Test Report Prepared By:

Electronics Test Centre
MPB Technologies Inc.
Unit 100
302 Legget Drive
Kanata Ontario K2K 1Y5

MPBT Report No.: M34R2197 **Customer No.: PO#1129**

Report for

FCC Part 1 Subpart I (1996)
FCC Part 15 Subpart B (1996)
FCC Part 22 Subpart H (1996)

For Mobile Transmitter Amplifiers for
T.D.M.A. Cellular Radio-Telephone Service

Testing of the
BST300 Cellular Booster

Test Personnel: S. Drysdale

Prepared for:

Mobile Communications Technologies INC.
360 Industrial Parkway South, Unit #1
Aurora, ON
L4G 3V7

_____
Client Acceptance
Authorized Signatory

January 21, 2000
M34R2197

_____
Dan Zanette
Lab Supervisor Electromagnetic Services
Electromagnetics Division
Authorized Signatory

ISO/IECGuide25: 1990
ISO 9002: 1987

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APPENDICES

1.0 INTRODUCTION

1.1 SCOPE

The purpose of this report is to present the findings and results of compliance testing performed in accordance with FCC Part(s) 1, 15, 22 (1996).

1.2 APPLICANT

This test report has been prepared for MCT Inc.

1.3 APPLICABILITY

All test procedures, limits, and results defined in this document apply to the, which shall be referred to herein as the Equipment Under Test (**EUT**).

The results contained in this report relate only to the item(s) tested.

This report does not imply product endorsement by NVLAP or the Canadian or US governments.

If multiple units, the test samples provided for testing were intended for use together.

1.4 TEST SAMPLE DESCRIPTION

Product	Part Number	Serial Number	Power Requirements	Peripheral Equipment
(T.D.M.A.) BST300 Cellular Booster	BST 300 (Sample# 642)	ACB10642	12 VDC	Signal Generator/ Cellular Phone

Tx Gain (dB): 22.0

Measured at: 849 MHz

Tx Maximum Power Output (dBm): 33.7 = 2.5 Watts

Band of operation Tx: 824-849 MHz

Measured at: 836.5 MHz

Rx Gain (dB): 19.0

Measured at: 869MHz

Band of operation Rx: 869 – 894 MHz

1.5 GENERAL TEST CONDITIONS AND ASSUMPTIONS

The EUT was setup and exercised using the configurations, modes of operation and arrangements defined in this report only. All inputs and outputs to and from other equipment associated with the EUT were adequately simulated.

Where relevant, the EUT was only tested using the monitoring methods and test criteria defined in this report.

All testing, unless otherwise noted, was performed under the following environmental conditions:

Temperature:	17 to 23 °C
Humidity:	45 to 75 %
Barometric Pressure:	68 to 106 kPa

1.6 SCOPE OF TESTING

Tests were performed in accordance with FCC Parts 1,15,22 (1996).

1.6.1 VARIATIONS IN TEST METHODS

There were no variations from the test procedures outlined above.

1.6.2 TEST SAMPLE MODIFICATIONS

No test sample modifications were made

2.0 TEST CONCLUSION

The EUT was subjected to the following tests. Compliance status is assessed as **PASS, FAIL,** or **MARGINAL PASS**

The following table summarizes the test results and details the tests performed in terms of the specification and class or level applied, the unique test sample identification, and the EUT modification state, the mode of operation, and configuration.

Test Case	Test Type	Specification	Class/ Level	Criteria	Test Sample	Config	Engineering / Qualification	**Result**
2.1	AC Port Conducted Emissions	FCC Part 15, (Subpart B)	B	NA	Sample #642	Test	Qualification	**PASS**
2.2	Radiated Emissions (Field Strength Spurious)	FCC Part 15, (Subpart B)	B	NA	Sample #642	Test	Qualification	**PASS**
2.3	ERP	FCC Part 22 (Subpart H)	NA	NA	Sample #642	Test	Qualification	**PASS**
2.4	Emission Mask (OCC BW)	FCC Part 22 (Subpart H)	NA	NA	Sample #642	Test	Qualification	**PASS**
2.5	Emission Mask (Out of band/Spurious)	FCC Part 22 (Subpart H)	NA	NA	Sample #642	Test	Qualification	**PASS**
2.6	MPE	FCC Part 1.1310	B	NA	Sample #642	Test	Qualification	**PASS**

STATEMENT OF COMPLIANCE
The client equipment referred to in this report was found to comply with the requirements of FCC regulations as summarized above.

ABBREVIATIONS

CE – Conducted Emissions

E-Field - Electric Field

H-Field - Magnetic Field

N/T - Not Tested

N/A - Not Applicable

RE – Radiated Emissions

MEASUREMENT UNCERTAINTY

The following measurement uncertainty with 95% confidence level was calculated using the methods defined in NAMAS document NIS81: May 1994.

For Radiated E-Field Emissions

Frequency = $\pm$ $1x10^{-3}$ MHz

Amplitude = $\pm$ 4.01 dB

For Conducted Emissions

Frequency = $\pm$ $1x10^{-3}$ MHz

Amplitude = $\pm$ 3.25 dB

TEST SET UP

The photographs in Appendix D show the set up with maximized emission levels for each test.

2.1 EMISSIONS – AC PORT CONDUCTED

Test Summary	
Test Lab: MPB Technologies Inc. Ottawa Test Personnel: S. Drysdale Test Date: February 7, 2000	Product: BST300 Cellular Booster

Test Description	
Objectives/Criteria	Specifications
The Conducted E-Field emissions proliferated by a system or sub-system shall not exceed the limits for the specifications as stated. **Emission levels should meet the requirements with a margin of 6 dB**. The EUT was tested against **Class B** limits.	FCC PART 15: 1996 **Frequency** **Class A*** **Class B*** .45 – 1.705 MHz 60 48 1.705 – 30 MHz 69.5 48 *All limits are for Quasi-peak detection in dBµV. The detector bandwidth is 9 kHz.

Test Result: **PASS**
Comments: Refer to Test Report Data sheets for more detail.

2.2 DIGITAL EMISSIONS, RADIATED

FIELD STRENGTH SPURIOUS

Test Summary	
Test Lab: MPB Technologies Inc. Ottawa Test Personnel: S. Drysdale Test Date: March 2, 2000	Product: BST300 Cellular Booster

Test Description	
Objectives/Criteria	Specifications
The Radiated E-Field emissions proliferated by a system or sub-system, measured at a distance of 3m from the EUT, shall not exceed the limits for the specifications as stated. **Emission levels should meet the requirements with a margin of 6dB**. The EUT was tested against Class B requirements	FCC Part 15: 1996 **Frequency** **Class A*** **Class B*** 30 – 88 MHz 49.5 40.0 88 – 216 MHz 54.0 43.5 216 – 960 MHz 56.9 46.0 > 960 MHz 60.0 54.0 *All limits are @ 3m and are in dBµV/m.

Test Result: PASS
No spurious or digital emissions were detected. Refer to Test Report Data sheets for more detail.

2.3 EFFECTIVE RADIATED POWER (ERP) LIMIT

Test Summary	
Test Lab: MPB Technologies Inc. Ottawa Test Personnel: S. Drysdale Test Date: January 31, 2000	Product: BST300 Cellular Booster

Test Description	
Objectives/Criteria	Specifications
The ERP proliferated by a system or sub-system shall not exceed the limits for the specifications as stated.	FCC PART 22: 1996, Subpart H Section 22.913 Limit = 7 Watts Limit = 38.5 dBm Max Power = 33.7 dBm / 2.5 Watts

Test Result: **PASS**
Comments: Refer to Test Report Data sheets for more detail.

2.4 EMISSION LIMITATIONS FOR CELLULAR – OCCUPIED BANDWIDTH

Test Summary	
Test Lab: MPB Technologies Inc. Ottawa Test Personnel: S. Drysdale Test Date: February 21, 2000	Product: BST300 Cellular Booster

Test Description	
Objectives/Criteria	Specifications
For an F3E/F3D emission mask, the mean power of emissions must be attenuated below that specified in mask (b), or mask (c). Measurement bandwidths are to be 300 Hz for any frequency removed from the carrier less then 45 kHz and 30 kHz for all else. For equipment which does not perform modulation and only amplifies the RF signal, pass/fail criteria shall be based on the following: a) The 20 dB bandwidth of the modulated carrier shall be the same (input signal vs. output signal). b) The difference of the amplitudes between the input signal and the output signal shall remain consistent (+/- 0.5 dB), for the 20 dB bandwidth of the modulated carrier.	FCC PART 22: 1996, Subpart H Section 22.917(b)/(c) Mask (b) (f_c – 45 kHz) to (f_c – 20 kHz), 26 dB (f_c + 20 kHz) to (f_c + 45 kHz), 26 dB 0 to (f_c – 45 kHz) , 60 or 43 + 10logP dB (f_c + 45 kHz) to (2 x f_c), 60 or 43 + 10logP dB Mask (c) (f_c – 20 kHz) to (f_c – 12 kHz), 117log(f_d/12)dB (f_c + 12 kHz) to (f_c + 20 kHz), 117log(f_d/12) dB 0 to (f_c – 20 kHz), 100log(f_d/12) or 60 or 43 + 10logP dB (f_c + 20 kHz) to (2 x f_c), 100log(f_d/12) or 60 or 43+10logP dB Note: dB refers to attenuation from the mean power of the unmodulated carrier. f_c refers to frequency of the carrier f_d refers to displacement frequency from the carrier in kHz P refers to the mean power of unmodulated carrier wave.

Test Result: **PASS**
Comments: Refer to Test Report Data sheets for more detail.

2.5 EMISSION LIMITATIONS FOR CELLULAR – OUT OF BAND

Test Summary	
Test Lab: MPB Technologies Inc. Ottawa Test Personnel: S. Drysdale Test Date: February 21, 2000	Product: BST300 Cellular Booster

Test Description	
Objectives/Criteria	Specifications
On any frequency twice or more then twice the fundamental frequency, the mean power of emissions must be attenuated below the mean power of the unmodulated carrier by a minimum of 60 **or** 43+10logP dB.	FCC PART 22: 1996, Subpart H Section 22.917(e) f_c – 10xf_c 43+10logP dB Note: dB refers to attenuation from the mean power of the unmodulated carrier. f_c refers to frequency of the carrier f_d refers to displacement frequency from the carrier in kHz P refers to the mean power of the unmodulated carrier wave.

Test Result: **PASS**
Comments: P <= 2.5W,Therefore 43 + LogP dB is 47dB. 47 dB down from unmodulated carrier is the limit for that frequency range of the mask. Refer to Test Report Data sheets for more detail.

