



Nemko

Test Report: 2W06347

Applicant: Coverage Solutions Corp.
2901 W. Busch Blvd.
Suite 900
Tampa, FL 33618, USA

Equipment Under Test: BDA-CELLB-1/1W-60A
(EUT)

FCC ID: QQRCELLB1W60

In Accordance With: **FCC Part 22, Subpart H**

Tested By: Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By: Glen Westwell, Wireless Technologist

Date: 16 December 2002

Total Number of Pages: 30

Table of Contents

Section 1. Summary of Test Results.....	3
Section 2. General Equipment Specification	5
Section 3. RF Power Output.....	6
Section 4. Occupied Bandwidth.....	8
Section 5. Spurious Emissions at Antenna Terminals	15
Section 6. Field Strength of Spurious Emissions	24
Section 7. Block Diagrams.....	28
Section 8. Test Equipment List	30

Section 1. Summary of Test Results**General**

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 22, Subpart H.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.



TESTED BY: _____
Kevin Carr, EMC Specialist

DATE: 16 December 2002

Nemko Canada Inc., a testing laboratory, is accredited by the Standards Council of Canada. The tests included in this report are within the scope of this accreditation. The results apply only to the samples tested.

Nemko Canada Inc. authorizes the above named company to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

This report applies only to the items tested.

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complied
Audio Frequency Response	2.1047	N/A
Audio Low-Pass Filter Response	2.1047	N/A
Modulation Limiting	2.1047	N/A
Occupied Bandwidth	2.1049	Complied
Spurious Emissions at Antenna Terminals	2.1051	Complied
Field Strength of Spurious Emissions	2.1053	Complied
Frequency Stability	2.1055	N/A
Transient Frequency Behavior	—	N/A

All Tests were conducted with the AGC circuitry enabled, and verified with AGC disabled.

The EUT is a f1-f1 amplifier, as such frequency stability was not performed.

The EUT contains no audio limiting circuitry.

Indoor Temperature: 23°C
Humidity: 10%

Outdoor Temperature: 05°C
 Humidity: 69%

Section 2. General Equipment Specification

Manufacturer:	Coverage Solutions Corp.	
Model No.:	BDA-CELLB-1/1W-60A	
Serial No.:	02071041	
Date Received In Laboratory:	3 Dec. 2002	
Nemko Identification No.:	1	
Supply Voltage:	120VAC, 60Hz	
Frequency Range:	Downlink:	880-894MHz
	Uplink:	835-849MHz
RF Output Power (Rated):	24.0 dBm	
RF Output Power (Measured):	Downlink, CDMA: 21.7 dBm Downlink, TDMA: 24.0 dBm Downlink, AMPS: 23.5 dBm	
	Uplink, CDMA: 22.7 dBm Uplink, TDMA: 24.0 dBm Uplink, AMPS: 23.7 dBm	
Emission Designator:	CDMA, DXW TDMA, F9W AMPS, F8W	

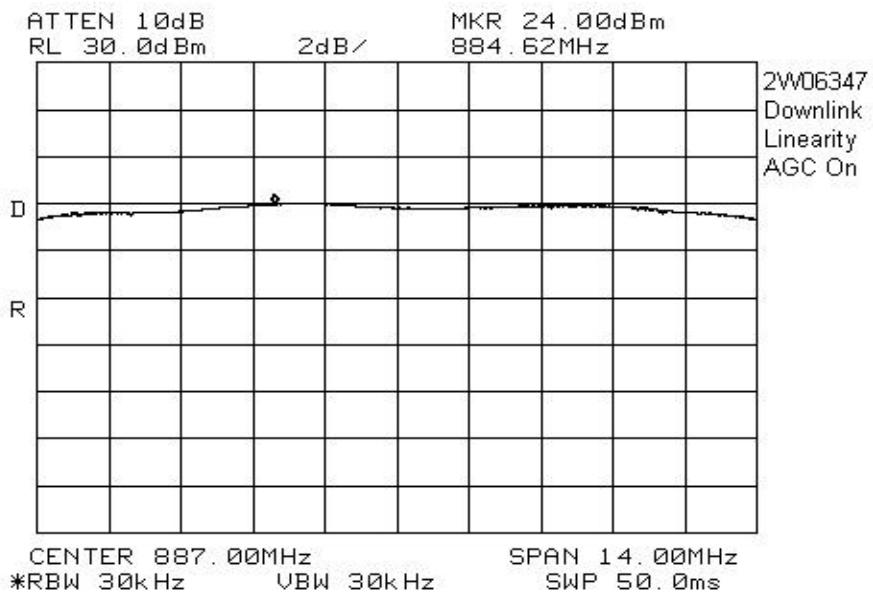
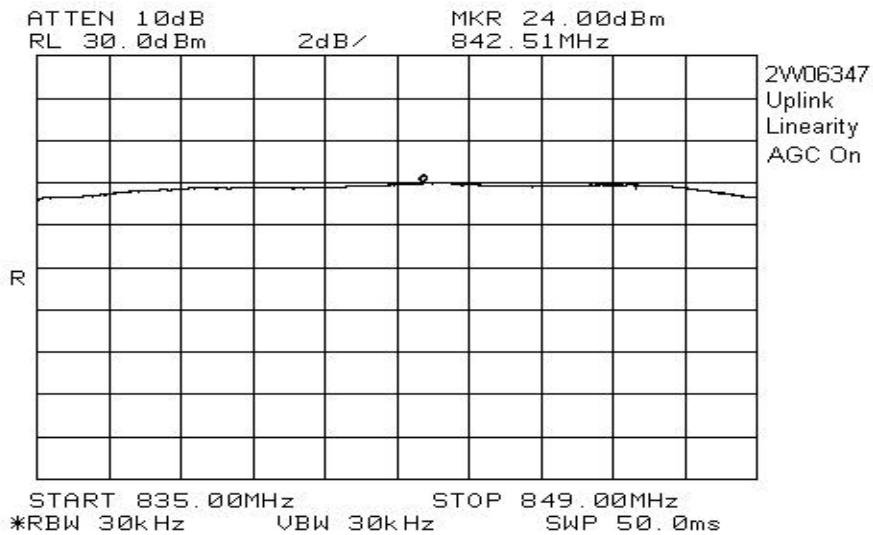
Section 3. RF Power Output**Para. No.: 2.1046**

Test Performed By: Kevin Carr	Date of Test: 10 Dec. 2002
--------------------------------------	-----------------------------------

Minimum Standard: 22.913(a)**Test Results:** Complied**Measurement Data:** See Attached Graphs. The maximum RF output power is within \pm 1dB of the manufacturer's rating. The RF output power is de-rated according to the number of channels via AGC and is equal to $P_{max} - 10\log N$.

Pmax = Maximum RF Output Power

N = Number Of Channels

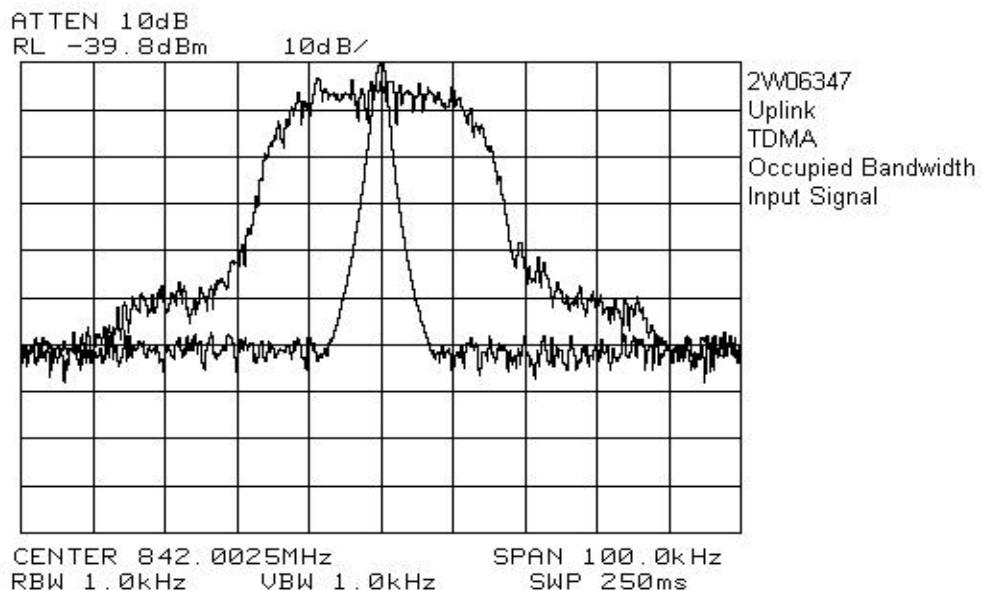
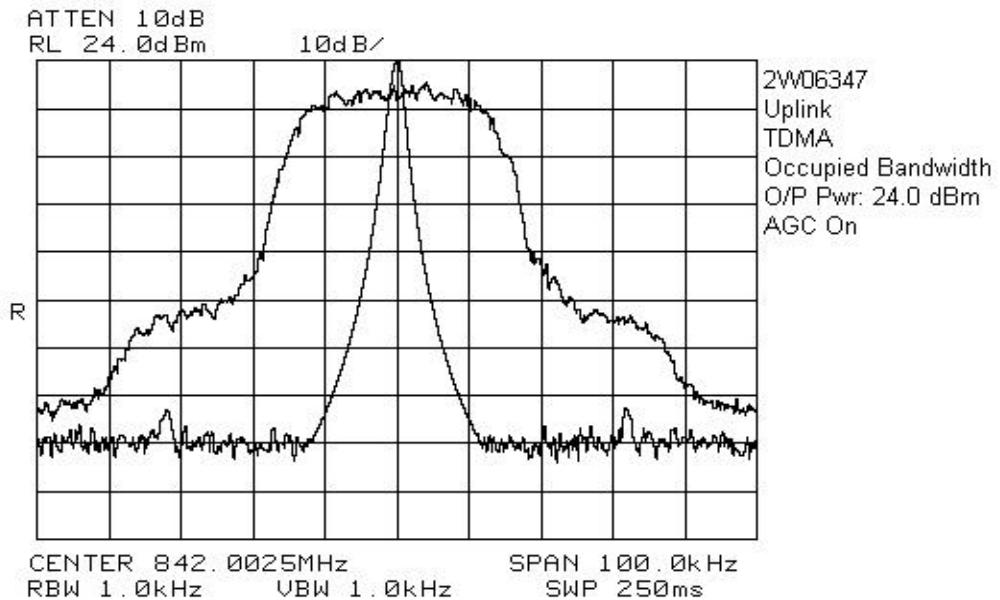


