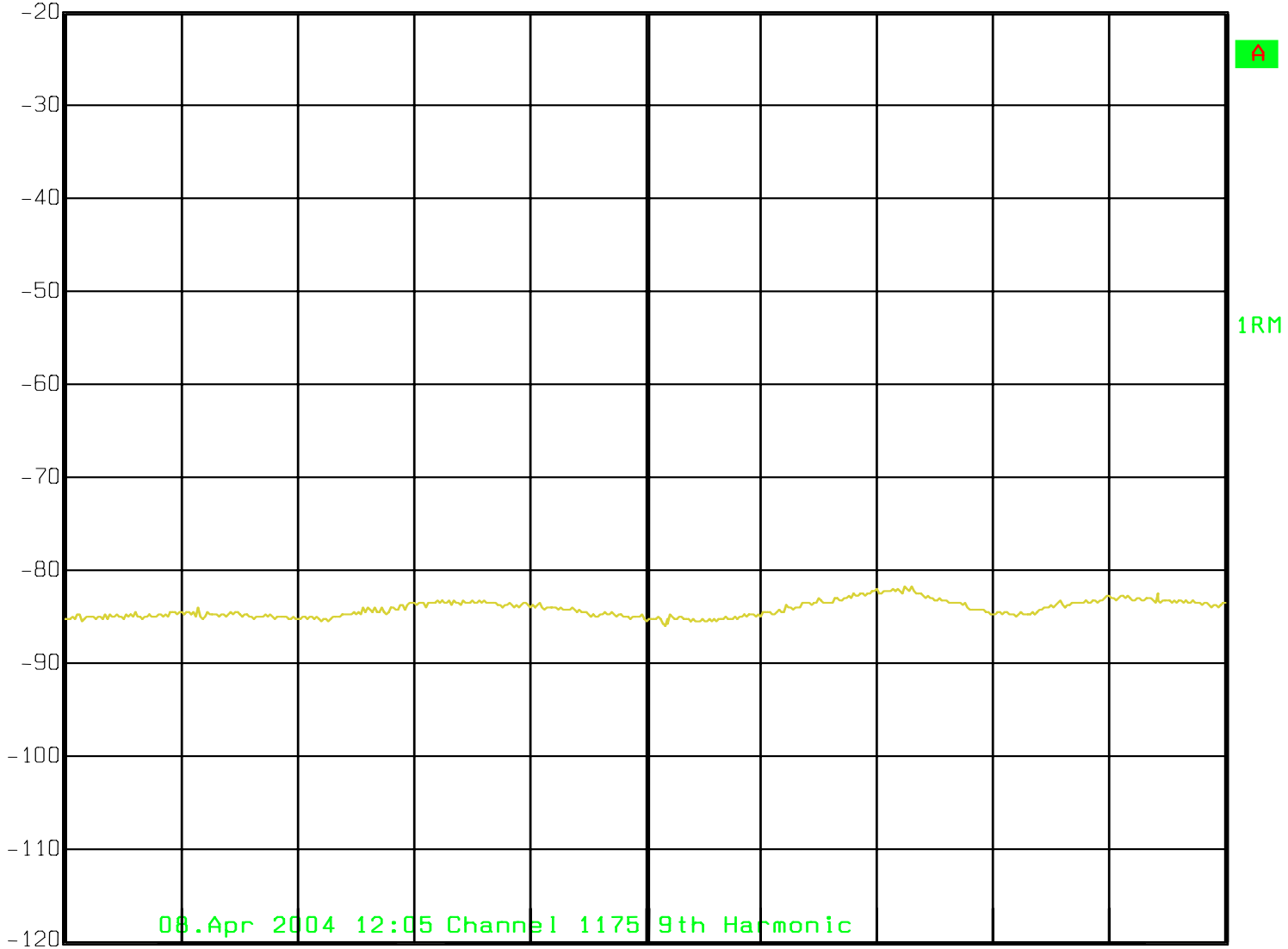
RBW 30 kHz RF Att 20 dB
VBW 30 kHz
SWT 5 s Unit dBm