2.6 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Test Summary	
Test Lab: MPB Technologies Inc. Ottawa Test Personnel: D. Zanette Test Date: February 4, 2000	Product: BST300 Cellular Booster

Test Description	
Objectives/Criteria	Specifications
For devices to be operated more then 20 cm from the users body, the equipment shall not exceed that listed in the table based on an averaging time of 30 minutes and that the limit is for the general population/uncontrolled exposure.	Power Density Requirements,FCC Part 1.1310 Frequency mWITHcm² 0.3 – 1.34 (100) 1.24 – 30 (180/f²) 30-300 0.2 **300-1500 f/1500** 1500-10000 1

Test Result: **PASS**
Comments: The maximum power output was at 30 cm from the antenna, this is 0.6 dB below the specified limit. Max Output measured at 836 MHz was 41.6 dBm. Refer to Test Report Data sheets for more detail.

3.0 TEST FACILITY

3.1 LOCATION

The EUT was tested for Electromagnetic Compatibility at the Electronics Test Centre, located in Kanata, Ontario, Canada.

3.2 GROUNDING PLANE

The EUT was located on a wooden table 80 cm above the ground plane. The EUT was grounded according to the Clients specifications.

3.3 POWER

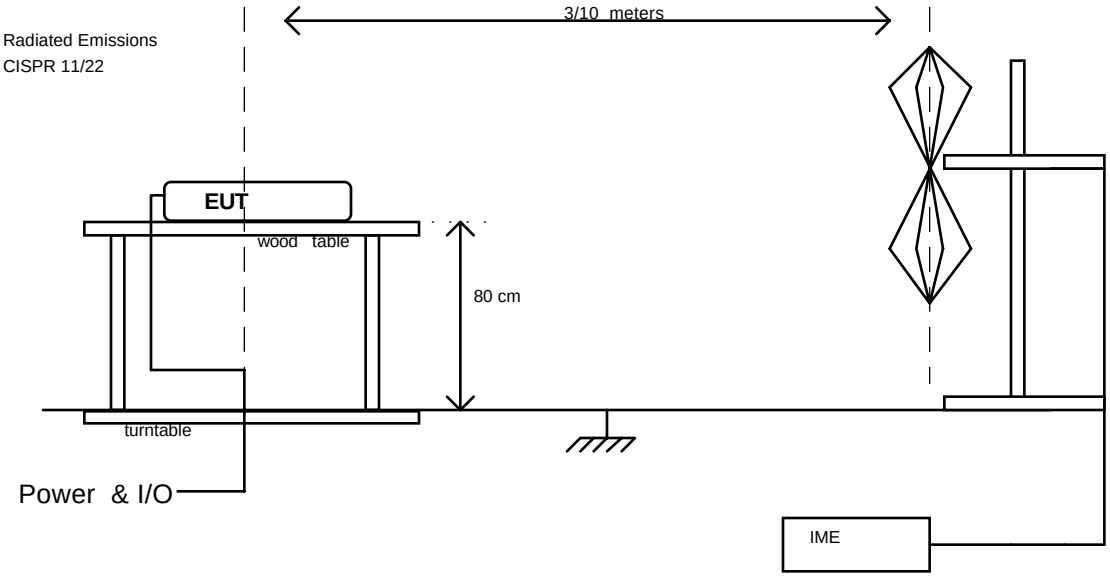
AC power was supplied via a CORCOM RFI feed through, 60-Ampere wall mounted filter. Bonding to hydro ground is via one inch grounding braid straps.

3.4 EMISSIONS PROFILE

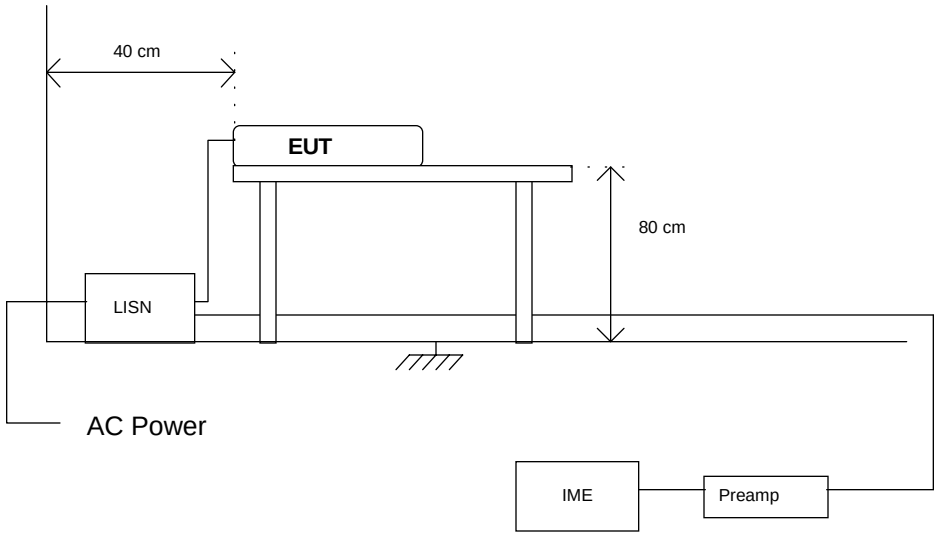
Conducted electromagnetic emission profiles were generated throughout the tests and are included in the Test Report Data sheets.

3.5 TEST CONFIGURATION

The following diagrams illustrate the configuration of the EUT test and measurement equipment used for CISPR Radiated and Conducted Emissions Testing.



Conducted Emissions CISPR 11 / 22



4.0 TEST EQUIPMENT

The following equipment was utilized for this procedure. All measurement devices are calibrated annually, traceable to NIST. Please refer to Appendix C for calibration data.

4.1 RADIATED EMISSIONS

a) Spectrum Analyzer
b) Receiver with CISPR Quasi-peak Adapter
c) Power Isolation Transformers
d) Biconilog antenna (25 MHz to 2 GHz)
e) Antenna mast positioner, and controller
f) Flush-mounted turntable, and controller

4.2 CONDUCTED EMISSIONS

a) Spectrum Analyzer
b) Line Impedance Stabilization Network, 50 µH
c) CISPR Quasi-peak Adapter
d) Power Isolation Transformer
e) Personal Computer and EMI/EMC Software

4.3 EMI SPECTRUM ANALYZER AND RECEIVER

4.3.1 Spectrum Analyzer

Range 1 of 2

Start Frequency	0.15 MHz
Stop Frequency	30 MHz
Transducer	LISN per CISPR 16
Quasi-Peak Bandwidth	9 kHz
Spectrum Analyzer BW	10 kHz
Video Bandwidth	100 kHz
Reference Level	100 dBµV

Range 2 of 2

Start Frequency	30 MHz
Stop Frequency	1000 MHz
Transducer	Biconilog Antenna
Quasi-Peak Bandwidth	120 kHz
Spectrum Analyzer BW	120 kHz
Video Bandwidth	1 MHz
Reference Level	100 dBµV

4.3.2 Receiver

Transducer	Biconilog Antenna
Quasi-Peak Bandwidth	120 kHz
Measurement Window	20 dBµV

Appendix A

CLIENT SAMPLE DESCRIPTION

	New ✓	Repeat	
MPBT Personnel	Date	Project/Work Order	
S. Drysdale	Feb 15, 2000	M34R2197	

Contact	Tom Vagenas	M.C.T. INC.	
Company		360 Industrial Parkway South, Unit #1	
	M.C.T. INC.	Aurora, ON	
		L4G 3V7	
Client Code	M34		
		Phone: 416-726-3444	Fax: 905-726-4233

Product Application	**Product Category**	**Product Type**
Commercial ✓	Cellular	TDMA Amplifier

Product Name/Part No.	BST300 Cellular Booster
Serial Number	ACB10642
Power Requirements: AC/DC, Current	DC, 12 VDC
Operational Frequency	NA
Typical Installation Instructions or Configuration	DC Car withadapter or with supplied AC/DC convertor.
Ground EUT	No
# Interconnecting Leads	2
Modulation Type	N/A (Amp boosts incoming signal, for test purposes TDMA was used)
Peripheral Equipment	Signal Generator/Cell Phone
Cables	FME type Cable 50 ohm.
Functional or Self-Test Duration	EUT is ready on power up.
Brief Functional Description	The EUT is for boosting cellular signals in areas of weak reception.
Other Remarks	

Prepared By:		Title:	Date:
S. Drysdale		EMC Technologist	February 15, 2000

Appendix B

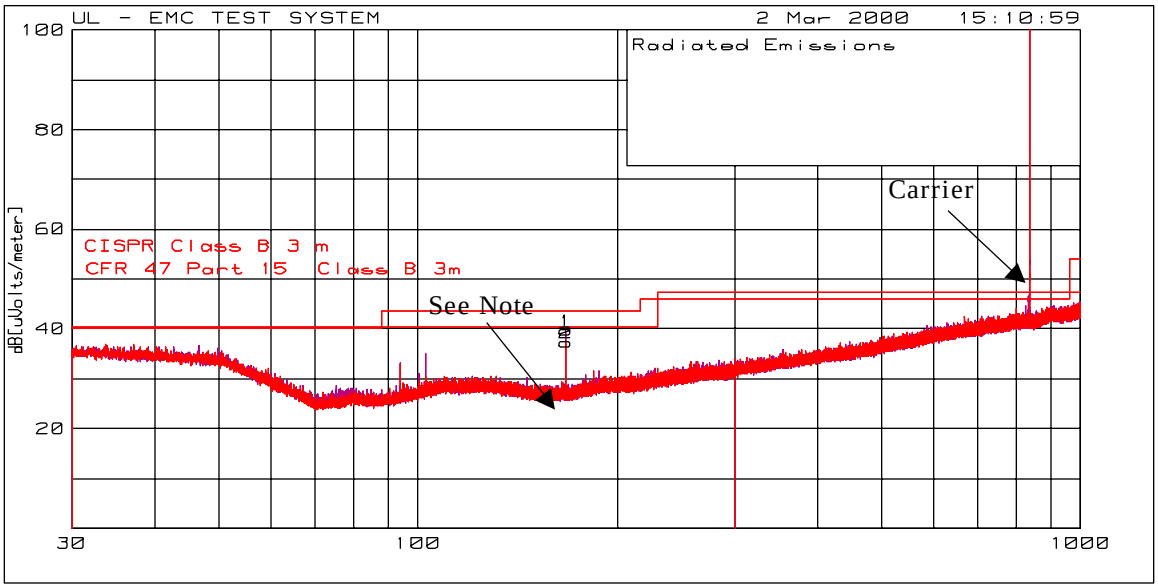
TEST REPORT DATA SHEETS
and PLOTS

TEST REPORT DATA

Customer No: PO#1129	MPBT No.: M342197	Test Date: March 2, 2000
TEST COMP./PART:	TEST DESCRIPTION: RADIATED EMISSIONS CLASS B	TEST CRITERIA:
MIL-SPECS./STDS.:	CISPR 22, FCC PART 15 SUBPART B	QUAL: ✔ ENG.:
FACILITY: **MPB TECHNOLOGIES INC.**	TEST ENGINEER: S. DRYSDALE	INTERNAL:
QA PERSONNEL:	OTHER: TEMP.: 21 C HUMIDITY: 35 %	

TEST PROCEDURES	DETAILS/DEVIATIONS: QUASI-PEAK LIMITS	PASS	FAIL	INIT
FCC PART 15	30 MHz - 88 MHz, 40 dBµV/m	✔		S.D.
SUBPART B	88 MHz -216 MHz, 43.5 dBµV/m	✔		S.D.
	216 MHz – 960 MHz, 46.0 dBµV/m	✔		S.D.
	> 960 MHz, 54.0 dBµV/m	✔		S.D.

