



KTL Ottawa

Safety - EMI - Telecom - ISO Guide 25

ENGINEERING TEST REPORT

ON:

**ALLEN TELECOM GROUP, SYSTEMS DIVISION
"MICROAMP 50, TPA 750 REPEATER"**

FCC ID: BCR9GBMA50T

**IN ACCORDANCE WITH:
FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER**

PROJECT NO.: 8R00131.2

TESTED FOR:

**ALLEN TELECOM GROUP, SYSTEMS DIVISION
30500 BRUCE INDUSTRIAL PARKWAY
CLEVELAND, OHIO 44139-3996**

TESTED BY:

**KTL OTTAWA INC.
3325 RIVER ROAD, R.R. 5
OTTAWA, ONTARIO K1V 1H2**



NVLAP LAB CODE: 100351-0

AUGUST 1998

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This report applies only to the items tested.

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

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EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

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- Transient Frequency Behaviour

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 1. Summary of Test Results

Manufacturer: Allen Telecom Group, Systems Division

Model No.: MICROAMP 50, TPA 750

Serial No.: 0001 and 0003

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 90, Subpart I.

☒ New Submission

☒ Production Unit

☐ Class II Permissive Change

☐ Pre-Production Unit

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

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.
See "Summary of Test Data".

NVLAP

NVLAP LAB CODE: 100351-0

TESTED BY: Kevin Carr
Kevin Carr, Technologist

DATE: 14 Sept 98

TECHNICAL REVIEW: Tom Tidwell
Tom Tidwell, Senior Technologist

DATE: 14 Sept. 1998

APPROVED BY: W. Waterhouse
W. Waterhouse, RF Engineering Lab Manager

DATE: 15th Sept 1998

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Summary Of Test Data

NAME OF TEST	PARA. NO.	SPEC.	MEAS.	RESULT
RF Power Output	90.205	Plot	Plot	Complies
Audio Frequency Response	TIA EIA-603.3.2.6	N/A	N/A	N/A
Audio Low-Pass Filter Response	TIA EIA-603.3.2.6	N/A	N/A	N/A
Modulation Limiting	TIA EIA-603.3.2.6	N/A	N/A	N/A
Occupied Bandwidth	90.210	Plots	Plots	Complies
Spurious Emissions at Antenna Terminals	90.210	Plots	Plots	Complies
Field Strength of Spurious Emissions	90.210	-13 dBm	Chart	Complies
Frequency Stability	90.213	N/A	N/A	N/A
Transient Frequency Behavior	90.214	N/A	N/A	N/A

Footnotes For N/A's:

- (1) Since the E.U.T. does not contain modulation circuitry modulation testing was not performed.
- (2) Since the E.U.T. is not a keyed carrier system, Transient Frequency Behavior was not performed.

Test Conditions: Temperature: 25 °C
 Humidity: 50 %

*EQUIPMENT: MICROAMP 50, TPA 750 Repeater**FCC ID: BCR9GBMA50T*

Section 2. General Equipment Specification**Transmitter****Supply Voltage Input:** 120 VAC, 60 Hz**Frequency Range:**
UL 806.0 to 824.0 MHz
DN 851.0 to 869.0 MHz**Tunable Bands:** Not Applicable**20 dB Passband:** 27.3 MHz

Type(s) of Modulation:	F3E (Voice)	F1D	F2D	D7W (IDEN)	Other
	☒	☐	☐	☒	☐

Gain: 50 dBm min**Maximum Input:** Not Applicable**Output Impedance:** 50 ohm

	UL	DN
RF Output (Rated):	Single: 21.7 dBm	12.9 dBm
	Composite: 18.7 dBm / 2 Channel	9.9 dBm / 2 Channel

Channel Spacing(s): Not Applicable

Frequency Translation:	F1-F1	F1-F2	N/A
	☒	☐	☐

Band Selection:	Software	Duplexer Change	Fullband Coverage
	☐	☒	☒

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Description of Modifications For Class II Permissive Change

NOT APPLICABLE

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Modifications Made During Testing

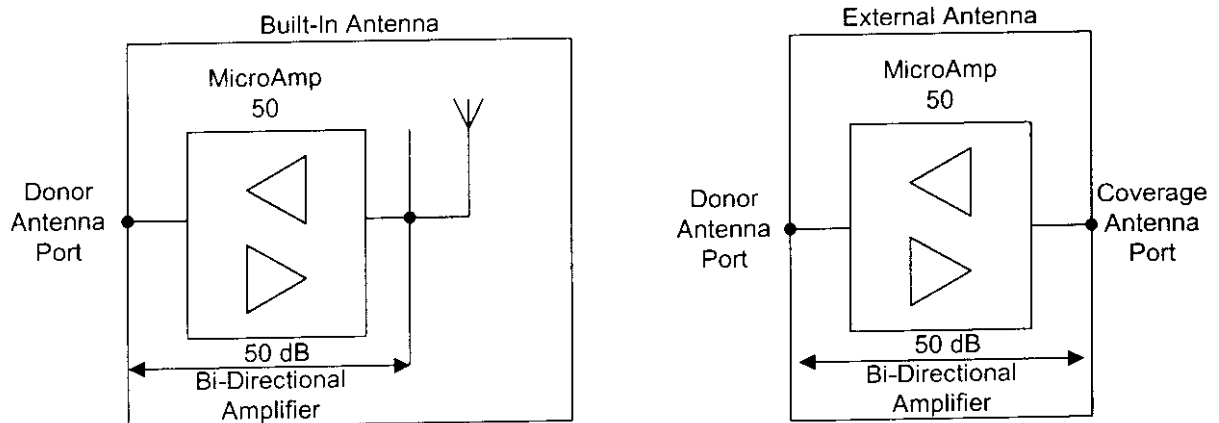
The first sample failed Spurious Emissions. A second sample was supplied and 2 CW Intermodulation Products and 2 CW Intermodulation Spurious Emissions were repeated. Two 1pF capacitors were added to the downlink path at each end of the stripline to ground near DP1. The stripline trace beside C78 is opened and a series inductor is inserted.

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Theory of Operation

The mircoamp50 model TPA 750 is a bi-directional amplifier designed for small area indoor coverage in the 7 trunking radio band. The unit can either use a built-in antenna or an external antenna for maximum coverage.

System Diagram



EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 3. RF Power Output

NAME OF TEST: RF Power Output	PARA. NO.: 2.985
TESTED BY: Kevin Carr	DATE: June 17, 1998

Test Results: Complies.

Measurement Data:

	Measured Power (dBm)	Rated Power (dBm)	Measured/Rated (dB)
Uplink	21.7	21.7	0.0
Downlink	12.9	12.9	0.0

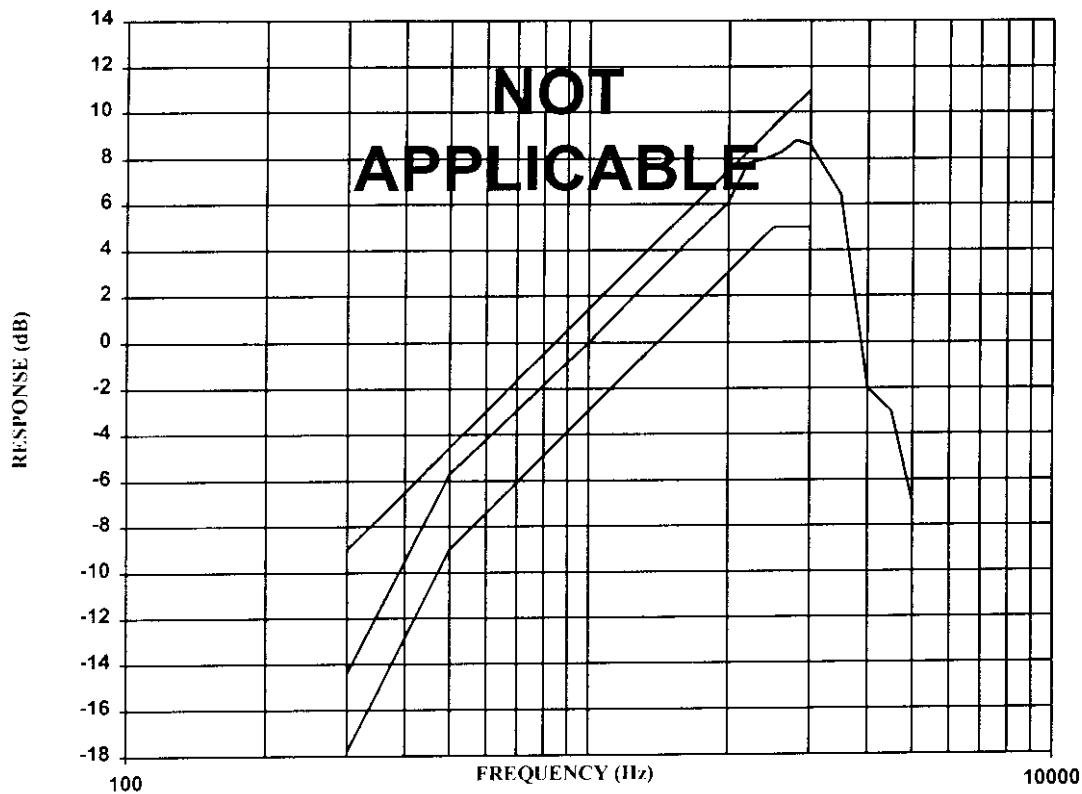
EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T**Section 4. Audio Frequency Response**

NAME OF TEST: Audio Frequency Response

PARA. NO.: 2.987(a)

TESTED BY:

DATE:

**Audio Frequency Response**

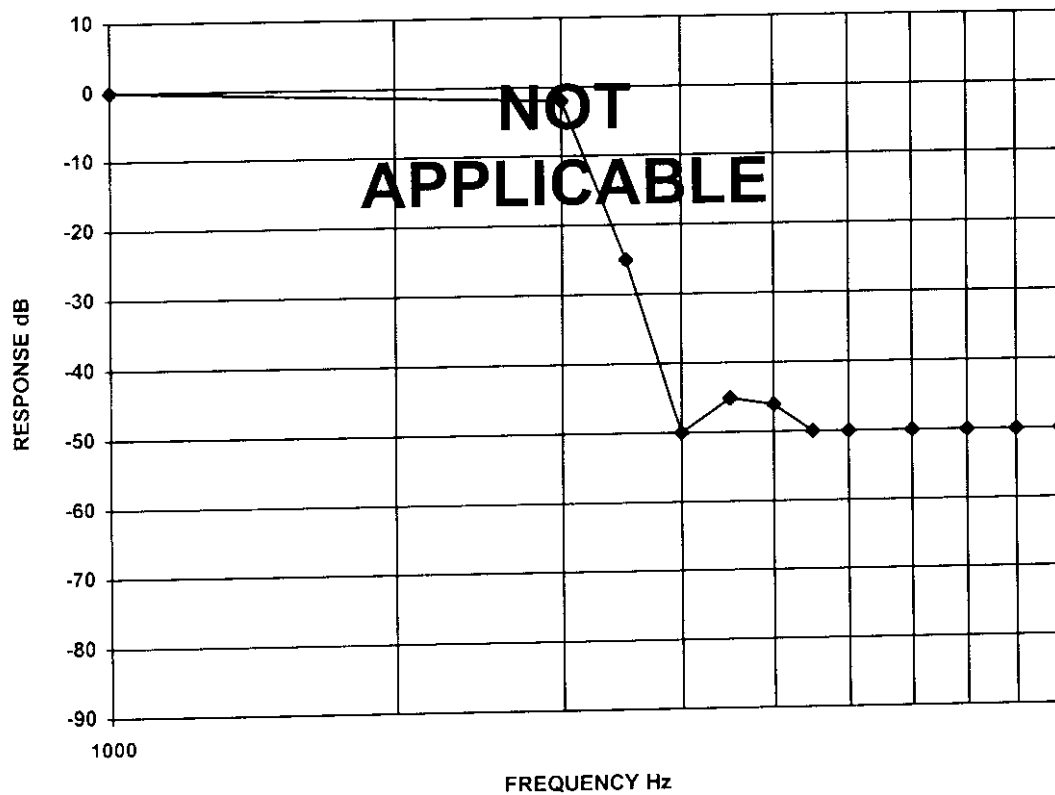
Frequency	300	600	900	1.2 k	1.5 k	1.8 k	2.1k	2.3 k	2.6 k	3.0 k	3.5 k	4 k

