



Flom Test Labs
EMI, EMC, RF Testing Experts Since 1963

toll-free: (866) 311-3268
fax: (480) 926-3598
<http://www.flomlabs.com>
info@flomlabs.com

Date: April 23, 2007

Applicant: Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

Attention of: Charles E. Conner, Project Engineer
(402) 467-5321; FAX: -3279
E-mail: charlie.conner@us.telex.com
Jim Andersen
Email: jim.andersen@us.telex.com

Equipment: BTR-800
FCC ID: B5DM529
FCC Rules: 74(H)

Gentlemen:

Enclosed please find your copy of the Engineering Test Report for which you are subject to the restrictions as listed on the attached summary.

As you know, the FCC, after a TCB issues a Grant, still has 30 days to review a submission and request added information. It is your decision whether or not to market the equipment subject to a possible recall before the end of the 30 days.

If your equipment is still retained by us, it will be returned to you 30 days after approval is achieved. Our invoice for services has been directed to your Accounts Payable Department.

Should you need any clarification, just fax or phone. Thank you again for this order - it has been a pleasure to be of service.

Sincerely yours,

Hoosamuddin S. Bandukwala, Lab Director

enclosure(s)
HSB/je

Flom Test Labs
3356 North San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

FCC ID: B5DM529
MFA p0730011, d0740037



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E-mail: charlie.conner@us.telex.com
Jim Andersen
Email: jim.andersen@us.telex.com

Equipment: BTR-800
FCC ID: B5DM529
FCC Rules: 74(H)

Gentlemen:

Enclosed please find your copies of the Application Form, covering letter to the FCC and Engineering Test Report, the whole for approval of the reference equipment as indicated.

Please allow from 8-12 weeks to hear from the Commission, who may request additional data or information, and even a sample for pre-grant audit testing. In the meantime, you are subject to the restrictions as listed on the attached summary.

If your equipment is still retained by us, it will be returned to you as soon as approval is achieved. Our invoice for services has been directed to your Accounts Payable Department.

Should you need any clarification, just fax or phone. Thank you again for this order - it has been a pleasure to be of service.

Sincerely yours,

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FCC ID: B5DM529
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Memo

Date: April 23, 2007

Applicant: Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

Equipment: BTR-800
FCC ID: B5DM529

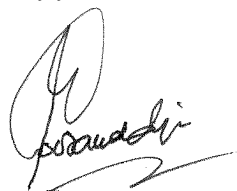
Please note that the enclosed Reports reflect the results of tests performed to the currently published Federal Communications Commissions Rules and Regulations.

Should the FCC's Examiners' interpretations request new and unpublished requirements, we will be pleased to provide them. We will invoice you accordingly, i.e. for the time spent on re-testing, providing the amended pages and/or Reports and for the time necessary to be spent on electronic filing. We will of course provide you with copies of any of the additions.

We regret any added expense to the Applicants, but of late the FCC continues to change their requirements without any prior written publication and/or notices.

As in the past, we will continue to provide all liaison with the FCC necessary for the successful conclusion of your project and the receipt of your Grant of Equipment Authorization.

Sincerely yours,

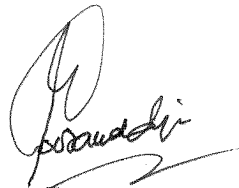


Hoosamuddin S. Bandukwala, Lab Director

Summary of Restrictions

1. All submissions to the FCC are subject to **their** Examiner's interpretation.
2. Please allow from 60 to 90 days before hearing from the FCC with regard to any submission.
3. The FCC can set aside any action; modify or set aside any action, within 30 days. (FCC Rule 1.108, 1.113).
4. Under Rule 2.803, if device is not type accepted/certificated then it must **not** be sold, leased, offered for sale, imported, shipped or distributed or advertised for sale.
5. FCC can revoke its certificates at any time if the equipment does not meet or **continue** to meet their Rules. (Rule Parts 2.927, 2.939).
6. FCC can request a sample at any time (2.936).

M. Flom Associates, Inc.



Hoosamuddin S. Bandukwala, Lab Director



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toll-free: (866) 311-3268
fax: (480) 926-3598
<http://www.flomlabs.com>
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Date: April 23, 2007

Federal Communications Commission
Via: Electronic Filing

Attention: Authorization & Evaluation Division

Applicant: Telex Communications, Inc.
Equipment: BTR-800
FCC ID: B5DM529
FCC Rules: 74(H)

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

Hoosamuddin S. Bandukwala, Lab Director

enclosure(s)
cc: Applicant
HSB/je

Flom Test Labs
3356 North San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
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FCC ID: B5DM529
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Transmitter Certification

of

FCC ID: B5DM529
Model: BTR-800

to

Federal Communications Commission

Rule Part(s) 74(H)

Date of report: April 23, 2007

On the Behalf of the Applicant: Telex Communications, Inc.

At the Request of: Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

Attention of: Charles E. Conner, Project Engineer
(402) 467-5321; FAX: -3279
E-mail: charlie.conner@us.telex.com
Jim Andersen
Email: jim.andersen@us.telex.com

Supervised by:

Hoosamuddin S. Bandukwala, Lab Director

List of Exhibits

(FCC **Certification** (Transmitters) - Revised 9/28/98)

Applicant: Telex Communications, Inc.

FCC ID: B5DM529

By Applicant:

1. Letter of Authorization
2. Confidentiality Request: 0.457 And 0.459
3. Identification Drawings, 2.1033(c)(11)
 - Label
 - Location of Label
 - Compliance Statement
 - Location of Compliance Statement
4. Photographs, 2.1033(c)(12)
5. Documentation: 2.1033(c)
 - (3) User Manual
 - (9) Tune Up Info
 - (10) Schematic Diagram
 - (10) Circuit Description
 - Block Diagram
 - Parts List
 - Active Devices
6. MPE/SAR Report

By M.F.A. Inc.:

- A. Testimonial & Statement of Certification

The Applicant has been cautioned as to the following:

15.21 Information to the User.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications 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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Rule	Description	Page
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	Standard Test Conditions and Engineering Practices	3
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	Test Results Summary Table	6
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74.861(e)6	Conducted Spurious Emissions	8
2.1046(a)	Carrier Power (Radiated)	10
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74.861(e)5, 74.861(e)6	Emission Masks (Occupied Bandwidth)	17
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Required information per ISO 17025-2005, paragraph 5.0:

a) **Test Report**

b) Laboratory: Flom Test Labs, Inc.
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107
(Canada: IC 2044) Chandler, AZ 85225

c) Report Number: d0740037

d) Client: Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

e) Identification: BTR-800
FCC ID: B5DM529

EUT Description: UHF Audio Base Station

f) EUT Condition: Not required unless specified in individual tests.

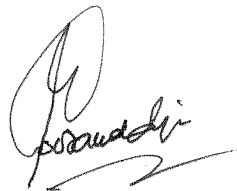
g) Report Date: April 23, 2007
EUT Received:

h, j, k): As indicated in individual tests.

i) Sampling method: No sampling procedure used.

l) Uncertainty: In accordance with MFA internal quality manual.

m) Supervised by:



Hoosamuddin S. Bandukwala, Lab Director

n) Results: The results presented in this report relate only to the item tested.

o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.

Sub-part
2.1033(c)(14):

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 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1079, 2.1051, 2.1053, 2.1055, 2.1057 and the following individual Parts:

- 15 – Radio Frequency Devices (unlicensed)
- 21 – Domestic Public Fixed Radio Services
- 22 – Public Mobile Services
- 22 Subpart H - Cellular Radiotelephone Service
- 22.901(d) - Alternative technologies and auxiliary services
- 23 – International Fixed Public Radio communication services
- 24 – Personal Communications Services
- 74 Subpart H - Low Power Auxiliary Stations
- 80 – Stations in the Maritime Services
- 80 Subpart E - General Technical Standards
- 80 Subpart F - Equipment Authorization for Compulsory Ships
- 80 Subpart K - Private Coast Stations and Marine Utility Stations
- 80 Subpart S - Compulsory Radiotelephone Installations for Small Passenger Boats
- 80 Subpart T - Radiotelephone Installation Required for Vessels on the Great Lakes
- 80 Subpart U - Radiotelephone Installations Required by the Bridge-to-Bridge Act
- 80 Subpart V - Emergency Position Indicating Radio Beacons (EPIRB'S)
- 80 Subpart W - Global Maritime Distress and Safety System (GMDSS)
- 80 Subpart X - Voluntary Radio Installations
- 87 – Aviation Services
- 90 – Private Land Mobile Radio Services
- 94 – Private Operational-Fixed Microwave Service
- 95 Subpart A - General Mobile Radio Service (GMRS)
- 95 Subpart C - Radio Control (R/C) Radio Service
- 95 Subpart D - Citizens Band (CB) Radio Service
- 95 Subpart E - Family Radio Service
- 95 Subpart F - Interactive Video and Data Service (IVDS)
- 97 - Amateur Radio Service
- 101 – Fixed Microwave Services

Standard Test Conditions and Engineering Practices

A2LA

"A2LA has accredited Flom Test Labs, Inc. Chandler, AZ for technical competence in the field of Electrical Testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Please refer to www.a2la.org for current scope of accreditation.