MPBT: SCOTT DRYSDALE	CUSTOMER: M.C.T. INC.	



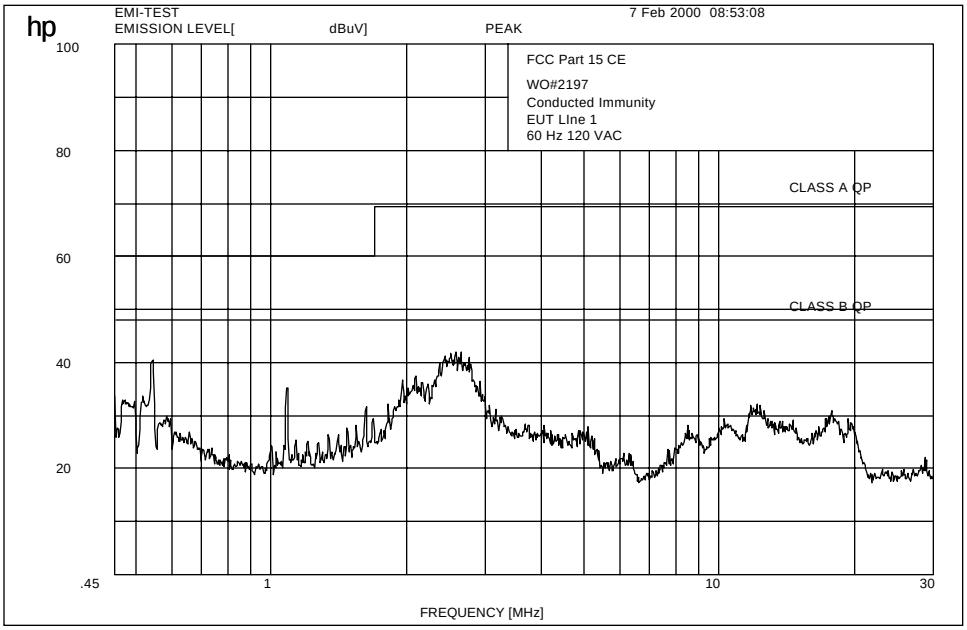
NOTE: This emission was below noise floor when a ferrite bead was applied to output of the signal generator outside of the shielded room.

TEST REPORT DATA

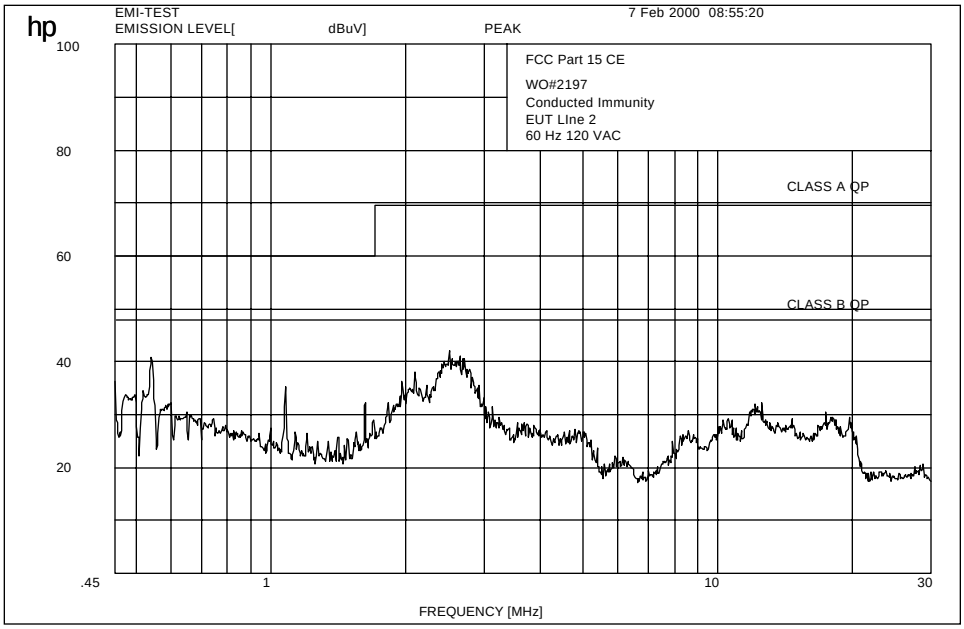
Customer No 1129	MPBT No.: M342197	Test Date: February 7, 2000
TEST COMP./PART:	TEST DESCRIPTION : CONDUCTED EMISSIONS CLASS B	TEST CRITERIA:
MIL-SPECS./STDS.:	FCC PART 15 SUBPART B	QUAL ✓ ENG.:
FACILITY: **MPB TECHNOLOGIES INC.**	TEST ENGINEER: S. DRYSDALE	INTERNAL:
QA PERSONNEL:	OTHER: TEMP.: 21 C HUMIDITY: 45 %	

TEST PROCEDURES	DETAILS/DEVIATIONS: QUASI-PEAK LIMITS	PASS	FAIL	INIT
FCC PART 15	Quasi-Peak 450 kHz - 30 MHz, 48 dBµV	✓		S.D.
CLASS B				
	Note: If the Quasi-Peak reading exceeds 48 dBµV,			
	an average measurement is performed. If the Quasi-Peak			
	measurement is more then 6dB higher then the average			
	measurement, the Quasi-Peak measurement is reduced by			
	13 dB.			

MPBT: S. DRYSDALE	CUSTOMER: M.C.T. INC.	1 OF 6



Line 1



Line 2

The EUT complies with conducted emission requirements.

TEST REPORT DATA

Customer No: 1129	MPBT No.: M34R2197	Test Date: January 31, 2000
TEST COMP./PART: SAMPLE 642	TEST DESCRIPTION: E.R.P LIMIT	TEST CRITERIA:
MIL-SPECS./STDS.:	FCC PART 22, SUBPART H SECTION 22.913	QUAL ✓ ENG.:
FACILITY: **MPB TECHNOLOGIES INC.**	TEST ENGINEER: S. DRYSDALE	INTERNAL:
QA PERSONNEL:	OTHER: TEMP.: 21 C HUMIDITY: 35 %	

TEST PROCEDURES	DETAILS/DEVIATIONS	PASS	FAIL	INIT
	The ERP proliferated by a system or sub-system shall not			
	exceed the limits for the specifications as stated.			
	7Watts	✓		S.D.
	The maximum power output(s) measured shall be within	✓		S.D.
	+ 2dB to 0dB of the manufacturer's rating(s) of RF			
	Power output.			

MPBT: S.D.	CUSTOMER: M.C.T. INC.	2 OF 6

Sample #642					
	Signal Gen	Spec A	Losses*	Calculated	Gain
Frequency	RF Out (dBm)	Reading	(dB)	Out (dBm)	(dB)
		(dBm)			
824	10	-18.8	52.3	33.5	23.5
836.5	10	-18.6	52.3	33.7	23.7
849	**10**	**-20.3**	**52.3**	**32**	**22**
869	**-13**	**-46.3**	**52.3**	**6**	**19**
881.5	-13	-44.6	52.3	7.7	20.7
894	-13	-45.2	52.3	7.1	20.1
Note: *Losses Incude Cable1 (0.9), Cable2 (0.9), Coupler (50), Cable3 (0.5)					
= 52.3					
Signal Gen RF Out taken at 1dB compression point					

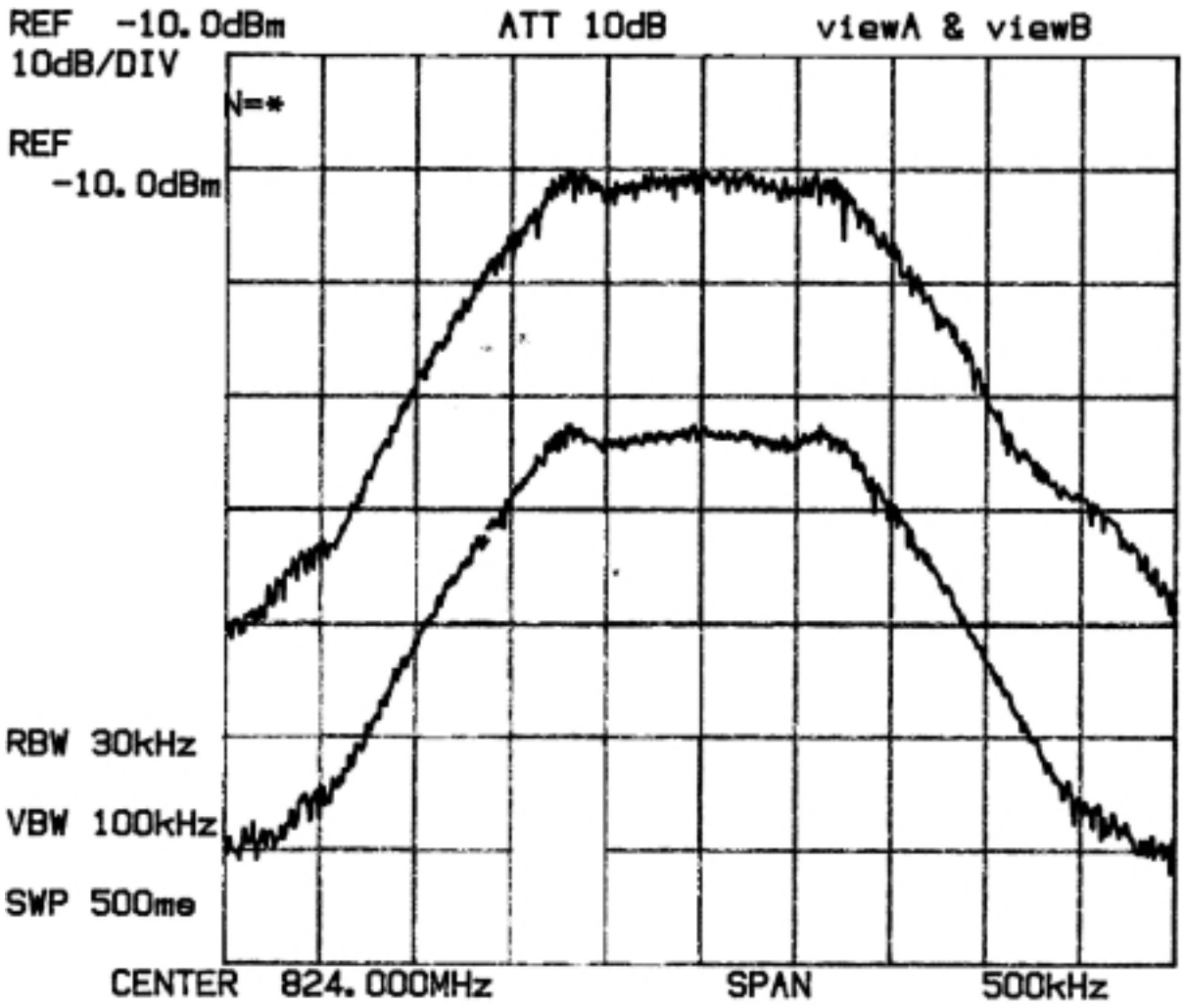
The EUT complies with maximum power output requirements.