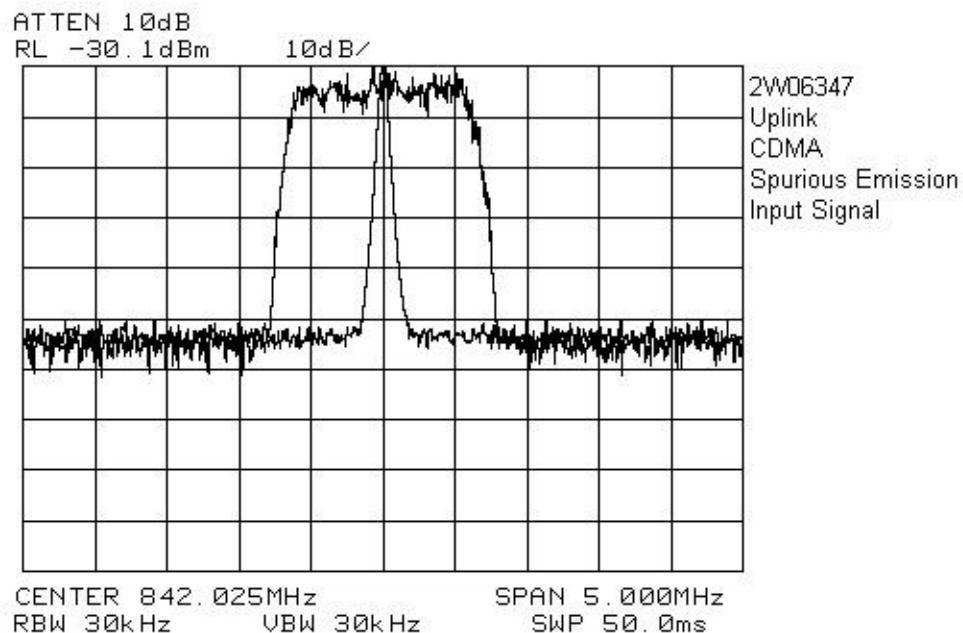
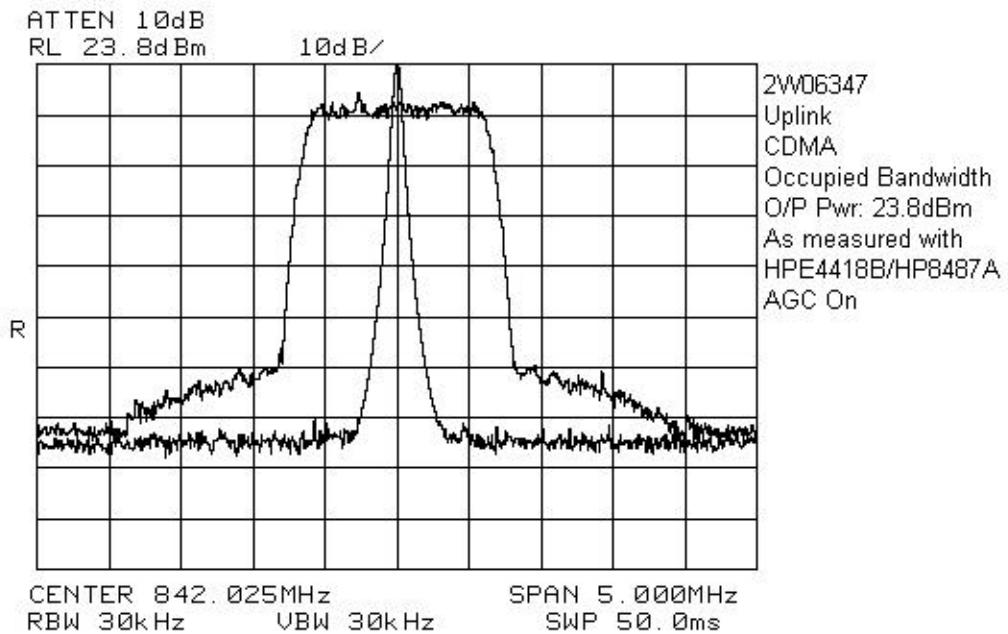
Section 4. Occupied Bandwidth**Para. No.: 2.1049**

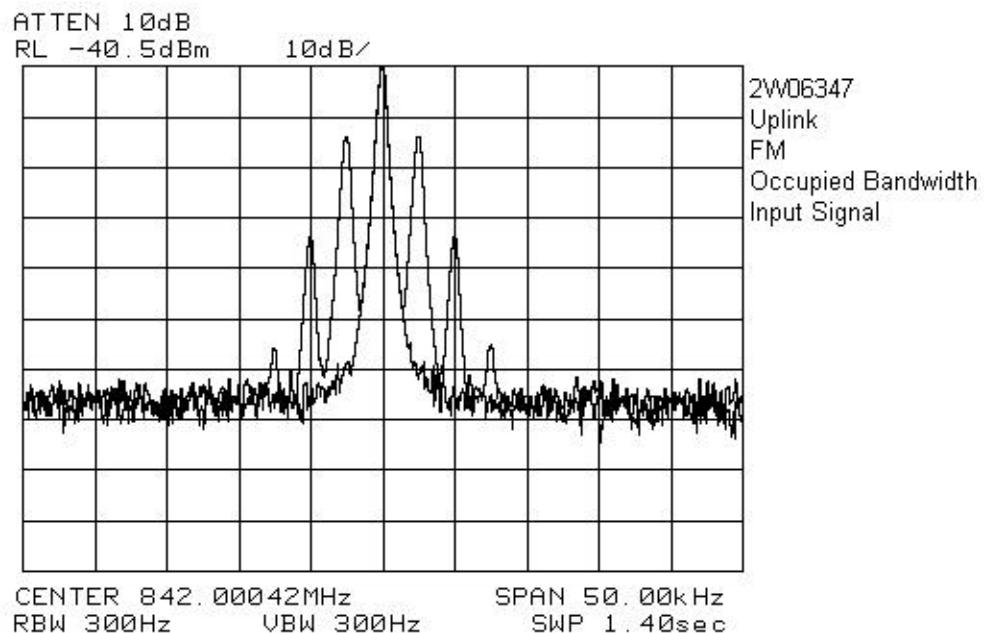
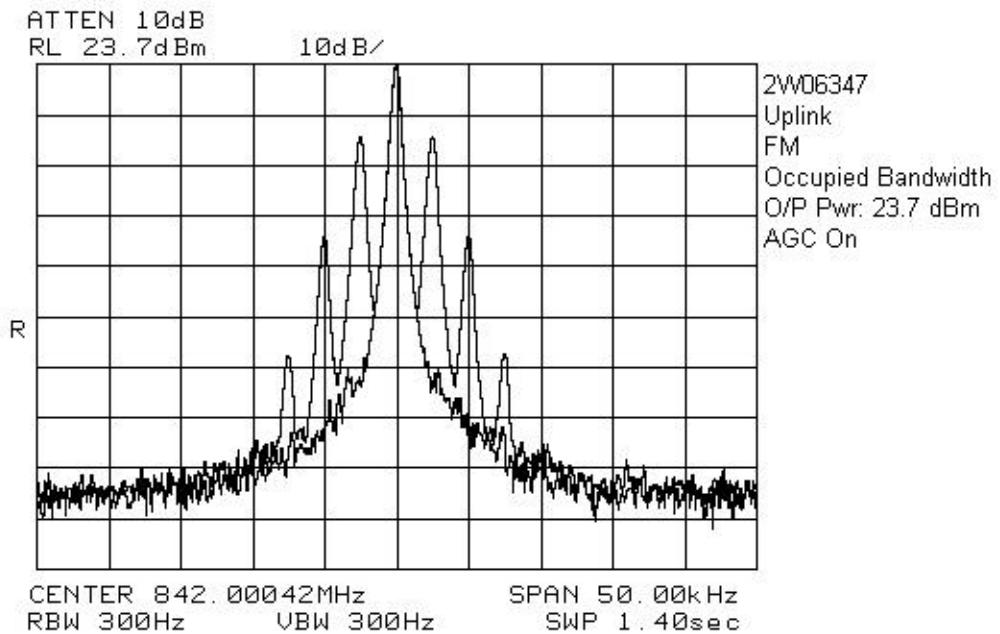
Test Performed By: Kevin Carr	Date of Test: 10 Dec. 2002
--------------------------------------	-----------------------------------

