CERTIFICATE OF COMPLIANCE
FCC PART 90 CERTIFICATION

Test Lab:	**Applicant Name:**
CELLTECH RESEARCH INC. Testing and Engineering Services 1955 Moss Court Kelowna, B.C. V1Y 9L3 Canada Phone: 250 - 860-3130 Fax: 250 - 860-3110 Toll Free: 1-877-545-6287 e-mail: celltech@globuswireless.com web site: www.globuswireless.com	**ITRONIX CORPORATION** 801 South Stevens Street Spokane, WA 99024 U.S.A. Attn: Fred Phillips, Certification Engineer Phone: 509-742-1506 Fax: 509-626-4204

FCC Classification:	**Non-Broadcast Station Transmitter (TNB)**
FCC Rule Part(s):	**§90, §2**
FCC ID:	**KBCXC6250RIM801D**
Model(s):	**XC6250PRO, XC6250+**
Equipment Type:	**Ruggedized Laptop PC with ARDIS Radio Modem**
Tx Frequency Range:	**806 - 825 MHz**
Rx Frequency Range:	**851 - 870 MHz**
Max. RF Output Power:	**1.5 Watts**
Frequency Tolerance:	**2.5 PPM**
Emission Designator:	**20K0F1D**

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Celltech Research Inc. certifies that no party to this application has been denied FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).

Shawn McMillen
General Manager
Celltech Research Inc.

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MEASUREMENT REPORT - FCC PART 90

1.1 SCOPE

Measurement and determination of electromagnetic emissions (EME) from radio frequency devices for compliance with the technical rules and regulations of the Federal Communications Commission.

§2.1033(a) General Information

APPLICANT:

ITRONIX CORPORATION
801 South Stevens Street
Spokane, WA 99024
Attn: Fred Phillips, Certification Engineer
Phone: 509-742-1506
Fax: 509-626-4204

FCC ID	**KBCXC6250RIM801D**
Model(s)	**XC6250PRO, XC6250+**
EUT Type	**Ruggedized Laptop PC with ARDIS Radio Modem**
Classification	**Licensed Non-Broadcast Station Transmitter (TNB)**
Rule Part(s)	**§90, §2**
Max. Radiated Power	**1.5 Watts**
Tx Freq. Range	**806-825 MHz**
Rx Freq. Range	**851-870 MHz**
Emission Designator	**20K0F1D**
Signal Modulation	**FSK**
Modes Tested	**Unmodulated Carrier, RD-LAP, MDC**
Power Supply	**ITE AC Adapter Model: AD50W1P-244 or Itronix 7.2V 4500mAhr NiMH Battery**

2.1 MEASUREMENT PROCEDURES

2.2 OCCUPIED BANDWIDTH - §2.1049(c)

The antenna output terminal of the EUT was connected to the input of a 50Ω spectrum analyzer through a matched 30dB attenuator. The radio transmitter was operating at maximum output power with and without internal data modulation.

Test Results

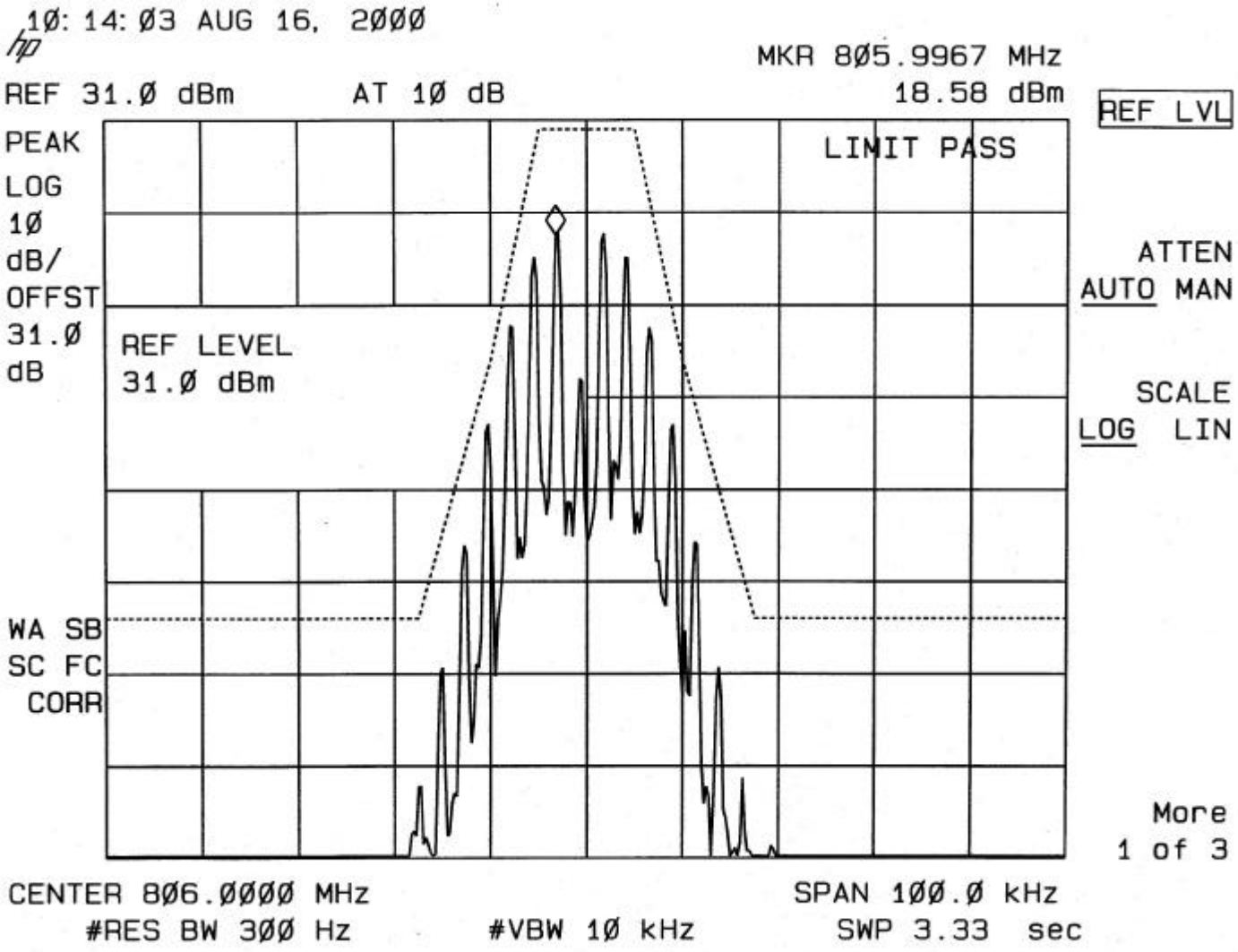
A. UNMODULATED CARRIER – High power
30.0dBm conducted power with a 30dB matched attenuator and coaxial cable with a total loss of 1.0dB.

B. INTERNAL MODULATION
Please see attached test plots (next pages). 100% of the in-band modulation is below the specified mask per 90.210(g) for both RD_LAP and MDC protocols.

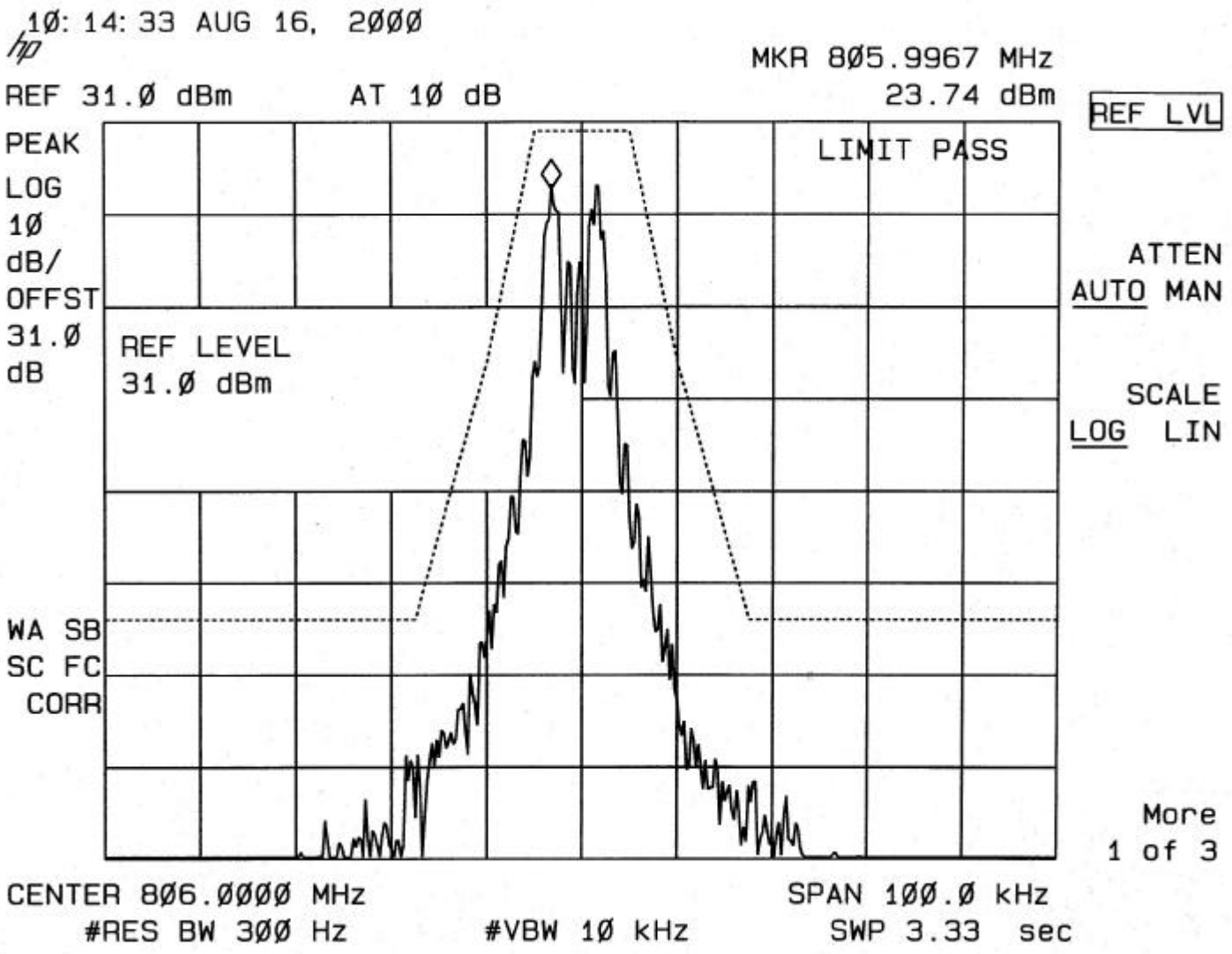
Emission Mask (806-821MHz)

FREQUENCY (MHz)	FORMULA	LIMIT (dBc)
-26500	43+10 log (P)	- 46
-0.050	43+10 log (P)	- 46
-0.050	50+10 log (P)	- 53
-0.0175	116 log (f_d / 6.1)	- 53
-0.010	116 log (f_d / 6.1) or 83 log ((f_d / 5)	- 25
-0.005	83 log ((f_d / 5)	0.0
0.005	83 log ((f_d / 5)	0.0
0.010	116 log (f_d / 6.1) or 83 log ((f_d / 5)	- 25
0.0175	116 log (f_d / 6.1)	- 53
0.050	50+10 log (P)	- 53
0.050	50+10 log (P)	- 46
26500	50+10 log (P)	- 46

OCCUPIED BANDWIDTH
Channel 806
RD-LAP



OCCUPIED BANDWIDTH
Channel 806
MDC



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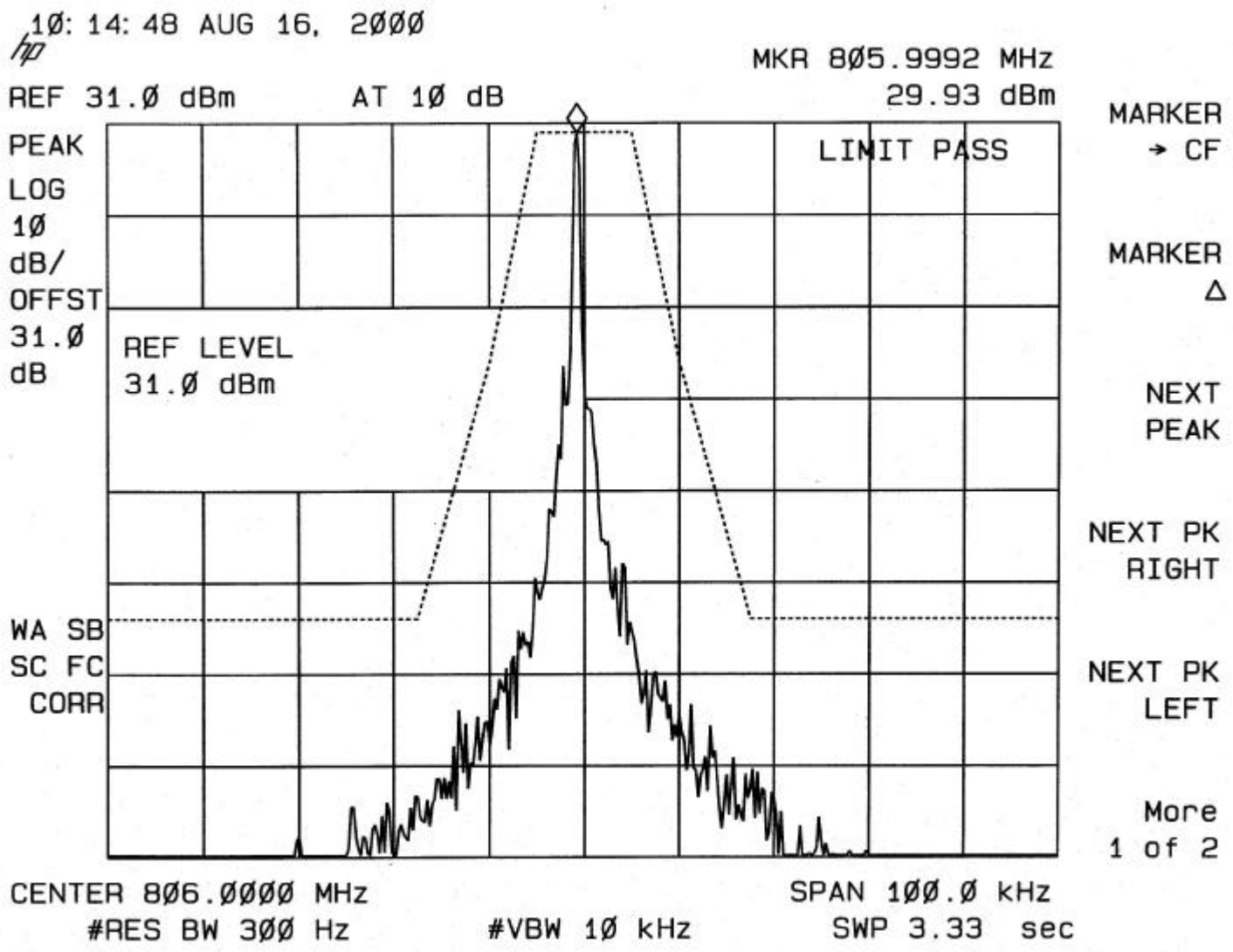
UNMODULATED