Ref Lvl
-20 dBm



Center 17.89865 GHz 100 MHz/ Span 1 GHz

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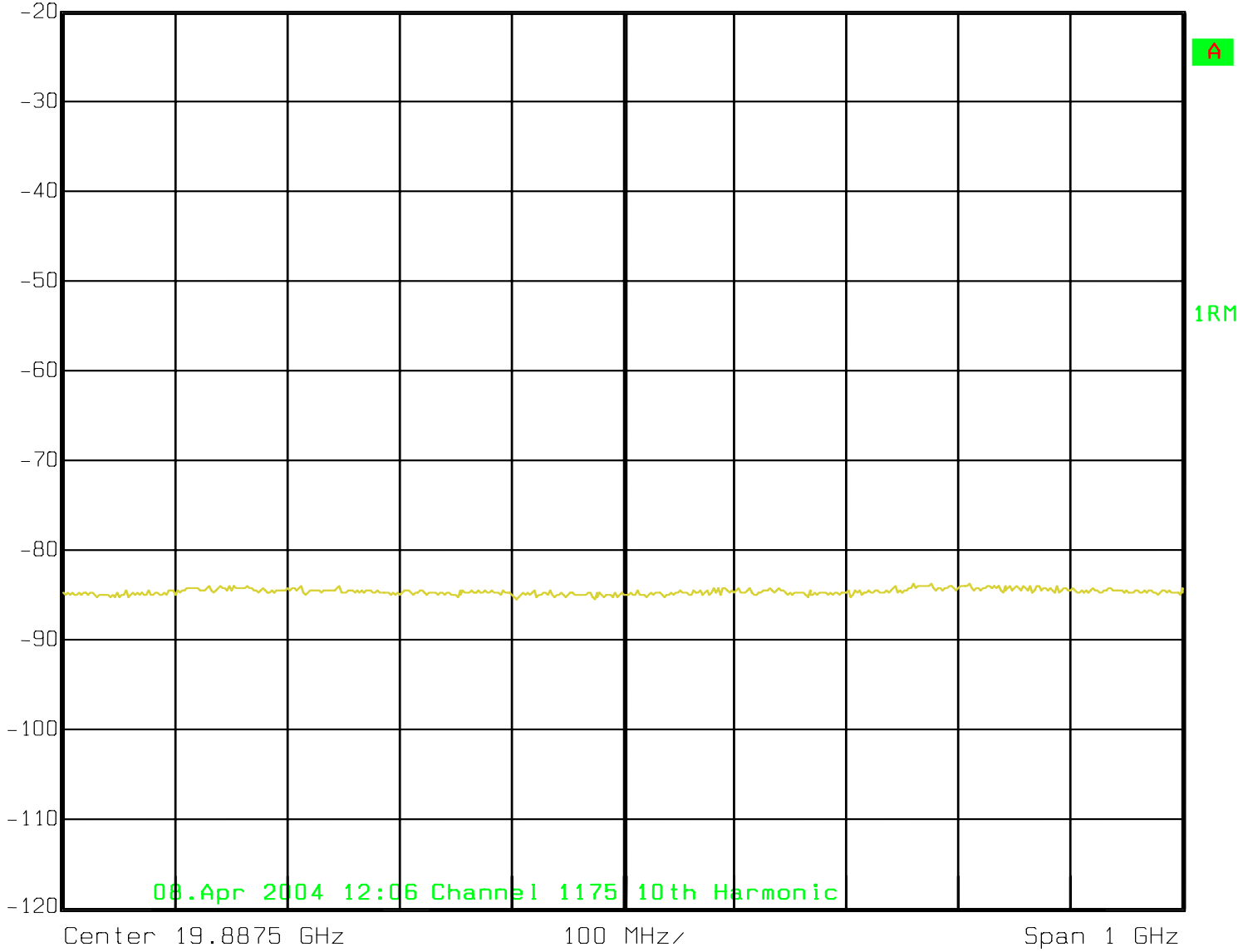
OJYKAG12