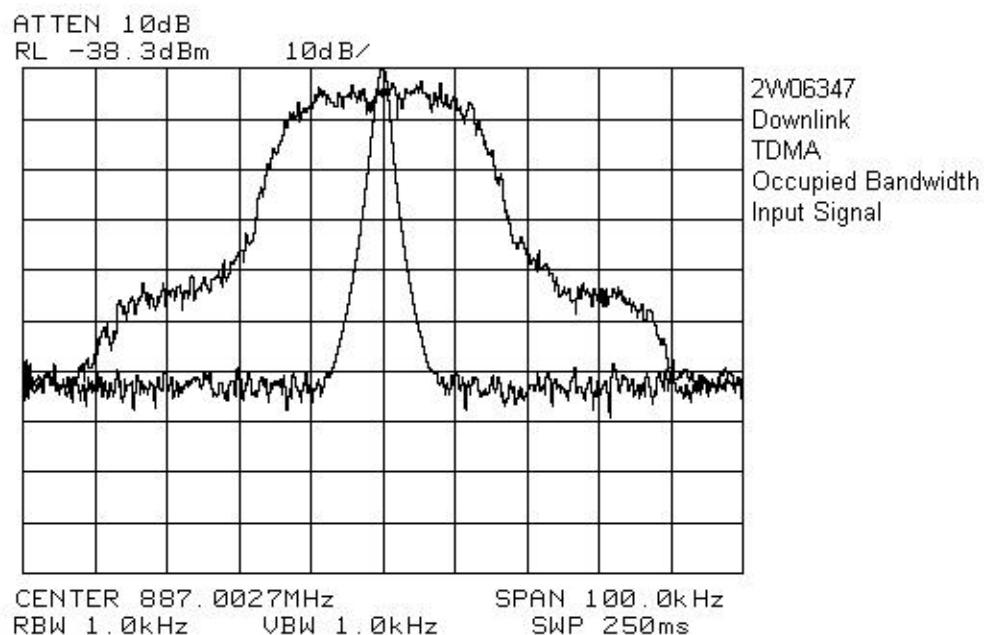
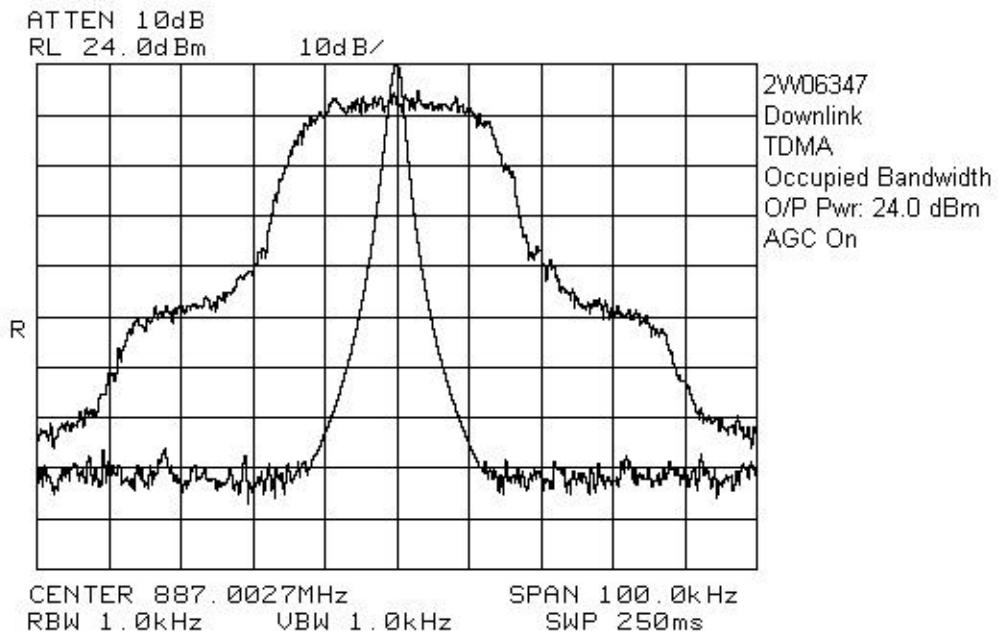
Minimum Standard: 22.917, Input vs Output**Test Results:****Measurement Data:** See Attached Graphs

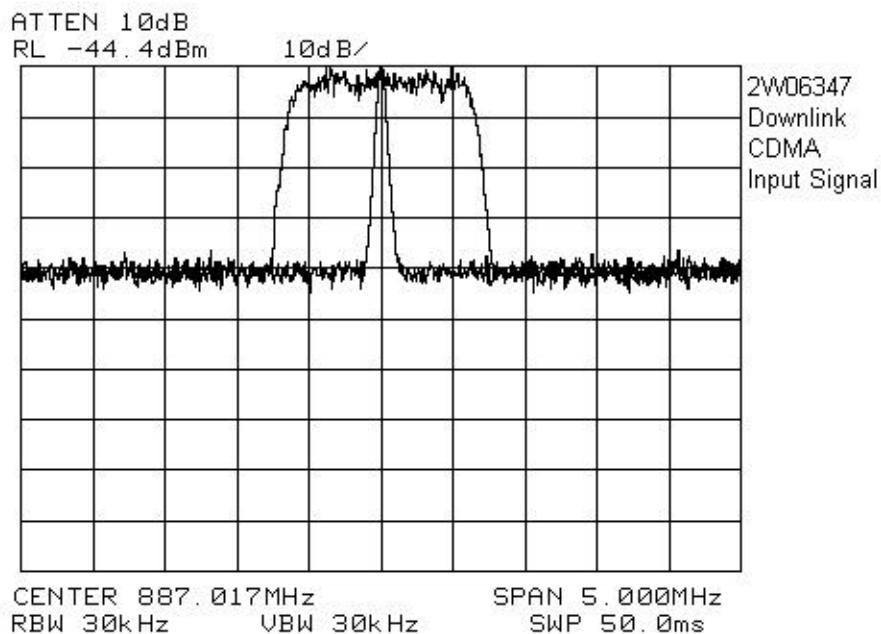
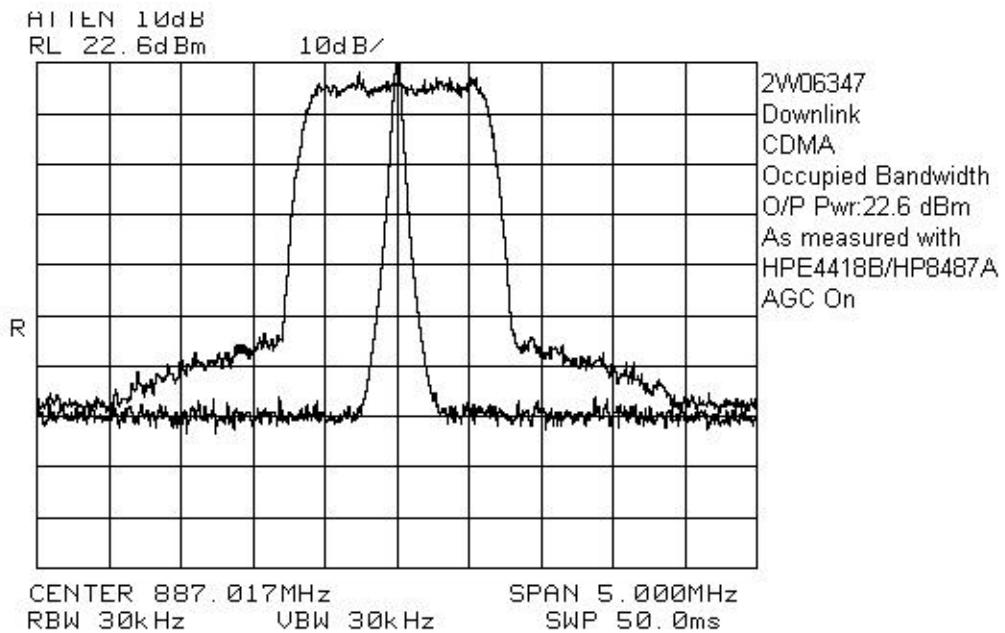
The occupied bandwidth was measured by comparison of input to the output signal. This was done in order to determine if there was any degradation to the output signal due to the amplification through the repeater.

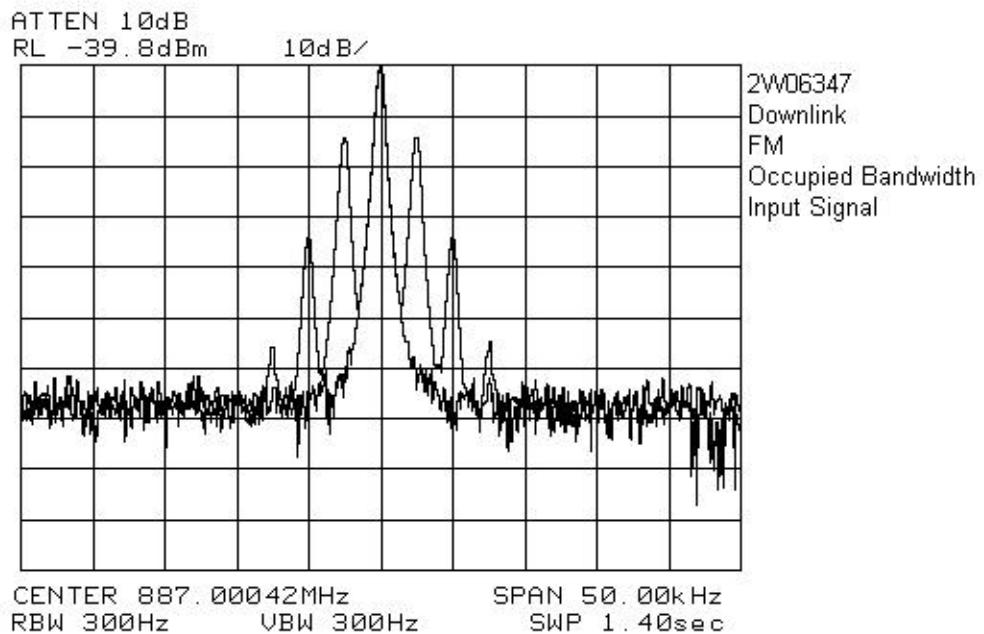
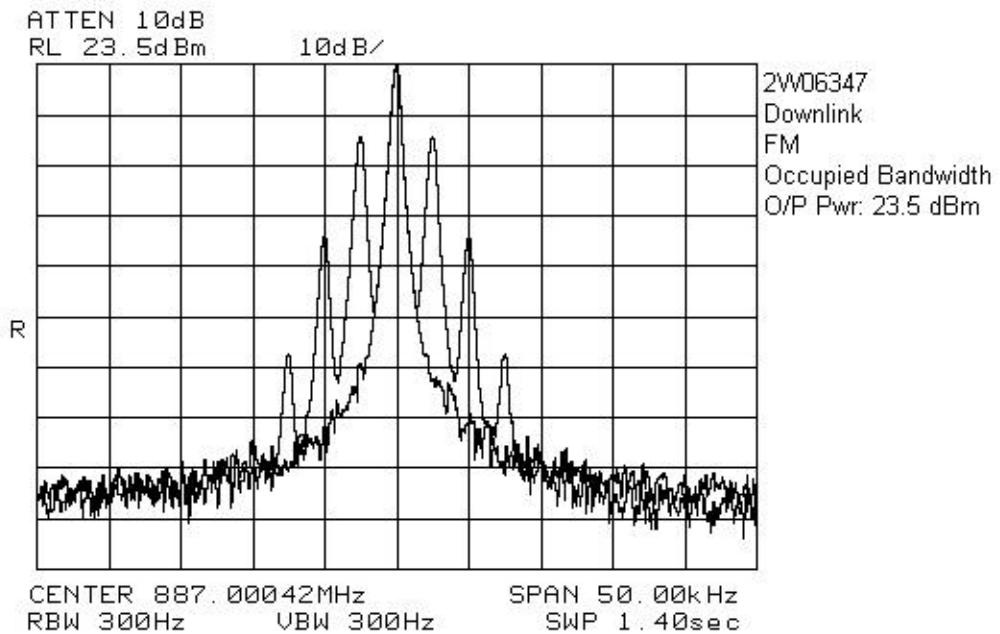