TEST REPORT DATA

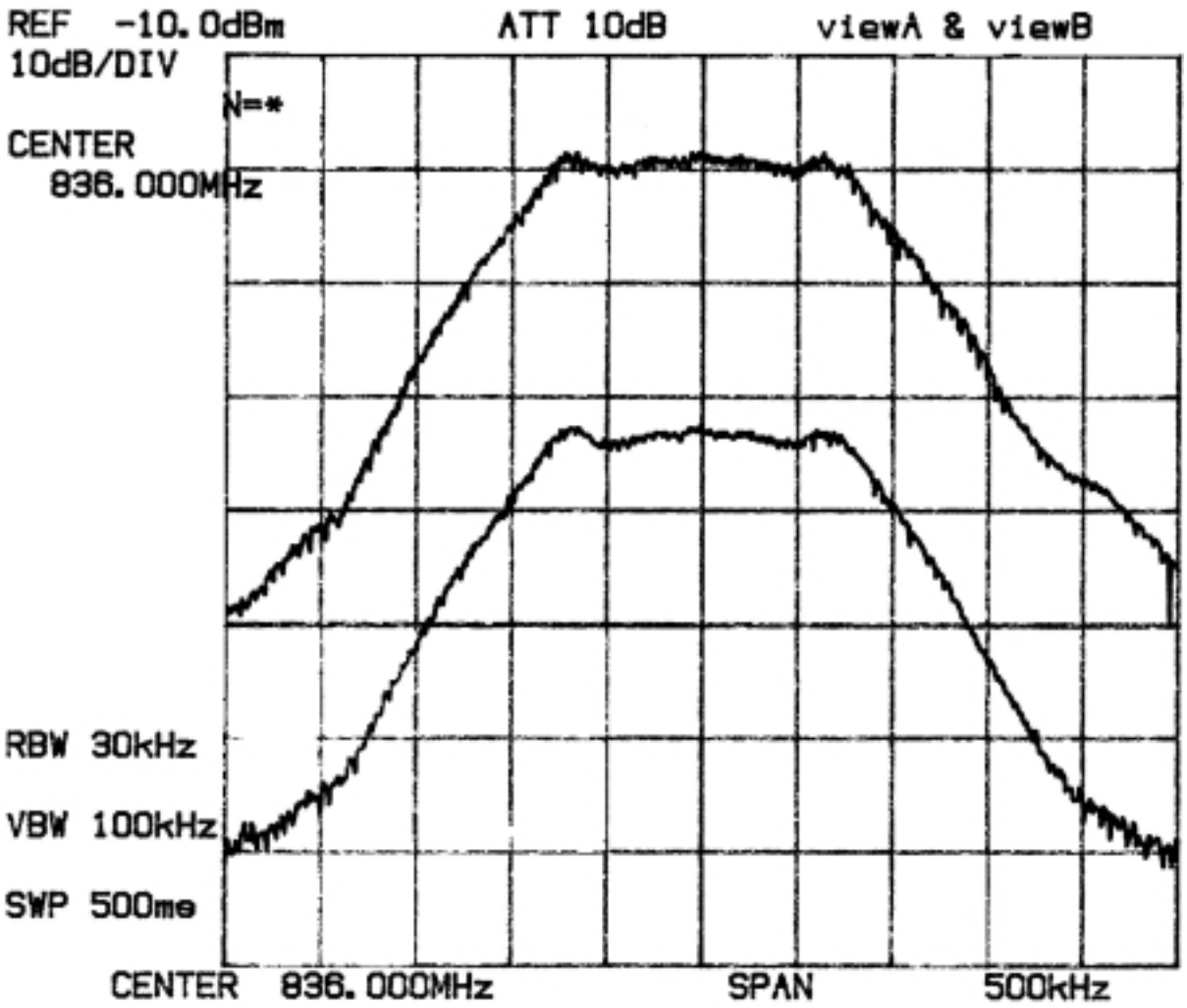
Customer No: 1129	MPBT No.: M342197	Test Date: Feb 1, 2000
TEST COMP./PART: SAMPLE 642	TEST DESCRIPTION: EMISSION LIMITATIONS FOR CELLULAR – OCCUPIED BANDWIDTH	TEST CRITERIA:
MIL-SPECS./STDS.:	FCC PART 22 SUBPART H, SECTION 22.917	QUAL: ✓ ENG.:
FACILITY: **MPB TECHNOLOGIES INC.**	TEST ENGINEER: S. DRYSDALE	INTERNAL:
QA PERSONNEL:	OTHER: TEMP.: 21 C HUMIDITY: 20 %	

TEST PROCEDURES	DETAILS/DEVIATIONS	PASS	FAIL	INIT
	The EUT must meet the specifications of **either** (b) **or** (c)			
Mask (b)	(f_c – 45 kHz) to (f_c – 20 kHz), 26 dB			
	(f_c + 20 kHz) to (f_c + 45 kHz), 26 dB			
	0 to (f_c – 45 kHz) , 60 or 43 + 10logP dB			
	(f_c + 45 kHz) to (2 x f_c), 60 or 43 + 10logP dB			
Mask (c)	(f_c – 20 kHz) to (f_c – 12 kHz), 117log(f_d/12)dB			
	(f_c + 12 kHz) to (f_c + 20 kHz), 117log(f_d/12) dB			
	0 to (f_c – 20 kHz), 100log(f_d/12) or 60 or 43 + 10logP dB			
	(f_c + 20 kHz) to (2 x f_c), 100log(f_d/12) or 60 or 43+10logP dB			
	Note: dB refers to attenuation from the mean power of			
	the unmodulated carrier			
	OR			
	For equipment which does not perform modulation and only			
	amplifies the RF signal, pass/fail criteria shall be based on the			
	following:			
	a) The 20 dB bandwidth of the modulated carrier shall be the same (input signal vs. output signal).	✓		S.D.
	b) The difference of the amplitudes between the input signal and the output signal shall remain consistent (+/- 0.5 dB), for the 20 dB bandwidth of the modulated carrier.	✓		S.D.

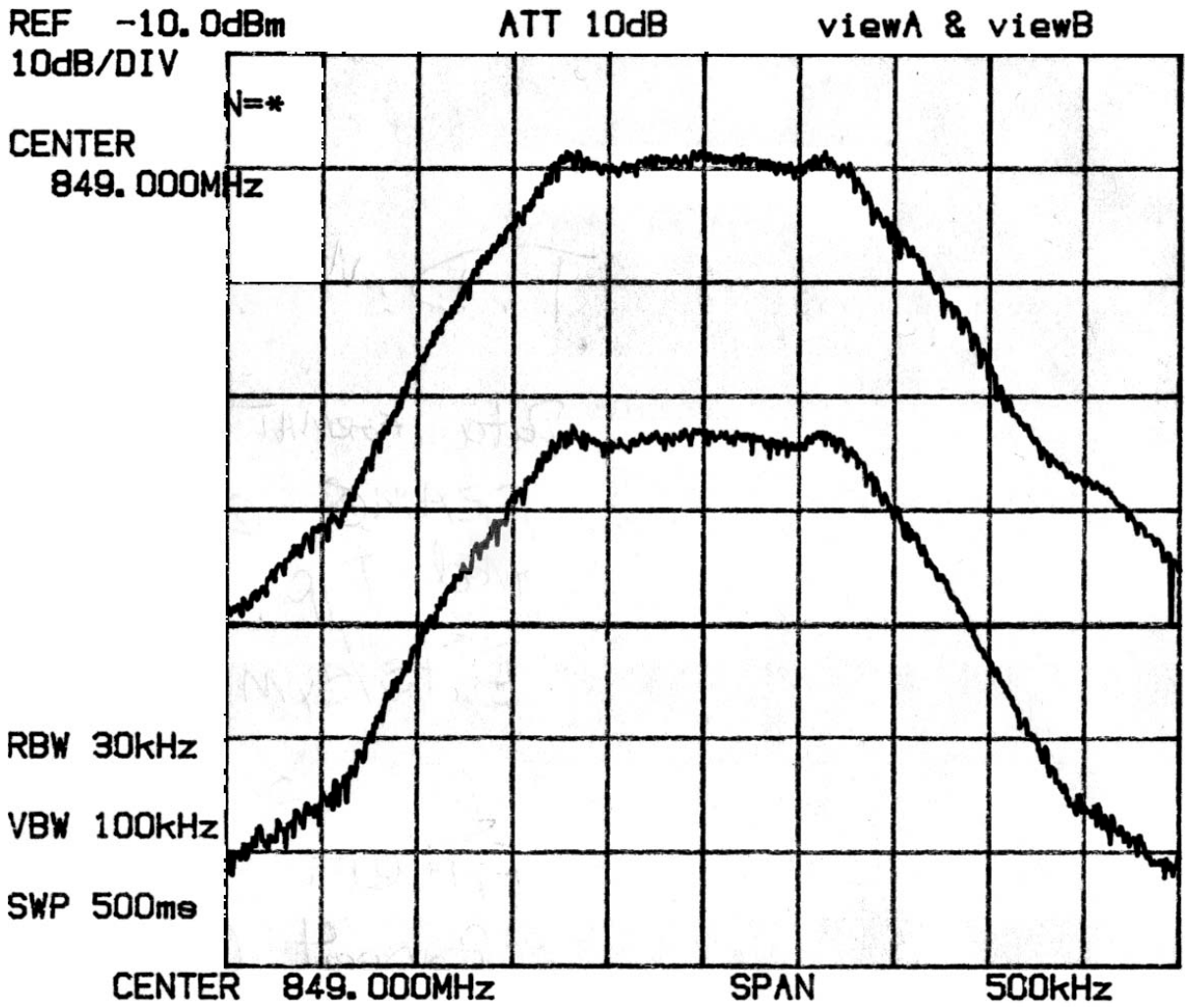
MPBT: S. DRYSDALE	CUSTOMER: M.C.T. INC.	