Frequency	4.5 k	5 k	5.5 k	6 k	6.5 k	7 k	7.5 k	8 k	8.5 k	9 k	9.5 k	10 k

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 5. Audio Low-Pass Filter Response

NAME OF TEST: Audio Low-Pass Filter Response	PARA. NO.: 2.987(a)
TESTED BY:	DATE:



Audio Low-Pass Filter Response

Frequency	1k	3 k	3.5 k	4 k	4.5 k	5 k	5.5 k	6 k	7 k	8 k	9 k	10 k

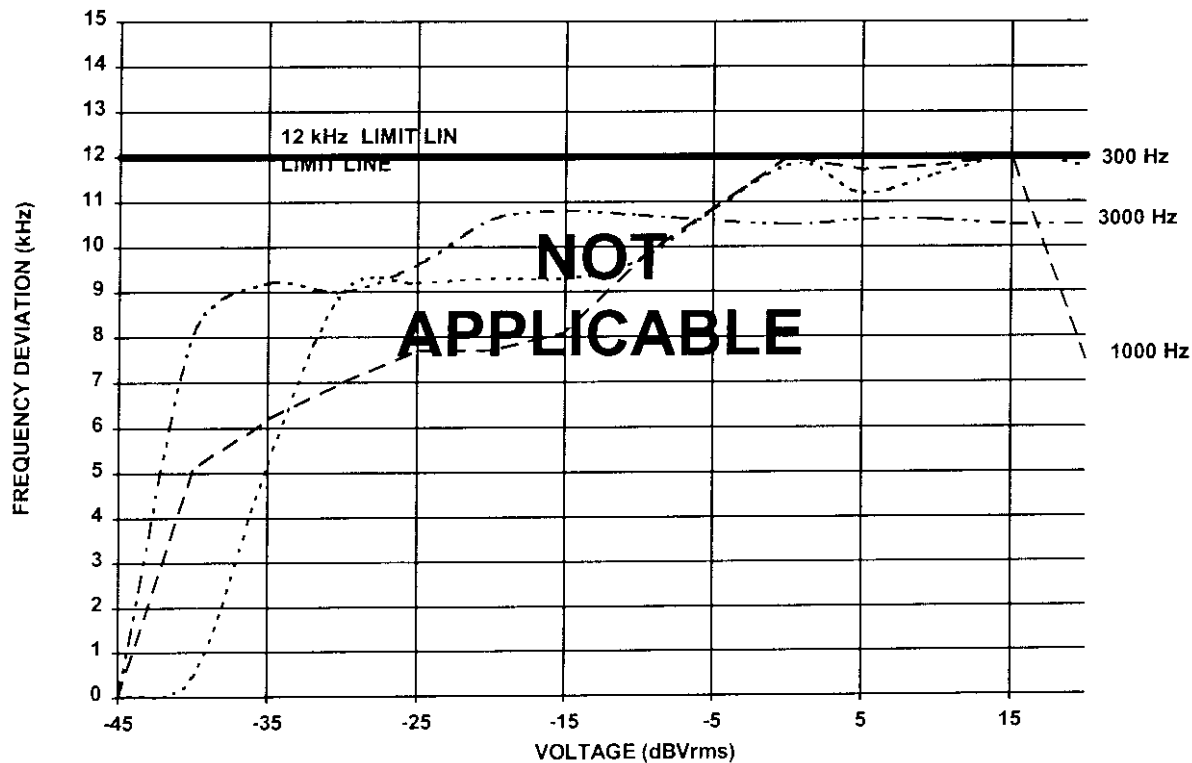
EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T**Section 6. Modulation Limiting**

NAME OF TEST: Modulation Limiting

PARA. NO.: 2.987(b)

TESTED BY:

DATE:



Input	-45	-40	-35	-30	-25	-20	-15	-10	0	5	10	15	20
300 Hz	0	0.452	5.2	9	9.02	9.3	9.3	9.7	11.8	11.2	11.6	12	11.8
1 kHz	0	5.1	6.2	7	7.7	7.7	8.1	9.7	12	11.7	11.8	12	7.5
Limit	12	12	12	12	12	12	12	12	12	12	12	12	12
3 kHz	0	8.1	9.2	9	9.6	10.6	10.8	10.7	10.5	10.6	10.6	10.5	10.5

Maximum deviation for non-voice modulation _____ kHz.

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FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

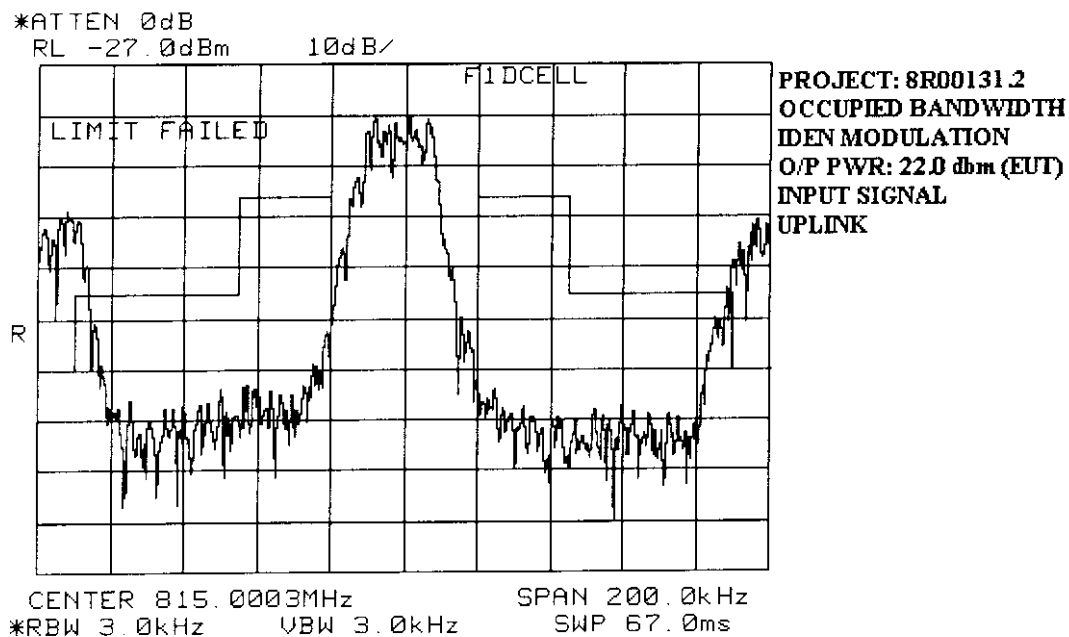
Section 7. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 2.989
TESTED BY: Kevin Carr	DATE: June 22, 1998

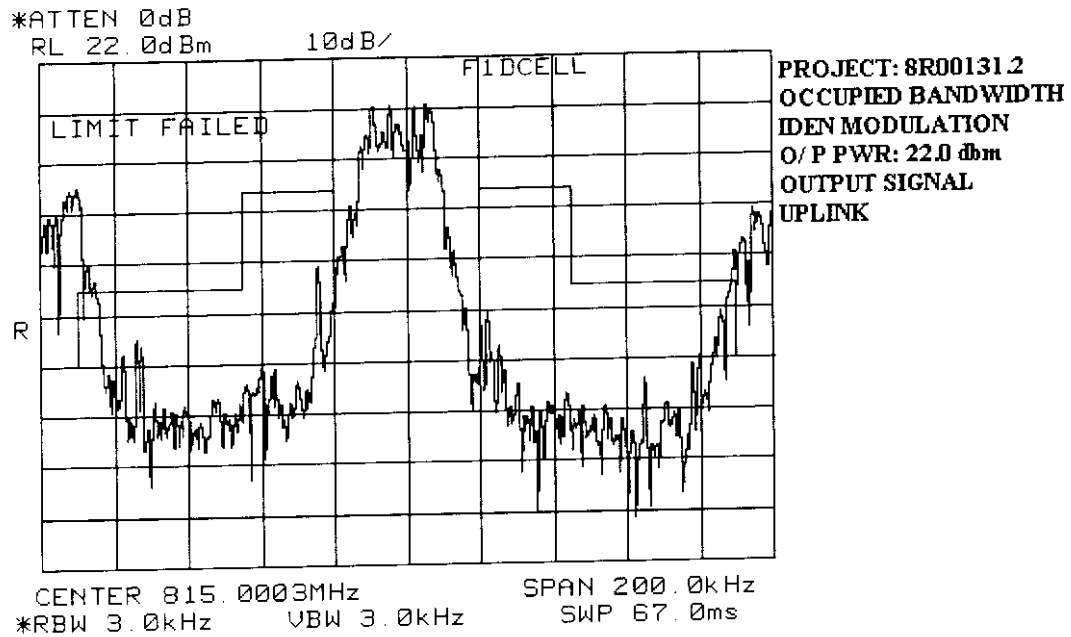
Test Results: Complies.

Test Data: See attached graph(s).

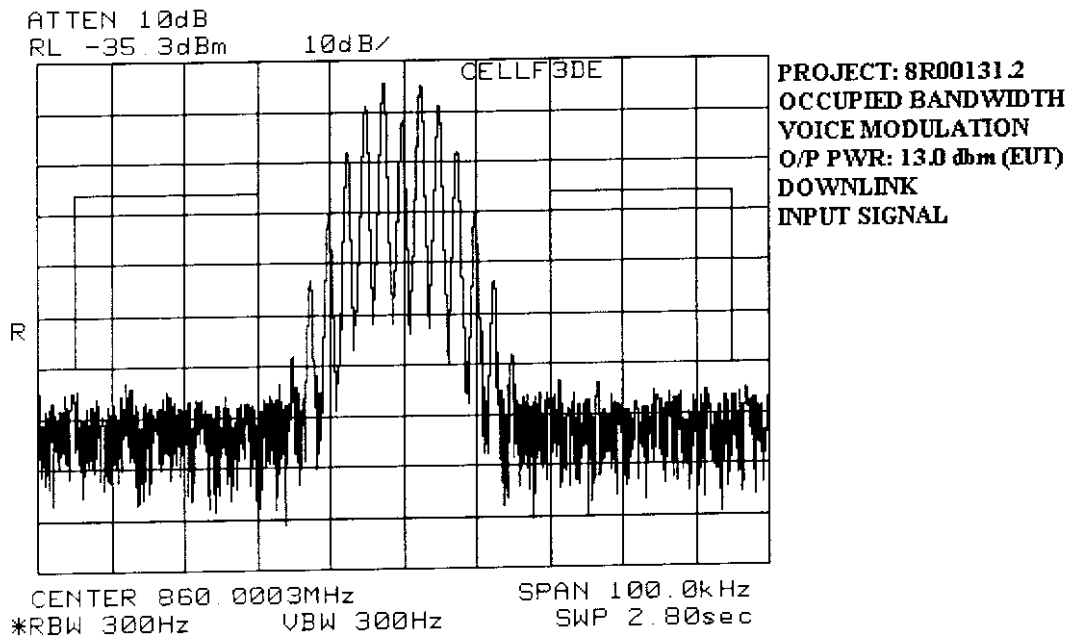
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FCC ID: BCR9GBMA50T