EQUIPMENT: BDA-CELLB-1/1W-60A

EQUIPMENT: BDA-CELLB-1/1W-60A



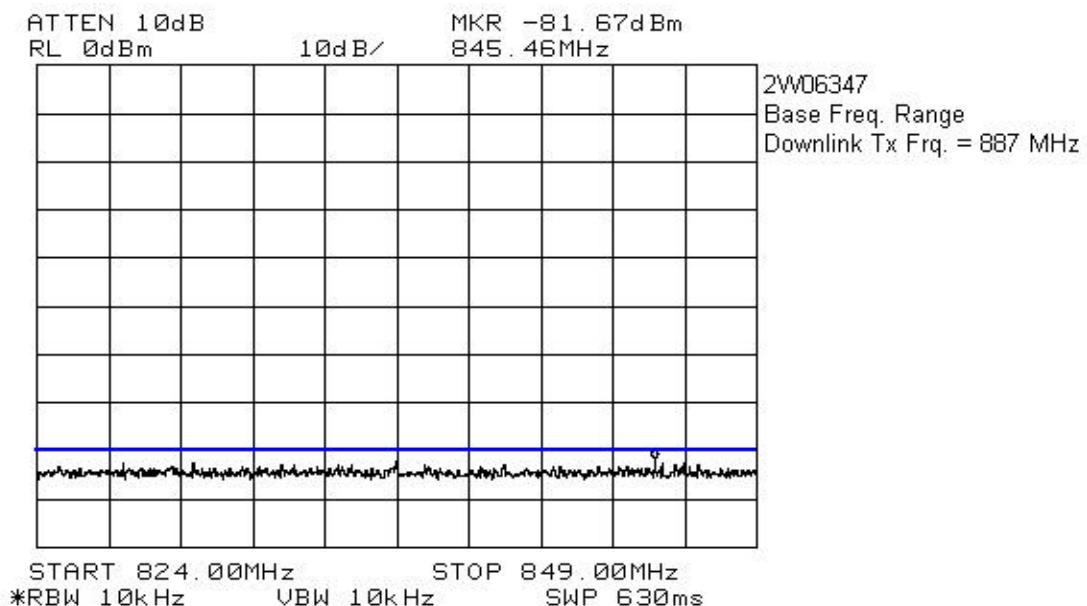
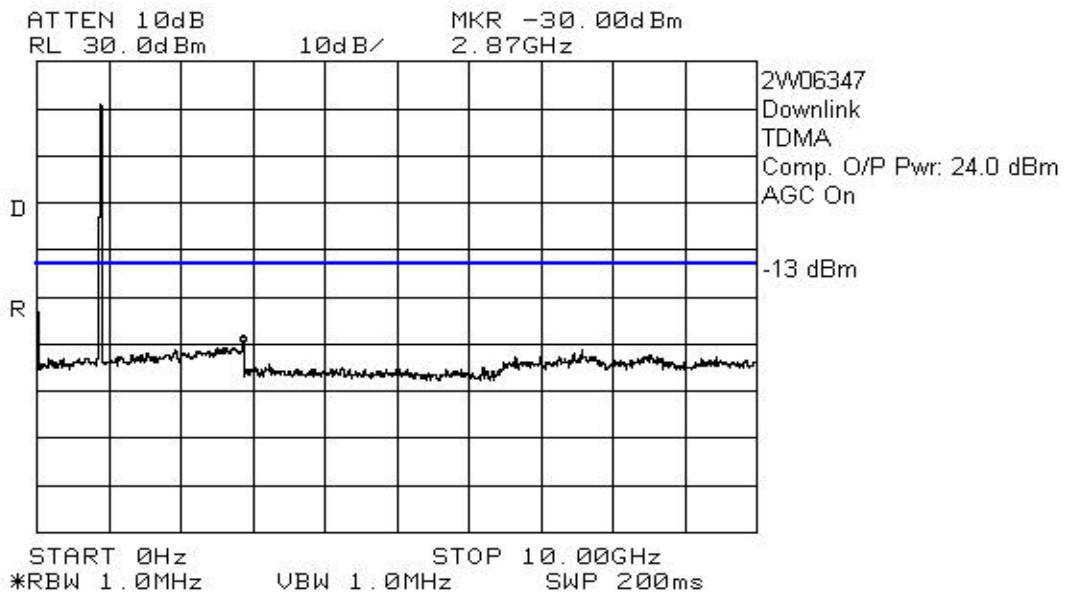
EQUIPMENT: BDA-CELLB-1/1W-60A

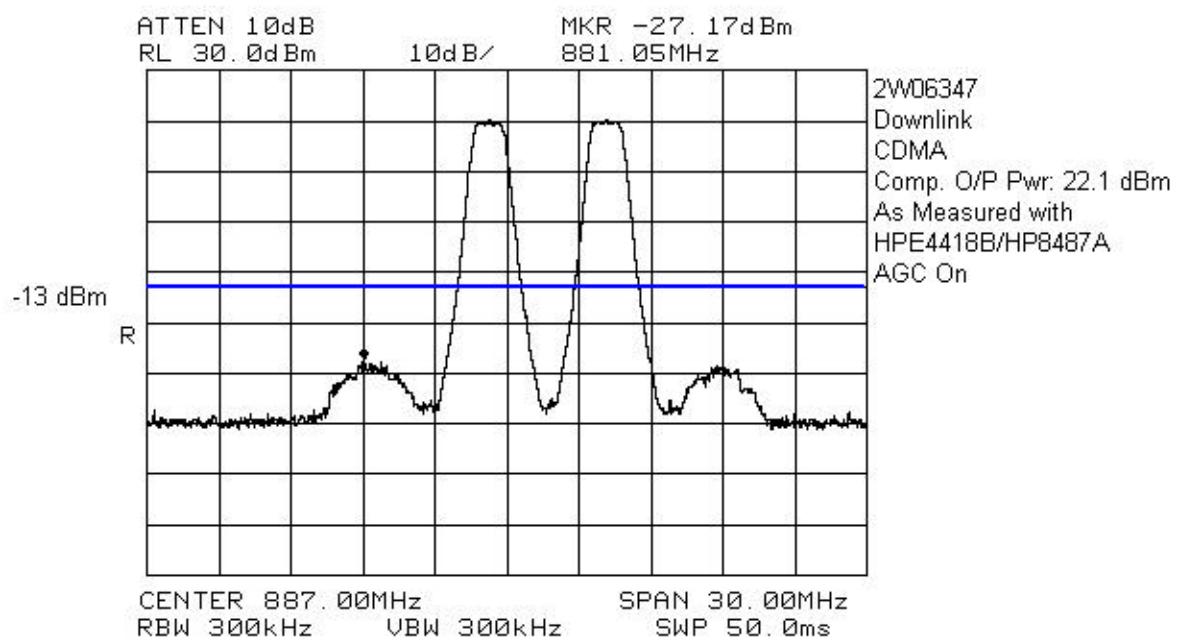
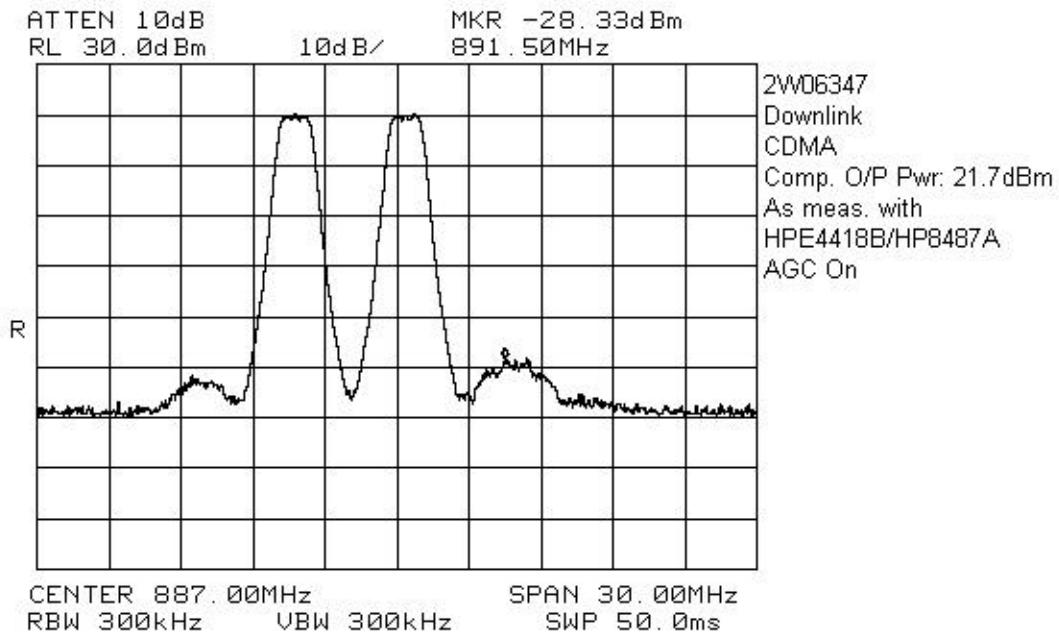
EQUIPMENT: BDA-CELLB-1/1W-60A