Certificate Number: **2152.01**

List of General Information Required for Certification

In Accordance with FCC Rules and Regulations,
Volume II, Part 2 and to

74(H)

Sub-part 2.1033

(c)(1):

Name and Address of Applicant: Telex Communications, Inc.
8601 E. Cornhusker Highway
P.O. Box 5579
Lincoln, NE 68505-5579

Manufacturer: Telex Communications, Inc.

(c)(2): **FCC ID:** B5DM529

Model Number: BTR-800

(c)(3): **Instruction Manual(s):**

Please see attached exhibits

(c)(4): **Type of Emission:** 82K5F3E

(c)(5): **Frequency Range, MHz:** 482 to 518

(c)(6): **Power Rating, Watts:** 0.1
 Switchable Variable N/A

FCC Grant Note:

(c)(7): **Maximum Power Rating, Watts:** 0.250

UUT Results: Passes Fails

Subpart 2.1033 (continued)

(c)(8): Voltages & currents in all elements in final RF stage, including final transistor or solid-state device:

Collector Current, A	=	17 mA
Collector Voltage, Vdc	=	9.2 V
Supply Voltage, Vdc	=	12

(c)(9): **Tune-Up Procedure :**

Please see attached exhibits

(c)(10): **Circuit Diagram/Circuit Description:**

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please see attached exhibits

(c)(11): **Label Information:**

Please see attached exhibits

(c)(12): **Photographs:**

Please see attached exhibits

(c)(13): **Digital Modulation Description:**

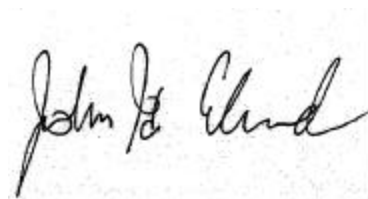
Attached Exhibits
 N/A

(c)(14): **Test and Measurement Data :**

Follows

Test Results Summary Table

Specification	Test Name	Pass, Fail, N/A	Comments
74.861(e)1	Carrier Output Power	Pass	
74.861(e)6	Conducted Spurious Emissions	Pass	
74.861(e)3	Modulating Limiting	Pass	
74.861(e)4	Frequency Stability	Pass	
74.861(e)5, 74.861(e)6	Occupied Bandwidth	Pass	
74.861(e)6	Radiated Spurious Emissions	Pass	



John Erhard

Performed by:

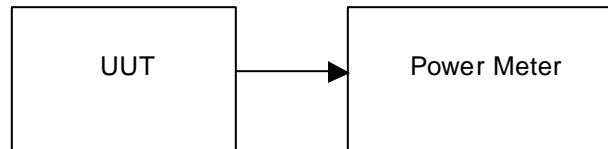
Flom Test Labs
3356 North San Marcos Place, Suite 107
Chandler, Arizona 85225-7176
(866) 311-3268 phone, (480) 926-3598 fax

Name of Test: Carrier Output Power (Conducted)
Specification: 74.861(e)1
Guide: ANSI/TIA/EIA-603C-2004
Equipment utilized: i00228, i00317

Test Procedure

The UUT was connected directly to a power meter and the peak-conducted power was recorded. Both high and low power modes were tested.

Test Set-Up



Test Results (high power)

Frequency MHz	Measured Power mW	Limit mW	Result
482.1	100	250	Pass
499.9	100	250	Pass
500.1	75	250	Pass
517.9	100	250	Pass

Test Results (low power)

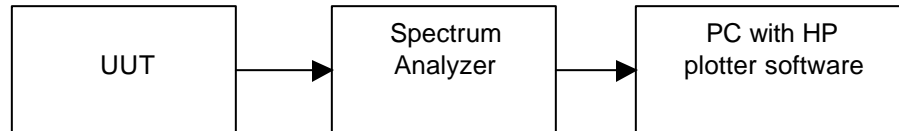
Frequency MHz	Measured Power mW	Limit mW	Result
482.1	11	250	Pass
499.9	10	250	Pass
500.1	8	250	Pass
517.9	10	250	Pass

Name of Test: Conducted Spurious Emissions
Specification: 74.861(e)6
Guide: ANSI/TIA/EIA-603C-2004
Equipment utilized: i00029

Test Procedure

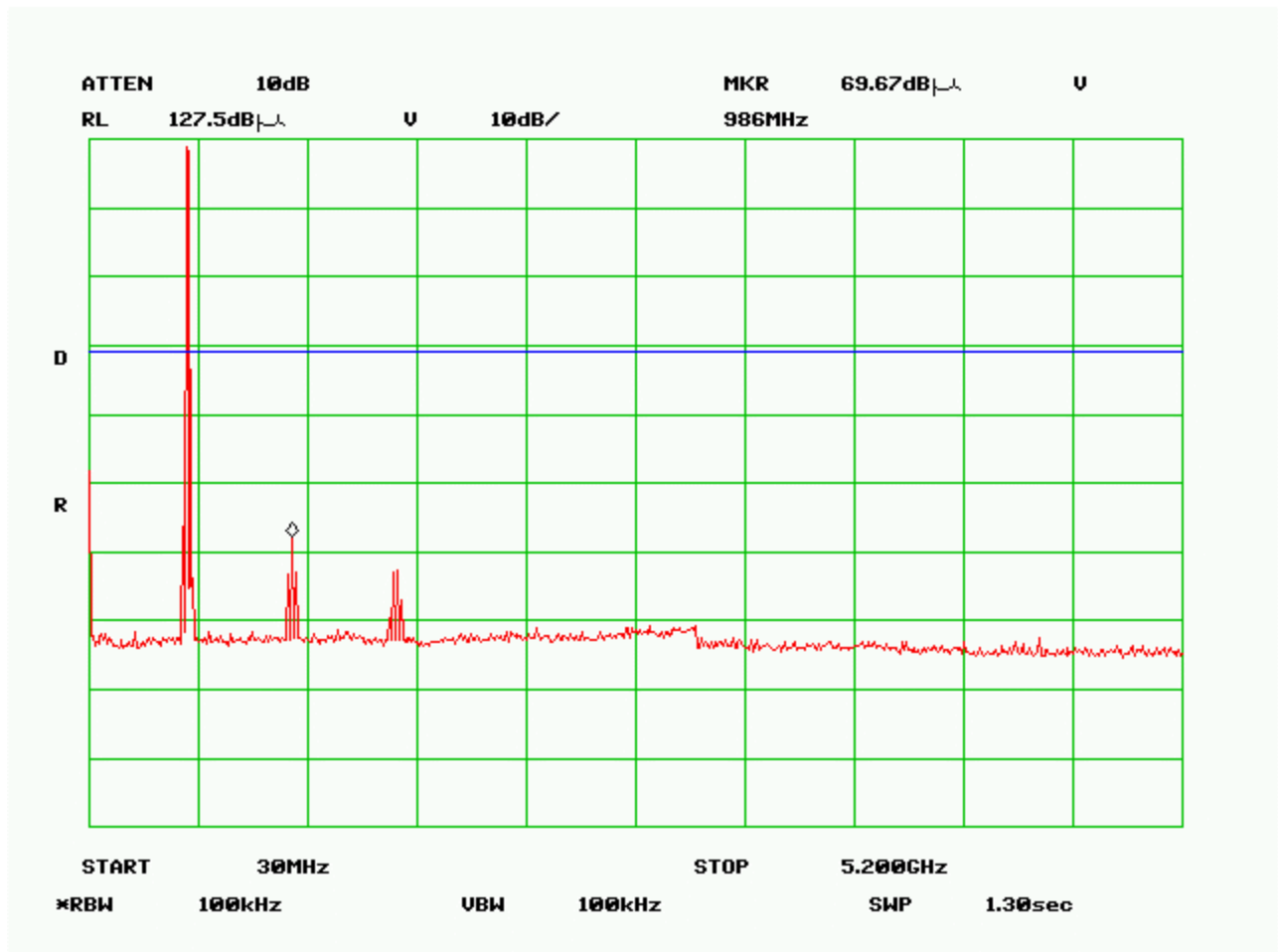
The UUT was connected directly to a spectrum analyzer. The conducted spurious emissions were monitored to at least the 10th harmonic of the transmitter in operation and the plots were captured utilizing the HP plotter software.