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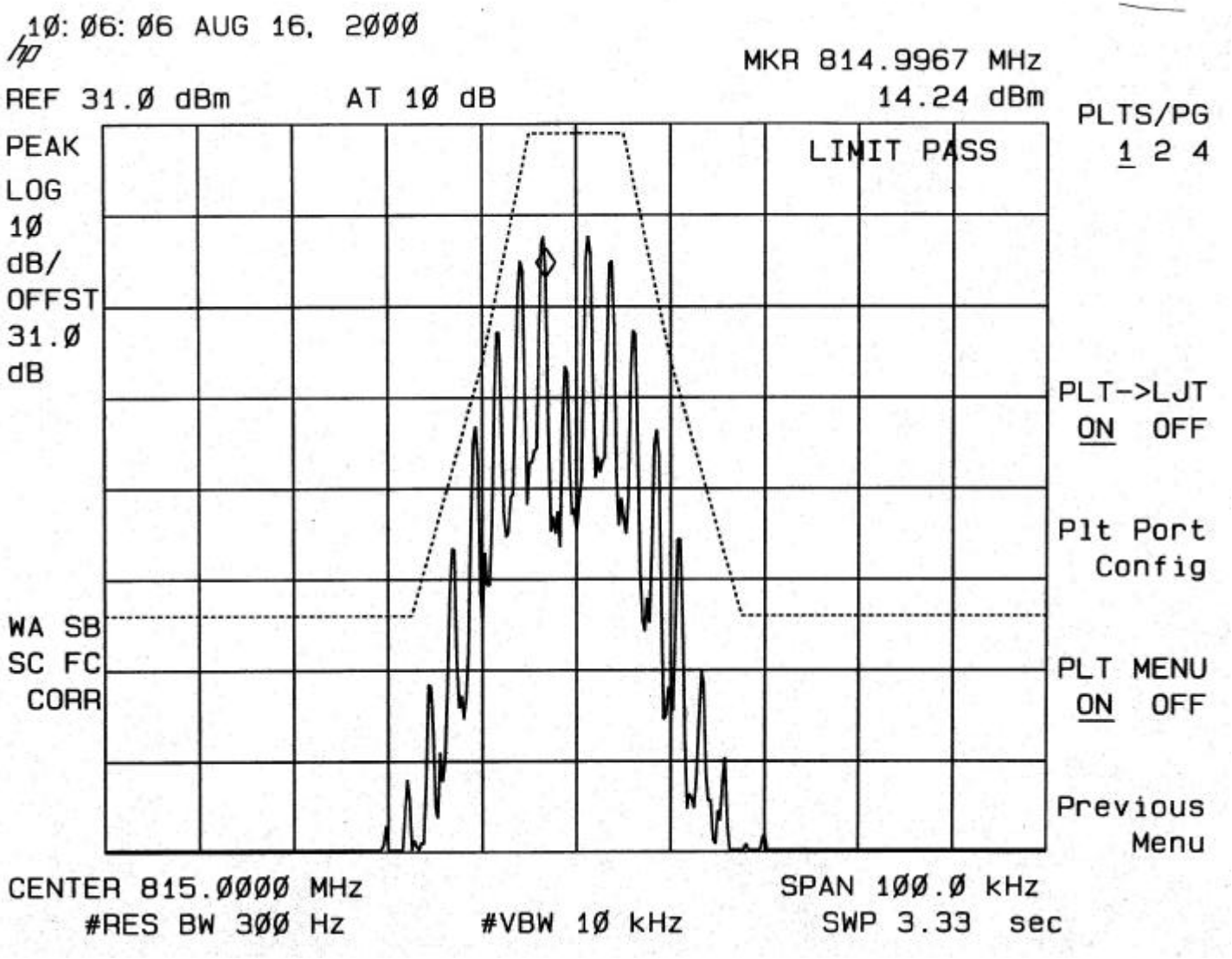
RD-LAP



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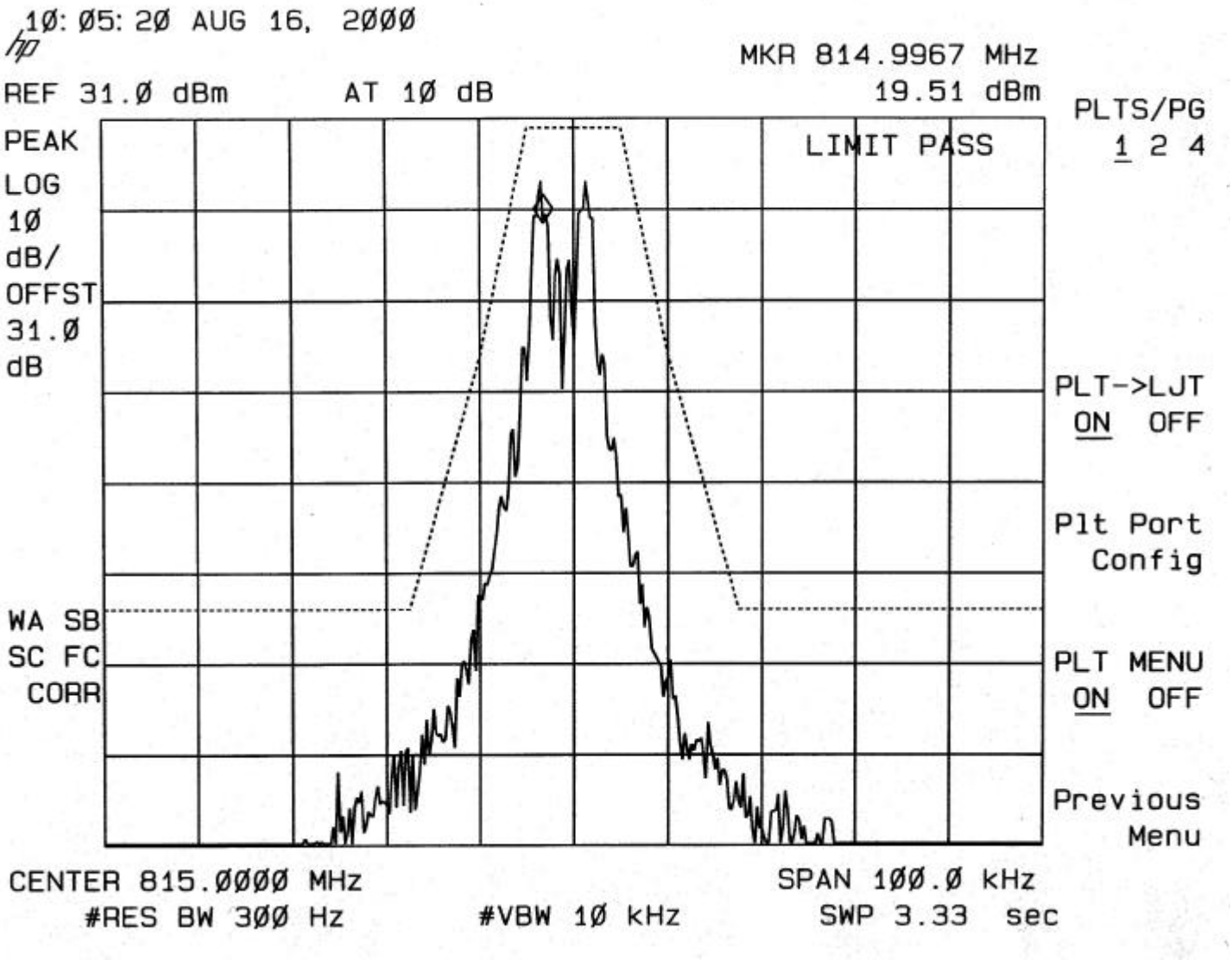
MDC



OCCUPIED BANDWIDTH
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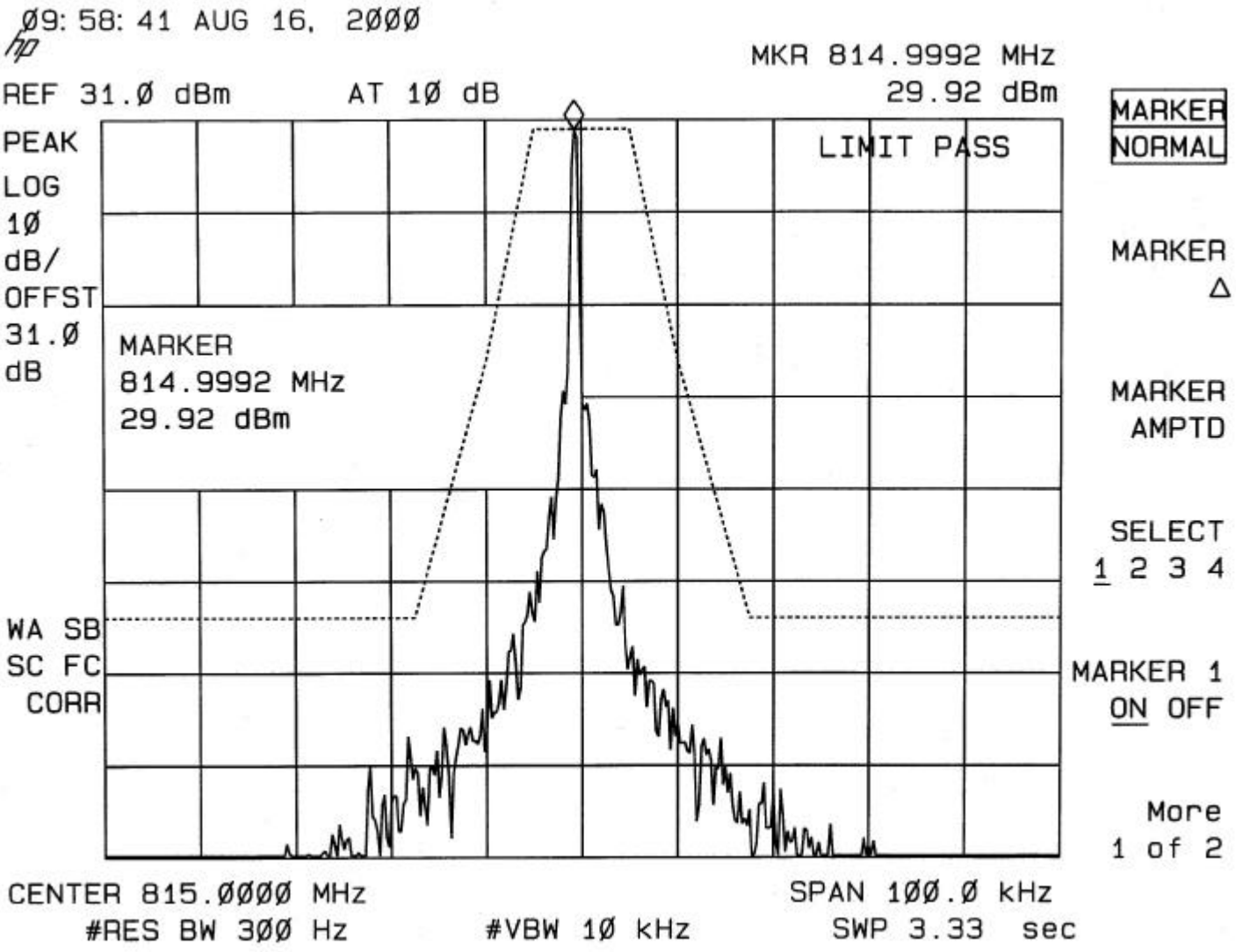
UNMODULATED



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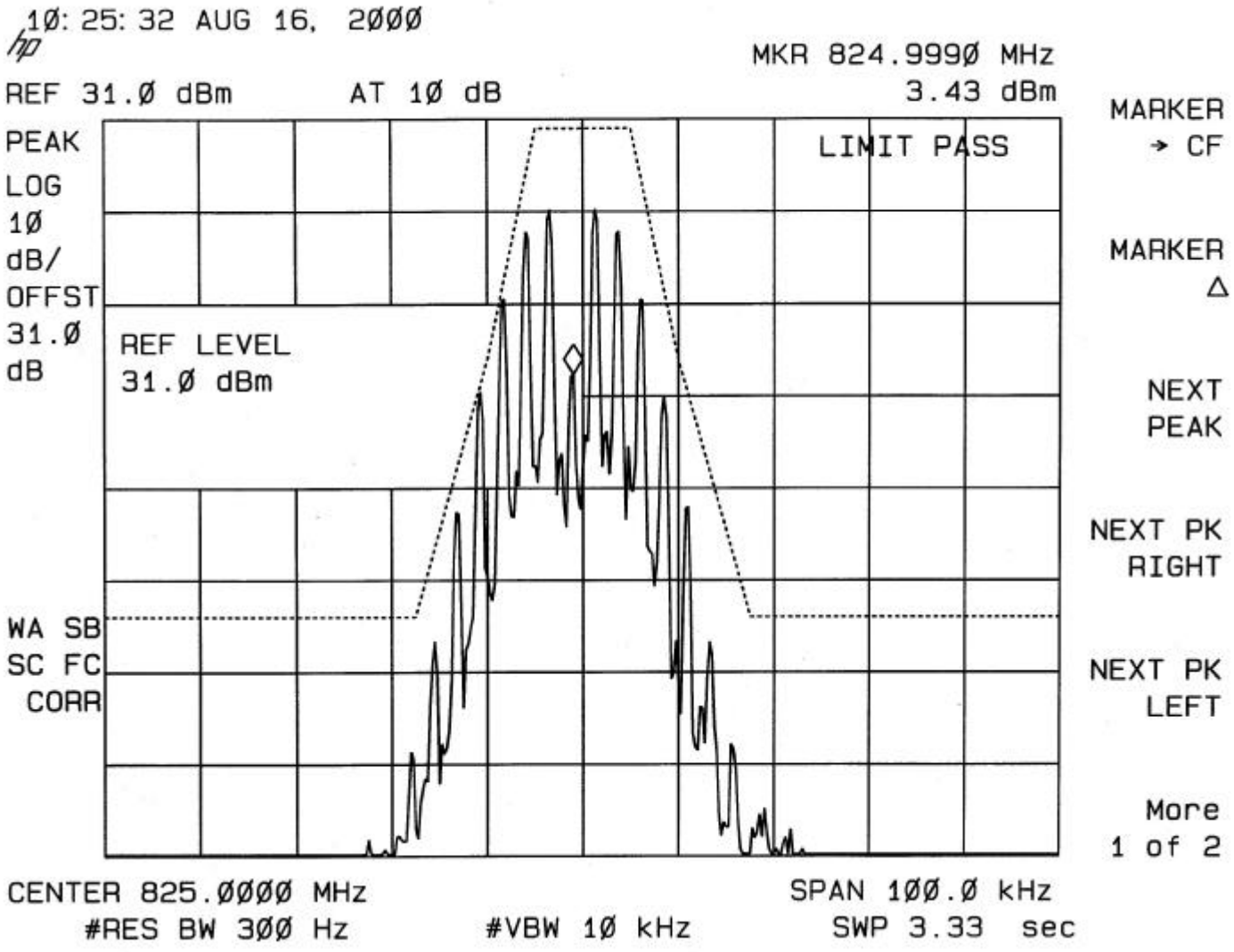
RD-LAP