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FCC ID: BCR9GBMA50T



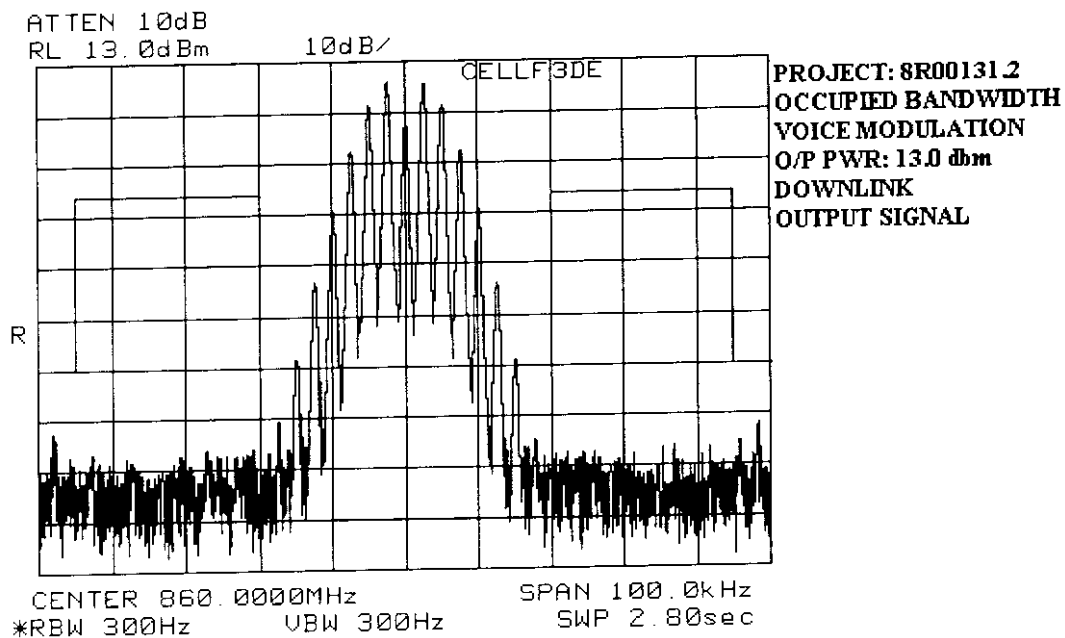
EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T



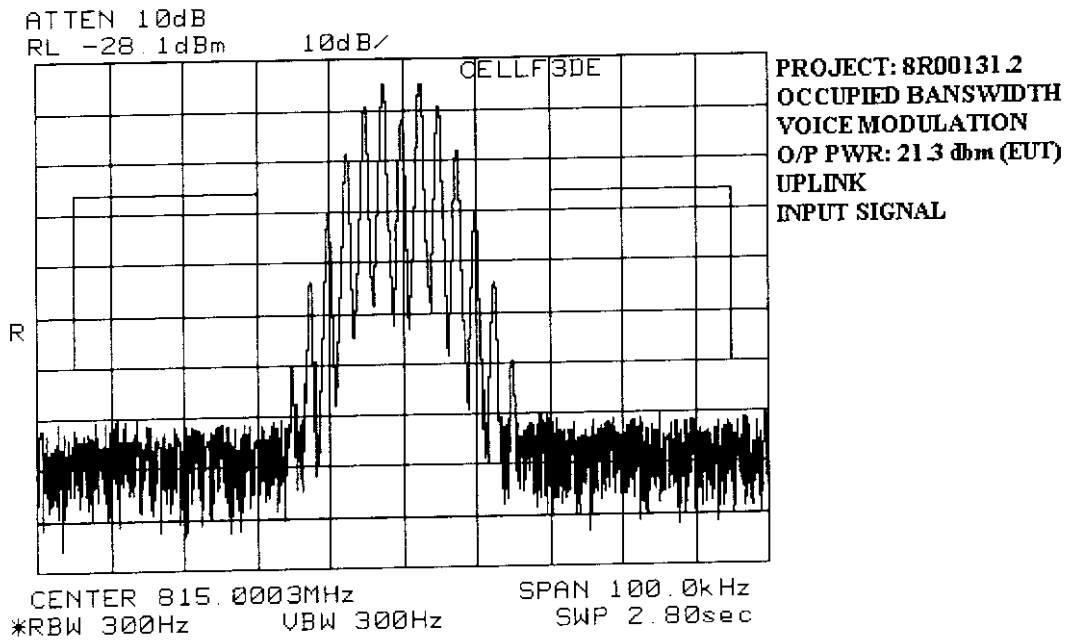
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EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T



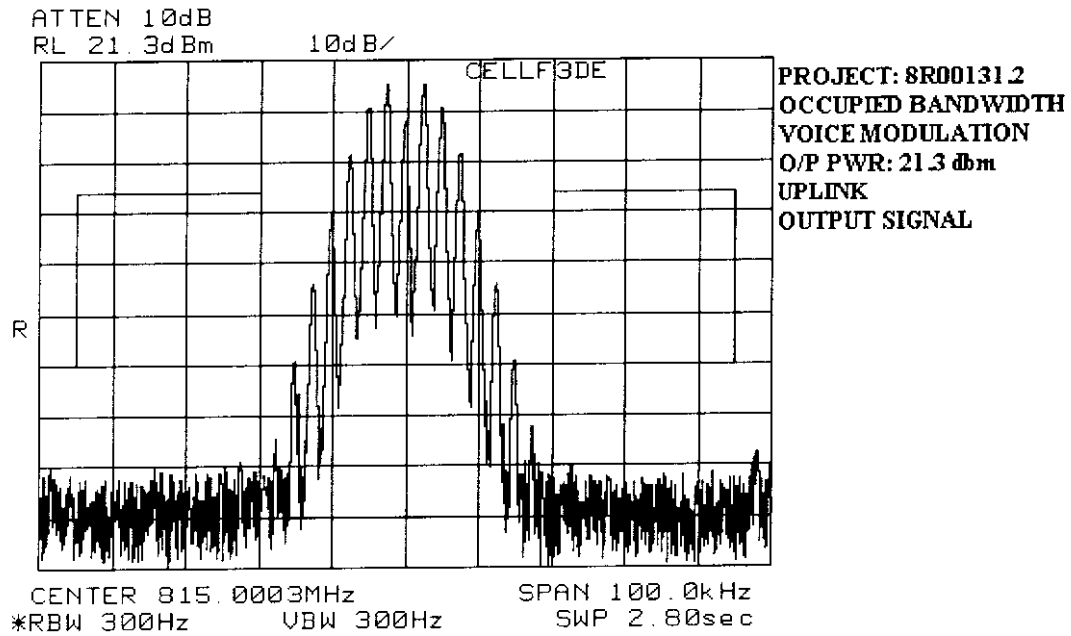
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EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 8. Spurious Emissions at Antenna Terminals

NAME OF TEST: Spurious Emissions @ Antenna Terminals	PARA. NO.: 2.991
TESTED BY: Kevin Carr	DATE: June 22, 1998

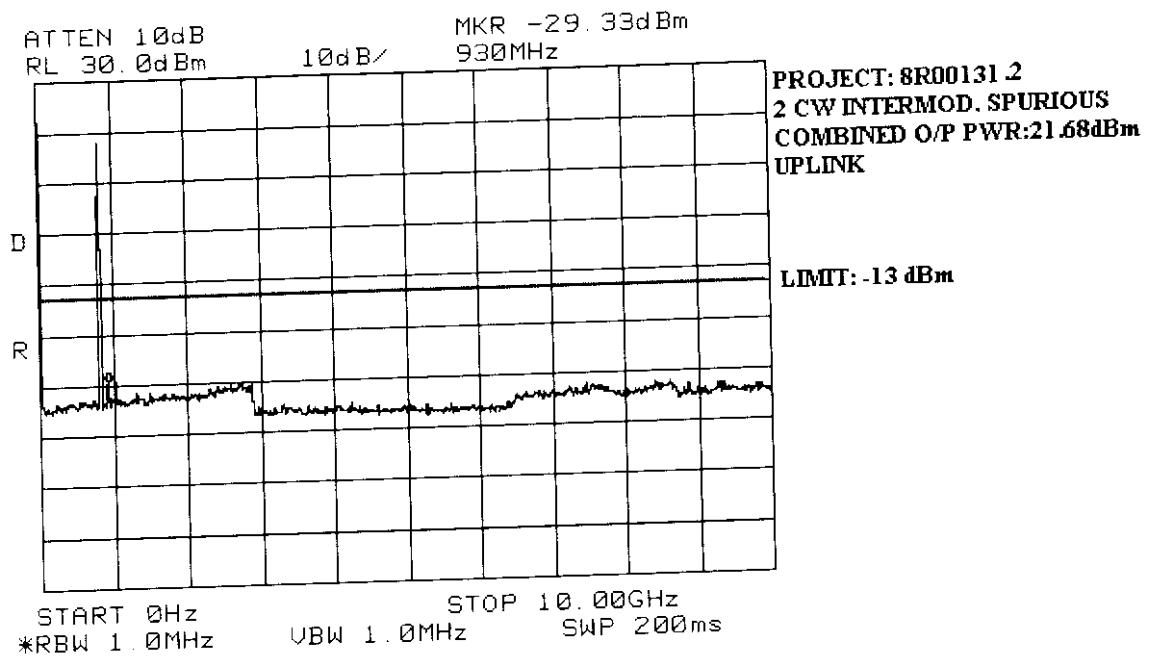
Test Results: Complies.

Test Data: See attached graph(s).

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FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2

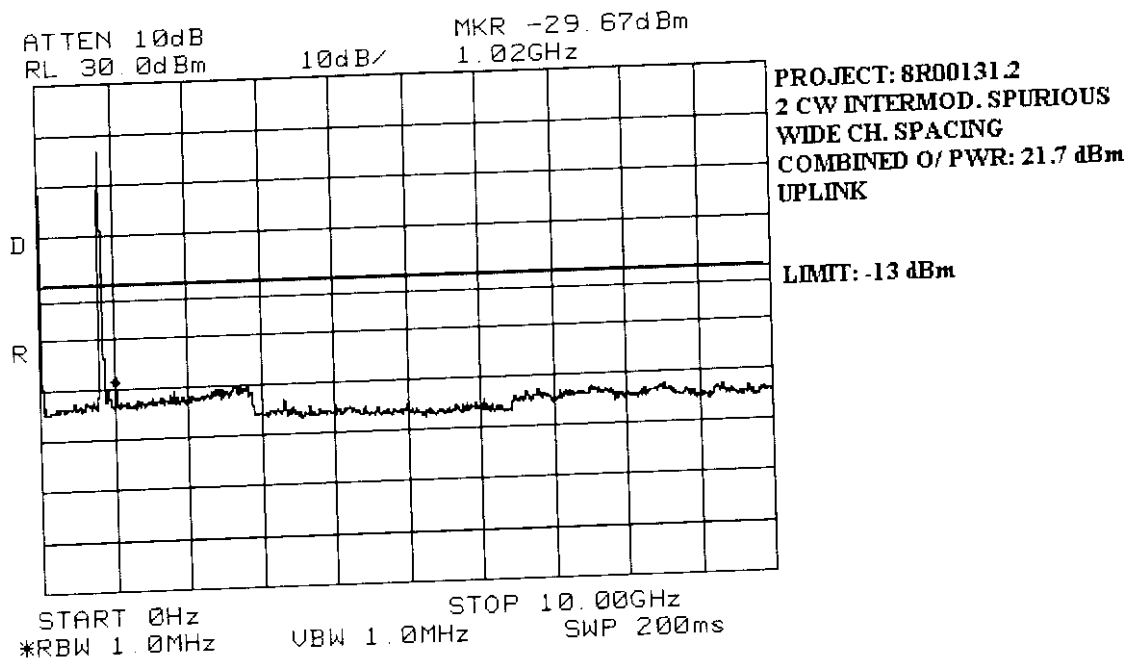
EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T