RBW 30 kHz RF Att 20 dB
VBW 30 kHz
SWT 5 s Unit dBm

Ref Lvl
-20 dBm



Center 19.8875 GHz 100 MHz/ Span 1 GHz

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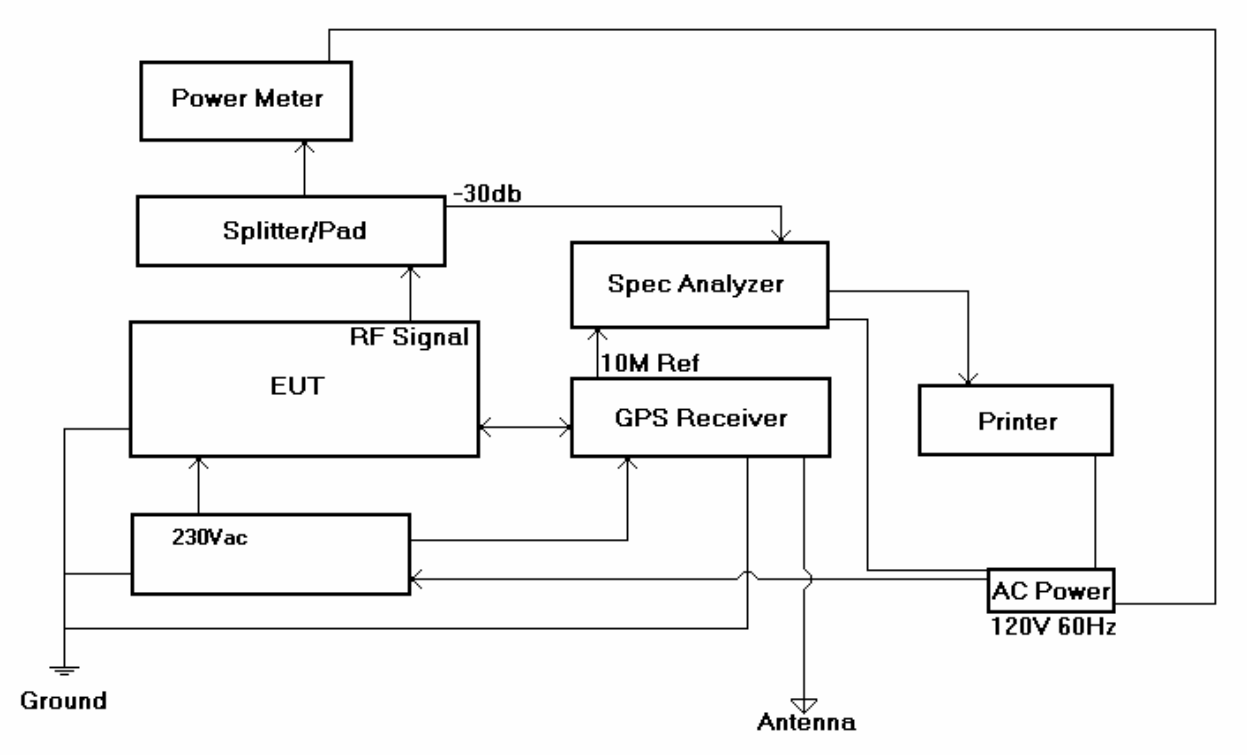
Spurious Emissions at Antenna Terminals

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. The test facility used was Criterion Technology, Rollinsvile CO.

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:

See Criterion Technology Test Report # 030925-721
Look @ page 25 for data results.

- Spurious emission bandwidth settings per 22.907 (j)(1) & (2) as applicable.

Supervised By: Thomas J. Funk

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:

1. Measurement Results: No data was taken due to the fact that this CDMA Radio Base Station cannot operate without a 1 pulse per Second signal that is produced off of GPS timing. So if the present of GPS is lost the RBS signal will wilt to a point that it is no longer operational. With GPS timing the RF portion of the system can operate and will to vary more than a few hertz, otherwise the system will wilt and shut down.

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. 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 (page 6-27 TIA/EIA/IS-95 for filtering frequency response limits.

§ 15.205 Restricted Bands of Operation.

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.25
0.495-0.505 [1]	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 Mhz.
[2] Above 38.6

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 EIRP of the device is less than 1640 Watts. The Antenna's used on this device are a typical 16dBi gain antenna, with this configuration and the maximum RF output of the device set to 20 Watts the exposure limit is less than 1640 Watts.