Test Set-Up

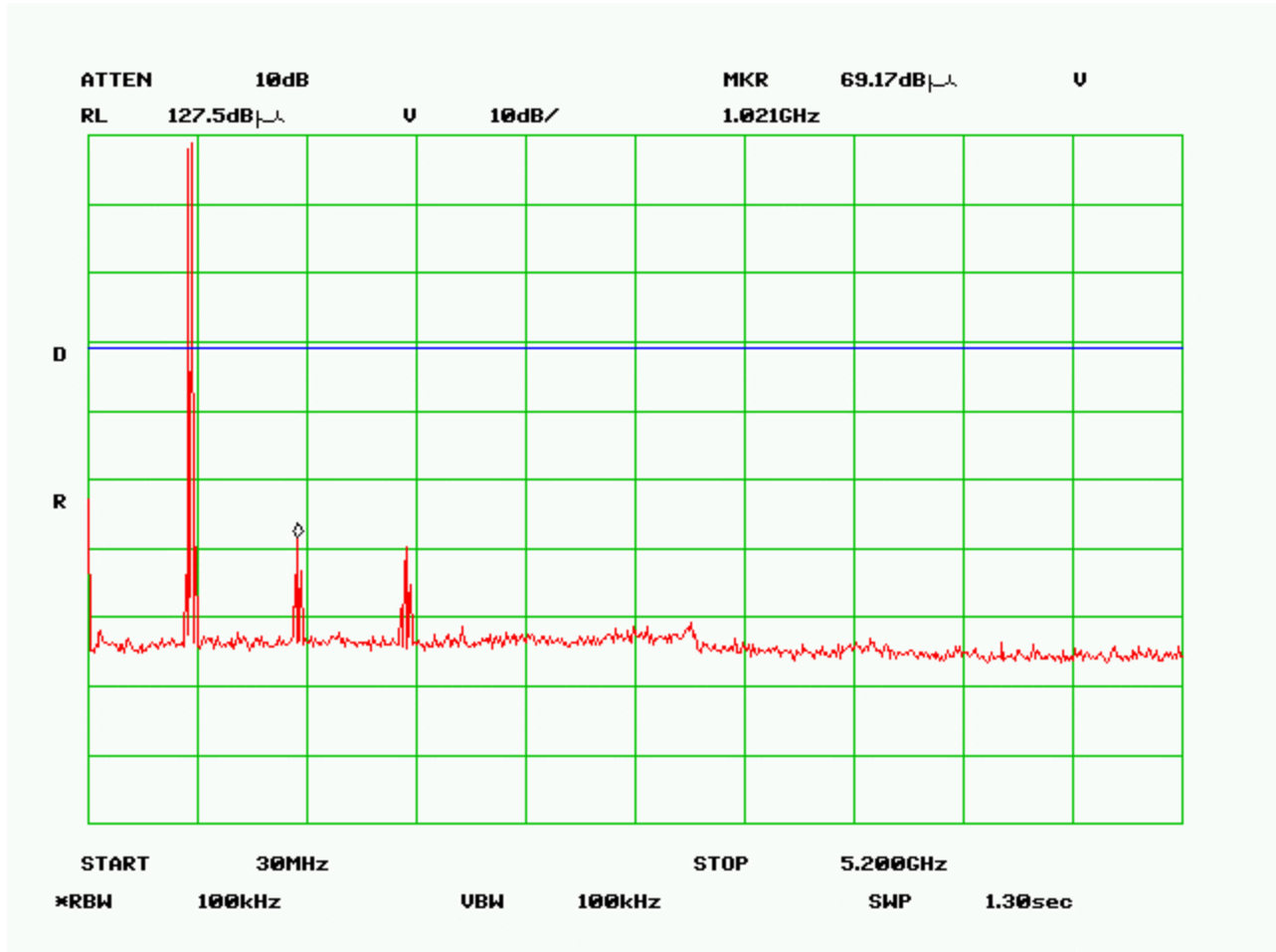


Test Data

482 & 499MHz Test Plot



500 & 517MHz Test Plot



For both plots the marker was placed on the peak spurious emission and shows that the level is below the limit of -35 dBc specified by 74.861(e)6.

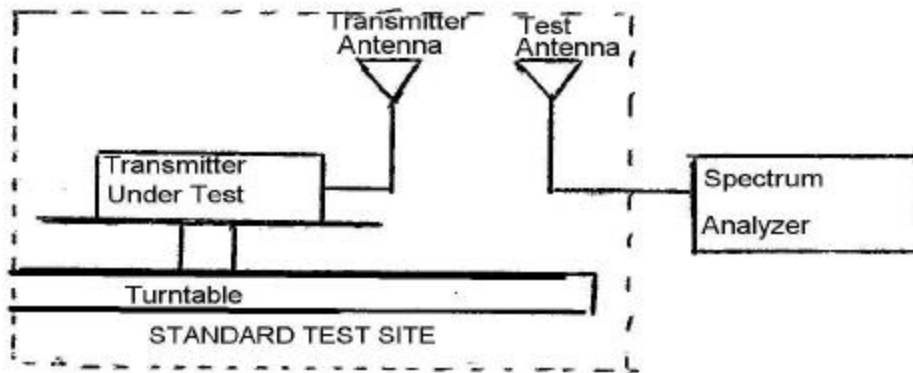
Name of Test: RF Power Output (Radiated)
Specification: 2.1046(a)
Guide: ANSI/TIA/EIA-603C-2004
Test Equipment: i00033, i00089, i00103

Measurement Procedure

Definition

The average radiated power of a licensed device is the equivalent power required, when delivered to a half-wave dipole or horn antenna, to produce at a distant point the same average received power as produced by the licensed device.

Test Setup:



Method of Measurement:

- A) Connect the equipment as illustrated. Place the transmitter to be tested on the turntable in the standard test site.
- B) Raise and lower the test antenna from 1m to 6 m with the transmitter facing the antenna and record the highest received signal in dB as LVL.
- C) Repeat step B) for seven additional readings at 45° interval positions of the turntable.
- D) Replace the transmitter under test with a half-wave or horn vertically polarized antenna. The center of the antenna should be at the same location as the transmitter under test. Connect the antenna to a signal generator with a known output power and record the path loss in dB or LOSS.
- E) Calculate the average radiated output power from the readings in step C) and D) by the following:

$$\text{average radiated power} = 10 \log_{10} 10(\text{LVL} - \text{LOSS})/10 \text{ (dBm)}$$

Test Results (high power)

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
482.1	99.52	22.51	24.7
499.9	99.34	23.16	25.1
500.1	97.09	23.15	22.9
517.9	98.44	22.76	23.8

Test Results (low power)

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
482.1	88.89	22.51	14.1
499.9	88.60	23.16	14.4
500.1	88.25	23.15	14.1
517.9	87.05	22.76	12.4

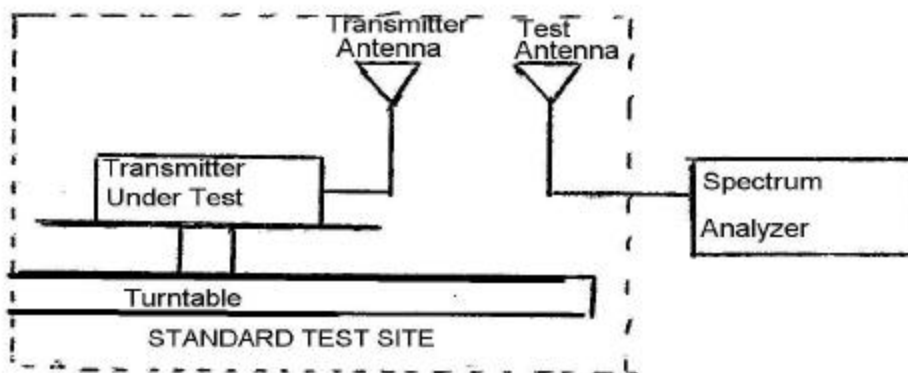
Name of Test: Radiated Spurious Emissions
Specification: 74.861(e)6
Guide: ANSI/TIA/EIA-603C-2004
Test Equipment: i00033, i00089, i00103