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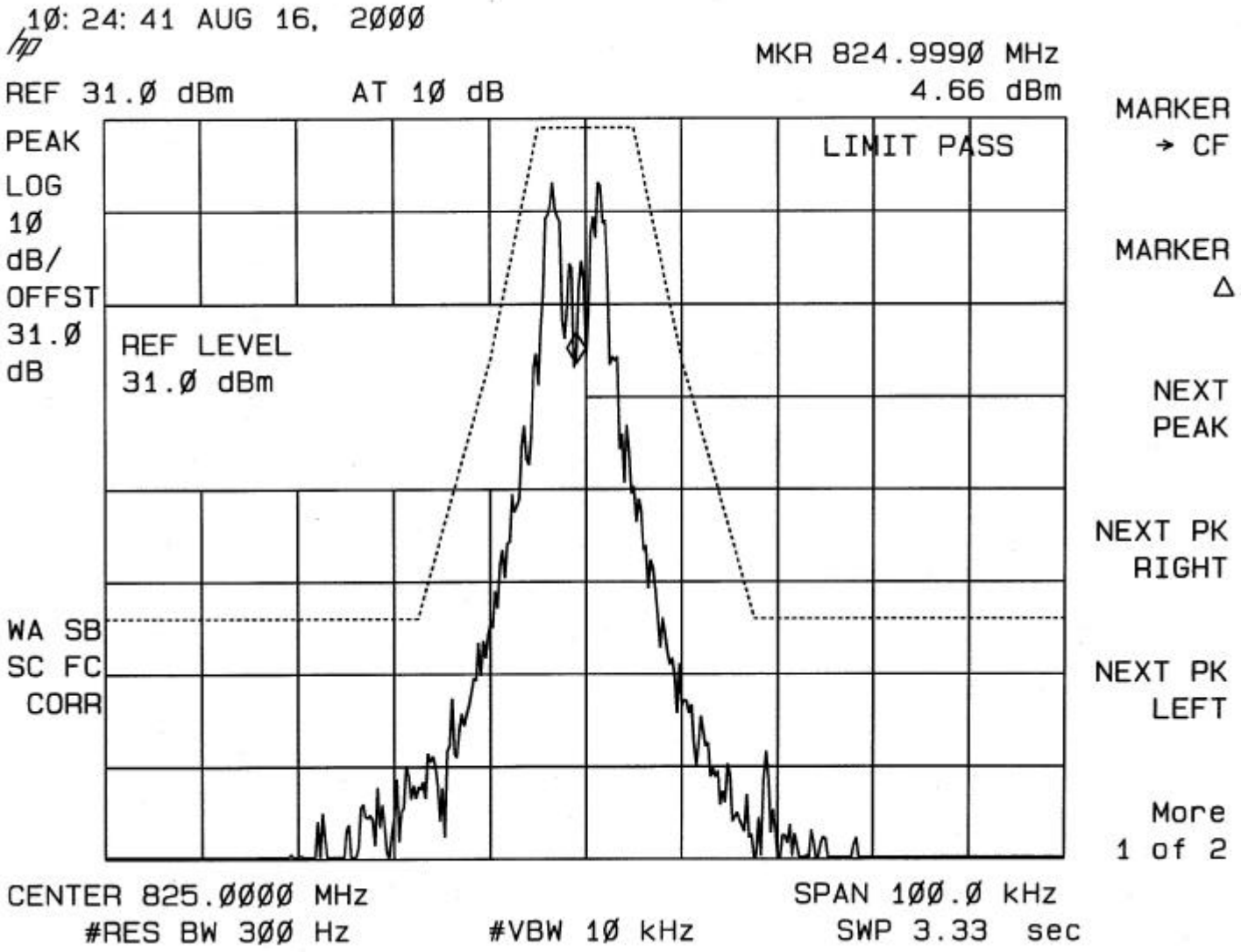
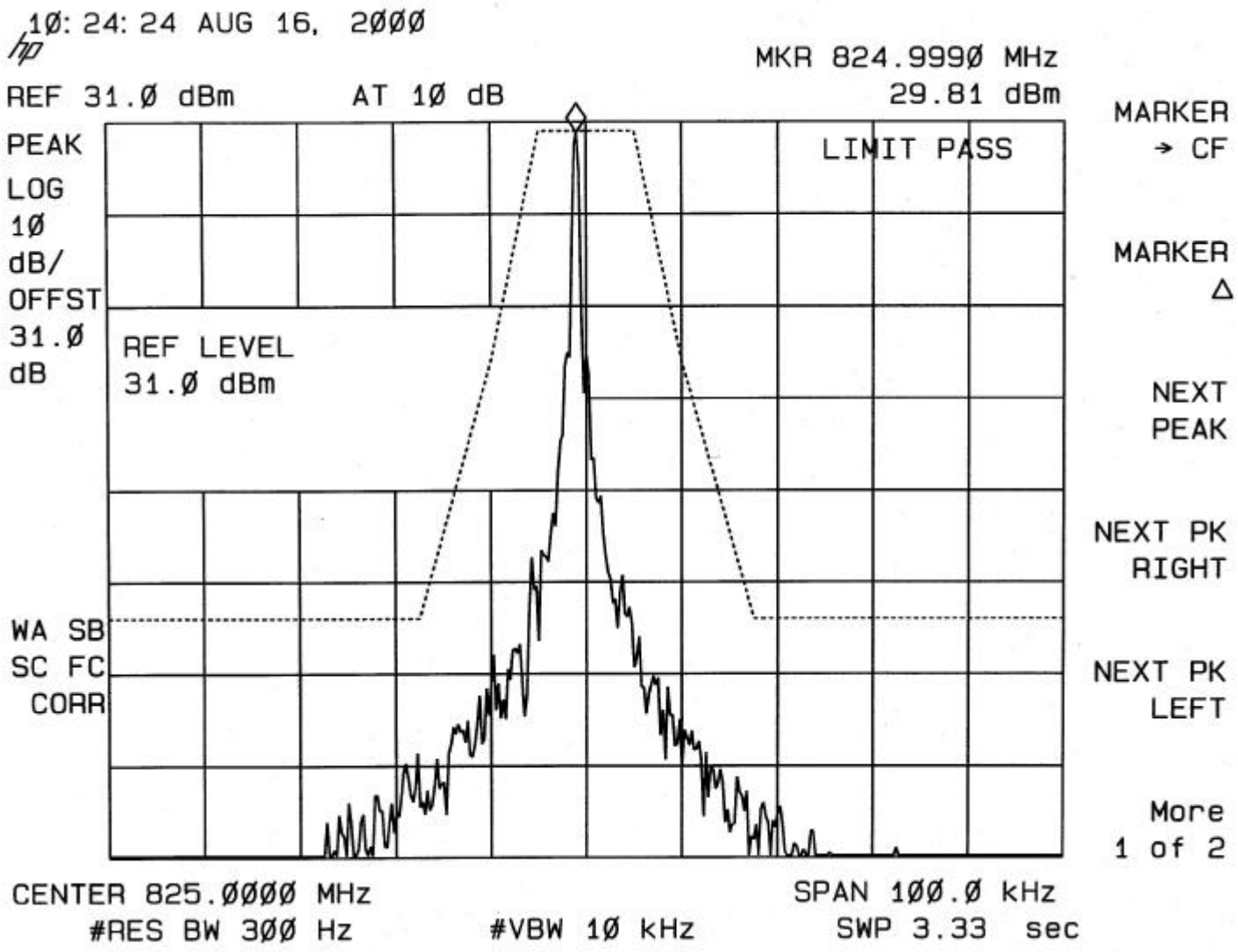
MDC



OCCUPIED BANDWIDTH
Channel 825
UNMODULATED



2.3 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL - §2.1051

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from 10MHz to 20GHz. The transmitter is modulated with a 2500Hz tone at a level of 16dB greater than that required to provided 50% modulation. The antenna output terminal of the EUT was connected to the input of a 50Ω spectrum analyzer through a matched 30dB attenuator and coaxial cable. The transmitter was operating at maximum power with and without internal data modulation. A high pass filter (Microwave Circuits Inc. P/N: H1G04G01) was used in series with the antenna, followed by a 25dB amplifier (HP 83017A).

2.4 RADIATED SPURIOUS AND HARMONIC EMISSIONS - §2.1053

Radiated and harmonic emissions above 1 GHz were measured at our 3-meter outdoor site. The EUT is placed on the turntable connected to a dummy load in normal operation using the intended power source. A receiving antenna located 3 meters from the turntable receives any signal radiated from the transmitter and its operating accessories. The receiving antenna is varied from 1 to 4 meters and the polarization is varied (horizontal and vertical) to determine the worst-case emission level. A high pass filter (Microwave Circuits Inc. P/N: H1G04G01) was used in series with the antenna, followed by a 25dB amplifier (HP 83017A).

2.5 FREQUENCY STABILITY/TEMPERATURE VARIATION - §2.1055

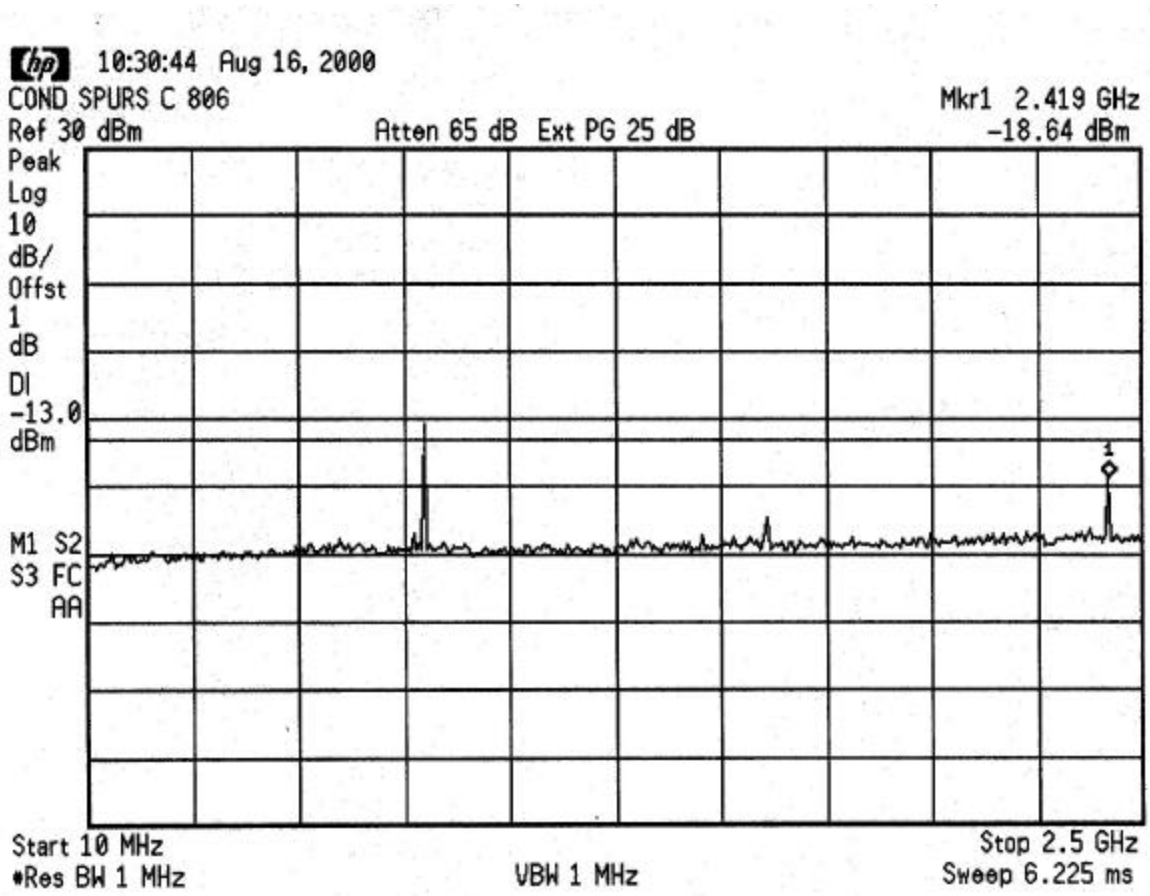
The frequency stability of the transmitter is measured by:
a) Temperature: The temperature is varied from -30°C to +60°C using an environmental chamber.
b) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied. The EUT is tested down to the battery endpoint.

Specification – The minimum frequency stability shall be +/- 0.00025% at any time during normal operation.

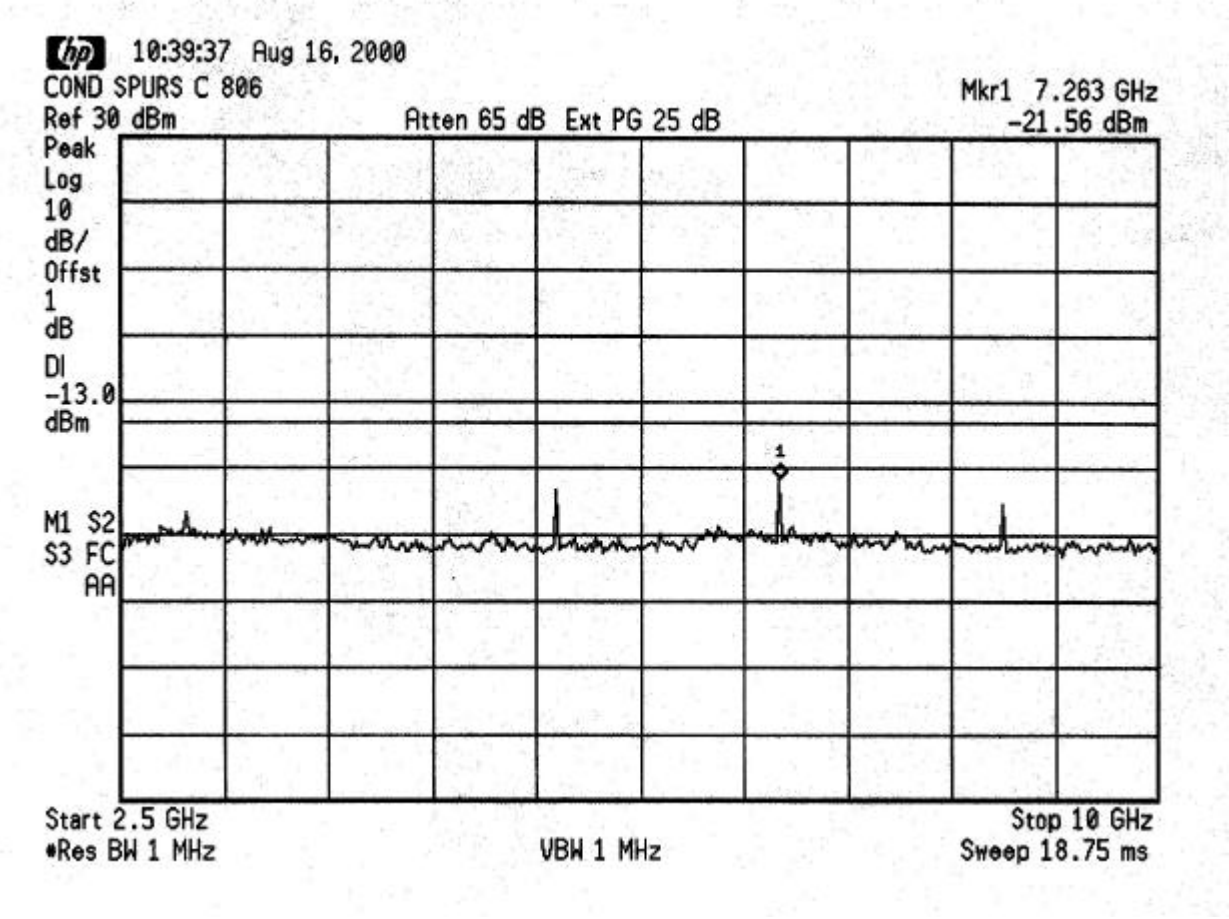
Time Period and Procedure:

1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature (25°C to 27°C to provide a reference).
2. The equipment is subjected to an overnight “soak” at -30°C without any power applied.
3. After the overnight “soak” at 30°C (usually 14-16 hours), the equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter and the individual oscillators is made within a three-minute interval after applying power to the transmitter.
4. Frequency measurements were made at 10°C intervals up to room temperature. A minimum period of one and one half-hour is provided to allow stabilization of the equipment at each temperature level.