TDMA @ 824 / Sig IN vs. Sig OUT



TDMA @ 836 / Sig IN vs. Sig OUT



TDMA @ 849 / Sig IN vs. Sig OUT

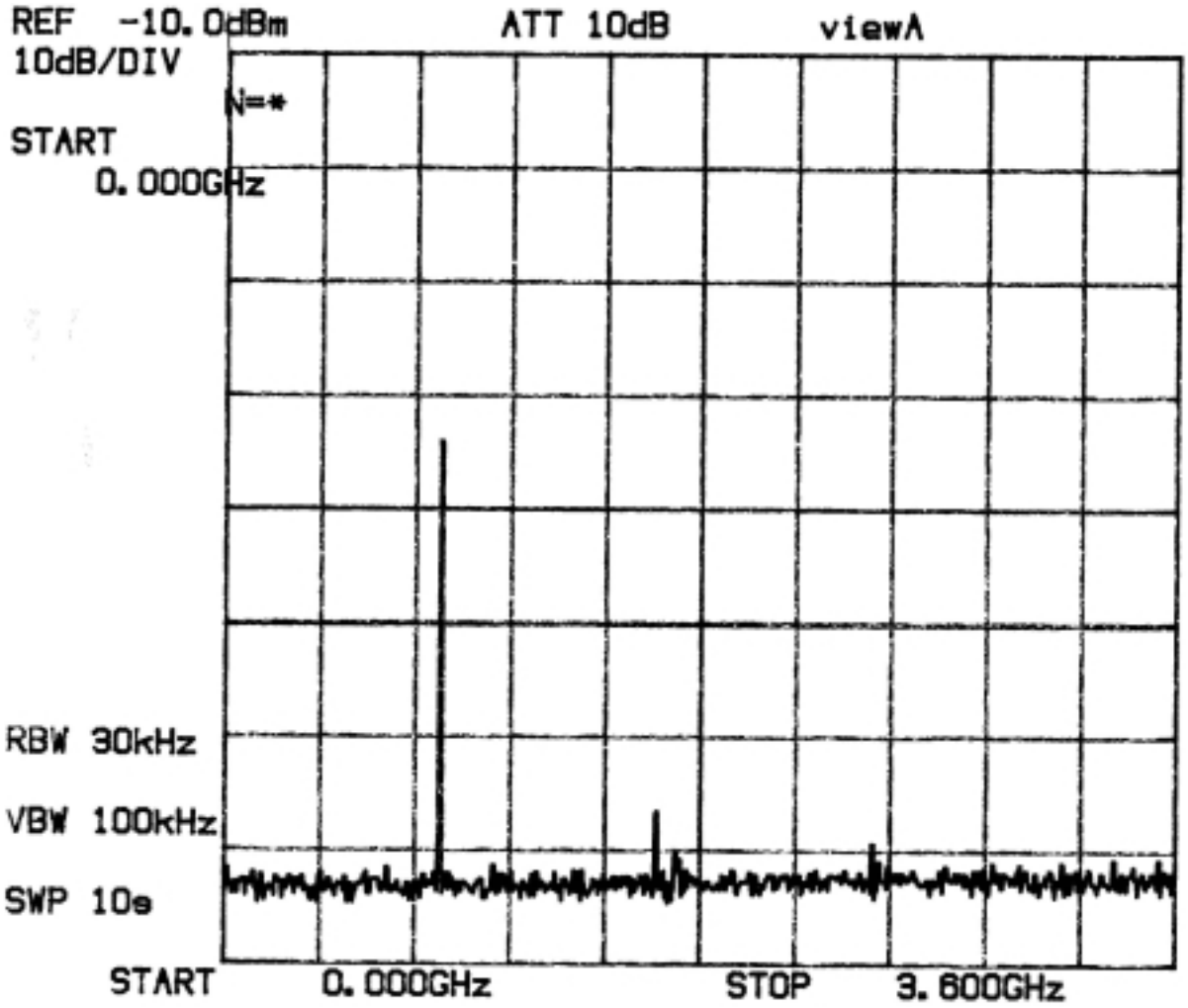
The EUT complies with emission limitations for cellular (out of band).

TEST REPORT DATA

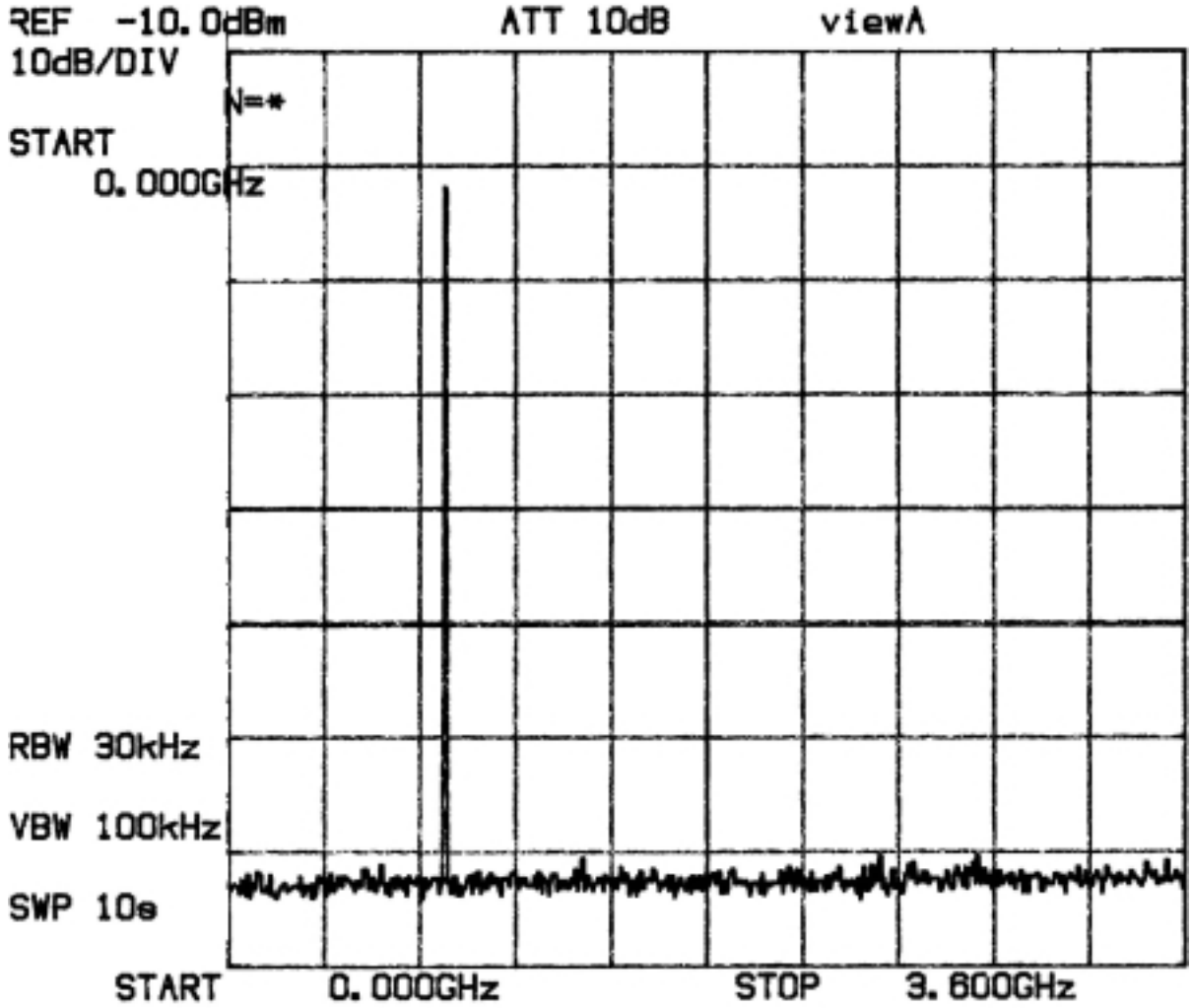
Customer No: 1129	MPBT No.: M34R2197	Test Date: January 31, 2000
TEST COMP./PART: SAMPLE 642	TEST DESCRIPTION: EMISSION LIMITATIONS FOR CELLULAR – SPURIOUS	TEST CRITERIA:
MIL-SPECS./STDS.:	FCC PART 22 SUBPART H, SECTION 22.917	QUAL: ✓ ENG.:
FACILITY: **MPB TECHNOLOGIES INC.**	TEST ENGINEER: S. DRYSDALE	INTERNAL:
QA PERSONNEL:	OTHER: TEMP.: 21 C HUMIDITY: 20 %	

TEST PROCEDURES	DETAILS/DEVIATIONS	PASS	FAIL	INIT
	Attenuated from Mean Power Output by at least	✓		S.D.
	60 **or** 43+10logP dB.			
	2nd Harmonic	✓		S.D.
	3rd Harmonic	✓		S.D.
	4th Harmonic	✓		S.D.
	5th Harmonic	✓		S.D.
	6th Harmonic	✓		S.D.
	7th Harmonic	✓		S.D.
	8th Harmonic	✓		S.D.
	9th Harmonic	✓		S.D.
	10th Harmonic	✓		S.D.

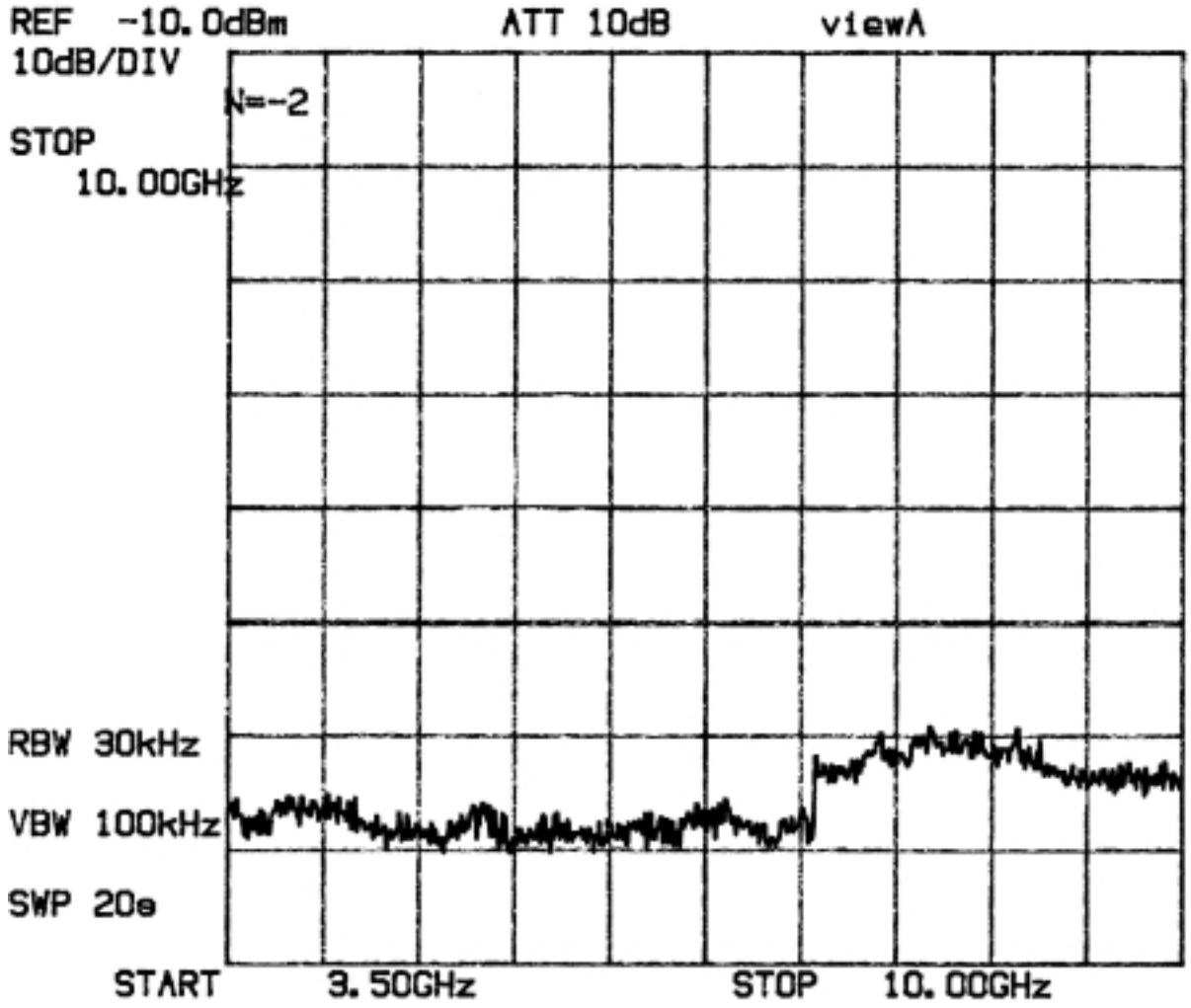
MPBT: S. DRYSDALE	CUSTOMER: M.C.T. INC.	4 OF 6