Measurement Procedure

Definition:

Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

Test Set up:



Method of Measurement:

- A) Connect the equipment as illustrated
- B) Adjust the spectrum analyzer for the following settings:
 - 1) Resolution Bandwidth 100 kHz (<1 GHz), 1 MHz (> 1GHz).
 - 2) Video Bandwidth = 3 times Resolution Bandwidth, or 30 kHz (22.917)
 - 3) Sweep Speed ≤ 2000 Hz/second
 - 4) Detector Mode = Mean or Average Power
- C) Place the transmitter to be tested on the turntable in the standard test site. The transmitter is transmitting into a non-radiating load that is placed on the turntable. The RF cable to this load should be of minimum length.
- D) For each spurious measurement the test antenna should be adjusted to the correct length for the frequency involved. This length may be determined from a calibration ruler supplied with the equipment. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to \pm the test bandwidth (see section 1.3.4.4).
- E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.
- F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.
- G) Reconnect the equipment as illustrated.

- H) Keep the spectrum analyzer adjusted as in step B).
- I) Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.
- J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
- K) Repeat step J) with both antennas vertically polarized for each spurious frequency.
- L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.
- M) The levels recorded in step L) are absolute levels of radiated spurious emissions in dBm. The radiated spurious emissions in dB can be calculated by the following:

Radiated spurious emissions dB =

$$10\log_{10}(\text{TX power in watts}/0.001) - \text{the levels in step I)}$$

NOTE: It is permissible that other antennas provided can be referenced to a dipole.

Test Results (high power)

482.1 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
964.200	2.18	30.87	-64.3
1446.300	9.45	31.18	-56.7
1928.389	8.23	33.48	-55.7
2410.497	10.25	35.46	-51.7
2892.597	9.25	37.56	-50.6
3374.696	9.16	39.50	-48.7
3856.793	8.62	41.52	-47.2
43.38.894	9.41	42.54	-45.4
4820.993	9.31	44.03	-44.0

499.9 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
999.800	10.12	30.00	-57.3
1499.698	9.68	31.33	-56.4
1999.598	8.02	33.80	-55.6
2499.498	12.40	35.78	-49.2
2999.396	8.55	38.00	-50.8
3499.296	9.41	39.96	-48.0
3999.194	8.79	42.10	-46.5
4499.093	9.76	42.74	-44.9
4998.992	9.52	44.70	-43.2

500.1 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
1000.194	10.67	29.70	-57.0
1500.282	8.28	31.33	-57.8
2000.387	7.92	33.80	-55.7
2500.484	8.45	35.78	-53.1
3000.581	8.54	38.00	-50.8
3500.677	9.45	39.96	-48.0
4000.774	9.00	42.10	-46.3
4500.870	10.06	42.75	-44.6
5000.967	9.80	44.70	-42.9

517.9 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
1035.796	13.84	29.85	-53.7
1553.692	20.69	31.63	-45.1
2071.591	13.70	34.11	-49.6
2589.488	14.11	36.21	-47.1
3107.385	9.08	38.45	-49.8
3625.282	9.05	40.52	-47.8
4143.178	9.55	42.29	-45.5
4661.075	9.61	43.40	-44.4
5178.975	9.85	45.31	-42.2

Test Results (low power)

482.1 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
964.200	7.36	30.87	-59.1
1446.300	-0.99	31.18	-67.2
1928.400	-1.38	33.48	-65.3
2410.491	-0.42	35.46	-62.3
2892.600	-8.53	37.56	-68.3
3378.700	-1.15	39.51	-59.0
3856.800	-1.43	41.52	-57.3
4338.883	-0.83	42.54	-55.7
4821.000	-0.84	44.03	-54.2

499.9 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
999.796	-1.40	30.00	-68.9
1499.692	4.10	31.33	-62.0
1999.592	4.10	33.80	-59.5
2499.490	-1.40	35.78	-63.0
2999.400	-1.90	38.00	-61.3
3499.300	-0.70	39.96	-58.1
3999.200	5.00	42.10	-50.3
4499.100	-0.50	42.74	-55.2
4999.000	-0.60	44.70	-53.5

500.1 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
1000.193	0.67	29.70	-67.0
1500.291	-2.03	31.33	-68.1
2000.400	4.01	33.80	-59.6
2500.500	-1.86	35.78	-63.5
3000.600	-1.38	38.00	-60.8
3500.674	-0.70	39.96	-58.1
4000.800	-1.25	42.10	-56.5
4500.900	-0.53	42.75	-55.2
5000.100	-0.56	44.70	-53.2

517.9 MHz

Frequency (MHz)	Monitored Level (dB μ V/m)	Correction Factor (dB)	ERP (dBm)
1035.790	0.16	29.85	-67.4
1553.687	-2.35	31.63	-68.1
2017.600	-1.98	34.11	-65.2
2589.477	0.37	36.21	-60.8
3107.373	5.64	38.45	-53.3
3625.300	-1.13	40.52	-58.0
4143.200	-0.47	42.29	-55.6
4661.100	-0.85	43.40	-54.8
5179.000	-0.25	45.31	-52.3

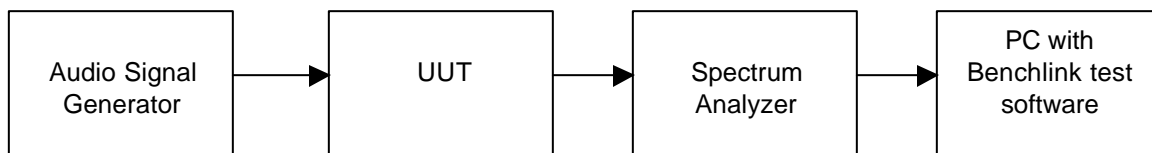
Name of Test: Emission Masks (Occupied Bandwidth)
Specification: 74.861(e)5, 74.861(e)6
Guide: ANSI/TIA/EIA-603C-2004
Equipment utilized: i00017, i00029, i00048, i00324

Test Procedure

The EUT was connected to an audio generator providing a 1kHz signal that was input into the UUT audio input port. The modulated output of the UUT was monitored with a spectrum analyzer and a PC with Benchlink test software. The appropriate mask was input into the spectrum analyzer and the plots were captured to verify proper operation. Both high and low power modes were tested.

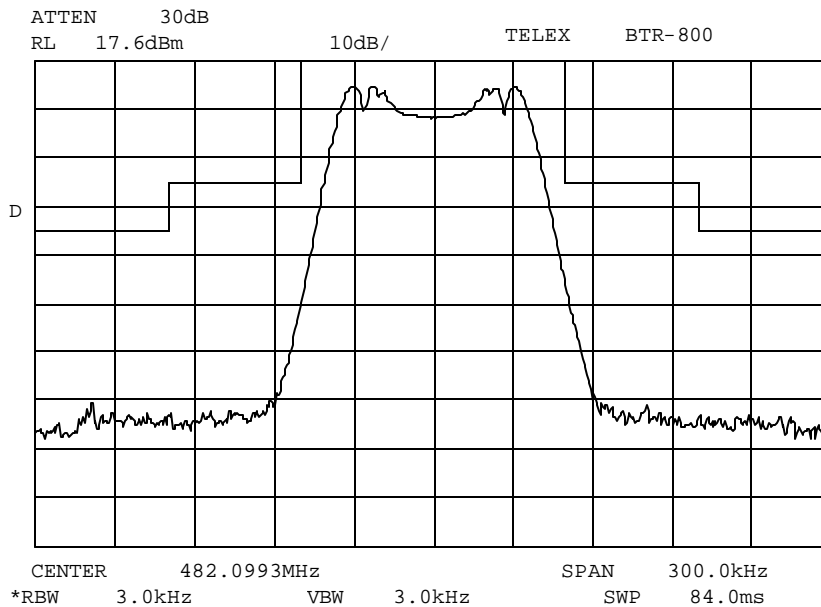
*Note: A 1kHz signal was used per the manufacturer’s tune up procedure. This establishes the digital self-limiting level for the internal circuitry.