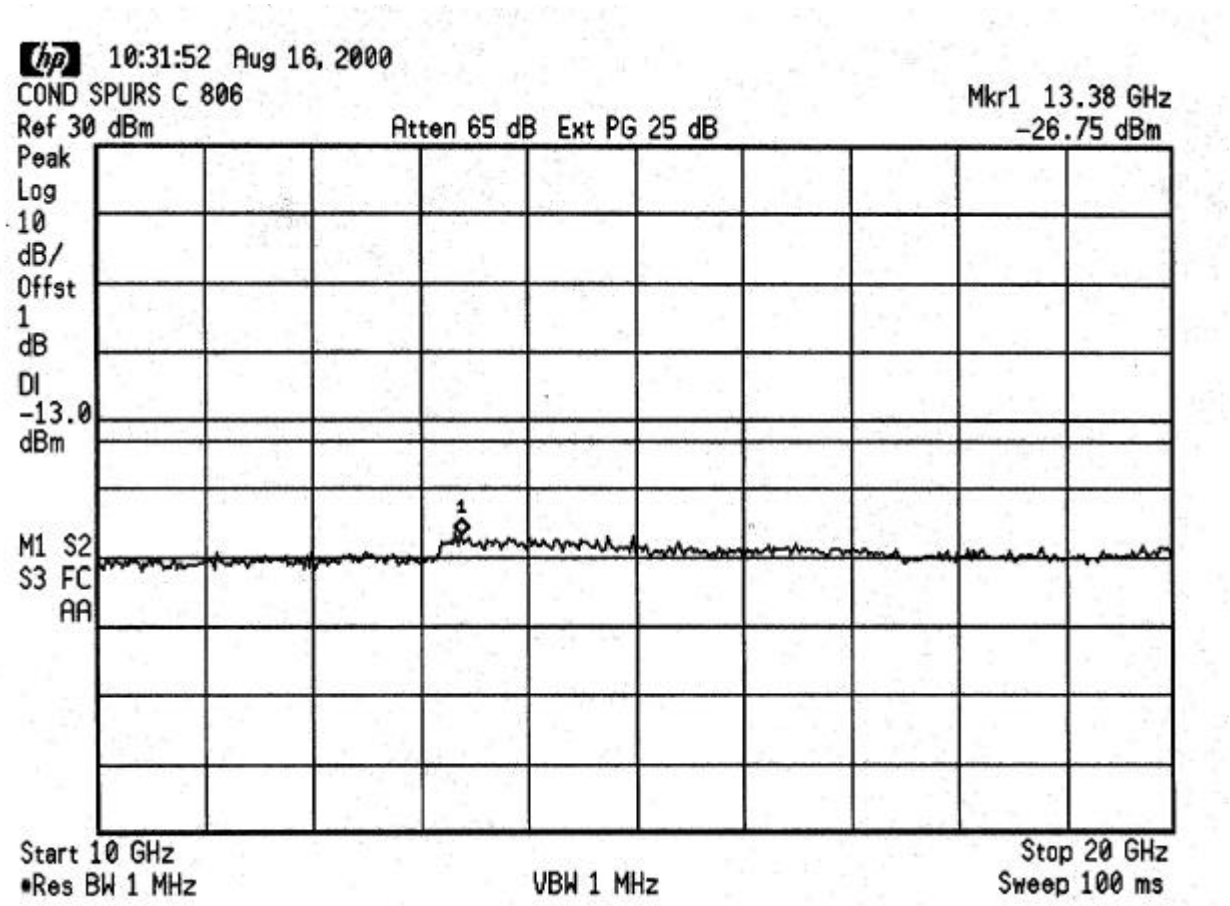
CONDUCTED SPURIOUS – Channel 806



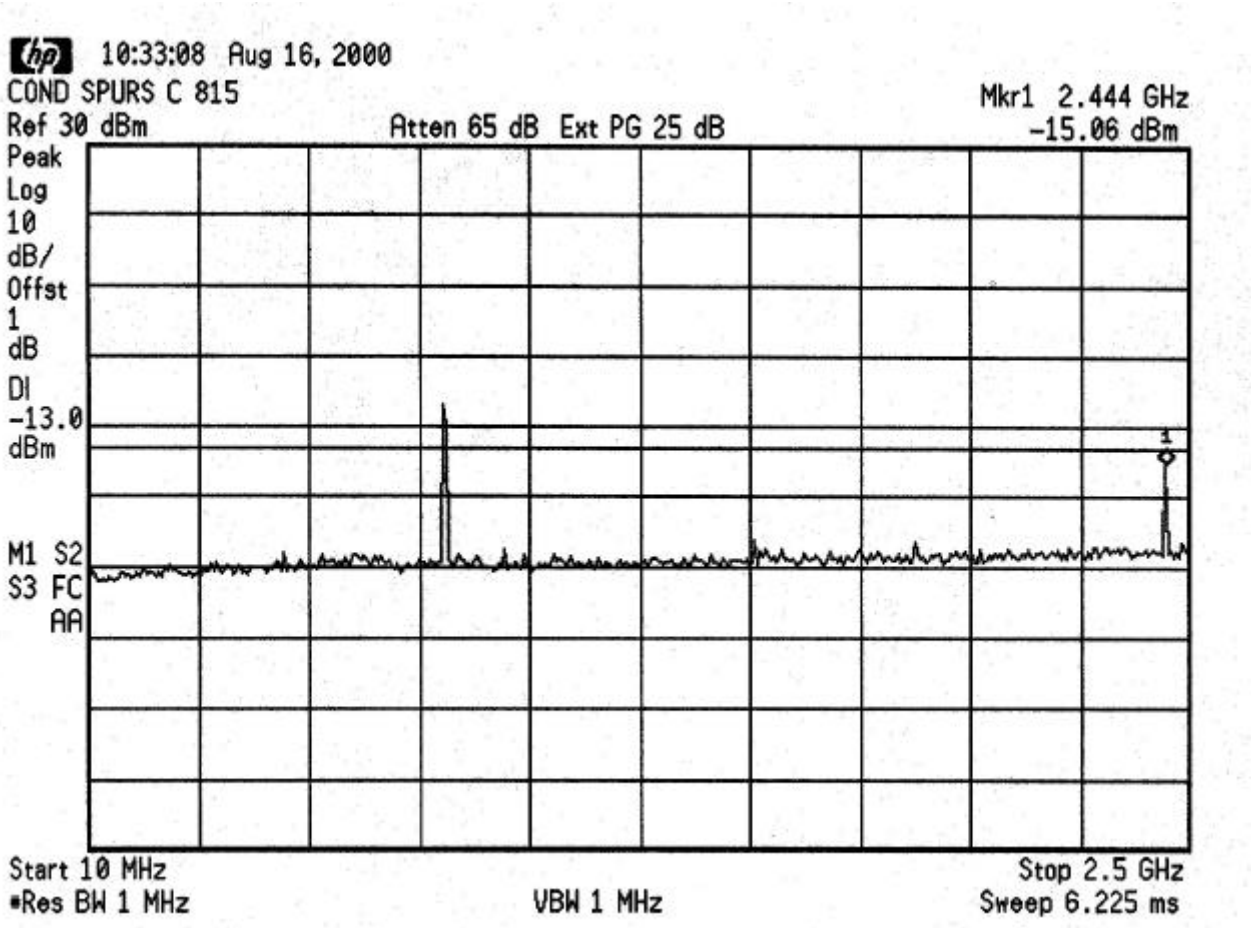
CONDUCTED SPURIOUS – Channel 806



CONDUCTED SPURIOUS – Channel 806



CONDUCTED SPURIOUS – Channel 815



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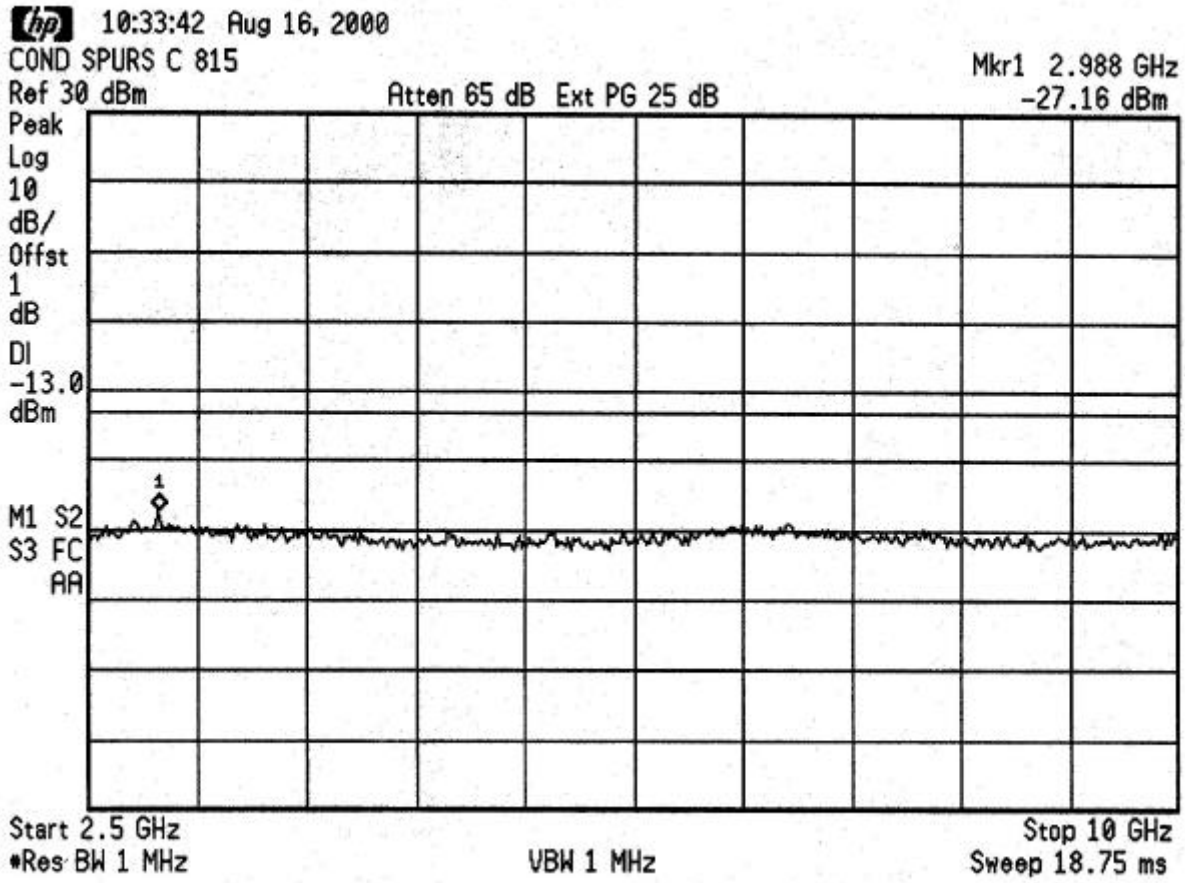

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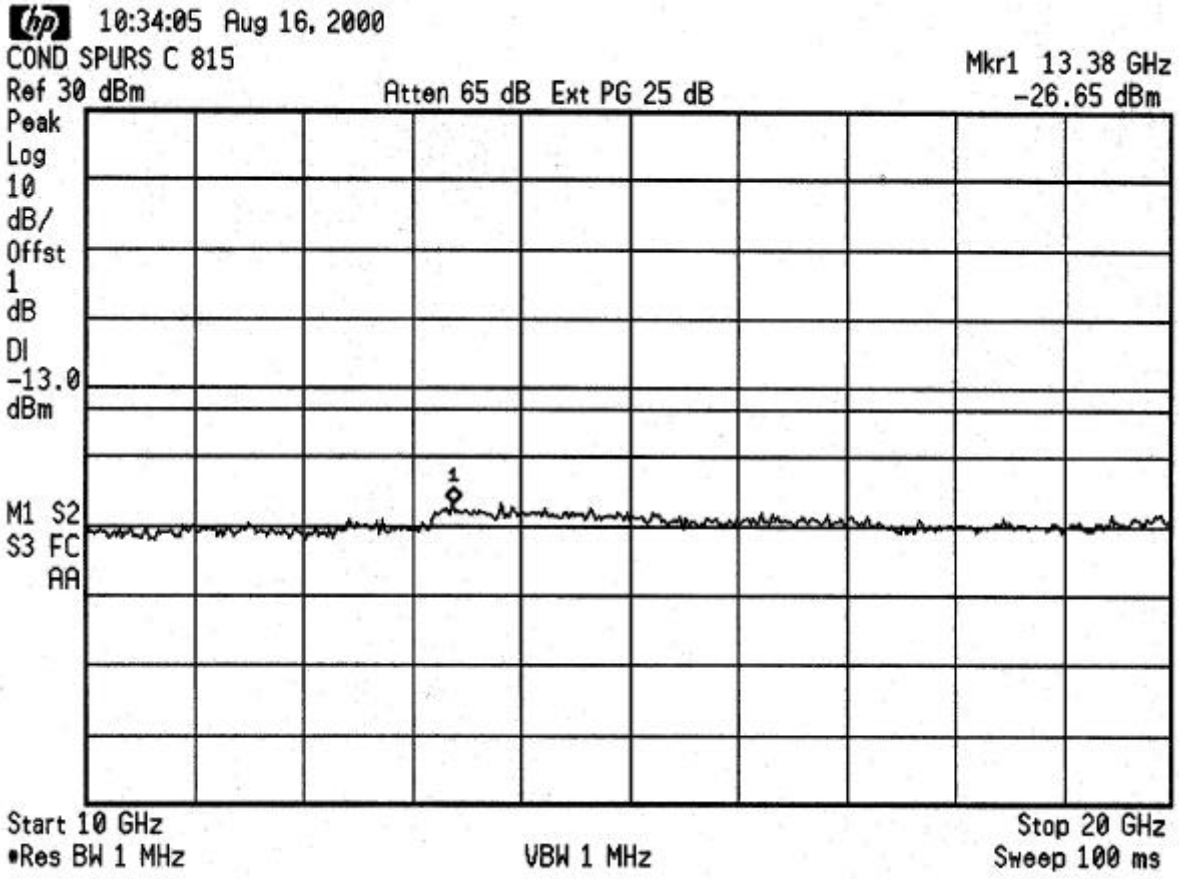