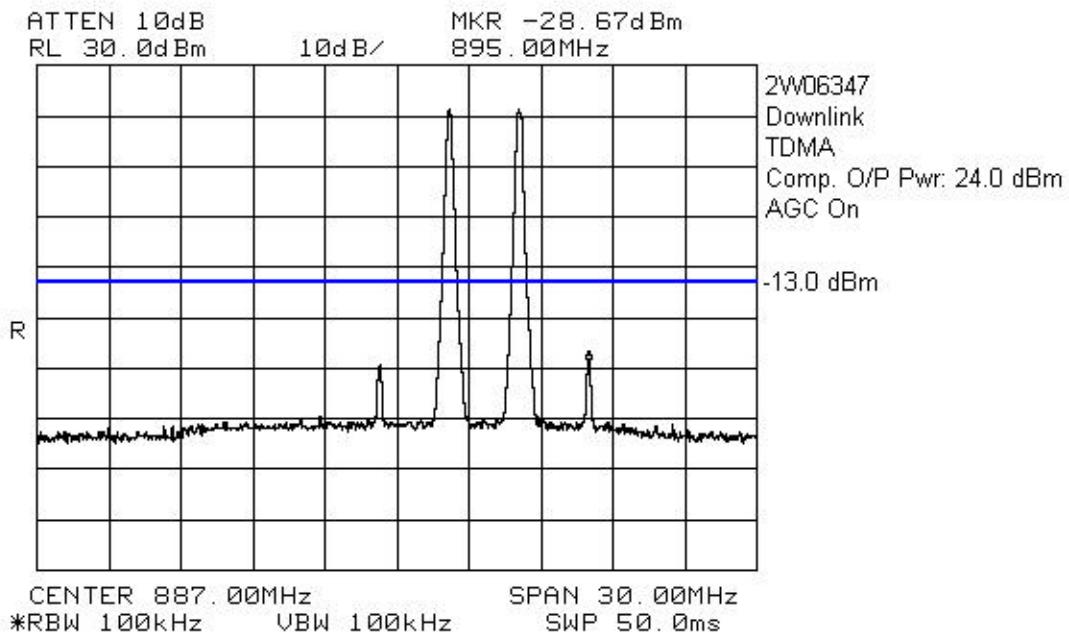
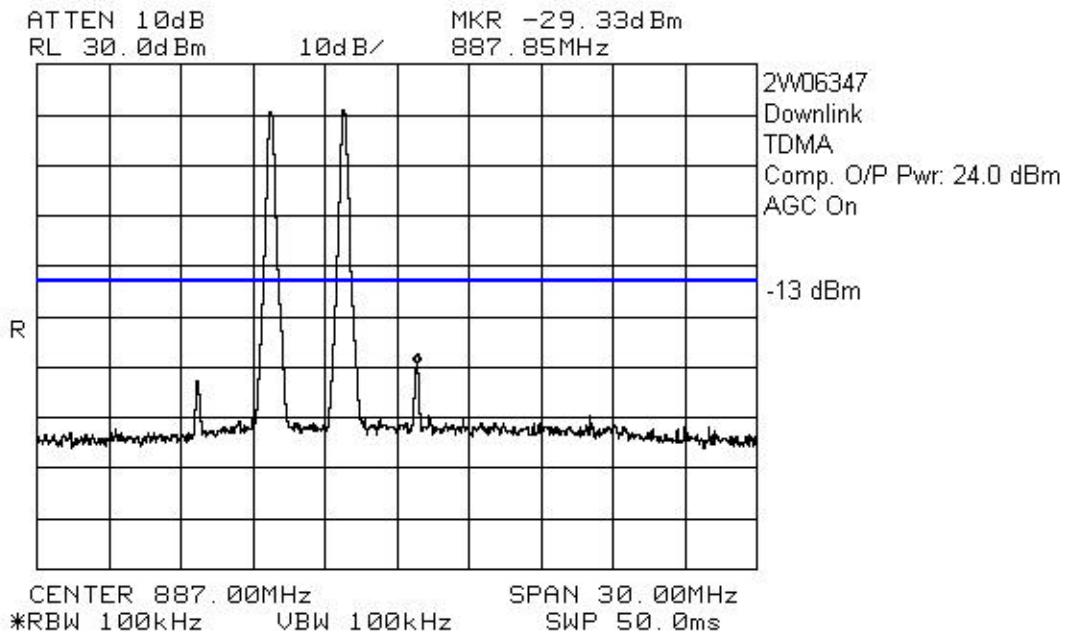
Section 5. Spurious Emissions at Antenna Terminals**Para. No.: 2.1051**

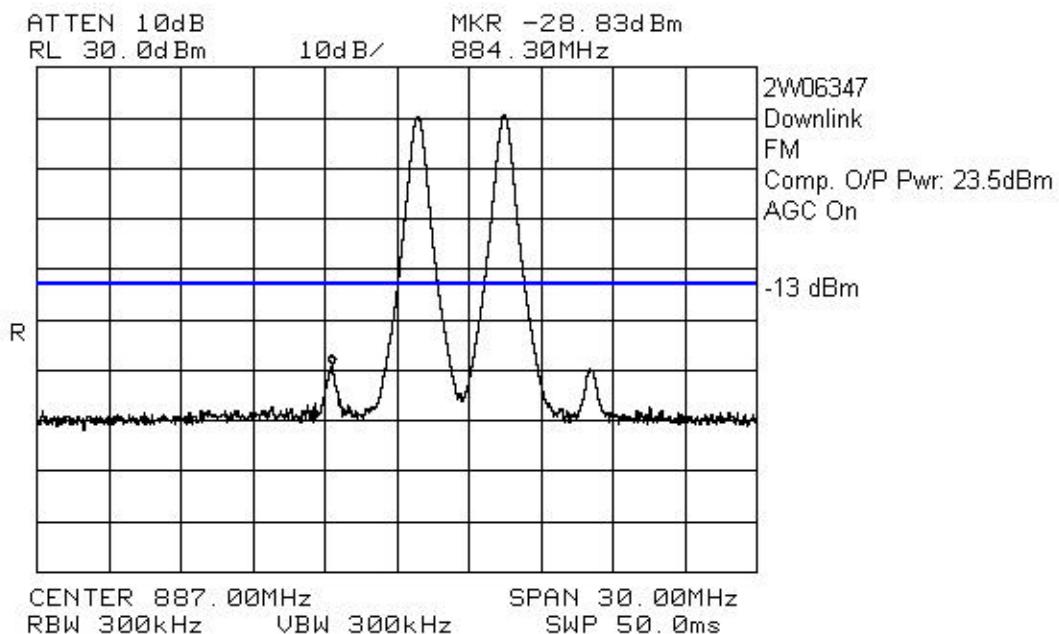
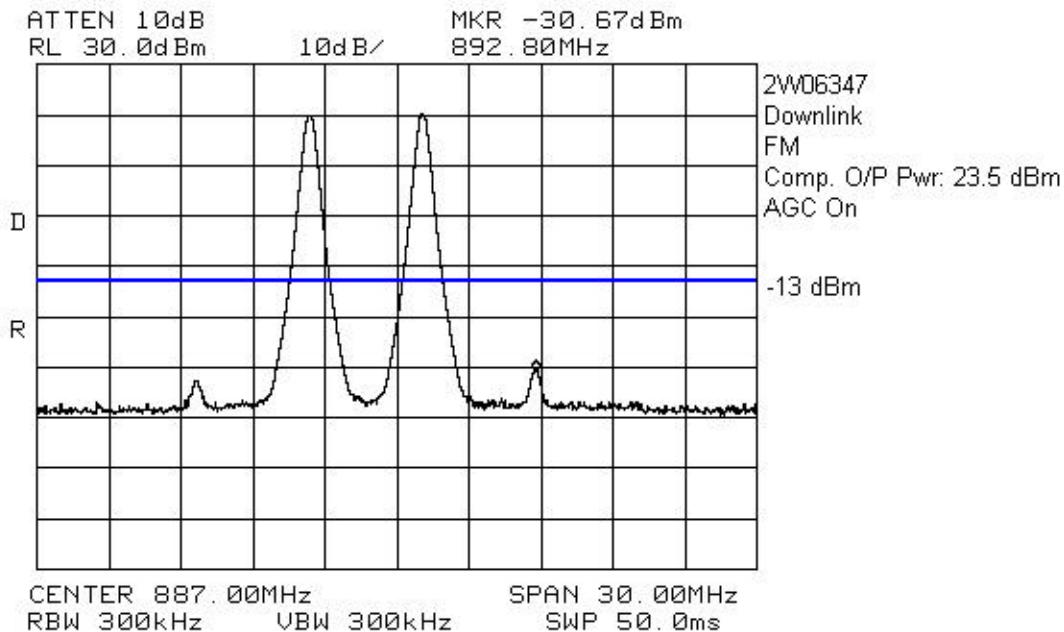
Test Performed By: Kevin Carr	Date of Test: 10 Dec. 2002
--------------------------------------	-----------------------------------