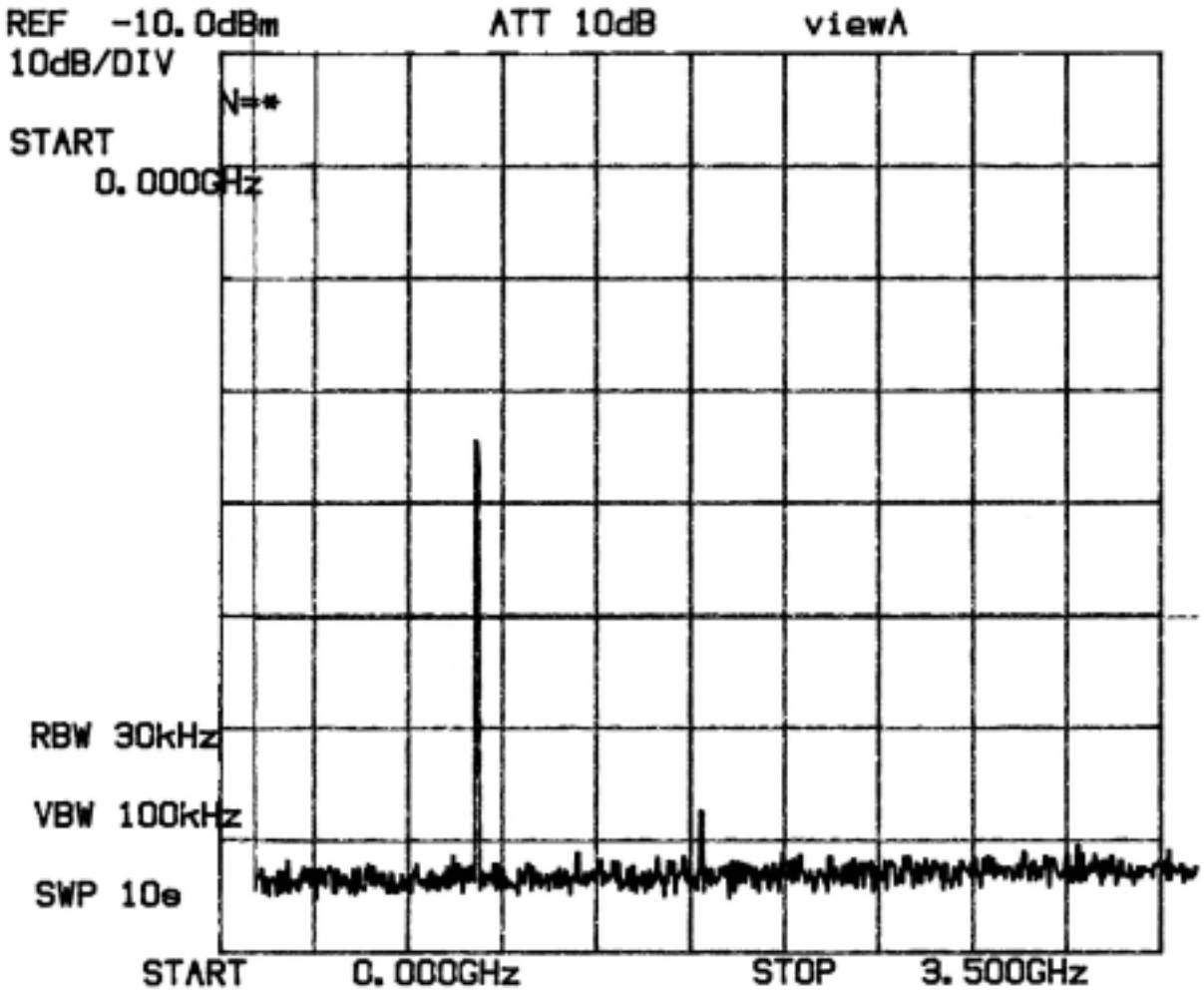
824 MHz - TDMA 0-3.6 SPURIOS (WITHOUT AMP)



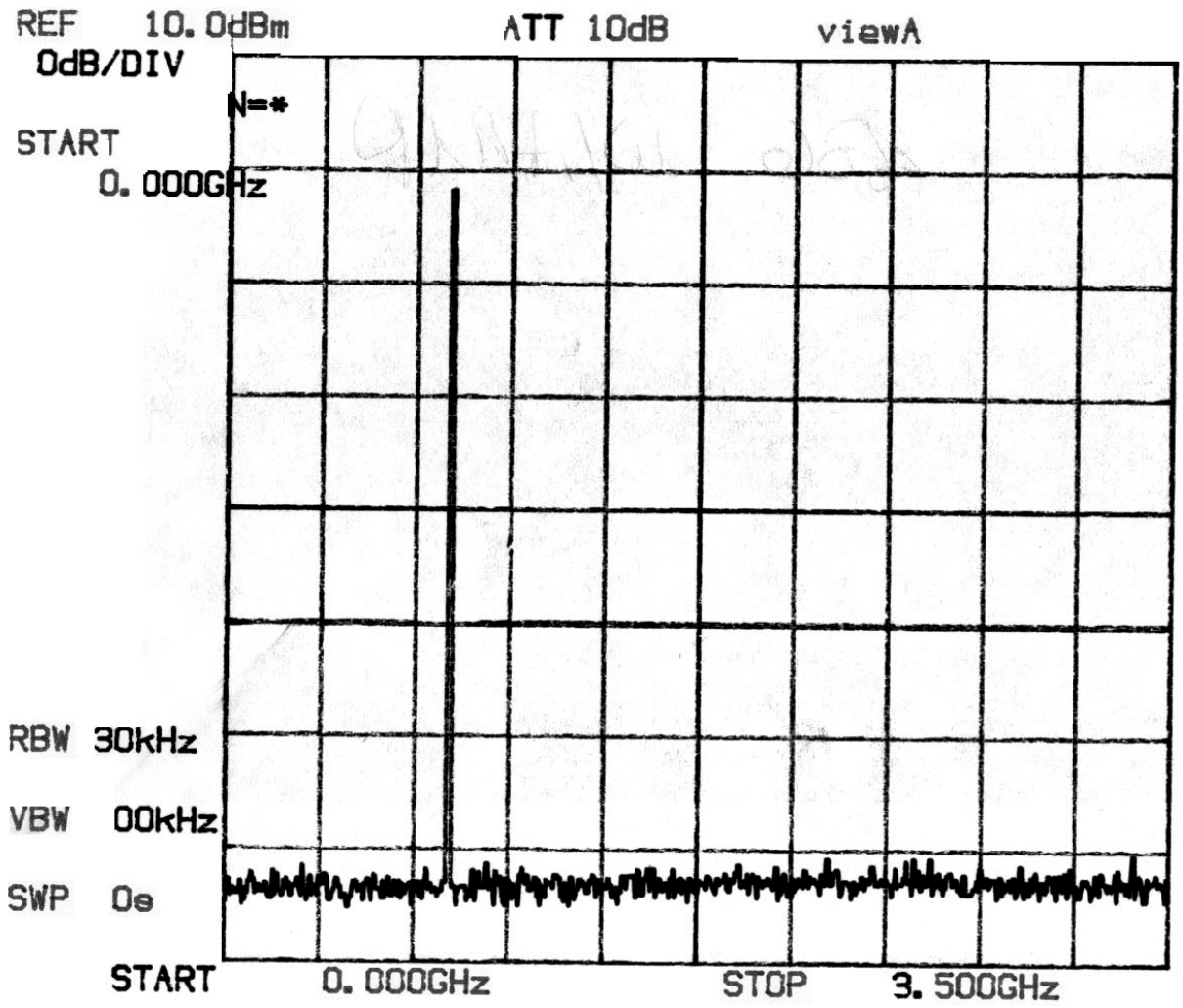
824 MHZ 0-3.6 SPURIOS (WITHAMP)