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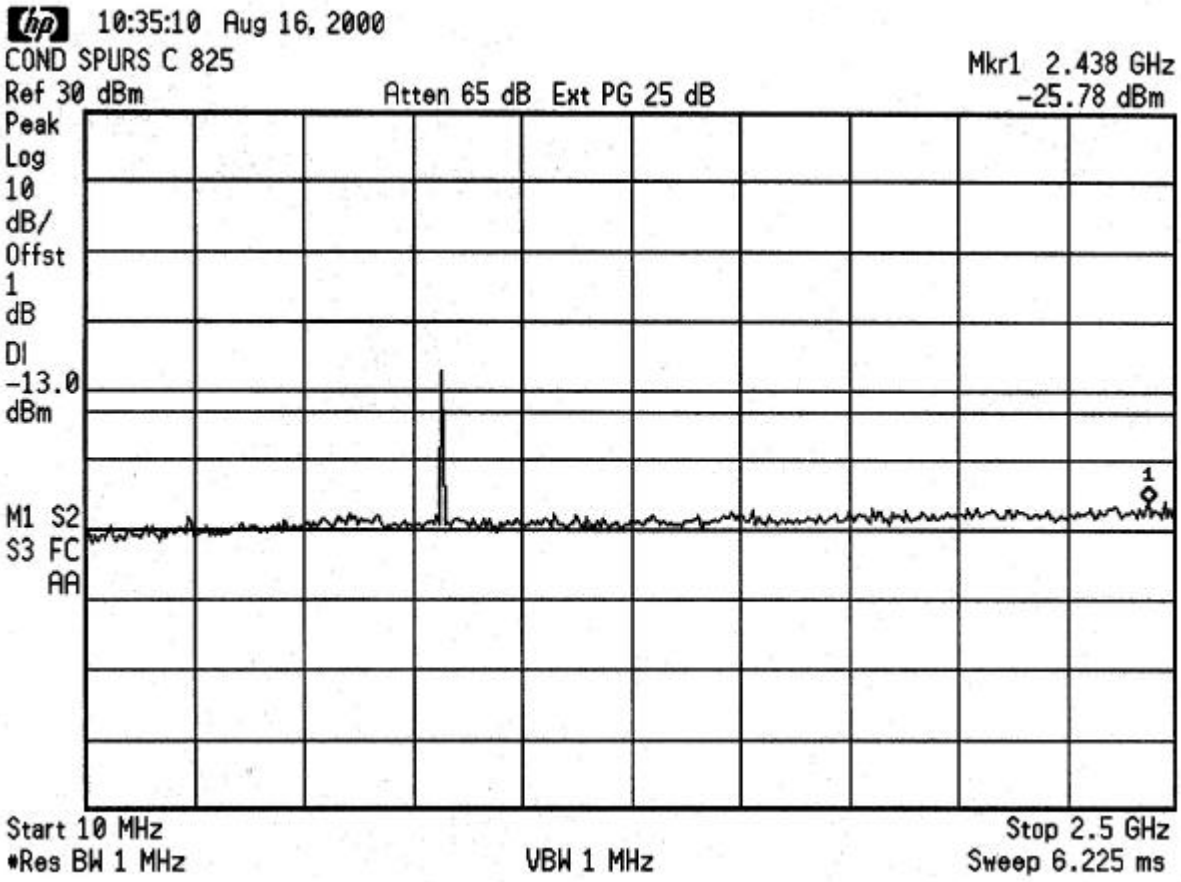

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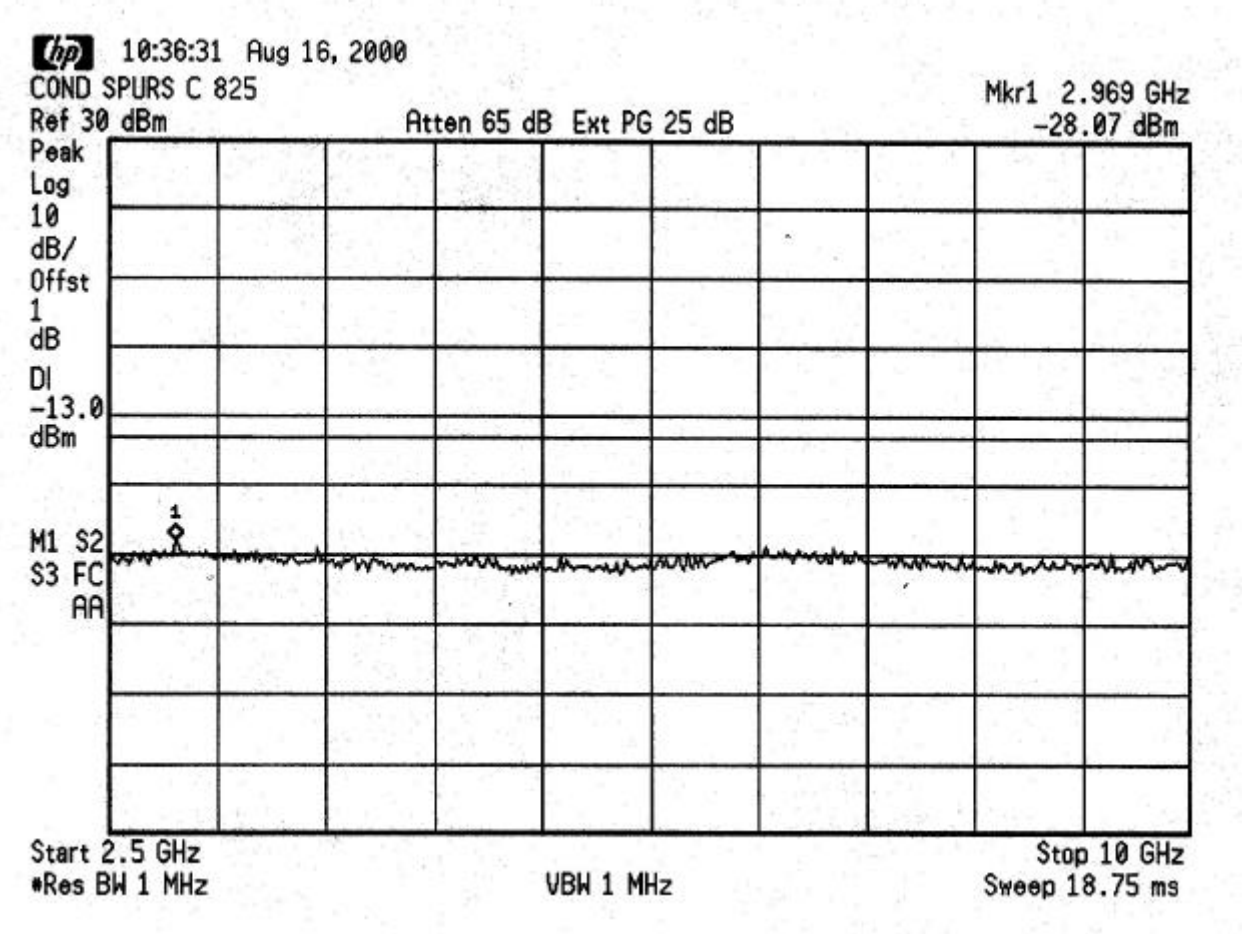

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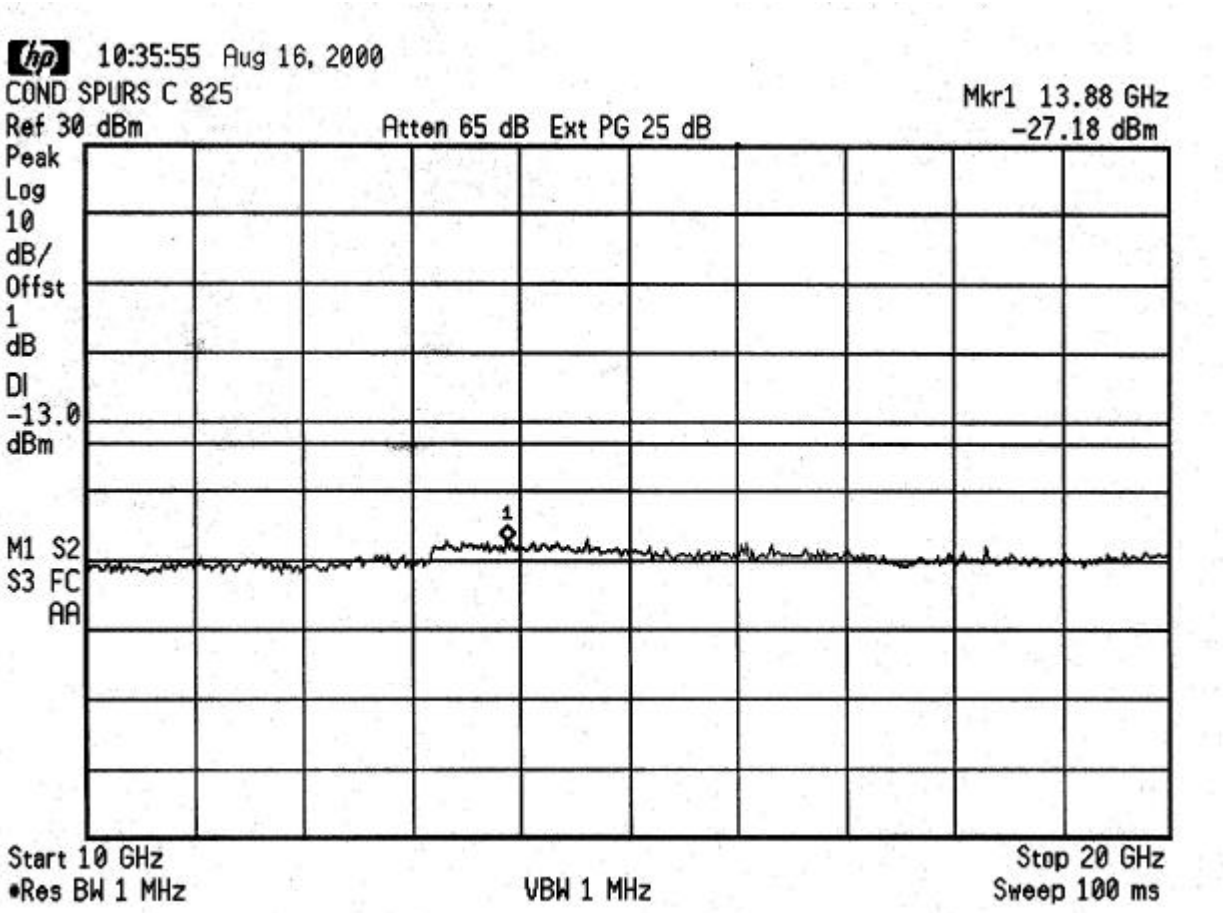


3.1 TEST DATA

3.2 EFFECTIVE RADIATED POWER OUTPUT - §2.1046

Freq. Tuned (MHz)	**EUT Conducted Power** (dBm)	**Field Strength of EUT** (dBm) V	H	**Dipole Gain** (dBd)	**Dipole Forward Conducted Power** (dBm)	**ERP of EUT Dipole Gain + Dipole Forward Conducted Power** (dBm)
806	30.00	- 6.276	- 5.31	-1.84	33.59	31.75
815	30.00	- 9.234	- 6.523	-1.69	33.45	31.76
825	30.00	- 6.528	- 5.772	-1.54	32.41	30.87

Notes:

ERP Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The height of the receive antenna and the turntable rotation were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. A signal generator and power amplifier controlled the dipole, and the input level of the dipole was adjusted to the same field strength level as the EUT. The conducted power was recorded. The ERP level was determined by adding the forward dipole power and the dipole gain in dB. For readings above 1GHz the above method is repeated using standard gain horn antennas.

3.3 FIELD STRENGTH OF SPURIOUS RADIATION – §2.1053

Operating Frequency:	806 MHz
Channel:	Low
Measured Conducted Power:	30.00dBm
Modulation:	unmodulated carrier
Distance:	3 meters
Limit:	43 + 10 $\log_{10}$ (W) = 39.47 dBc

Frequency (MHz)	**Level** (dBm)	**AFCL** (dB)	**POL** (H/V)	**ERP** (dBm)	(dBc)
1630	$\leq$ -56.47	28.96	H	- 15.39	45.39
3260	$\leq$ - 57.24	28.55	H	- 16.57	46.57
6520	$\leq$ - 55.49	29.87	H	- 13.50	43.50
13040	< - 60				

Notes:

1. The bandwidth is set per §90.210 (RBW = 1MHz, VBW = 1MHz).
2. The spectrum was checked from 10 MHz up to 20GHz.
3. < -60dBm is below the floor of the spectrum analyzer.
4. The EUT is manipulated through 3 orthogonal axis and the worst-case emission are reported.
5. The EUT is placed 3.0 meters away from the receiving antenna and the ERP is calculated using the formula.
   ERP (dBm) = 10 Log_{10} (((r(mV/m)/1 x 10^6)^2 / 49.2/1 x 10^{-3})
   ERP (dBm) = 10 Log_{10} [(3 x FS/1 x 10^6)^2 / (49.2) x 1000]
   ERP (Watts) = {(3 x FS)/1 x 10^6}^{2} / 49.2
   Note: The antenna factor and cable loss were determined prior to the test.

Operating Frequency:	815 MHz
Channel:	Mid
Measured Conducted Power:	30.00dBm
Modulation:	unmodulated carrier
Distance:	3 meters
Limit:	43 + 10 $\log_{10}$ (W) = 39.47 dBc

Frequency (MHz)	**Level** (dBm)	**AFCL** (dB)	**POL** (H/V)	**ERP** (dBm)	(dBc)
1630	$\leq$ - 57.48	28.96	H	- 16.40	46.40
3260	$\leq$ - 57.06	28.55	H	- 16.39	46.39
6520	$\leq$ - 56.71	29.87	H	- 14.72	44.72
13040	< - 60				

Notes:

1. The bandwidth is set per §90.210 (RBW = 1MHz, VBW = 1MHz).
2. The spectrum was checked from 10 MHz up to 20GHz.
3. < -60dBm is below the floor of the spectrum analyzer.
4. The EUT is manipulated through 3 orthogonal axis and the worst-case emission are reported.
5. The EUT is placed 3.0 meters away from the receiving antenna and the ERP is calculated using the formula:
   ERP (dBm) = 10 Log_{10} (((r(mV/m)/1 x 10^6)^2 / 49.2/1 x 10^{-3})
   ERP (dBm) = 10 Log_{10} [(3 x FS/1 x 10^6)^2 / (49.2) x 1000]
   ERP (Watts) = {(3 x FS)/1 x 10^6}^{2} / 49.2
   Note: The antenna factor and cable loss were determined prior to the test.