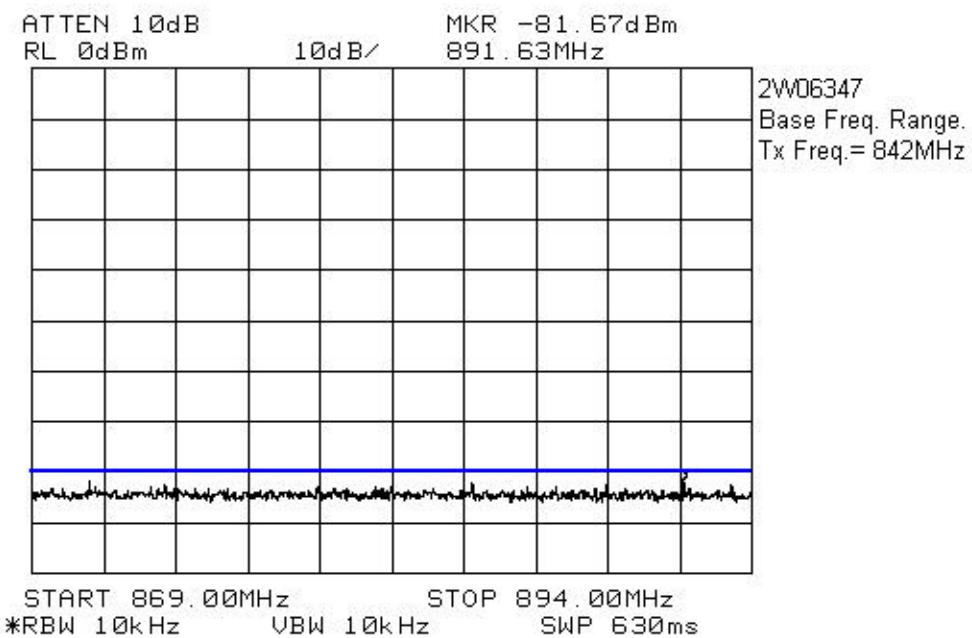
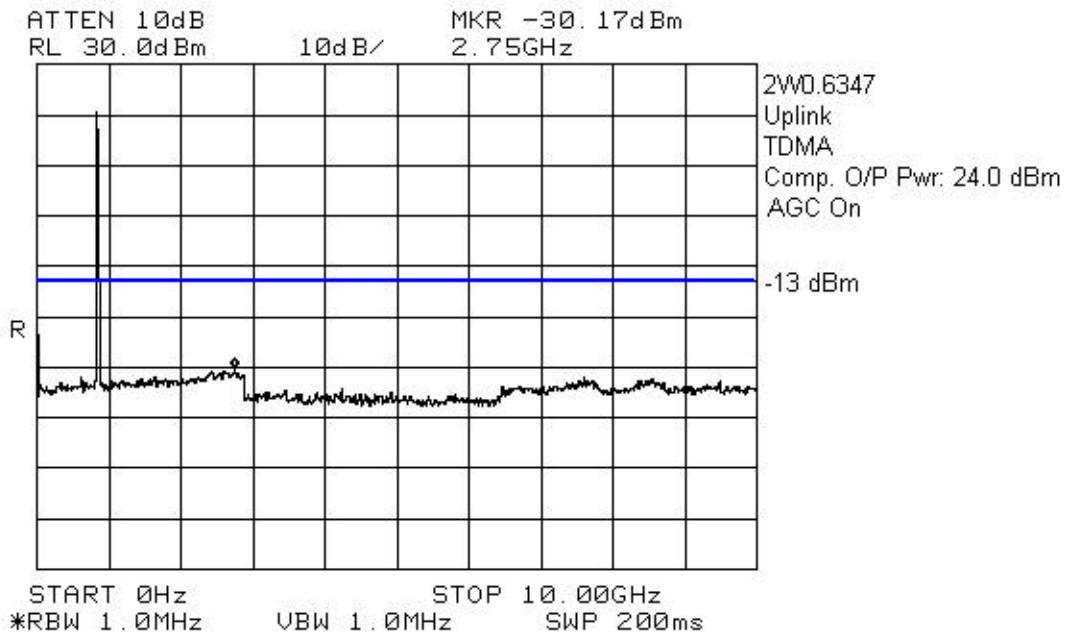
Minimum Standard: 22.917(e): -13dBm
(f): -80dBm**Test Results:** Complied.**Measurement Data:** See attached graphs. Only worst case has been reported

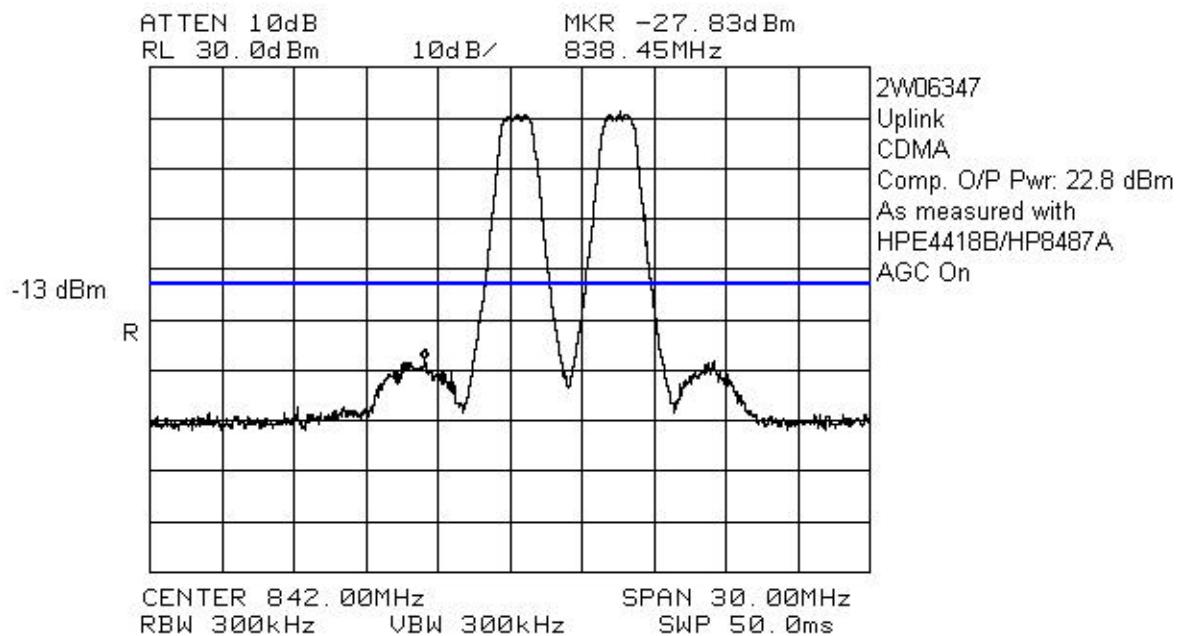
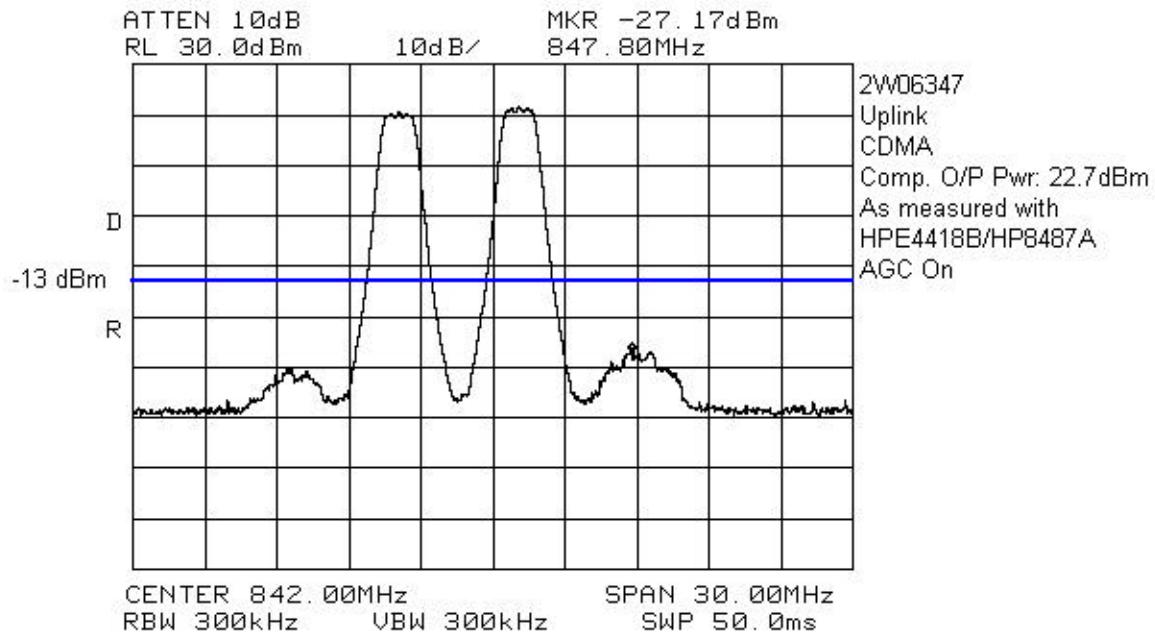
EQUIPMENT: BDA-CELLB-1/1W-60A