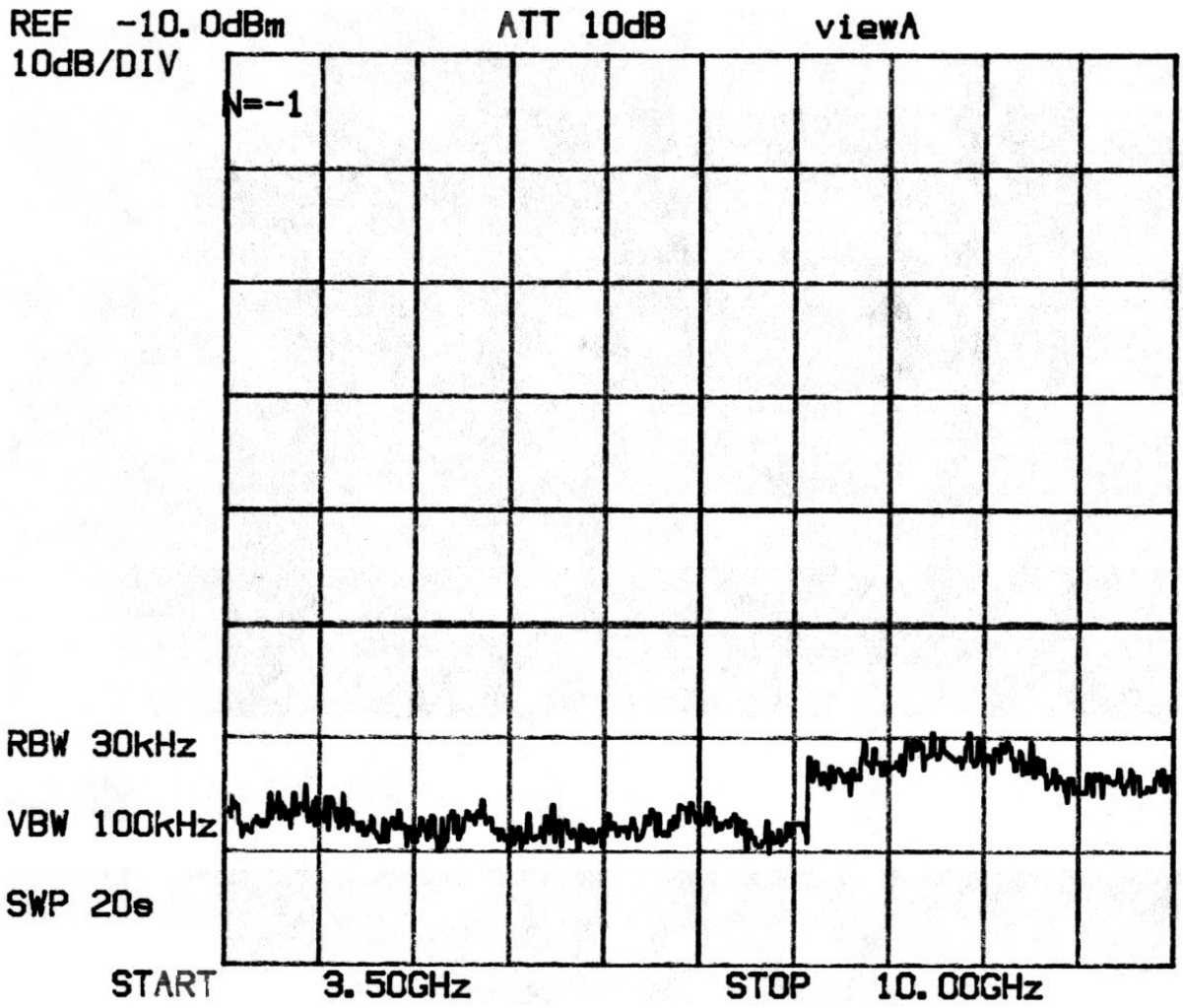
824 MHz TDMA, 3.6 – 10 GHz SPURIOS (WITH AMP)



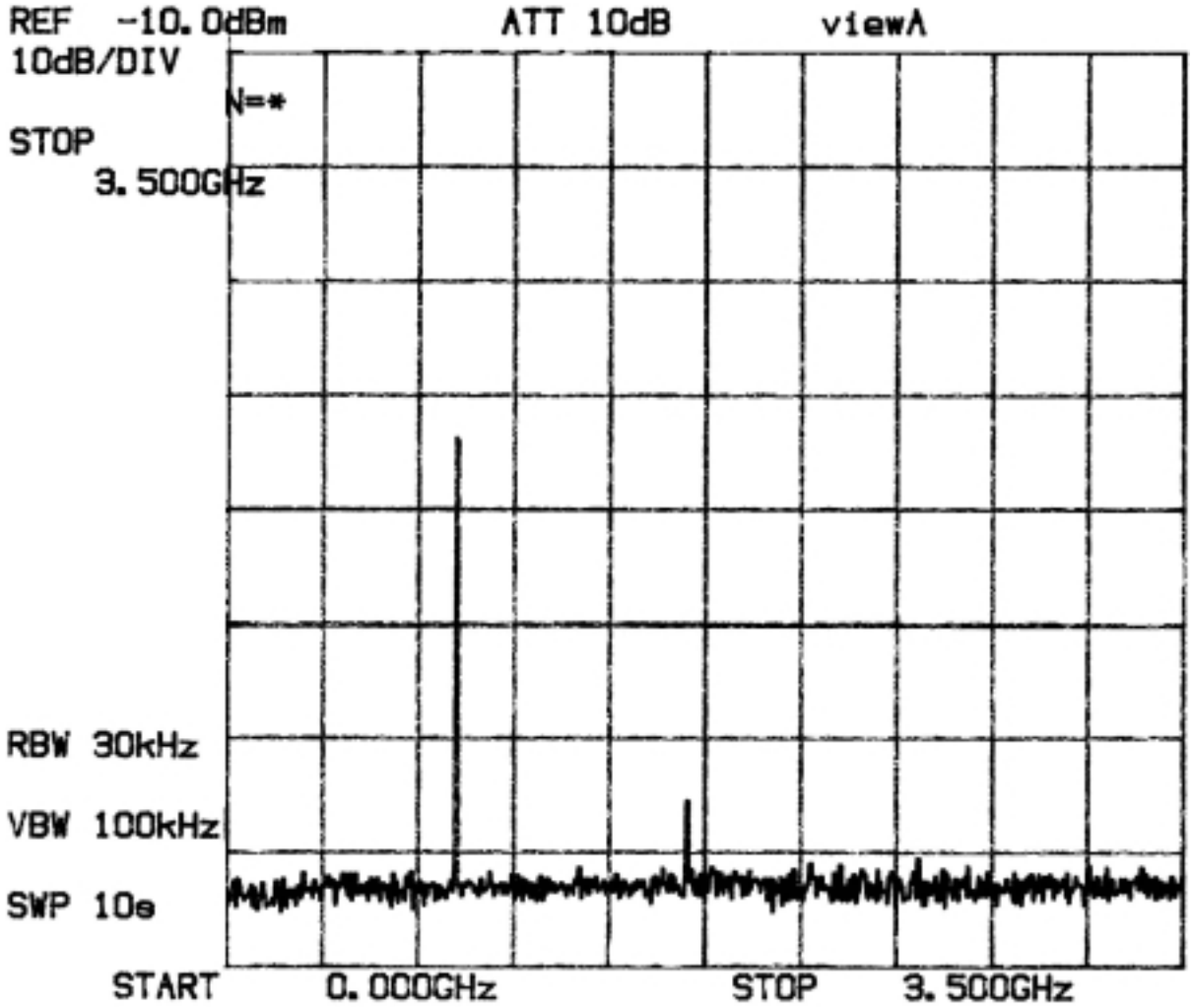
836 MHz TDMA 0-3.6 SPURIOS (WITHOUT AMP)



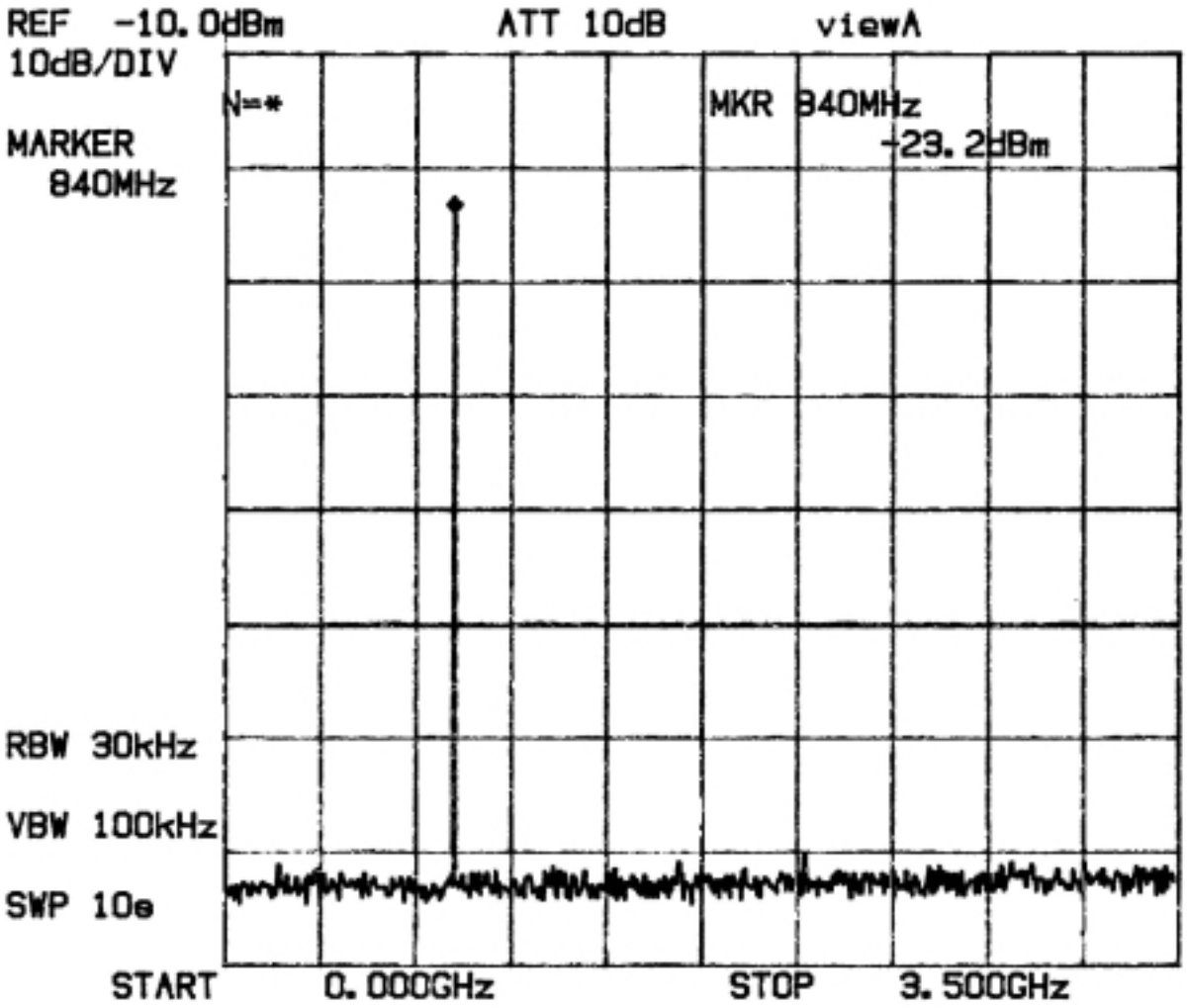
836 MHz TDMA 0-3.5 GHz SPURIOS (WITHAMP)