Test Set-Up

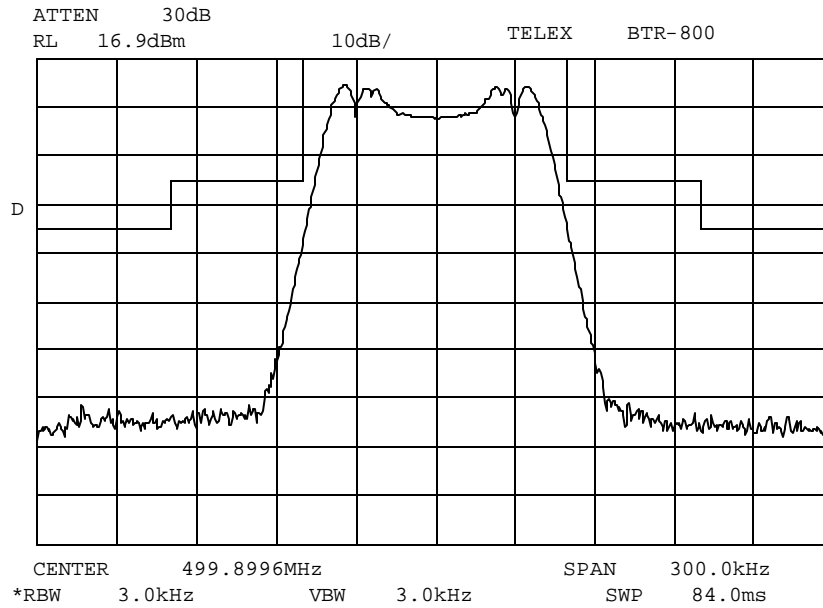


Emission Mask Test Results (high power)

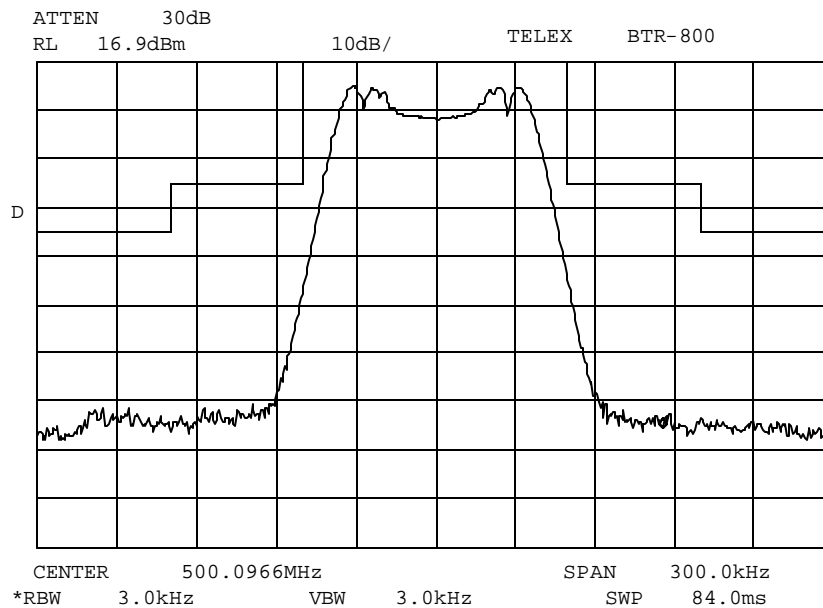
482.1 MHz



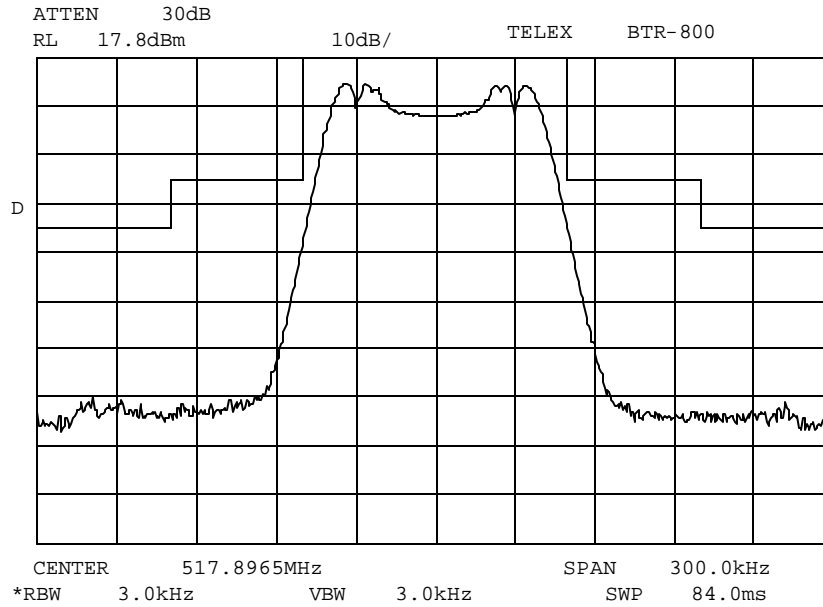
499.9 MHz



500.1 MHz

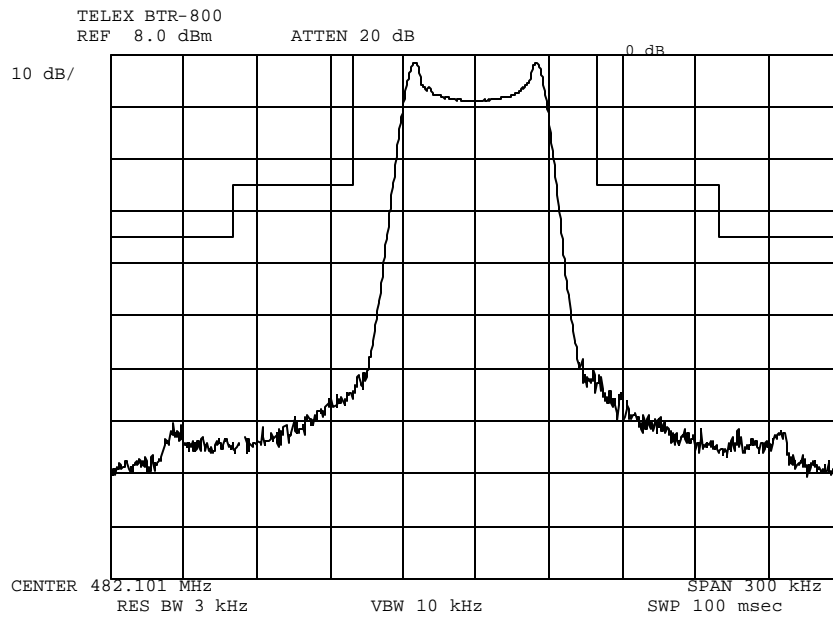


517.9 MHz

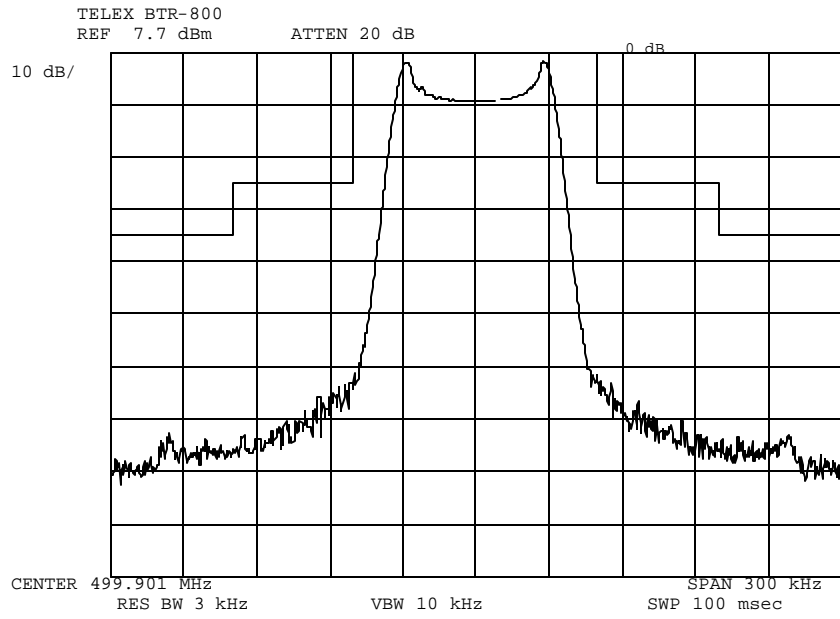


Emission Mask Test Results (low power)