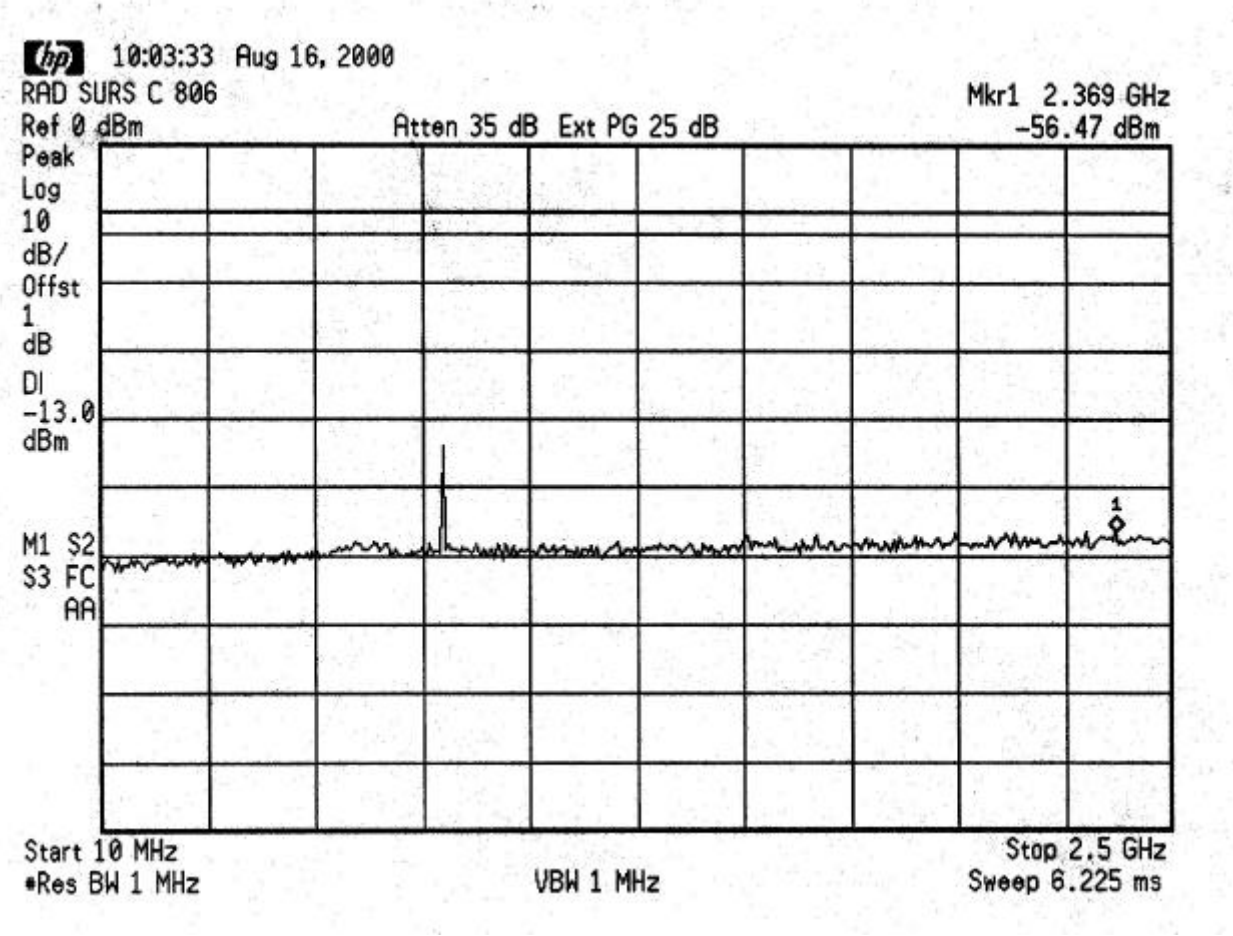
Operating Frequency:	825 MHz
Channel:	High
Measured Conducted Power:	30.00dBm
Modulation:	unmodulated carrier
Distance:	3 meters
Limit:	43 + 10 $\log_{10}$ (W) = 39.47 dBc

Frequency (MHz)	**Level** (dBm)	**AFCL** (dB)	**POL** (H/V)	**ERP** (dBm)	(dBc)
1630	$\leq$ -55.55	28.96	H	- 14.47	44.47
3260	$\leq$ - 57.16	28.55	H	- 16.49	46.49
6520	$\leq$ - 56.77	29.87	H	- 14.78	44.78
13040	< - 60				

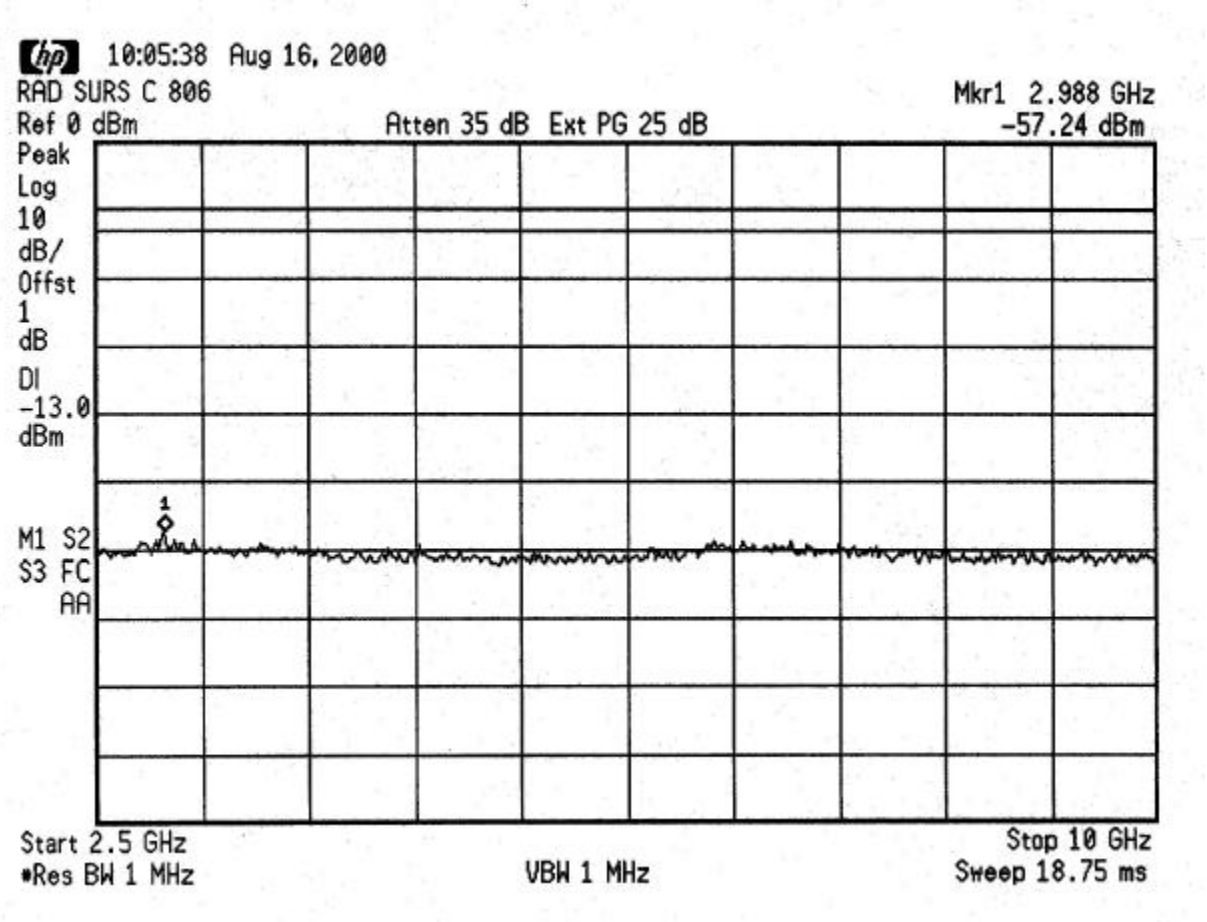
Notes:

1. The bandwidth is set per §90.210 (RBW = 1MHz, VBW = 1MHz).
2. The spectrum was checked from 10 MHz up to 20GHz.
3. < -60dBm is below the floor of the spectrum analyzer.
4. The EUT is manipulated through 3 orthogonal axis and the worst-case emission are reported.
5. The EUT is placed 3.0 meters away from the receiving antenna and the ERP is calculated using the formula:
   ERP (dBm) = 10 Log_{10} (((r(mV/m)/1 x 10^6)^2 / 49.2/1 x 10^{-3})
   ERP (dBm) = 10 Log_{10} [(3 x FS/1 x 10^6)^2 / (49.2) x 1000]
   ERP (Watts) = {(3 x FS)/1 x 10^6}^{2} / 49.2
   Note: The antenna factor and cable loss were determined prior to the test.

RADIATED SPURIOUS – Channel 806



RADIATED SPURIOUS – Channel 806



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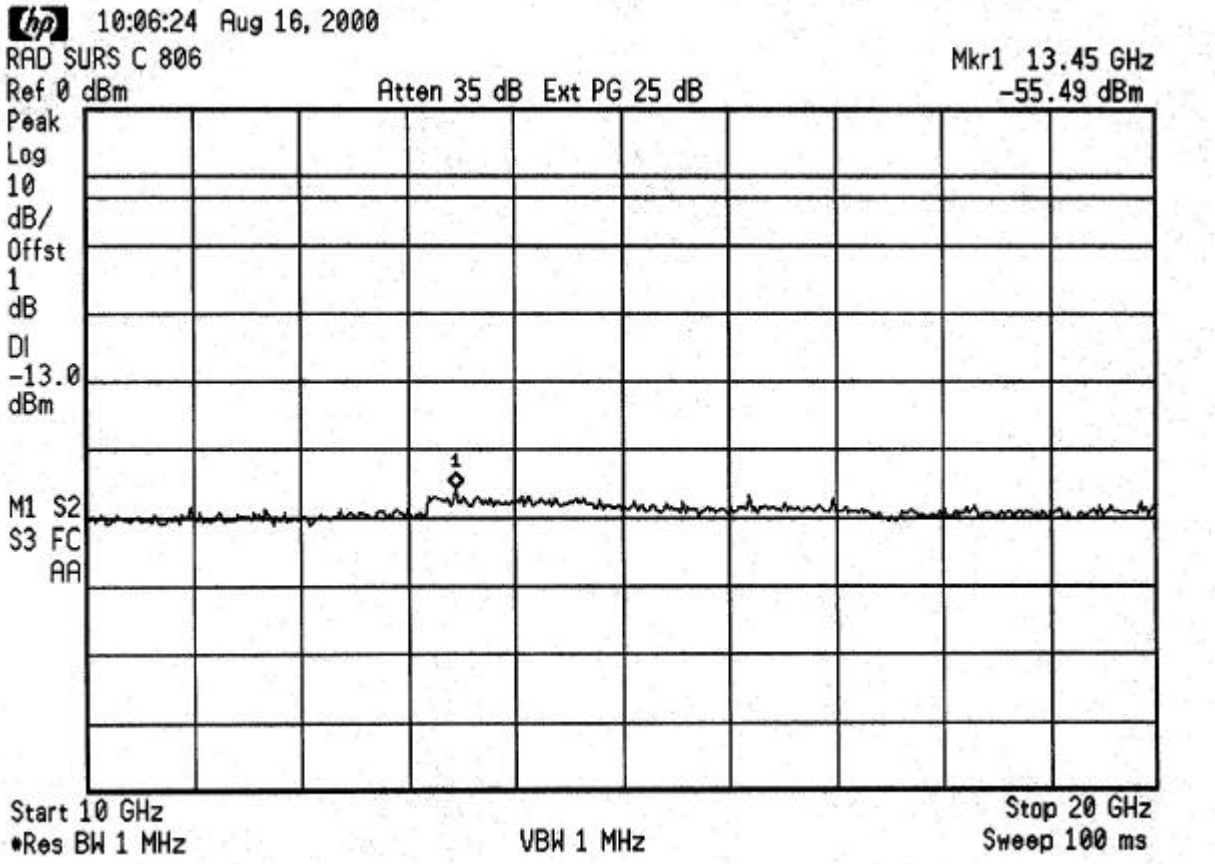

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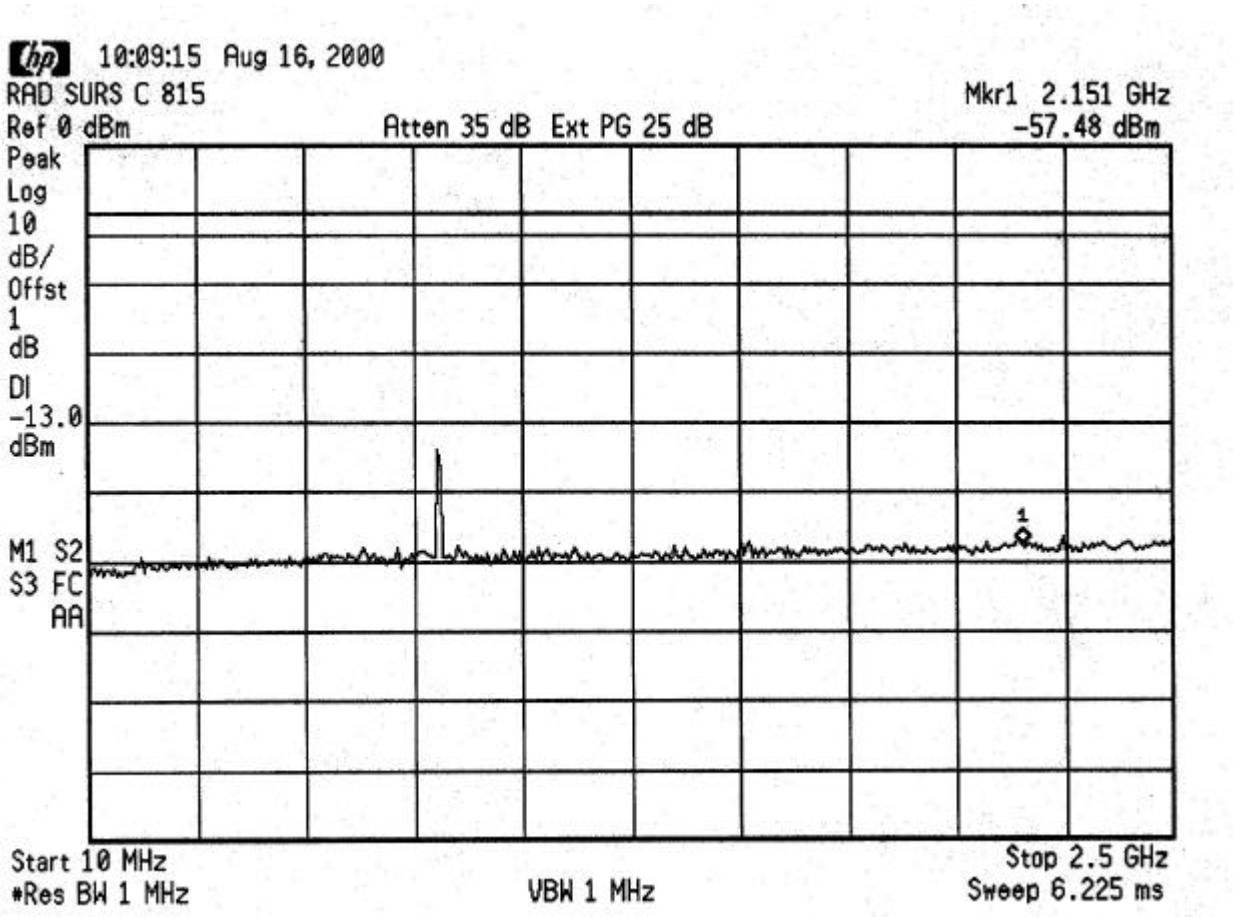