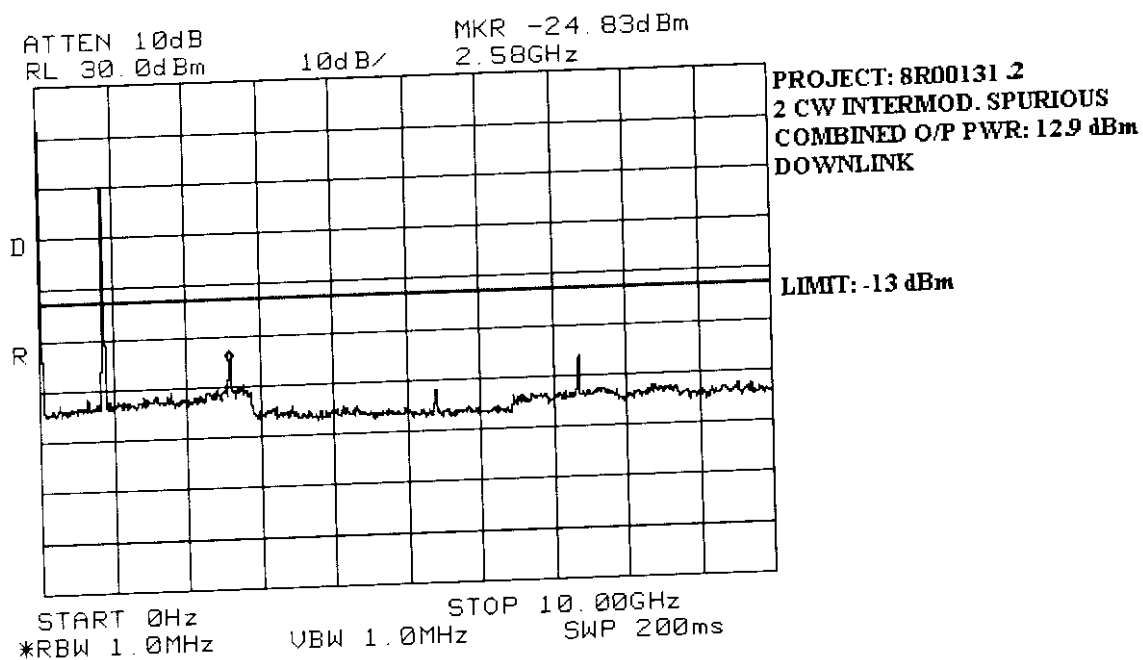
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PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T



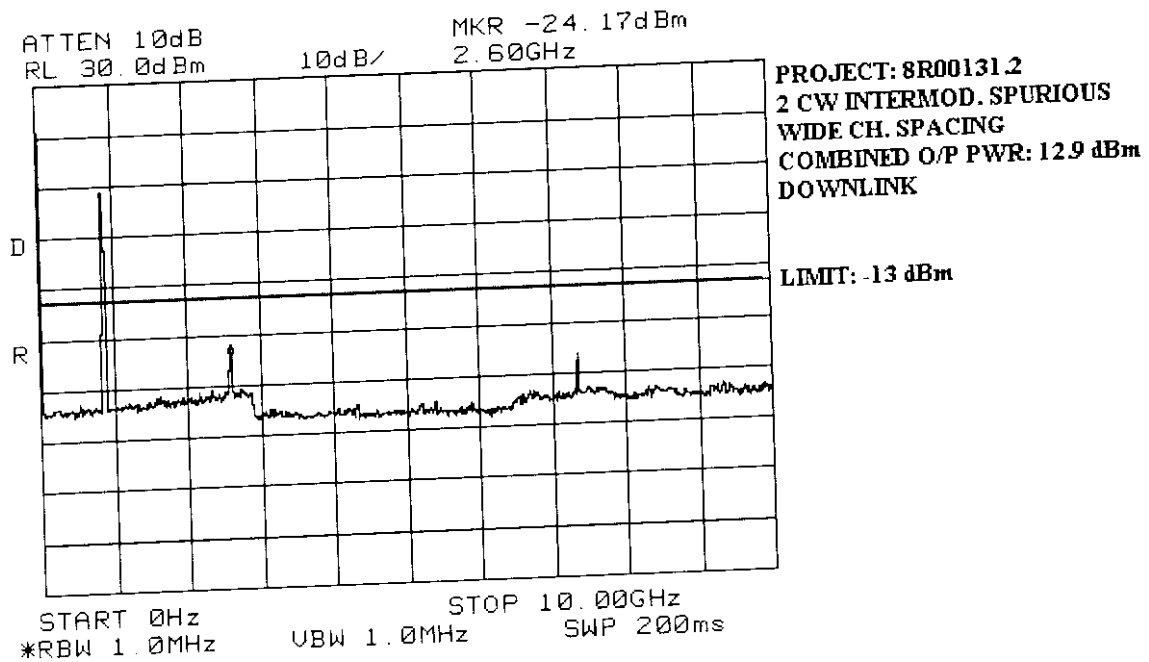
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FCC ID: BCR9GBMA50T



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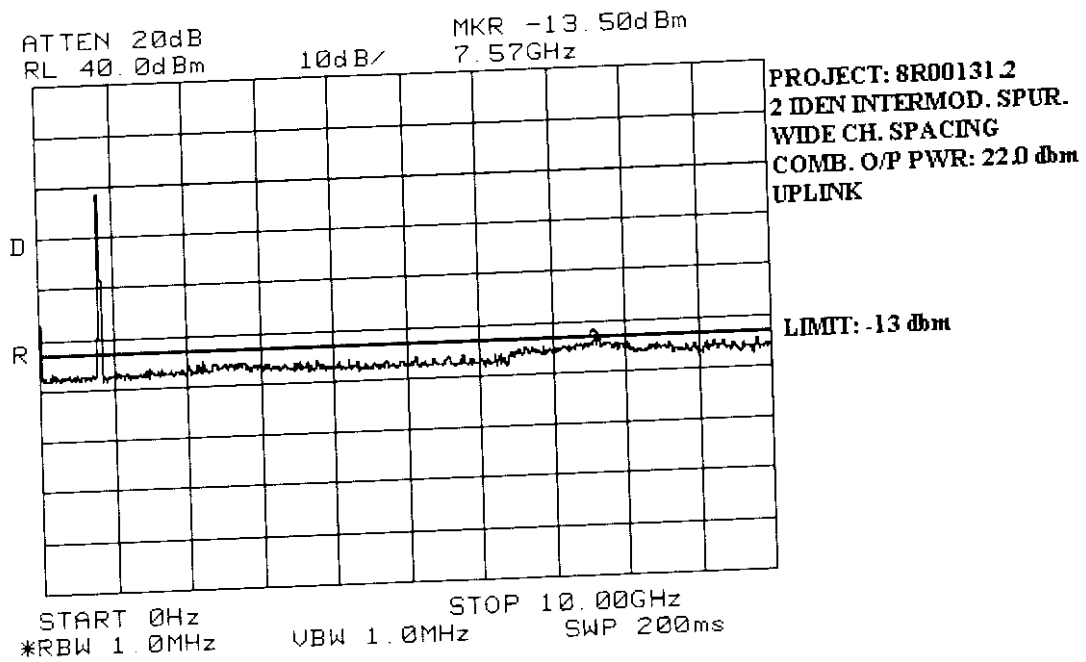
EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T



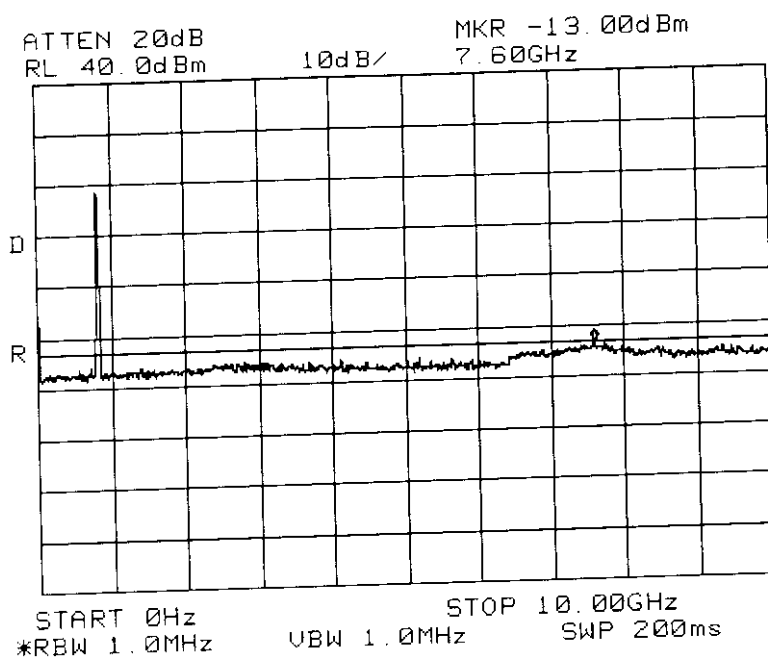
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FCC ID: BCR9GBMA50T

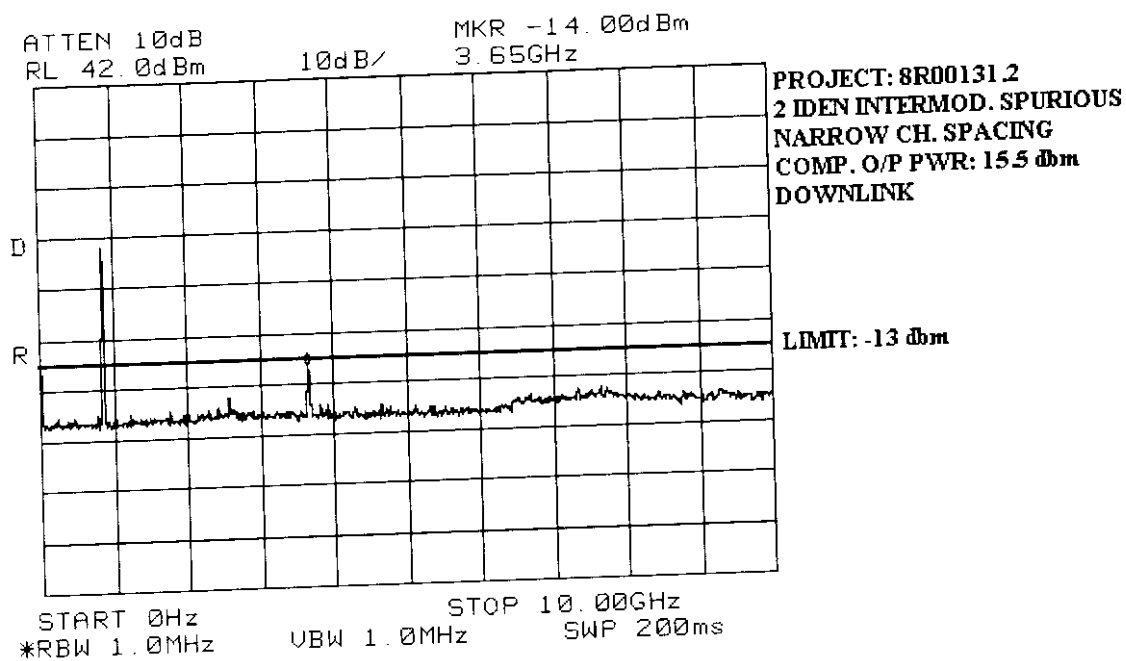


PROJECT: 8R00131.2
2 IDEN INTERMOD. SPURIOUS
NARROW CH. SPACING
COMB. O/P PWR: 22.0 dBm
UPLINK

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FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2