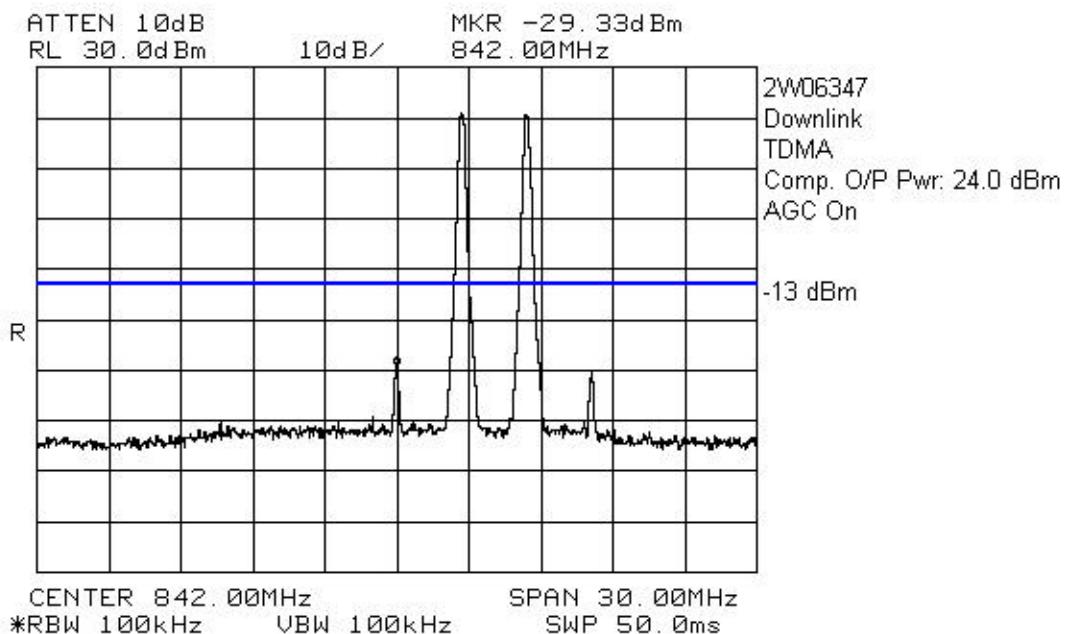
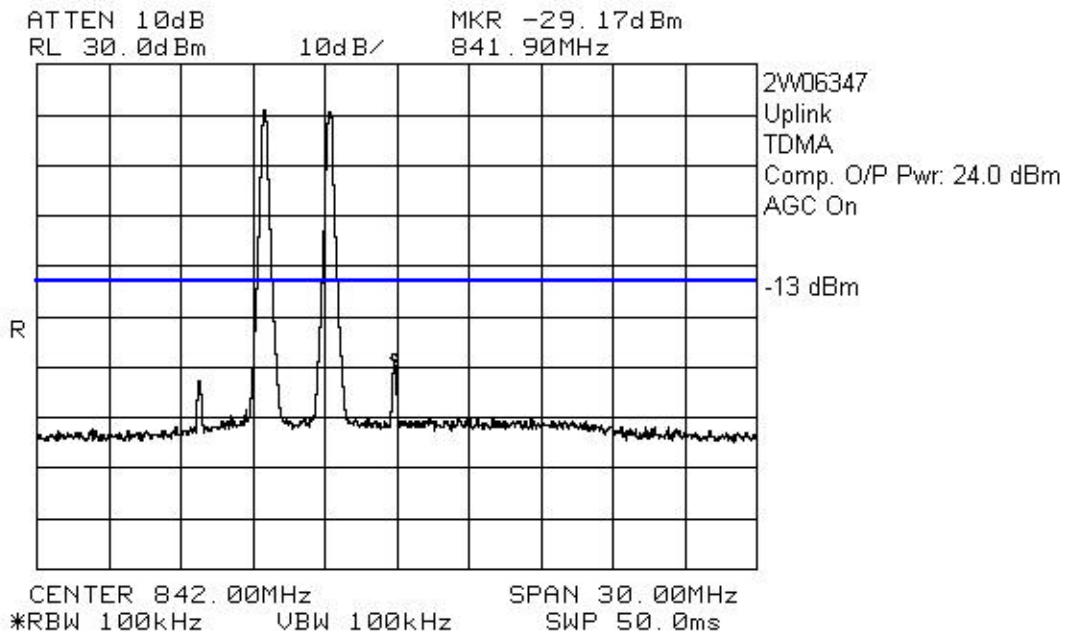
EQUIPMENT: BDA-CELLB-1/1W-60A

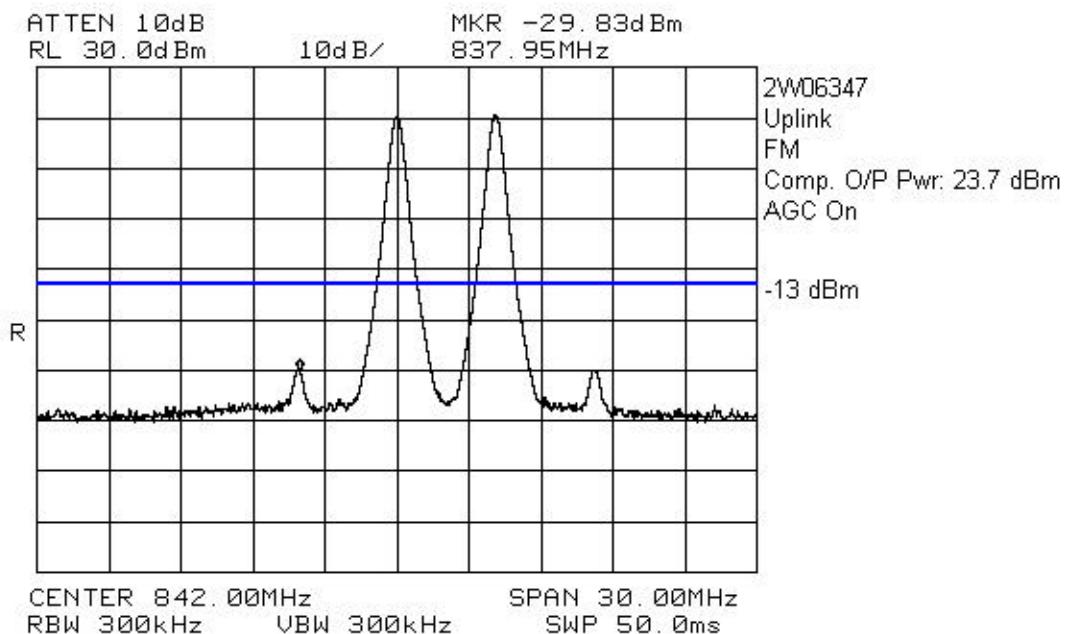
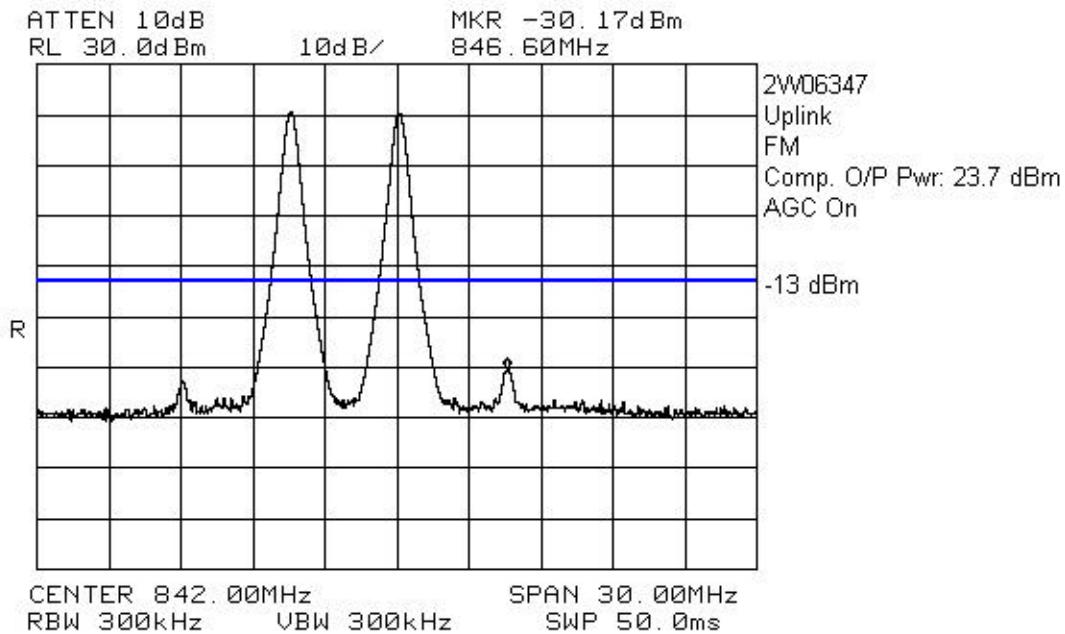
EQUIPMENT: BDA-CELLB-1/1W-60A

EQUIPMENT: BDA-CELLB-1/1W-60A

EQUIPMENT: BDA-CELLB-1/1W-60A

EQUIPMENT: BDA-CELLB-1/1W-60A

EQUIPMENT: BDA-CELLB-1/1W-60A

EQUIPMENT: BDA-CELLB-1/1W-60A

Section 6. Field Strength of Spurious Emissions**Para. No.: 2.1053**

Test Performed By: Kevin Carr	Date of Test: 5 Dec. 2002
--------------------------------------	----------------------------------

Minimum Standard: 22.917(e): -13dBm**Test Results:** Complied.**Measurement Data:** See attached chart.