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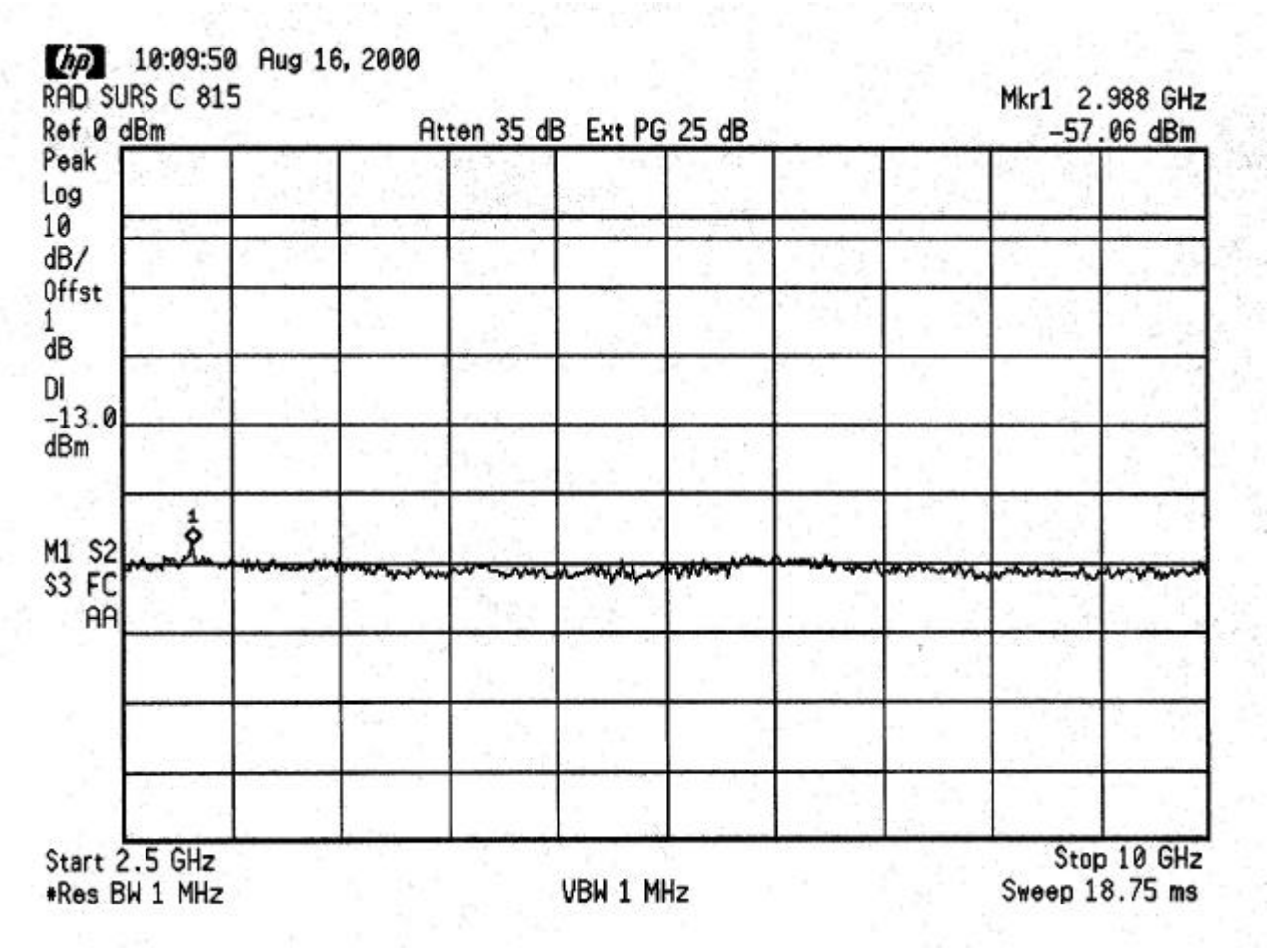

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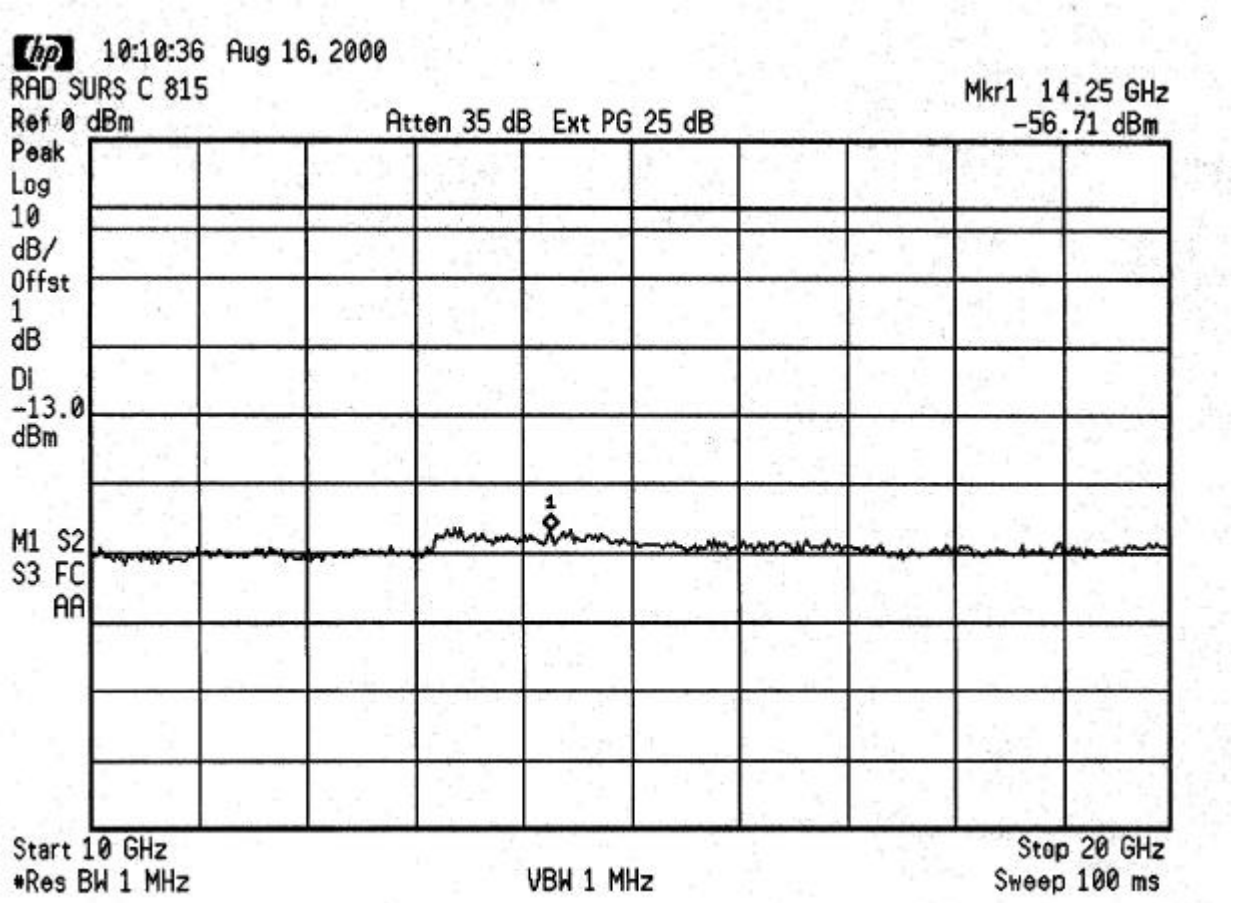

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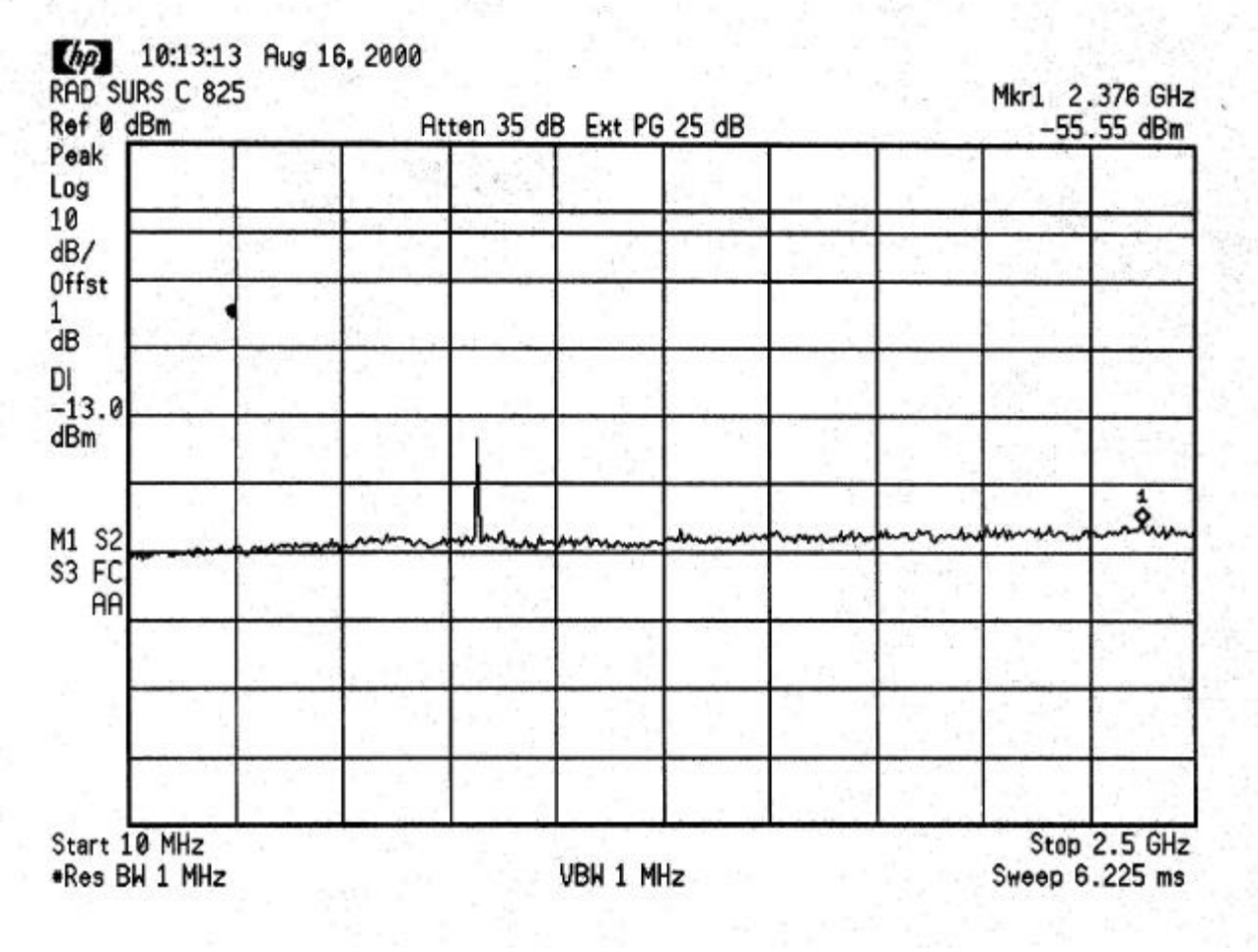

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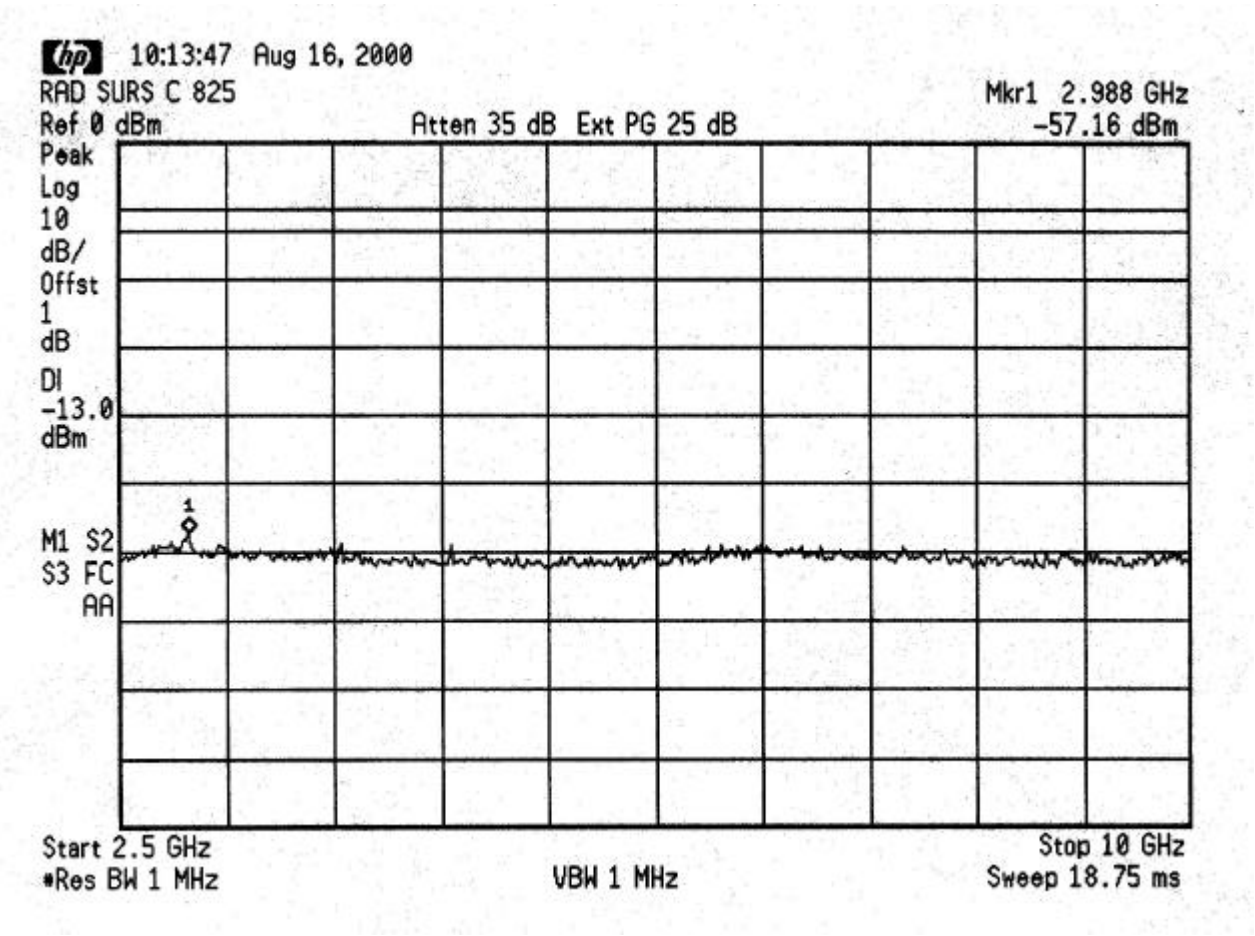
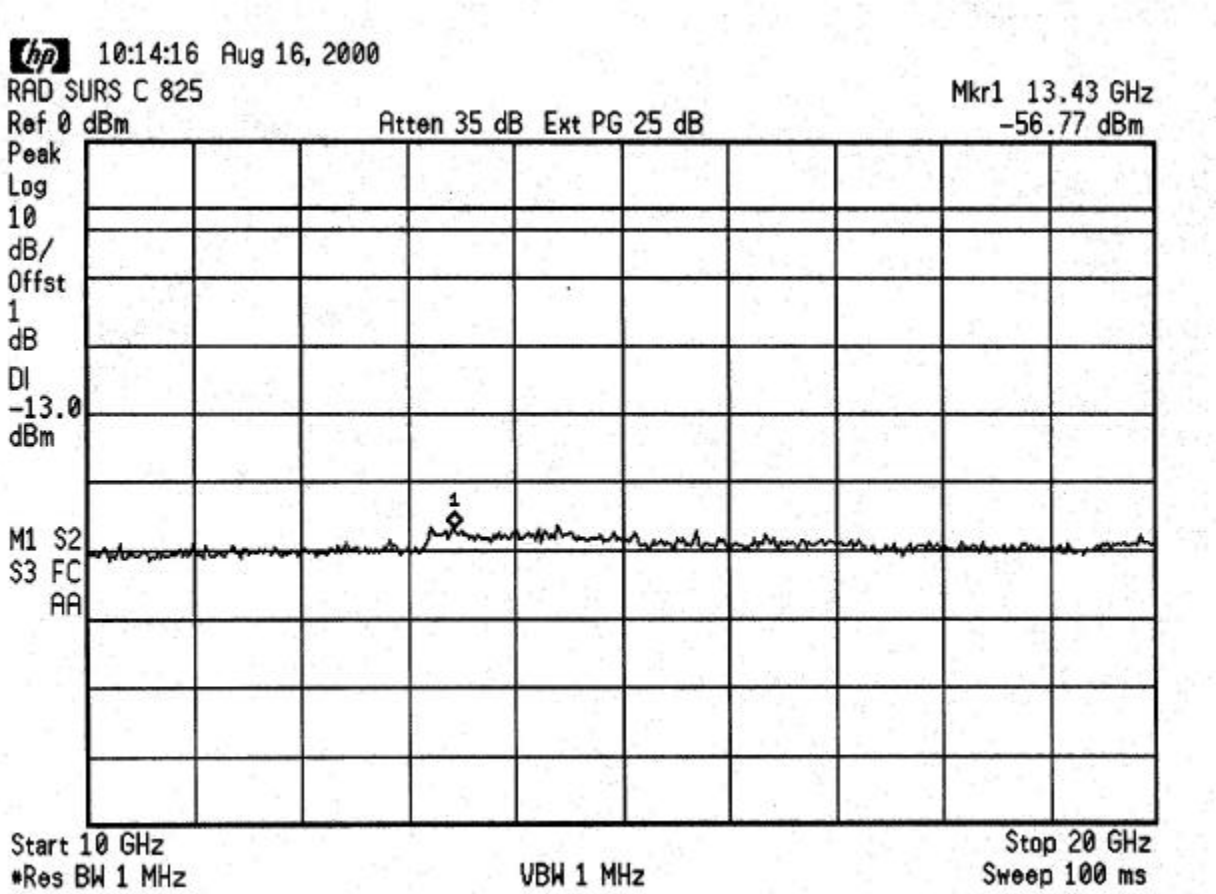