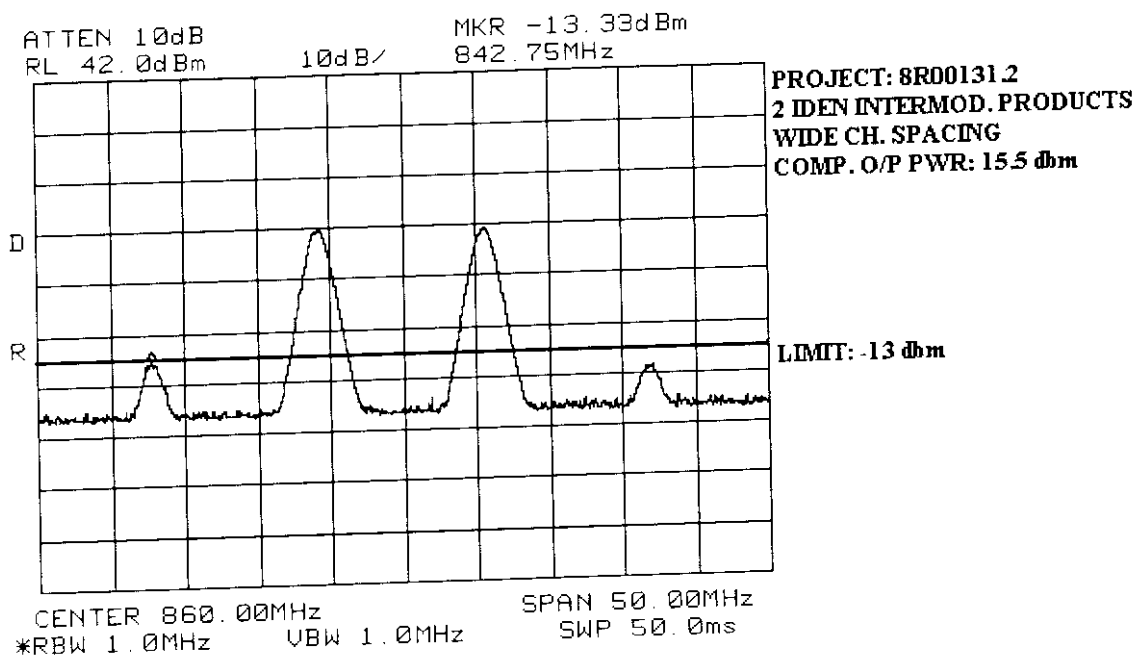
EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T