Radiated Disturbance Test Data:

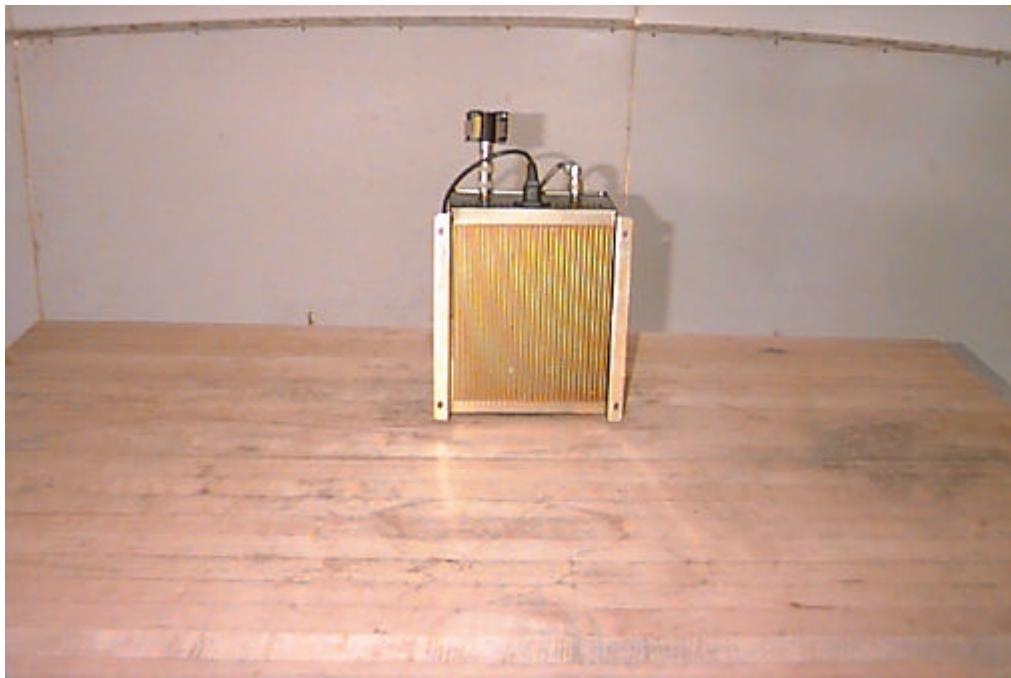
Test Date: 5 Dec. 2002											
Engineer's Name: Kevin Carr											
Temperature (C°): Indoor: 21, Outdoor: 5						Humidity %: Indoor 11, Outdoor: 69					
Tested as per (Table Top/Floor Standing): Table Top											
Test Distance (meters): 3						Range: A					
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dB μ V)	Sig Sub. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Signal Substitution Power (dBm)	Limit (dBm)	Margin (dB)	Detector	Amp.
51.6	BC1	V	21.1	-86.8	N/A	0.8	-64.9	-13	51.9	Peak	N/A
51.6	BC1	H	7.2	-85.2	N/A	0.8	-77.2	-13	64.2	Peak	N/A
1684	Horn 2	V	56.3	-120.5	N/A	3.6	-60.6	-13	47.6	Peak	N/A
1684	Horn 2	H	58.1	-120.9	N/A	3.6	-59.2	-13	46.2	Peak	N/A
2526	Horn 2	V	69.5	-127.6	N/A	5.9	-52.2	-13	39.2	Peak	N/A
2526	Horn 2	H	70.8	-127.4	N/A	5.9	-50.7	-13	37.7	Peak	N/A
3368	Horn 2	V	64.0	-125.6	N/A	5.4	-56.1	-13	43.1	Peak	N/A
3368	Horn 2	H	64.0	-126.7	N/A	5.4	-57.2	-13	44.2	Peak	N/A
4210	Horn 2	V	56.3	-119.9	N/A	6.5	-57.1	-13	44.1	Peak	N/A
4210	Horn 2	H	58.7	-119.9	N/A	6.5	-54.3	-13	41.3	Peak	N/A
1774	Horn 2	V	55.8	-119.4	N/A	3.8	-59.7	-13	46.7	Peak	N/A
1774	Horn 2	H	57.2	-119.9	N/A	3.8	-58.9	-13	45.9	Peak	N/A
2661	Horn 2	V	69.7	-127.5	N/A	7.8	-50.0	-13	37.0	Peak	N/A
2661	Horn 2	H	79.2	-128.4	N/A	7.8	-41.4	-13	28.4	Peak	N/A
3548	Horn 2	V	61.2	-125.6	N/A	5.5	-59.0	-13	46.0	Peak	N/A
3548	Horn 2	H	60.3	-127.5	N/A	5.5	-61.7	-13	48.7	Peak	N/A
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole											
Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW											
Notes:		AGC off									

Radiated Disturbance Results(Cont.):

Final Test Result (Please Check One):	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
Were their deviations from the standard test procedure?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, document:		
Has rented equipment been used?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, document:		
Exercise Program: The mode used to exercise the various system components in a manner similar to typical use.	There are no computer or microprocessor parts installed that contain software. The EUT was tested at Mid. frequency of each band, at full O/P power into a 50 ohm load.	

Radiated Disturbance Detailed Setup Photos:

Rear

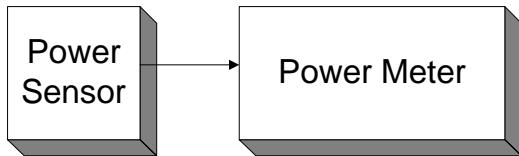


Front



Section 7. Block Diagrams

Para. No. 2.1046 - R.F. Power Output

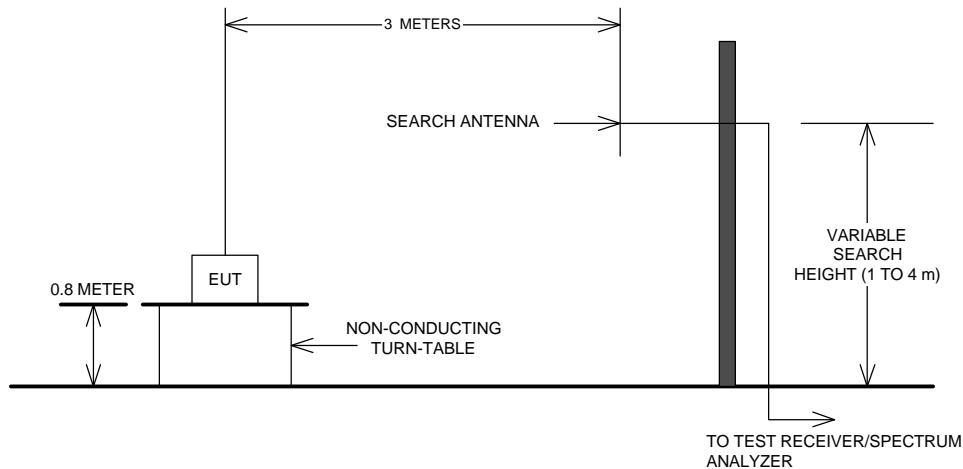
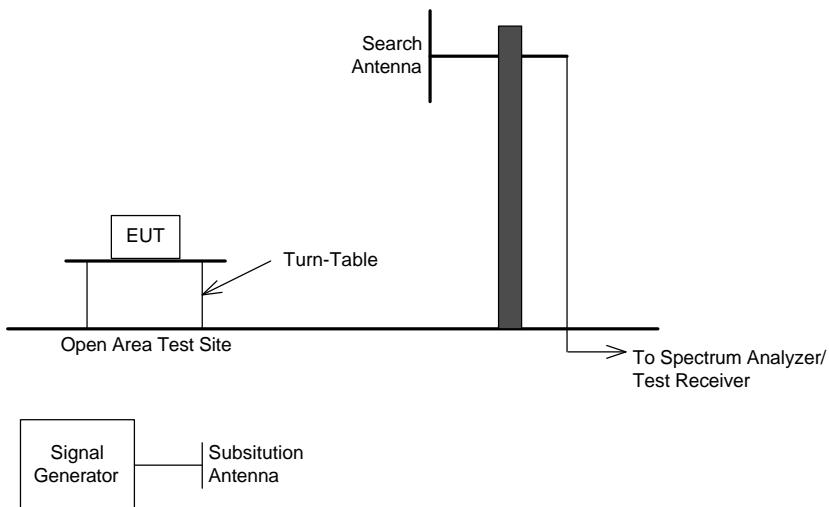


Para. No. 2.1049 - Occupied Bandwidth



Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation**TIA/EIA 603**
Effective Radiated Power
Spurious Emissions

Section 8. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	3846A01407
1 Year	Spectrum Analyzer-1	Hewlett Packard	8566B	2311A02238
1 Year	Spectrum Analyzer Display-1	Hewlett Packard	8566B	2314A04759
1 Year	Attenuator	Narda	768-20	9507
1 Year	Attenuator	Narda	768-10	9707
1 Year	Receiver	Rohde & Schwarz	ESVS-30	843710/002
1 year	Biconilog Antenna	EMCO	3143	1038
1 Year	Horn Antenna	EMCO #2	3115	4336
1 Year	Log Periodic Antenna 1	EMCO	LPA-25	1141
1 Year	Biconical (1) Antenna	EMCO	3109	9204-2708
1 year	50 Ω Termination	Wiltron	26N50	605248
1 Year	50 ohm Combiner Pad	Mini Circuits	ZA3PD-2	9746
3 Year	Signal Generator	Rohde & Schwarz	SM1Q03	DE22004
3 Year	Signal Generator	Rhode & Schwarz	SM1Q03E	FA001269
1 Year	RF AMP	JCA	2-4 GHz	FA001496
1 Year	RF AMP	JCA	1-2 GHz	FA001498
1 Year	RF AMP	JCA	4-8 GHz	FA001497
1 Year	Power Meter	Hewlett Packard	E4418B	FA001413
1 Year	Power Sensor	Hewlett Packard	8487A	FA001419