RADIATED SPURIOUS – Channel 825



3.4 FREQUENCY STABILITY - § 2.1055

Operating Frequency: 806,000,000 Hz

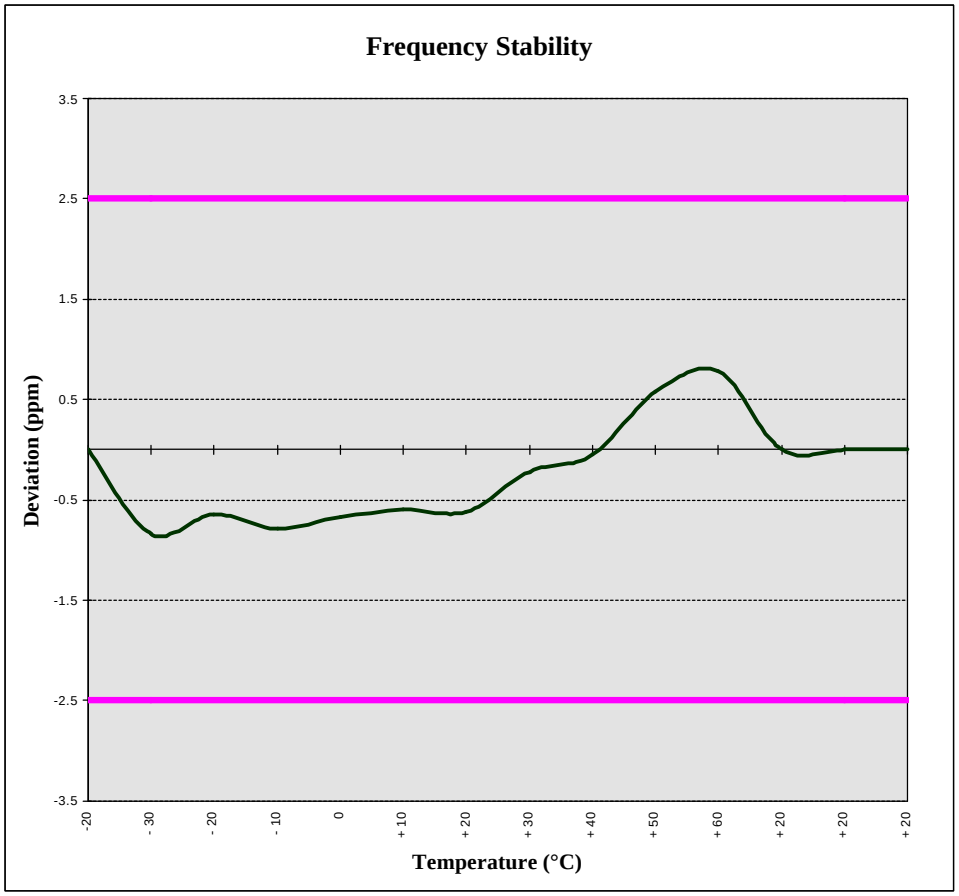
Channel: Low

Reference Voltage: 7.0 VDC

Deviation Limit: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	**POWER** (VDC)	**TEMP** (ºC)	**FREQ.** (Hz)	**Deviation** (%)
100 %	7.00	+ 20 (Ref)	806000000	0.00000000
100 %		- 30	806000678.2	-0.00000084
100 %		- 20	806000520.5	-0.00000065
100 %		- 10	806000635.5	-0.00000079
100 %		0	806000539.4	-0.00000067
100 %		+ 10	806000482.9	-0.00000060
100 %		+ 20	806000496.5	-0.00000062
100 %		+ 30	806000176.4	-0.00000022
100 %		+ 40	806000040.3	-0.00000005
100 %		+ 50	805999535.2	0.00000058
100 %		+ 60	805999369.2	0.00000078
85 %	N/A	+ 20	806000000	0.00000000
115 %	N/A	+ 20	806000000	0.00000000
BATT. ENDPOINT	N/A	+ 20	806000000	0.00000000

FREQUENCY STABILITY - § 2.1055



3.4 FREQUENCY STABILITY - § 2.1055

Operating Frequency: 815,000,000 Hz

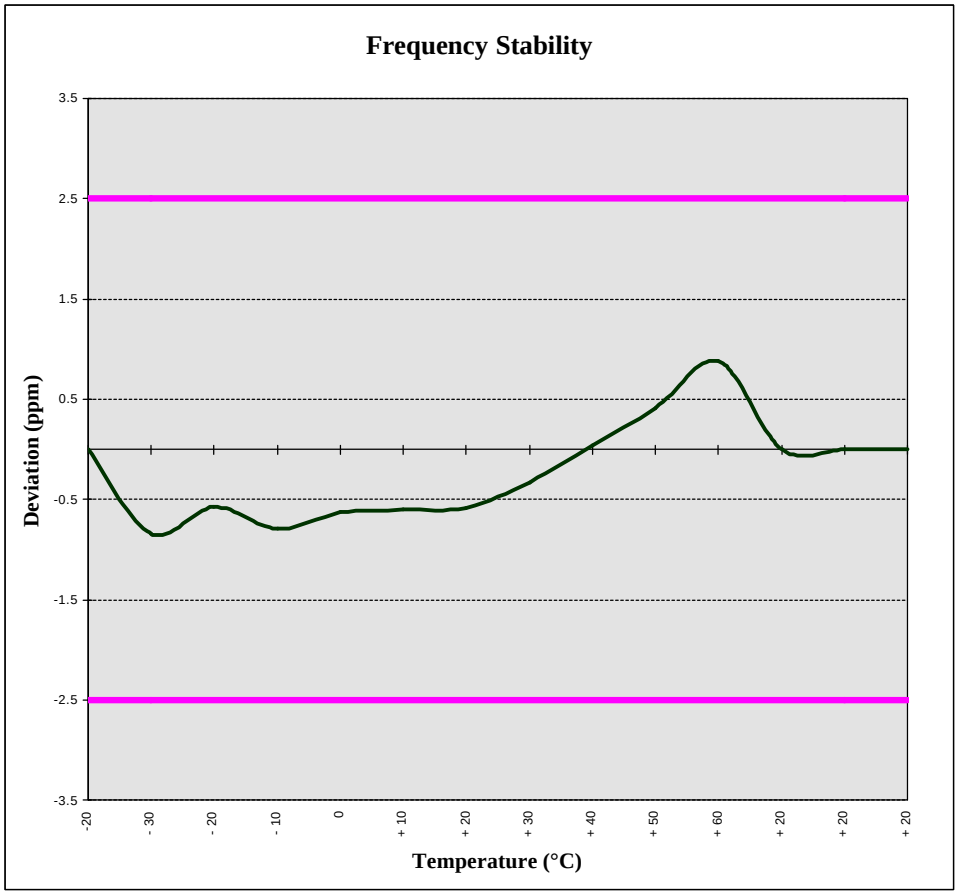
Channel: Mid

Reference Voltage: 7.0 VDC

Deviation Limit: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (ºC)	FREQ. (Hz)	Deviation (%)
100 %	7.00	+ 20 (Ref)	815000000	0.00000000
100 %		- 30	815000684.4	-0.00000084
100 %		- 20	815000466.1	-0.00000057
100 %		- 10	815000645.8	-0.00000079
100 %		0	815000512.4	-0.00000063
100 %		+ 10	815000491.4	-0.00000060
100 %		+ 20	815000473.4	-0.00000058
100 %		+ 30	815000262.9	-0.00000032
100 %		+ 40	814999971.5	0.00000003
100 %		+ 50	814999663	0.00000041
100 %		+ 60	814999282.2	0.00000088
85 %	N/A	+ 20	815000000	0.00000000
115 %	N/A	+ 20	815000000	0.00000000
BATT. ENDPOINT	N/A	+ 20	815000000	0.00000000

FREQUENCY STABILITY - § 2.1055



3.4 FREQUENCY STABILITY - § 2.1055

Operating Frequency: 825,000,000 Hz

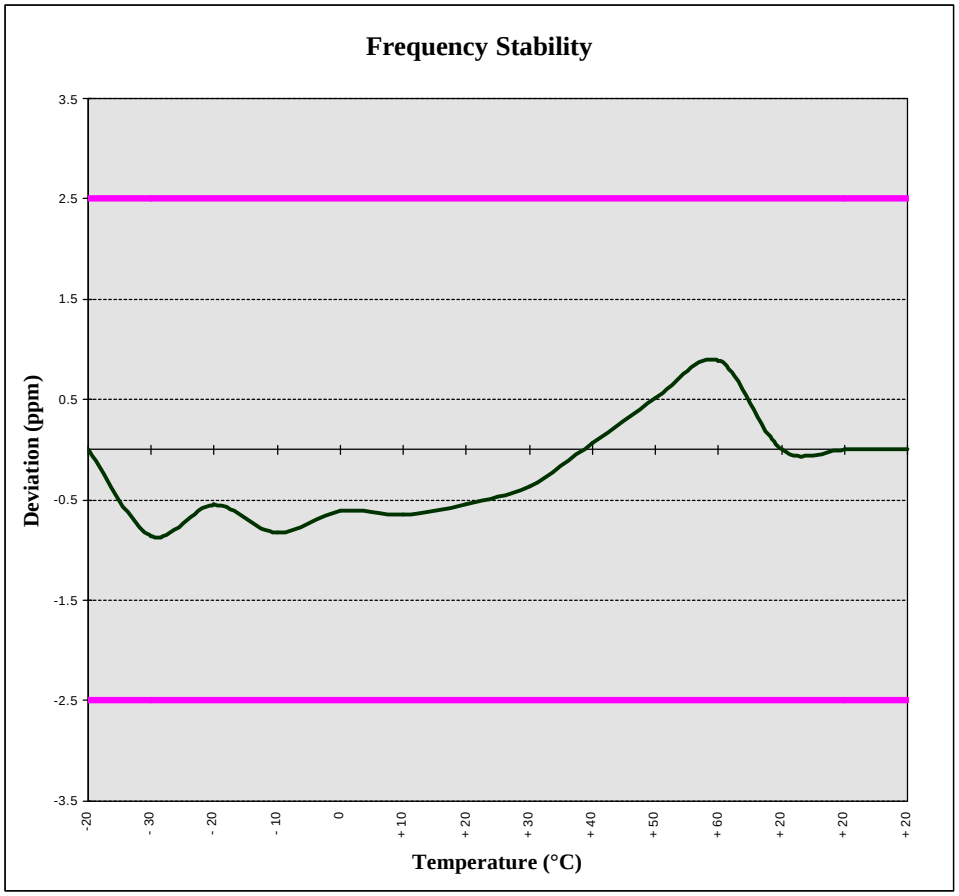
Channel: High

Reference Voltage: 7.0 VDC

Deviation Limit: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	**POWER** (VDC)	**TEMP** (ºC)	**FREQ.** (Hz)	**Deviation** (%)
100 %	7.00	+ 20 (Ref)	825000000	0.00000000
100 %		- 30	825000709.6	-0.00000086
100 %		- 20	825000452.5	-0.00000055
100 %		- 10	825000684.6	-0.00000083
100 %		0	825000503.3	-0.00000061
100 %		+ 10	825000537.3	-0.00000065
100 %		+ 20	825000446.9	-0.00000054
100 %		+ 30	825000299.8	-0.00000036
100 %		+ 40	824999947.8	0.00000006
100 %		+ 50	824999575.3	0.00000051
100 %		+ 60	824999264.1	0.00000089
85 %	N/A	+ 20	825000000	0.00000000
115 %	N/A	+ 20	825000000	0.00000000
BATT. ENDPOINT	N/A	+ 20	825000000	0.00000000

FREQUENCY STABILITY - § 2.1055



4.1 TEST EQUIPMENT

Type	Model	Last Calib.	Serial No.
Signal Generator	HP 8648D (9kHz-4.0GHz)	Nov 1999	3847A00611
Gigatronics Power Meter	8652A	Oct 1999	1835272
Gigatronics Power Sensor (2)	80701A (0.05-18GHz)	Oct 1999	1833535, 1833542
Amplifier Research Power Amp.	5S1G4 (5W, 800MHz-4.2GHz)	N/A	26235
Microwave System Amplifier	HP 83017A (0.5-26.5GHz)	N/A	3123A00587
Network Analyzer	HP 8753E (30kHz-3GHz)	Nov 1999	US38433013
Audio Analyzer	HP 8903B	March 1999	3729A18691
Modulation Analyzer	HP 8901A	March 1999	3749A07154
Frequency Counter	HP 53181A (3GHz)	May 1999	3736A05175
DC Power Supply	HP E3611A	N/A	KR83015294
Multi-Device Controller	EMCO 2090	N/A	9912-1484
MiniMast	EMCO 2075	N/A	0001-2277
Turntable	EMCO 2080-1.2/1.5	N/A	0002-1002
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept 1998	9120A-239
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept 1998	9120A-240
Roberts Dipoles	Compliance Design (2 sets) 3121C	June 2000	
Spectrum Analyzer	HP 8594E	March 2000	3543A02721
Spectrum Analyzer	HP E4408B	Nov 1999	US39240170
Shielded Screen Room	Lindgren R.F. 18W-2/2-0	N/A	16297
Environmental Chamber	ESPEC ECT-2 (Temperature/Humidity)	Feb 2000	0510154-B

5.1 CONCLUSION

The data collected shows that the Itronix Ruggedized Laptop PC with RIM 801D ARDIS Radio Modem FCC ID: KBCXC6250RIM801D complies with all the requirements of Parts 2 and 90 of the FCC rules.

No modifications were made to the device.