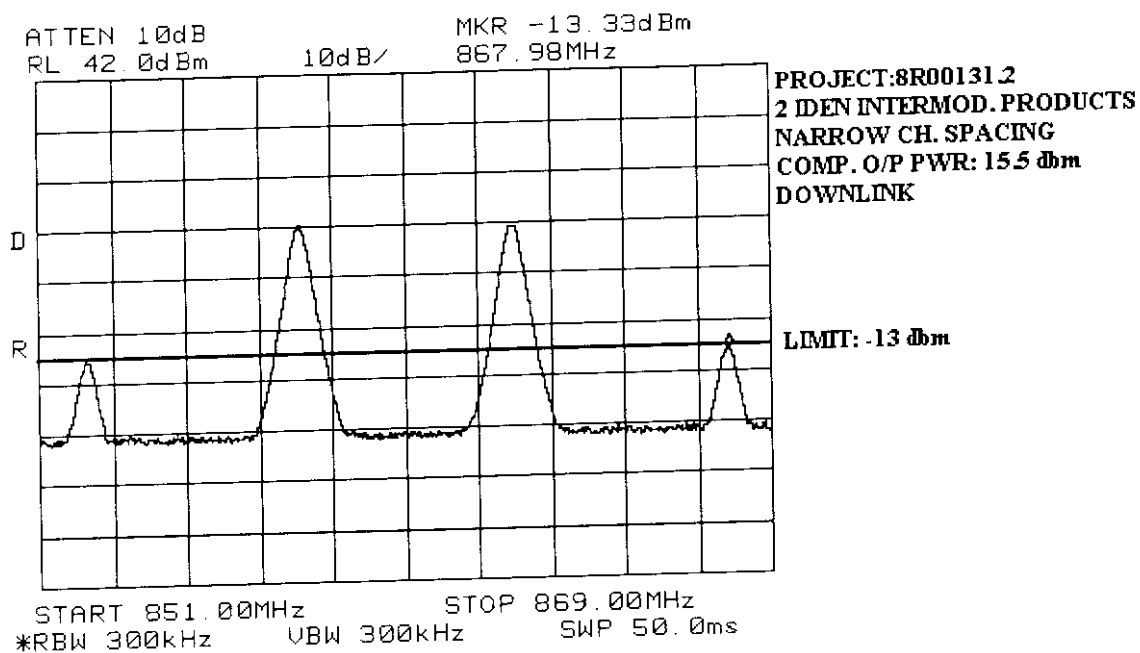
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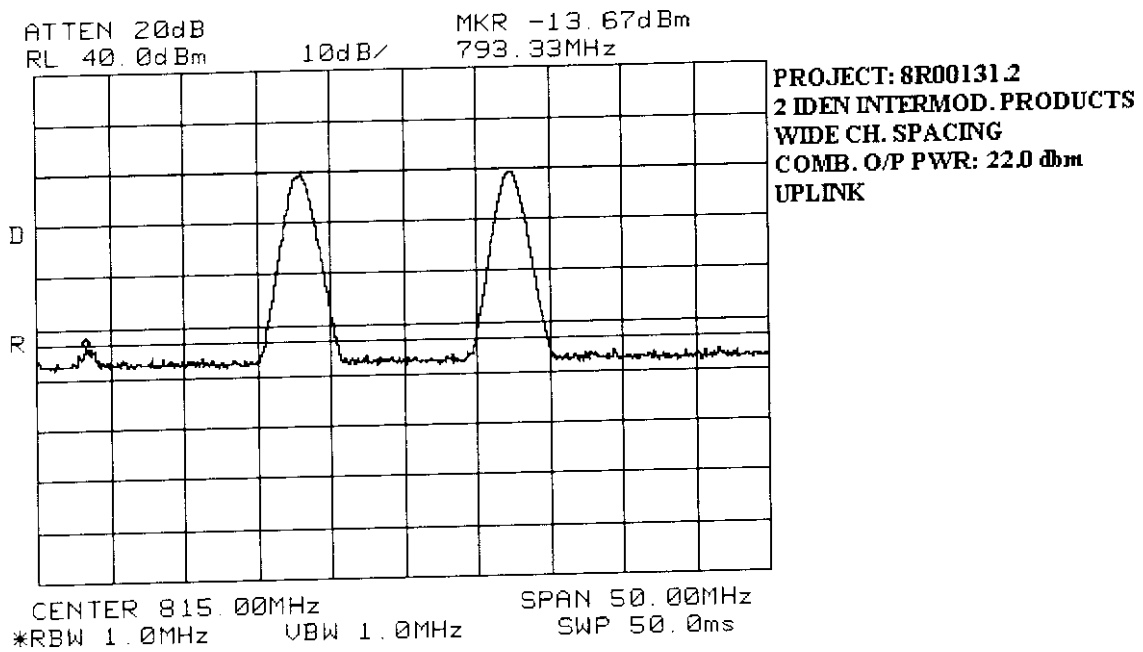
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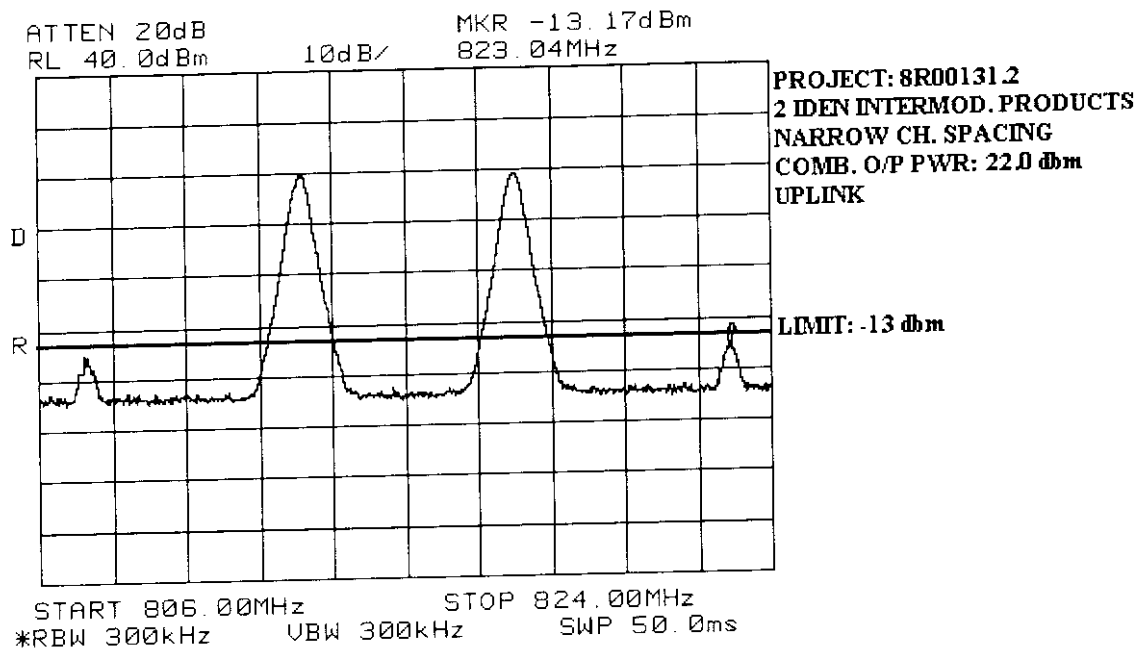
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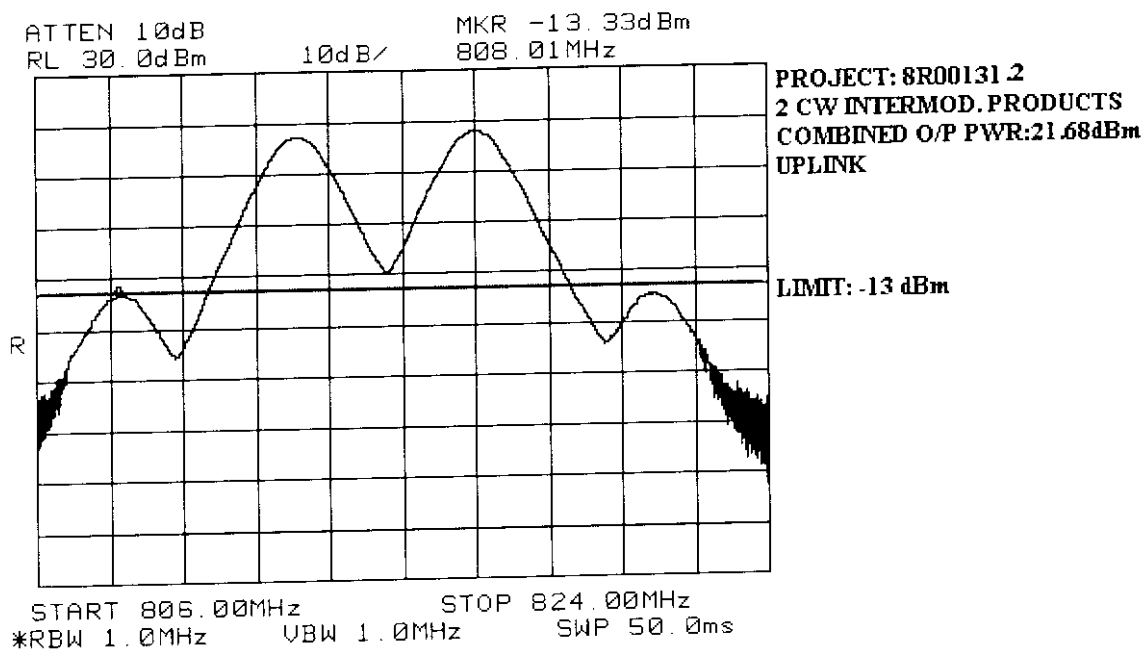
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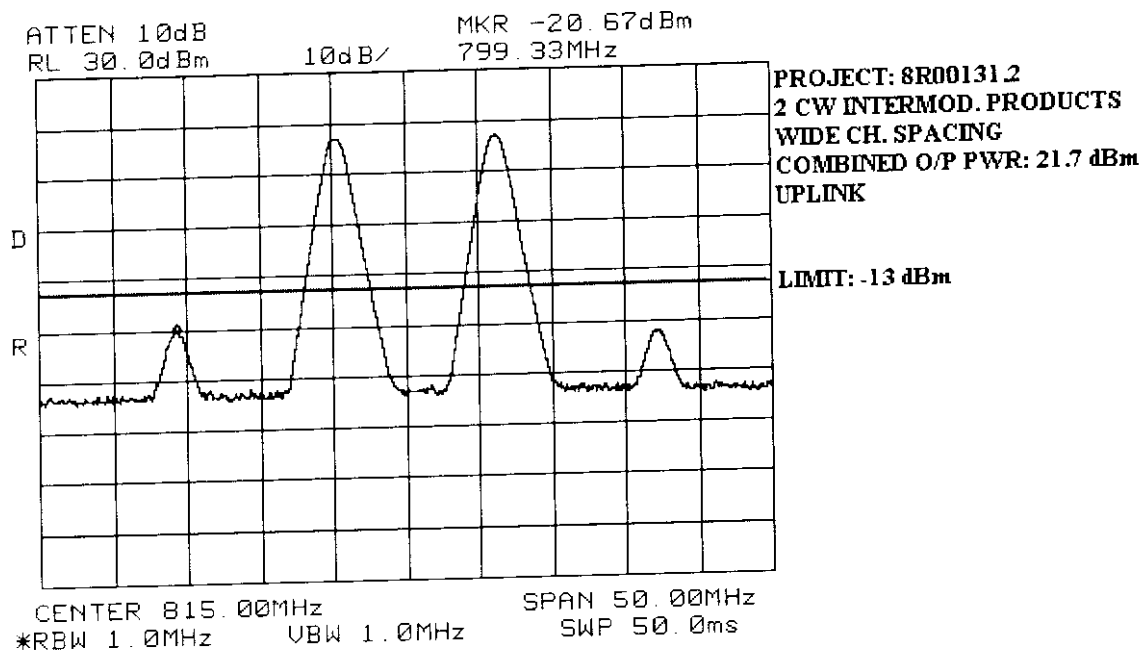
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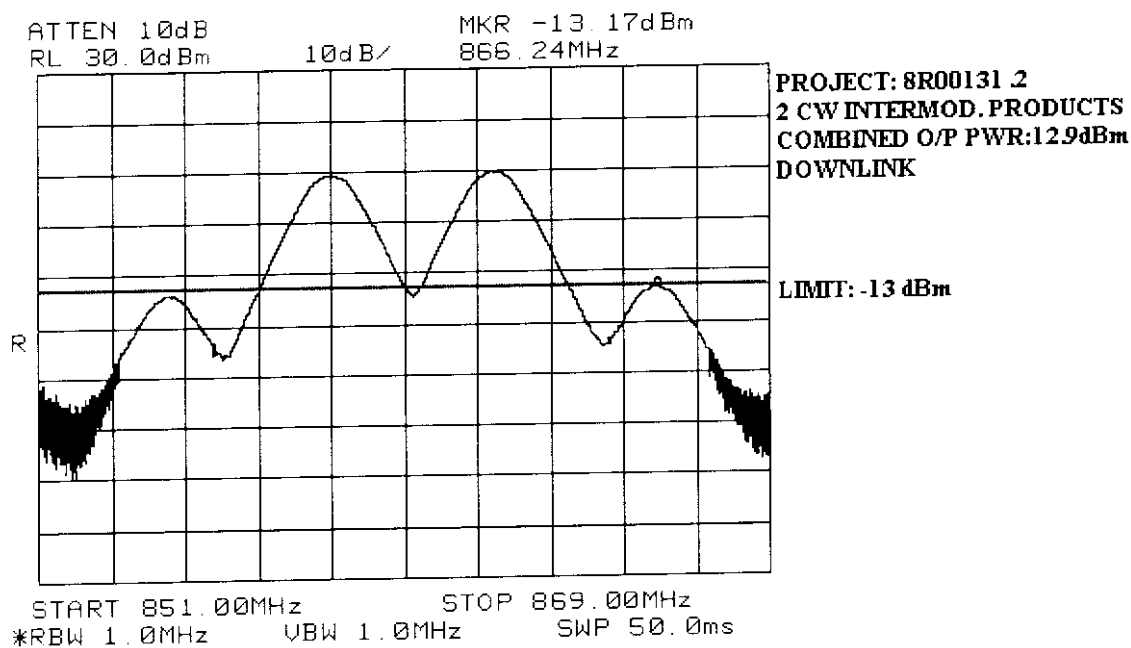
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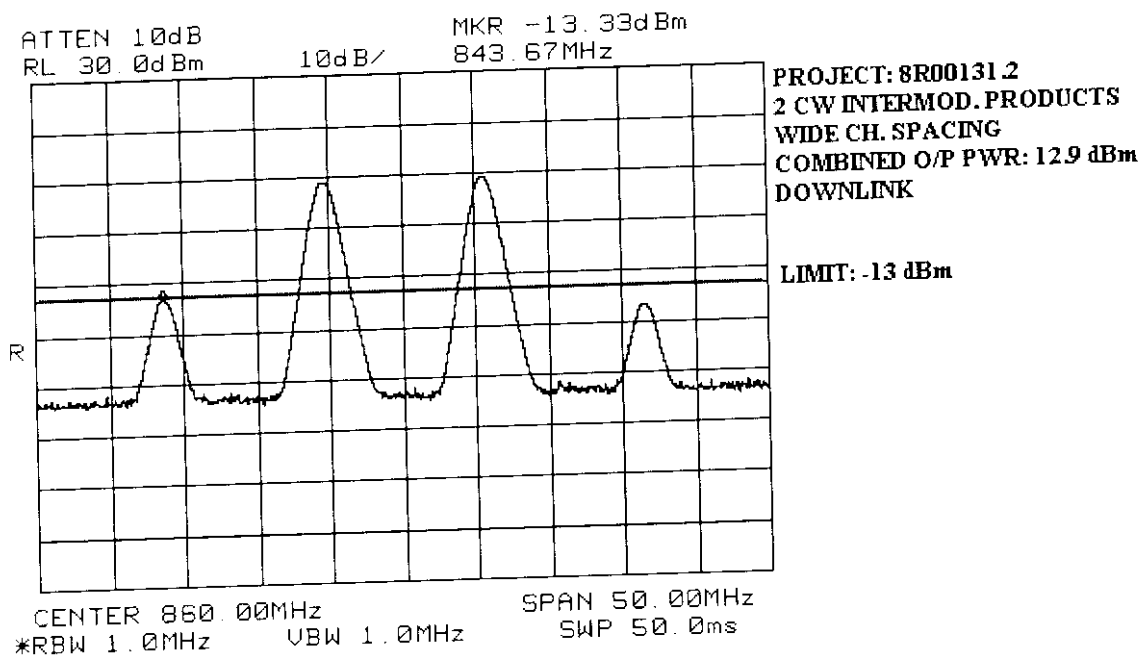
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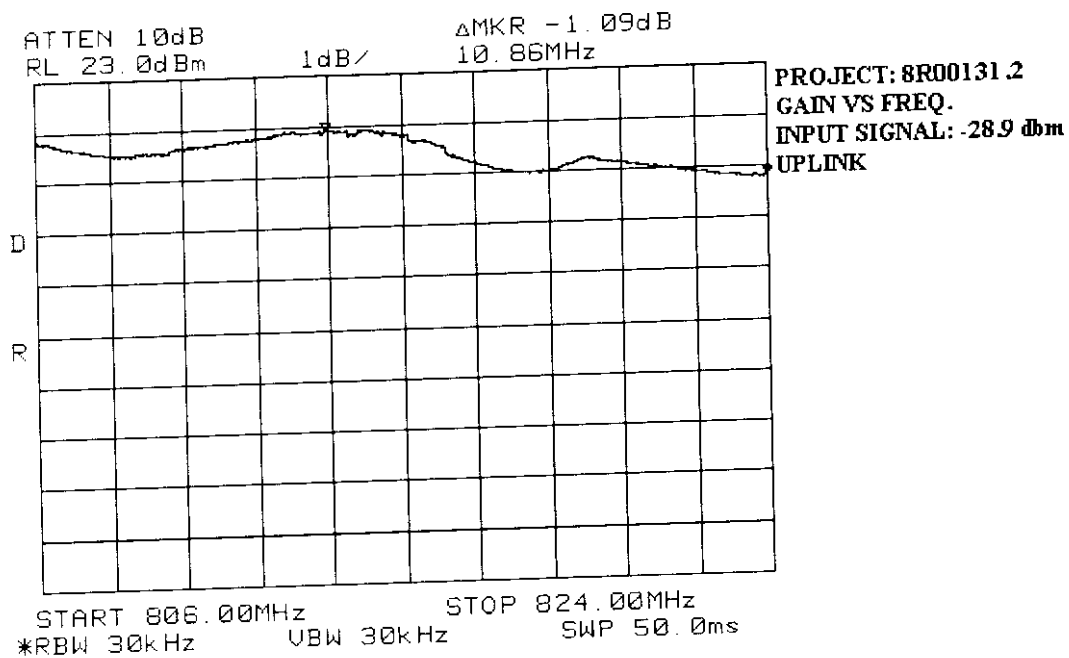
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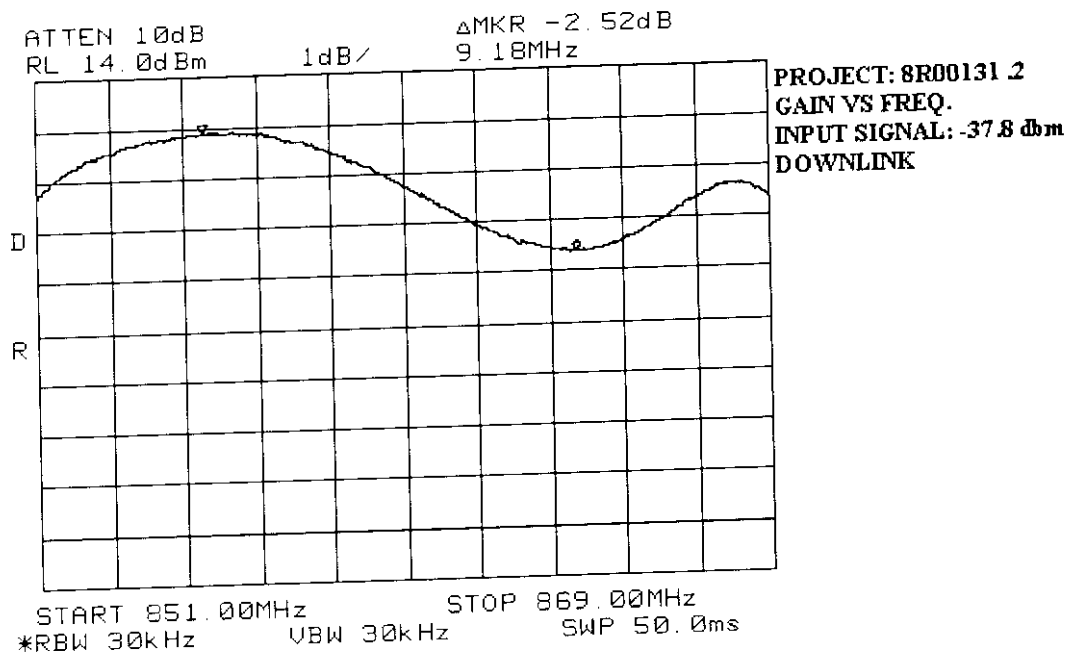
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FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 9. Field Strength of Spurious Emissions

NAME OF TEST: Field Strength of Spurious Emissions	PARA. NO.: 2.993
TESTED BY: Kevin Carr	DATE: August 11, 1998

Test Results: Complies.