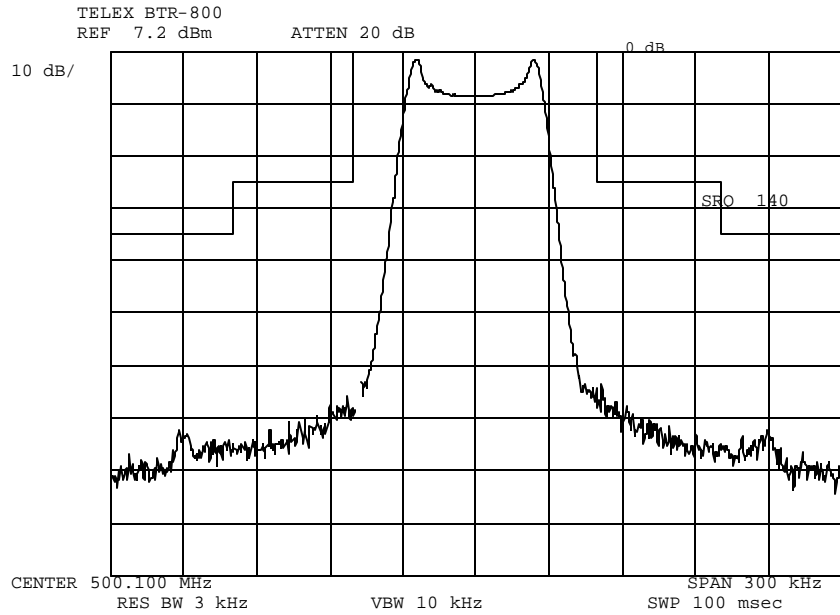
482.1 MHz



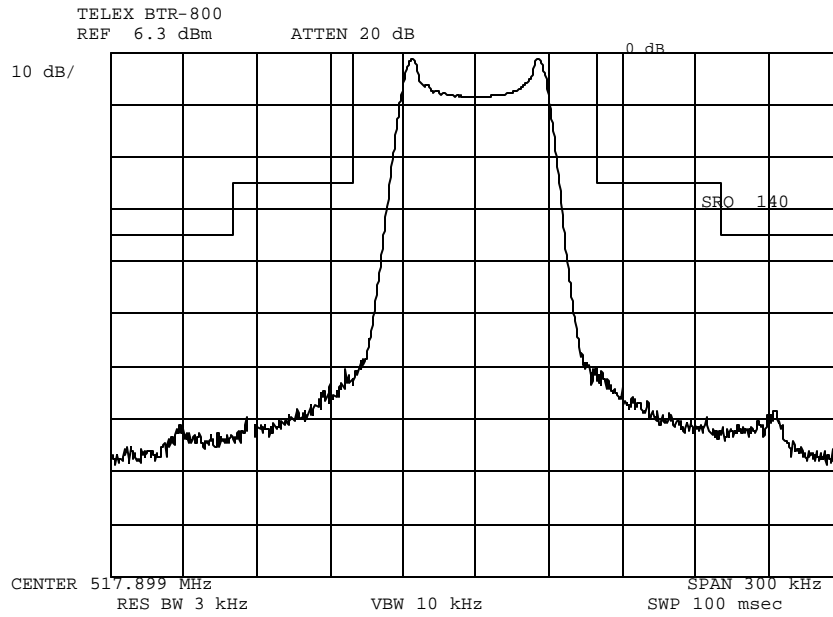
499.9 MHz



500.1 MHz

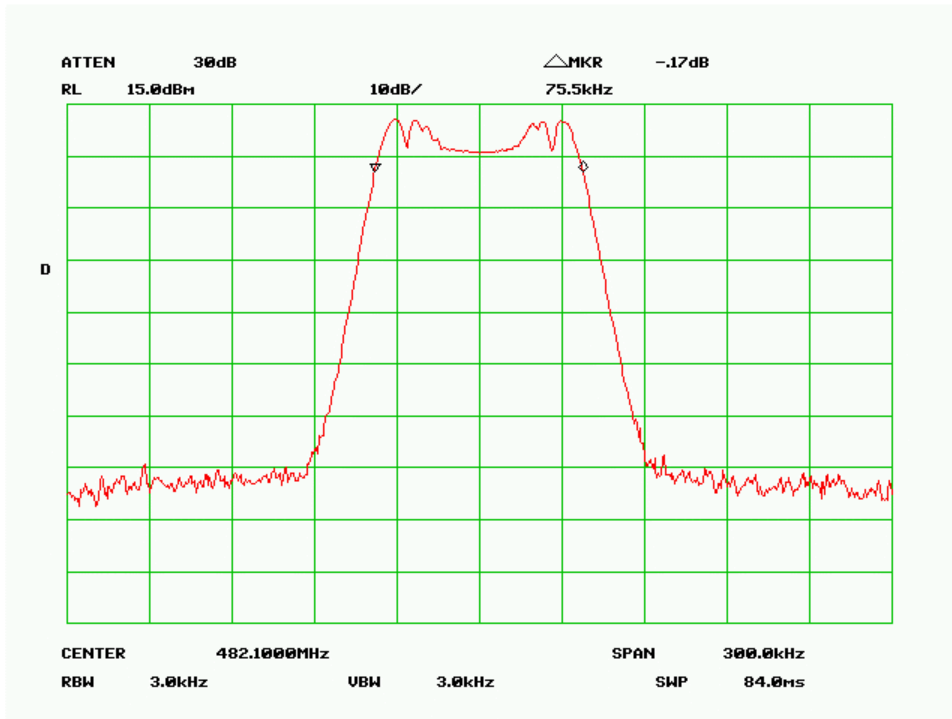


517.9 MHz

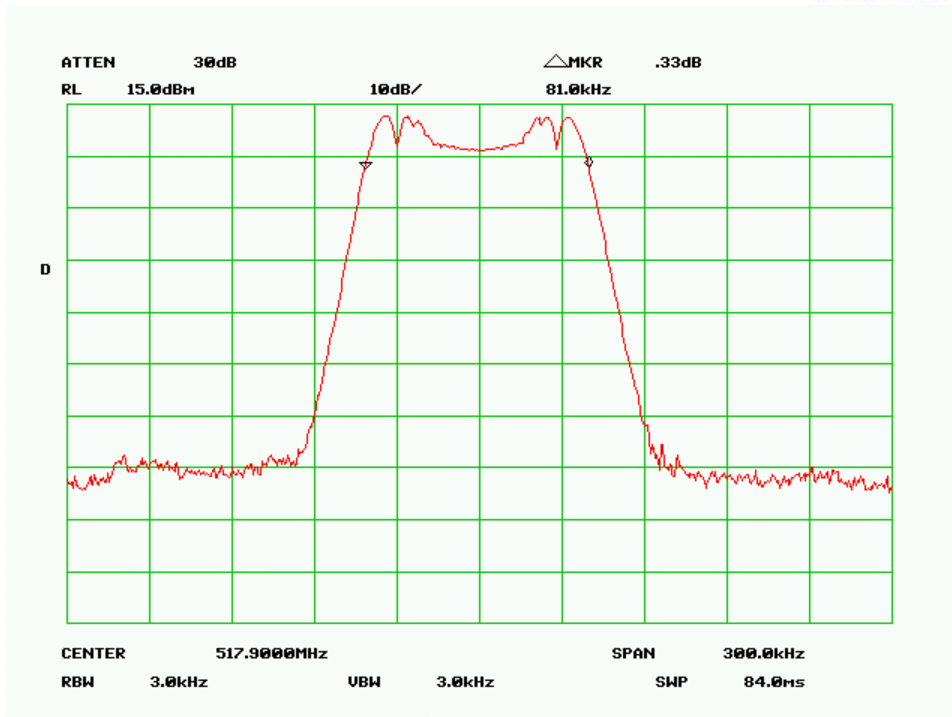


99% Occupied Bandwidth Test Results (High power)