Test Data: See attached table.

Note: See page A5 for applicable limit.

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Test Data - Radiated Emissions - Uplink

Distance: 3m		A tower		Receiver: 014		VBW 1 MHz		RBW 3 MHz			
Freq. (MHz)	Ant. *	Pol. (V/H)	Ant. HGT. (m)	Table (deg.)	RCVD Signal (dBµV/m)	Ant. Factor (dB)**	Amp. Gain (dB)***	Dist. Corr. (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
812.0	L/P	V			51.8	28.7			80.5	80.5	0.0*
812.0	L/P	H			53.4	28.7			82.1	82.1	0.0*
915.98	L/P	V			48.8	30.4			79.2	84.4	5.2*
915.98	L/P	H			44.7	30.4			75.1	84.4	9.3
39.97	B/C2	V			39.4	13.1			52.5	84.4	31.9
39.97	B/C2	H			30.4	13.1			43.5	84.4	40.9
93.44	B/C2	V			31.5	10.7			42.2	84.4	42.2
93.44	B/C2	H			33.1	10.7			43.8	84.4	40.6
1624.0	Hrn2	V			82.6	29.6	-43.7		68.5	82.2	13.7
1624.0	Hrn2	H			79.2	29.6	-43.7		65.1	82.2	17.1
2435.0	Hrn2	V			61.5	32.9	-46.5		47.9	82.2	34.3
2435.0	Hrn2	H			64.6	32.9	-46.5		51.0	82.2	31.2
3248.0	Hrn2	V			48.6	38.9	-45.4		42.1	82.2	40.1
3248.0	Hrn2	H			50.5	38.9	-45.4		44.0	82.2	38.2
4060.0	Hrn2	V			47.3	38.8	-44.8		41.3	82.2	40.9
4060.0	Hrn2	H			47.6	38.8	-44.8		41.6	82.2	40.6
4872.0	Hrn2	V			46.8	41.1	-46.0		41.9	82.2	40.3
4872.0	Hrn2	H			47.4	41.1	-46.0		42.5	82.2	39.7
5684.0	Hrn2	V			45.1	43.0	-45.6		42.5	82.2	39.7
5684.0	Hrn2	H			45.4	43.0	-45.6		42.8	82.2	39.4
6496.0	Hrn2	V			47.0	45.0	-45.2		46.8	82.2	35.4
6496.0	Hrn2	H			46.1	45.0	-45.2		45.9	82.2	36.3
7308.0	Hrn2	V			46.9	46.3	-45.7		47.5	82.2	34.7
7308.0	Hrn2	H			47.0	46.3	-45.7		47.6	82.2	34.6
8120.0	Hrn2	V			46.6	47.8	-43.6		50.8	82.2	31.4
8120.0	Hrn2	H			45.9	47.8	-43.6		50.1	82.2	32.1

Notes:

The spectrum was search up to the 10th harmonic of the fundamental frequency.

B/C = Biconical, B/L = Biconilog, L/P = Log-Periodic, H = Horn, D/P = Dipole

* Includes cable loss when amplifier is not used.

** Includes cable loss.

() Denotes failing emission level.

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Test Data - Radiated Emissions - Downlink

Distance: 3m		A tower		Receiver: 014		VBW 1 MHz		RBW 3 MHz			
Freq. (MHz)	Ant. *	Pol. (V/H)	Ant. HGT. (m)	Table (deg.)	RCVD Signal (dBµV/m)	Ant. Factor (dB)**	Amp. Gain (dB)***	Dist. Corr. (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
860.0	L/P	V			56.9	29.6			86.5	86.5	0.0*
860.0	L/P	H			58.8	29.6			88.4	88.4	0.0*
1720.0	Hrn2	V			92.8	30.1	-45.3		77.6	82.3	4.7
1720.0	Hrn2	H			96.0	30.1	-45.3		80.8	82.3	1.5
2580.0	Hrn2	V			70.6	33.4	-46.3		57.7	82.3	24.6
2580.0	Hrn2	H			75.4	33.4	-46.3		62.5	82.3	19.8
3440.0	Hrn2	V			59.9	39.8	-45.2		54.5	82.3	27.8
3440.0	Hrn2	H			57.5	39.8	-45.2		52.1	82.3	30.2
4300.0	Hrn2	V			64.5	39.4	-45.4		58.5	82.3	23.8
4300.0	Hrn2	H			63.8	39.4	-45.4		57.8	82.3	24.5
5160.0	Hrn2	V			52.1	42.0	-45.9		48.2	82.3	34.1
5160.0	Hrn2	H			52.0	42.0	-45.9		48.1	82.3	34.2
6020.0	Hrn2	V			46.9	43.9	-44.8		46.0	82.3	36.3
6020.0	Hrn2	H			46.3	43.9	-44.8		45.4	82.3	36.9
6880.0	Hrn2	V			47.8	45.7	-46.2		47.3	82.3	35.0
6880.0	Hrn2	H			49.5	45.7	-46.2		49.0	82.3	33.3
7740.0	Hrn2	V			45.5	47.8	-45.8		47.5	82.3	34.8
7740.0	Hrn2	H			45.5	47.8	-45.8		47.5	82.3	34.8
8600.0	Hrn2	V			46.0	50.0	-43.7		52.3	82.3	30.0
8600.0	Hrn2	H			46.0	50.0	-43.7		52.3	82.3	30.0

Notes:
The spectrum was search up to the 10th harmonic of the fundamental frequency.
B/C = Biconical, B/L = Biconilog, L/P = Log-Periodic, H = Horn, D/P = Dipole
* Includes cable loss when amplifier is not used.
** Includes cable loss.
() Denotes failing emission level.

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 10. Frequency Stability

NAME OF TEST: Frequency Stability	PARA. NO.: 2.995
TESTED BY:	DATE:

Test Results: Complies/Does Not Comply.

Measurement Data: See attached tables.

NOT APPLICABLE

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 11. Transient Frequency Behaviour

NAME OF TEST: Transient Frequency Behaviour	PARA. NO.: 90.214
TESTED BY:	DATE:

Test Results: Complies/Does Not Comply.

Measurement Data: See attached graphs.

NOT APPLICABLE

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Section 12. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.	
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	May 20/98	May 20/99	
	Plotter	Hewlett Packard	7470A	2308A30807	NCR	NCR	
1 Year	Spectrum Analyzer-2	Hewlett Packard	8566B	1950A00400	July 22/98	July 22/99	
1 Year	Spectrum Analyzer Display-2	Hewlett Packard	85662A	1950A01177	July 22/98	July 22/99	
1 Year	Quasi Peak Adaptor-2	Hewlett Packard	85650A	2251A00620	July 22/98	July 22/99	
1 Year	Radio Test Set	Rohde & Schwarz	CMS 52	840.0009.52	July 23/98	July 23/99	
1 Year	RF Millivoltmeter	Rohde & Schwarz	URV5	FA000420	July 23/98	July 23/99	
1 Year	RF Millivoltmeter	Rohde & Schwarz	URV5-Z4	FA000905	July 23/98	July 23/99	
1 Year	Insertion Unit	Rohde & Schwarz	URV5-Z4	FA000905	July 23/98	July 23/99	
2 Year	Horn Antenna	EMCO #2	3115	4336	Oct. 30/97	Oct. 30/99	
	50 Ω Termination	Wiltron	26N50	605248	N/A	N/A	
1 Year	Low Noise Amplifier	Avantek	AWT-8035	1005	Aug. 4/98	Aug. 4/99	
1 Year	Low Noise Amplifier	DBS Microwave	DWT-13035	9623	Aug. 4/98	Aug. 4/99	
1 Year	Signal Generator	Rohde & Schwarz	SM1Q03	1084-8004-03	July 23/98	July 23/99	
1 Year	Arbitrary Waveform Gen.	Sony/Tektronix	AWG2021	J310495	NCR	NCR	
3 Year	RF Generator	Rohde & Schwarz	SME3	DE14439	June 29/96	June 29/99	

NA: Not Applicable
NCR: No Cal Required

KTL Ottawa

FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2
ANNEX A

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

ANNEX A

TEST METHODOLOGIES

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

NAME OF TEST: RF Power Output**PARA. NO.: 2.985****Minimum Standard:**

Para. No. 90.205(a). The maximum allowable station ERP is dependent upon the stations HAAT and required service area and will be authorized in accordance with Table 1 of 90.205(d).

Method Of Measurement:Detachable Antenna:

The peak power at antenna terminals is measured using an in-line peak power meter. Power output is measured with the maximum rated input level.

Integral Antenna:

If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation $GP/4\pi R^2 = E^2/120\pi$ and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts

E = the maximum measured field strength in V/m

R = the measurement range (3 meters)

G = the numeric gain of the transmit antenna in relation to an isotropic radiator

KTL Ottawa

FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2
ANNEX A

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

NAME OF TEST: Spurious Emissions at Antenna Terminals	PARA. NO.: 2.991
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Test Method: RBW: 1% of emission bandwidth in the 0 - 1 GHz range.
1 MHz at frequencies above 1 GHz.

VBW: $\Rightarrow$ RBW

The spectrum is searched up to 10 times the fundamental frequency.

KTL Ottawa

FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2
ANNEX A

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

NAME OF TEST: Occupied Bandwidth **PARA. NO.: 2.989**

Minimum Standard: Para. No. 90.210, see table 1 below for applicable mask.

Table 1

Frequency Band (MHz)	Mask for equipment with Low Pass Filter	Mask for equipment without Low Pass Filter
Below 25	A or B	A or C
25 - 50	B	C
72 - 76	B	C
150 - 174	B, D or E	C, D or E
150 Paging only	B	C
220 - 222	F	F
421 - 512	B, D or E	C, D or E
450 paging only	B	H
806 - 821/ 851 - 866	B	G
821 - 824/ 866 - 869	B	H
896 - 901/ 935 - 940	I	J
902 - 928	K	K
929 - 930	B	G
Above 940	B	C
All other bands	B	C

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

NAME OF TEST: Field Strength of Spurious

PARA. NO.: 2.993

Minimum Standard: Para. No. 90.210, see table 1 for applicable mask.