482.1 MHz

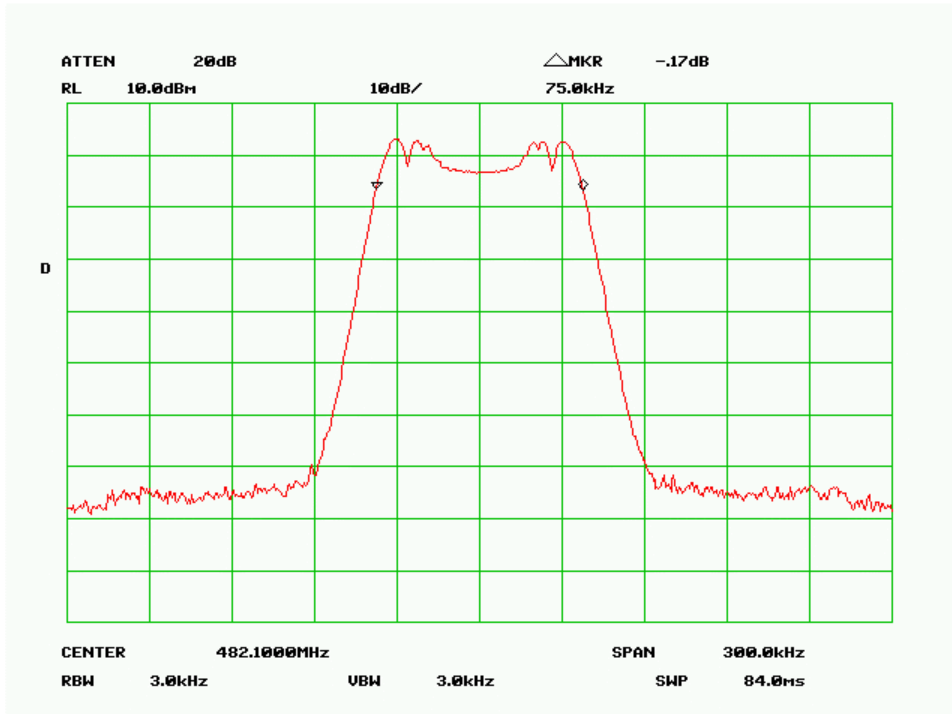


517.9 MHz

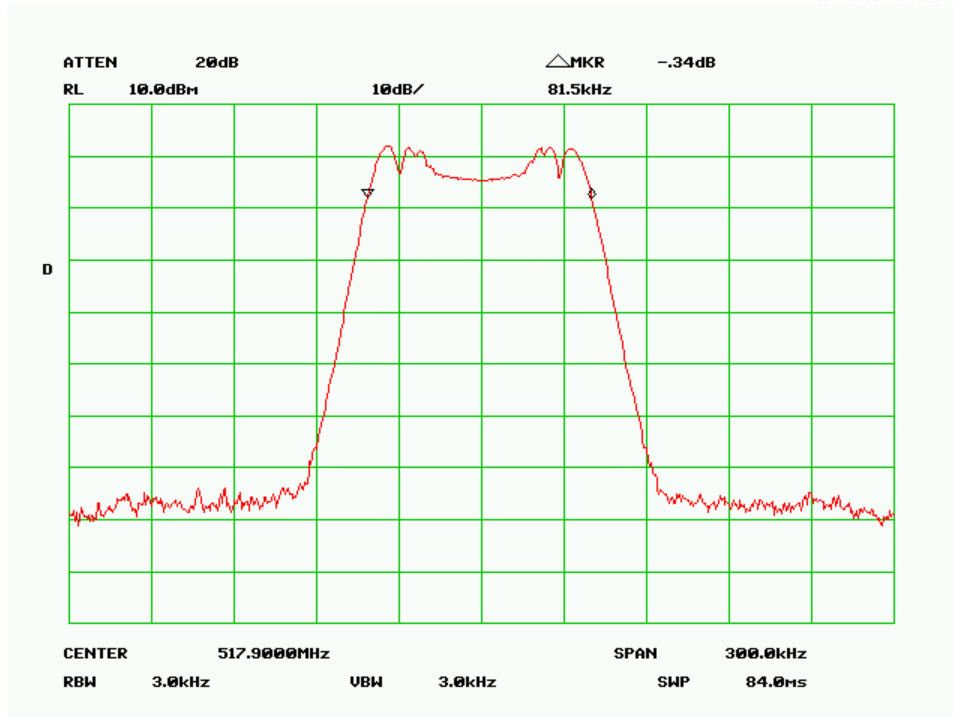


99% Occupied Bandwidth Test Results (low power)

482.1 MHz



517.9 MHz

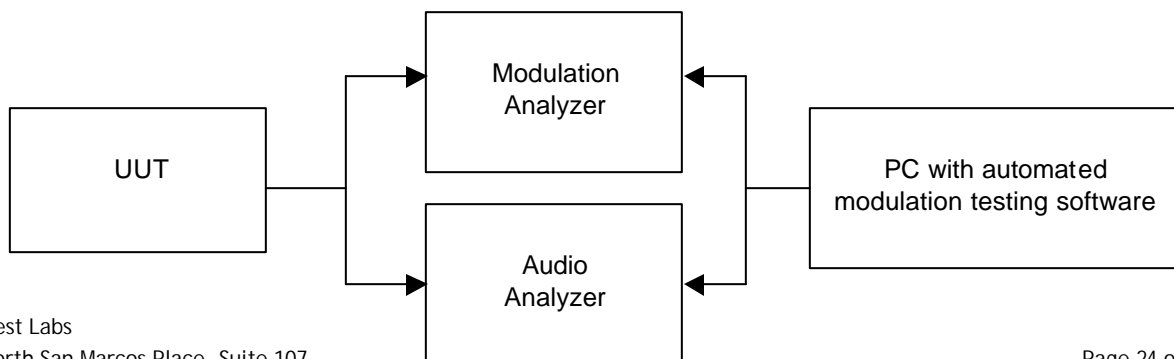


Name of Test: Modulation Limiting
Specification: 74.861(e)3
Guide: ANSI/TIA/EIA-603C-2004
Equipment utilized: i00321, i00324

Test Procedure

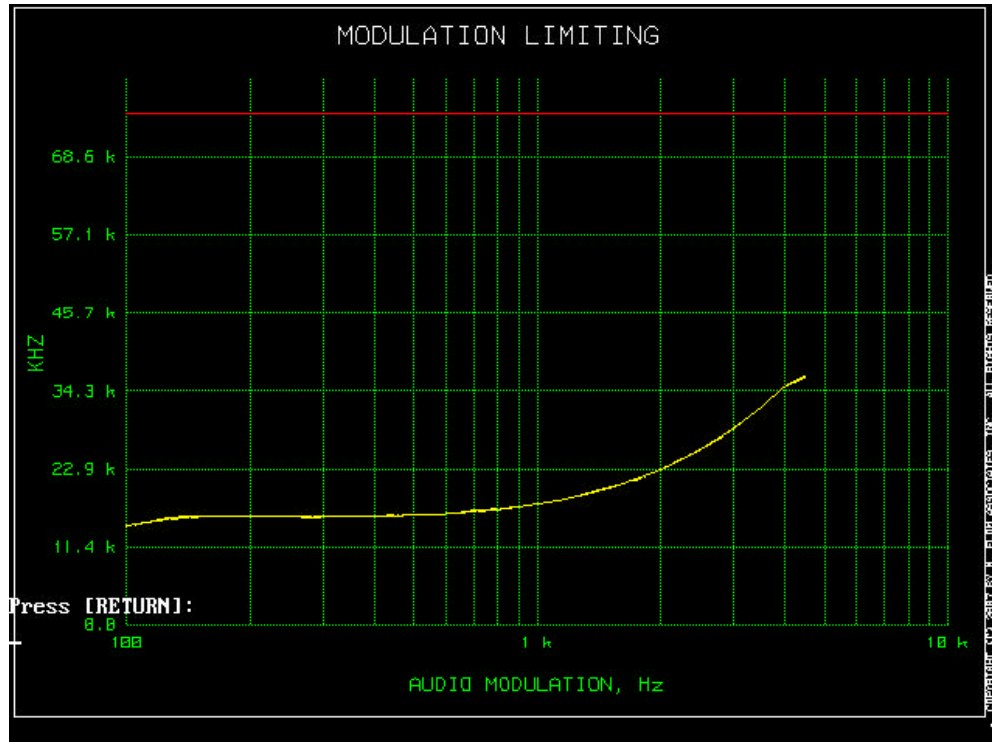
- A) The signal generator was connected to the input of the EUT as shown below.
- B) The modulation response was measured for each of three frequencies (one of which was the frequency of maximum response), and the input voltage was varied and was observed on an HP 8901A Modulation Analyzer.
- C) The input level was varied from 30% modulation (± 1.5 kHz deviation) to at least 20 dB higher than the saturation point.
- D) Measurements were performed for both negative and positive modulation and the respective results were recorded.