Calculation of Field Strength Limit

An example of attenuation requirement of $50 + 10 \log P$ is equivalent to -20 dBm (1×10^{-5} Watts) at the antenna terminal. We determine the field strength limit by using the plane wave relation.

$$GP/4\pi R^2 = E^2/120\pi$$

For emissions ≤ 1 GHz:

G = 1.64 (Dipole Gain)

P = 10^{-5} Watts (Maximum spurious output power)

R = 3m (Measurement Distance)

$$E = \frac{\sqrt{30GP}}{R} = E = \frac{\sqrt{30 \times 1.64 \times 10^{-5}}}{3} = 0.00739 \text{ V/m} = 77.4 \text{ dB}\mu\text{V/m}$$

For emissions > 1 GHz:

G = 1 (Isotropic Gain)

P = 1×10^{-5} Watts (Maximum spurious output power)

R = 3m (Measurement Distance)

$$E = 77.4 - 20 \log \sqrt{1.64} = 75.2 \text{ dB}\mu\text{V/m@3m}$$

MASK	Spurious Limit	FS Limit Below 1 GHz	FS Limit Above 1 GHz
A,B,C,G,H,I	-13dBm	84.4 dB μ V/m@3m	82.2 dB μ V/m@3m
D,J	-20dBm	77.4 dB μ V/m@3m	75.2 dB μ V/m@3m
E,F,K	-25dBm	72.4 dB μ V/m@3m	70.2 dB μ V/m@3m

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

NAME OF TEST: Frequency Stability PARA. NO.: 2.995

Minimum Standard: Para. No. 990.213. The transmitter carrier frequency shall remain within the assigned frequency below in ppm.

Table 2

Frequency Band (MHz)	Fixed And Base Stations	Mobile Stations	
		> 2 Watts o/p pwr	< 2 Watts o/p pwr
Below 25	100	100	200
25 - 50	20	20	50
72 - 76	5	-	50
150 - 174	5	5	5
220 - 222	0.1	1.5	1.5
421 - 512	2.5	5	5
806 - 821	1.5	2.5	2.5
821 - 824	1.0	1.5	15
851 - 866	1.5	2.5	2.5
866 - 869	1.0	1.5	1.5
869 - 901	0.1	1.5	1.5
902 - 928	2.5	2.5	2.5
929 - 930	1.5	-	-
935 - 940	0.1	1.5	1.5
1427 - 1435	300	300	300
Above 2450	-	-	-

KTU Ottawa

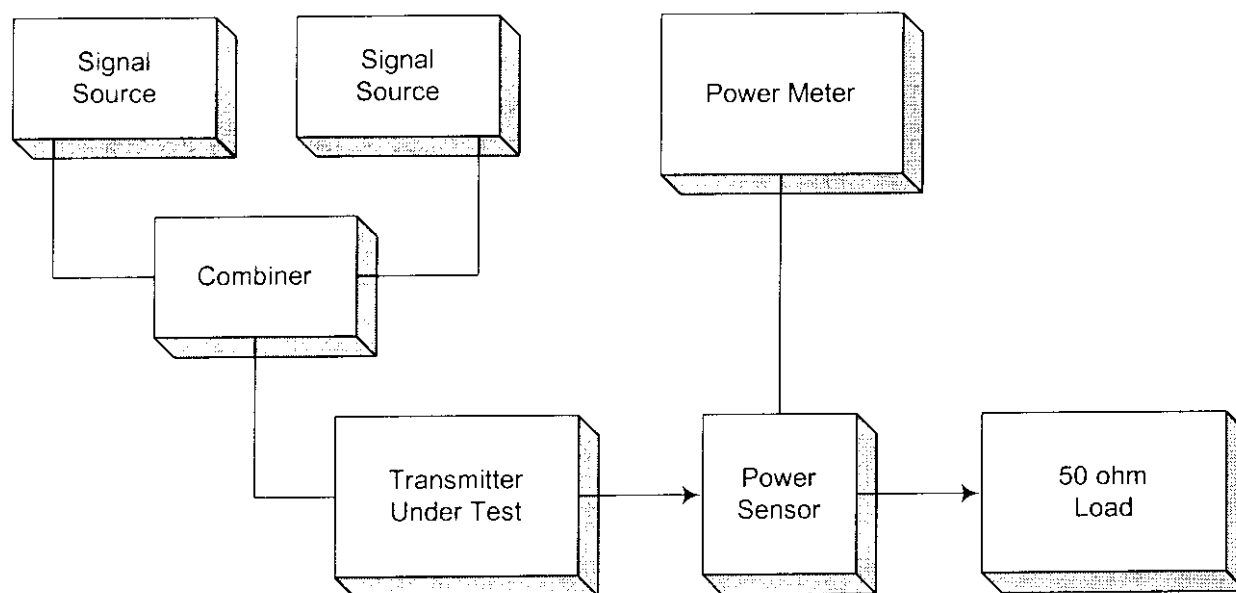
FCC PART 90, SUBPART I
PRIVATE LAND MOBILE REPEATER
PROJECT NO.: 8R00131.2
ANNEX B

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

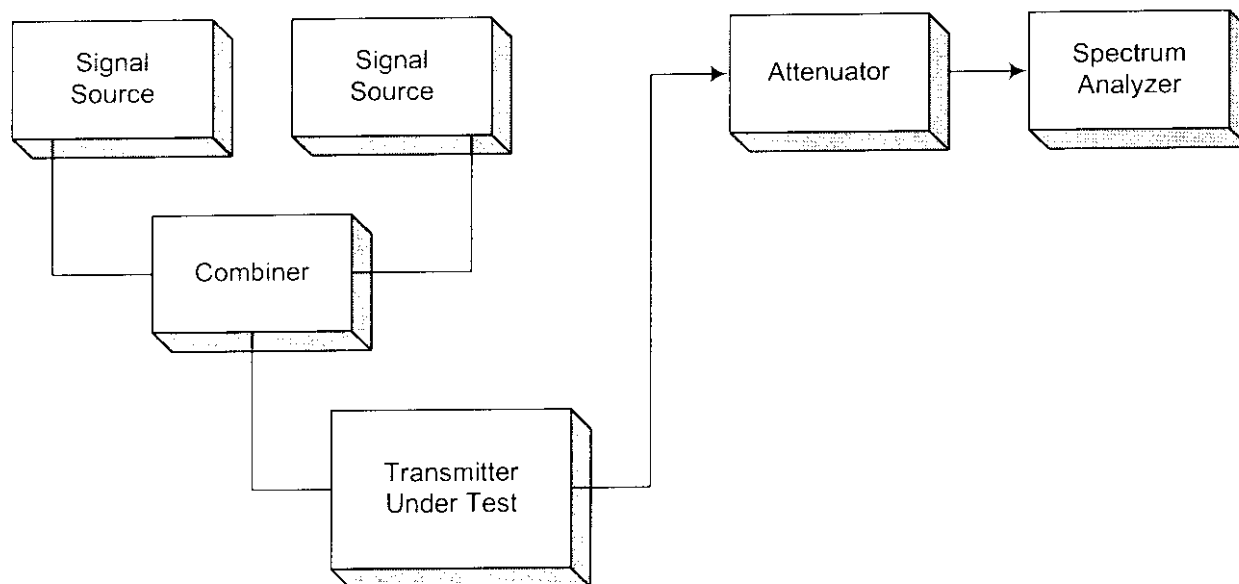
ANNEX B
TEST DIAGRAMS

EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Para. No. 2.985 - R.F. Power Output

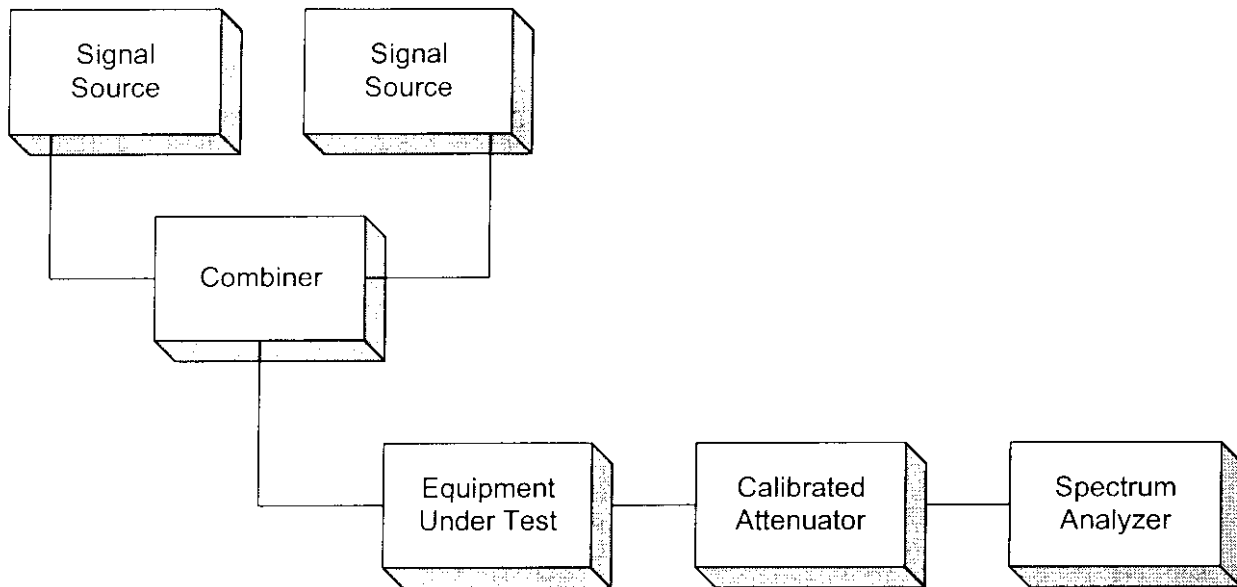


Para. No. 2.989 - Occupied Bandwidth

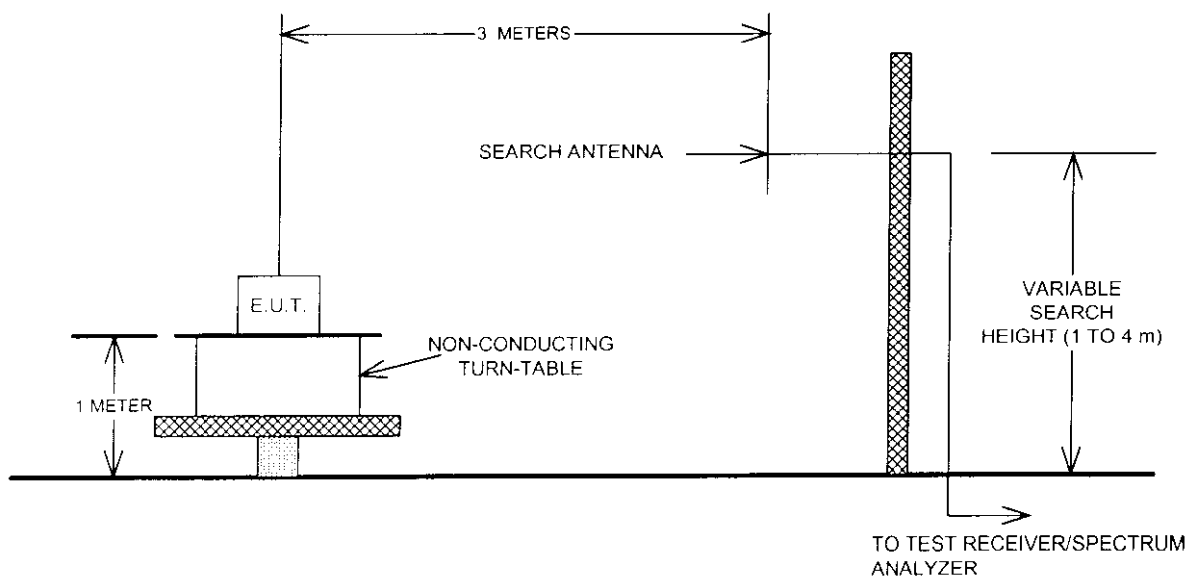


EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Para. No. 2.991 - Spurious Emissions at Antenna Terminals



Para. No. 2.993 - Field Strength of Spurious Radiation



EQUIPMENT: MICROAMP 50, TPA 750 Repeater
FCC ID: BCR9GBMA50T

Para. No. 2.995 - Frequency Stability