Test Set-Up

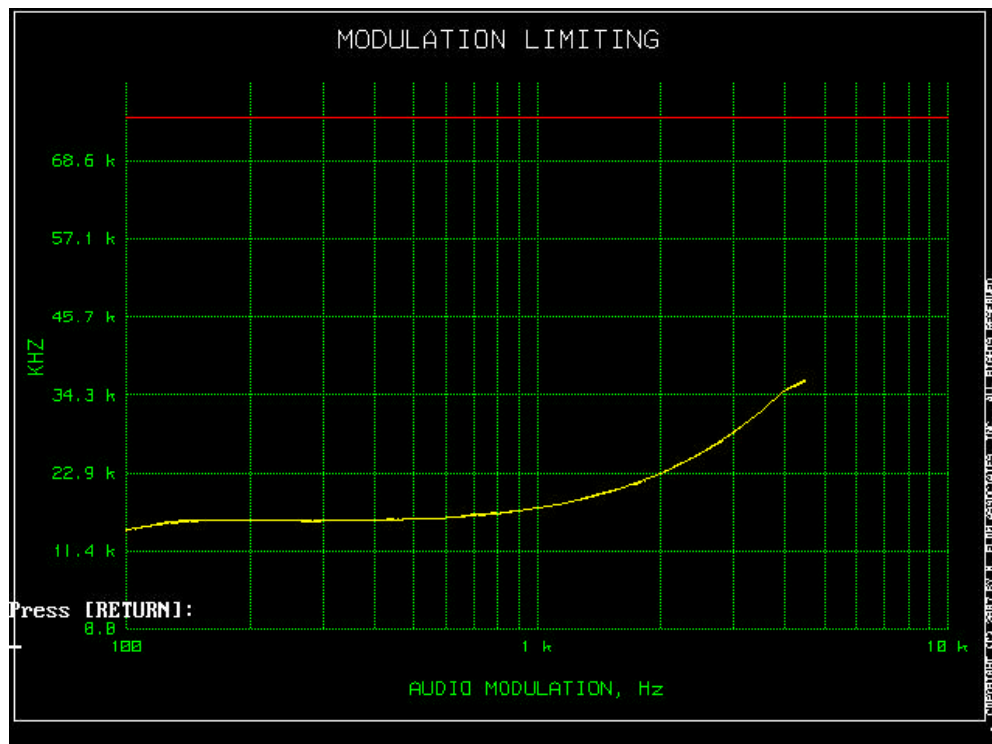


Test Results

Positive Peaks



Negative Peaks

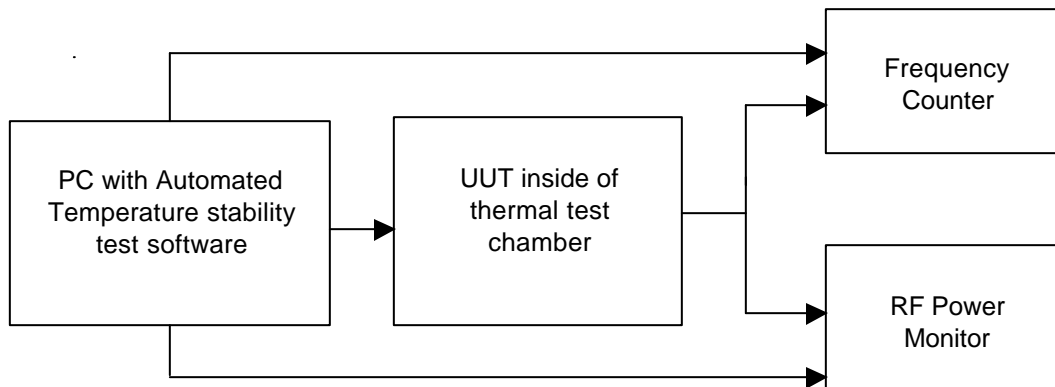


Name of Test: Frequency Stability (Temperature Variation)
Specification: 74.861(e)4
Guide: ANSI/TIA/EIA-603C-2004
Equipment utilized: i00019, i00027, i00321

Test Procedure

The UUT was tested utilizing HTBasic automated PC test software controlling a Thermal test chamber. The UUT was placed in a thermal test chamber and the TX output was connected to a frequency counter and an RF level monitor. The frequency at 25°C was recorded as the nominal frequency. The temperature was varied from -30°C to 50°C in 10°C increments allowing suitable time for internal temperature stabilization. The output frequency and power were monitored to ensure the transmitter stability stayed within the limit of 0.005% (50 PPM). The RF power monitor was utilized to ensure the transmitter remained in the on state throughout the test process.

Test Set-Up



Test Results

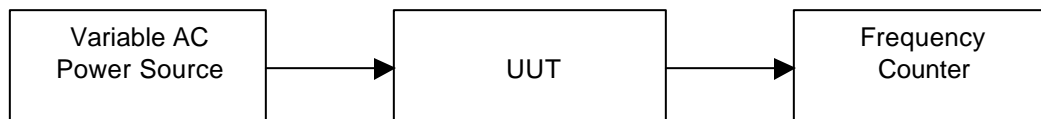
Tuned Frequency (MHz)	Lowest Frequency (MHz)	Highest Frequency (MHz)	Variation (Hz)	Limit (Hz)	Result
482.1	482.097092	482.100709	2807	24,105	Pass
517.9	517.894805	517.901481	6676	25,895	Pass

Name of Test: Frequency Stability (Voltage Variation)
Specification: 74.861(e)4
Guide: ANSI/TIA/EIA-603C-2004
Equipment utilized: i00019, i00027, i00321

Test Procedure

The UUT supply voltage connected to a Variable AC source with the nominal voltage of 120 VAC applied and the transmitter output was monitored with a frequency counter. The frequency was recorded at nominal voltage then compared to the upper and lower voltage limits. A maximum variation of 0.005% (50-PPM) limit was compared to the frequency variation observed.

Test Set-Up

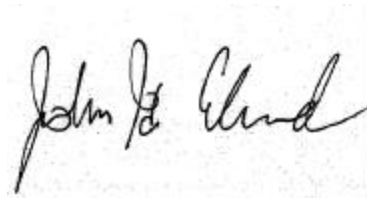


Test Results

Frequency (MHz) at Nominal Voltage	Frequency (MHz) at -15% voltage	Frequency (MHz) at +15% voltage	Variation (Hz)	Limit (Hz)	Result
482.09856	482.09856	482.09856	0	24,105	Pass
517.89706	517.89706	517.89706	0	25,895	Pass

Asset#	Manufacturer	Model	Serial Number	Calibration Cycle	Calibration Due
i00017	HP	8903A	2216A01753	12 mo.	12/11/2007
i00019	HP	5334B	20704A00347	12 mo.	7/27/2007
i00027	Tenney	Tenney Jr	9083-76J-234	12 mo.	9/12/2007
i00029	HP	8563E	3213A00104	12 mo.	3/9/2008
i00033	HP	85462A	3625A00357	12 mo.	11/03/2007
i00048	HP	8566B	2511AD1467	24 mo.	8/30/2007
i00089	Aprel Log Periodic	2001	001500	12 mo.	10/25/2007
i00103	EMCO Horn	3115	9028-3925	36 mo.	10/4/2009
i00228	HP	E4418B	GB39512470	12 mo.	8/1/2007
i00317	HP	8481A	3318A28077	12 mo.	8/18/2007
i00321	HP	8901A	2239A02170	12 mo.	9/28/2007
i00324	HP	8903B	3011A09079	12 mo.	10/05/2007

In addition to the above listed equipment standard RF cables and connectors were utilized during the testing described in this report. Prior to use the proper operation of these cables and connectors was verified. They do not require calibration.



Performed by:

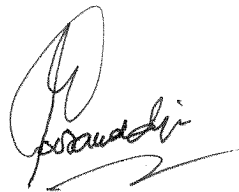
John Erhard

END OF TEST REPORT

**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 supplied 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:

Hoosamuddin S. Bandukwala, Lab Director