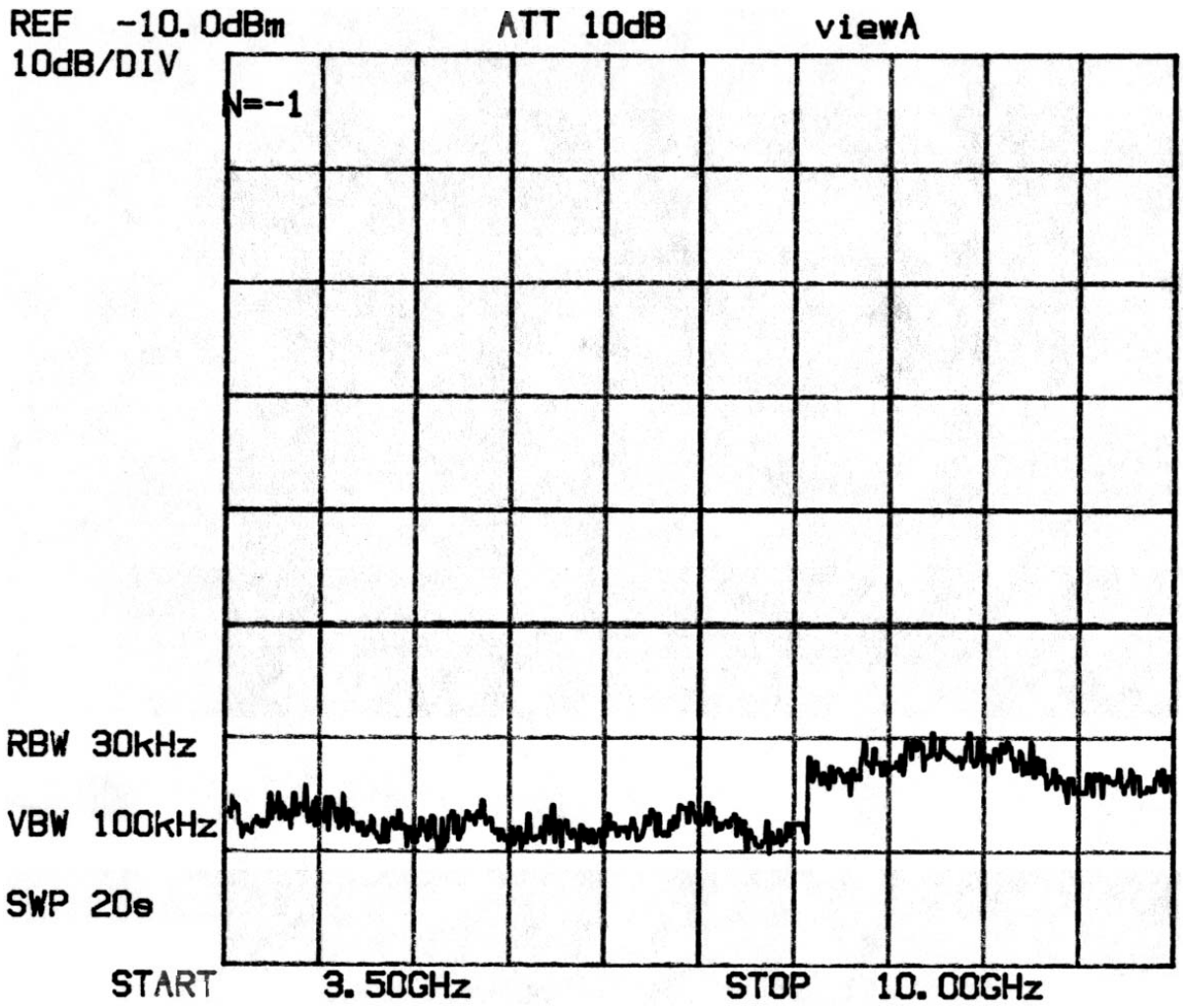
836 MHz TDMA, 3.5 – 10 GHz SPURIOS (WITH AMP)



849 MHz TDMA, 0-3.5 GHz SPURIOS (WITHOUT AMP)



849 MHz TDMA, 0-3.5 GHz SPURIOS (WITHAMP)



849 MHz TDMA, 3.5 – 10 GHz SPURIOS (WITHAMP)

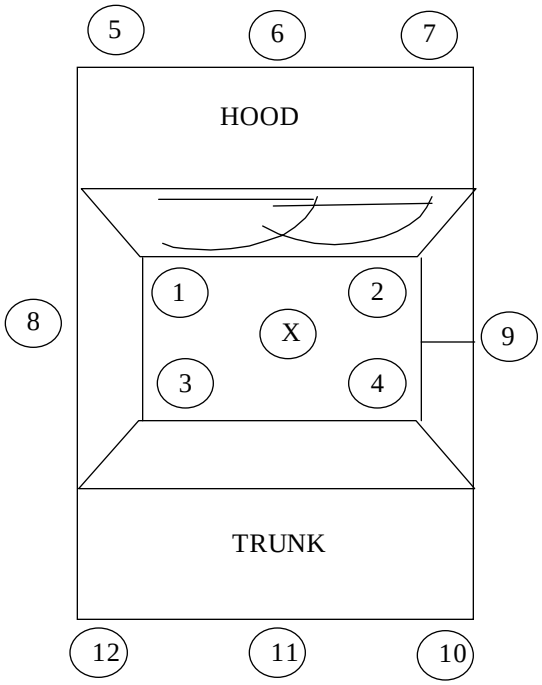
The EUT complies with emission limitations for cellular (spurious) requirements.

TEST REPORT DATA

Customer No: 1129	MPBT No.: M34R2197	Test Date: February 4, 2000
TEST COMP./PART: SAMPLE 642	TEST DESCRIPTION: MAXIMUM PERMISSIBLE EXPOSURE	TEST CRITERIA: GENERAL EXPOSURE LIMITS
MIL-SPECS./STDS.:	FCC PART 1 SUBPART I, SECTION 1.1310	QUAL ✓ ENG.:
FACILITY: **MPB TECHNOLOGIES INC.**	TEST ENGINEER: D. ZANETTE	INTERNAL:
QA PERSONNEL:	OTHER: TEMP.: 15 C HUMIDITY: 20%	

TEST PROCEDURES	DETAILS/DEVIATIONS	PASS	FAIL	INIT
FCC Part 1 Subpart I	Frequency mWITHcm²			
Section 1.1310				
	0.3 – 1.34 (100)			
	1.24 – 30 (180/f²)			
	30-300 0.2			
	300-1500 f/1500	✓		D.Z.
	1500-10000 1			
	Note: Points and respective readings shown on next			
	page. Averaging time is 30 minutes.			
	f = 824 (Lowest Tx Frequency)			
	Limit = 28.7			

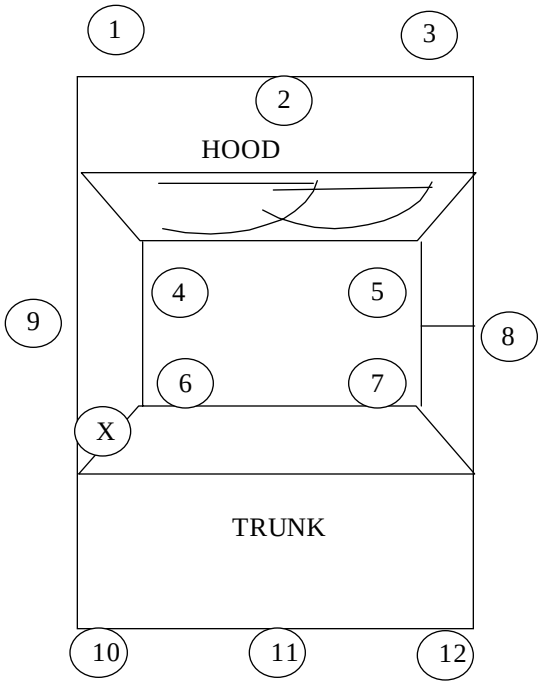
Antenna – Magnetic Mount With High Gain, Model SEM15 (4dB)



Point	Reading (V/m)	INT./EXT.
1 –HEAD	8.0	INT.
2 – HEAD	9.1	INT.
3 – HEAD	5.4	INT.
4 – HEAD	6.6	INT.
1 – PELVIC	11.6	INT.
2 – PELVIC	10.1	INT.
3 – PELVIC	10.2	INT.
4 – PELVIC	7.6	INT.
5	7.0	EXT.
6	6.2	EXT.
7	5.6	EXT.
8	14.6	EXT.
9	13.4	EXT.
10	6.6	EXT.
11	7.4	EXT.
12	8.0	EXT.

NOTE: "X" REFERS TO POSITION OF ANTENNA. CAR WAS A HONDA CIVIC DX.

Antenna – Glass mount, Model SEM2, (5DB)



Point	Reading (V/m)	INT./EXT.
1	5.4	EXT.
2	4.4	EXT.
3	3.8	EXT.
4 – HEAD	21.2	INT.
5 – HEAD	21.8	INT.
6 – HEAD	23.1	INT.
7 – HEAD	18.4	INT.
4 – PELVIC	17.2	INT.
5 – PELVIC	11.6	INT.
6 – PELVIC	19.6	INT.
7 – PELVIC	12.8	INT.
8	7.2	EXT.
9	**27.0**	**EXT.**
10	7.4	EXT.
11	8.0	EXT.
12	4.6	EXT.

NOTE: "X" REFERS TO POSITION OF ANTENNA. CAR WAS A HONDA CIVIC DX.
POINT 9 (WORST CASE) WAS ACHIEVED AT 30 CM FROM ANTENNA.
Limit = 28.7 = 28700000 uV = 149.2 dBuV = 42.2 dBm
Max Output = 27.0 = 27000000 uV = 148.6 dBuV = 41.6 dBm
The EUT complies with maximum permissible exposure requirements.

Appendix C

TEST EQUIPMENT REPORT

Radiated Emissions

Asset	Characteristics	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date
4281	Biconilog Antenna	Antenna Research	LPB-2520/A	1048	Dec 30, 1999	Dec 30, 2000
4989	Spectrum Analyzer	Hewlett Packard	8566B/462	2747A05263	Dec 30, 1999	Dec 30, 2000
4990	Quasi Peak Adapter	Hewlett Packard	85650A	2521A00815	Dec 30, 1999	Dec 30, 2000
4529	Mast/Antenna Control	Electro-Mechanics	1050C	1086	Monitored	Monitored
4861	Turn Table Control	Sunol	5C98V		Monitored	Monitored
5076	Software	Underwriters Laboratories	V2.05	MC106399NK07147	Monitored	Monitored

Conducted Emissions

Asset	Characteristics	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date
4281	Biconilog Antenna	Antenna Research	LPB-2520/A	1048	Dec 30, 1999	Dec 30, 2000
4989	Spectrum Analyzer	Hewlett Packard	8566B/462	2747A05263	Dec 30, 1999	Dec 30, 2000
4990	Quasi Peak Adapter	Hewlett Packard	85650A	2521A00815	Dec 30, 1999	Dec 30, 2000
4529	Mast/Antenna Control	Electro-Mechanics	1050C	1086	Monitored	Monitored
4861	Turn Table Control	Sunol	5C98V		Monitored	Monitored
5076	Software	Underwriters Laboratories	V5.0	MC106399NK07147	Monitored	Monitored

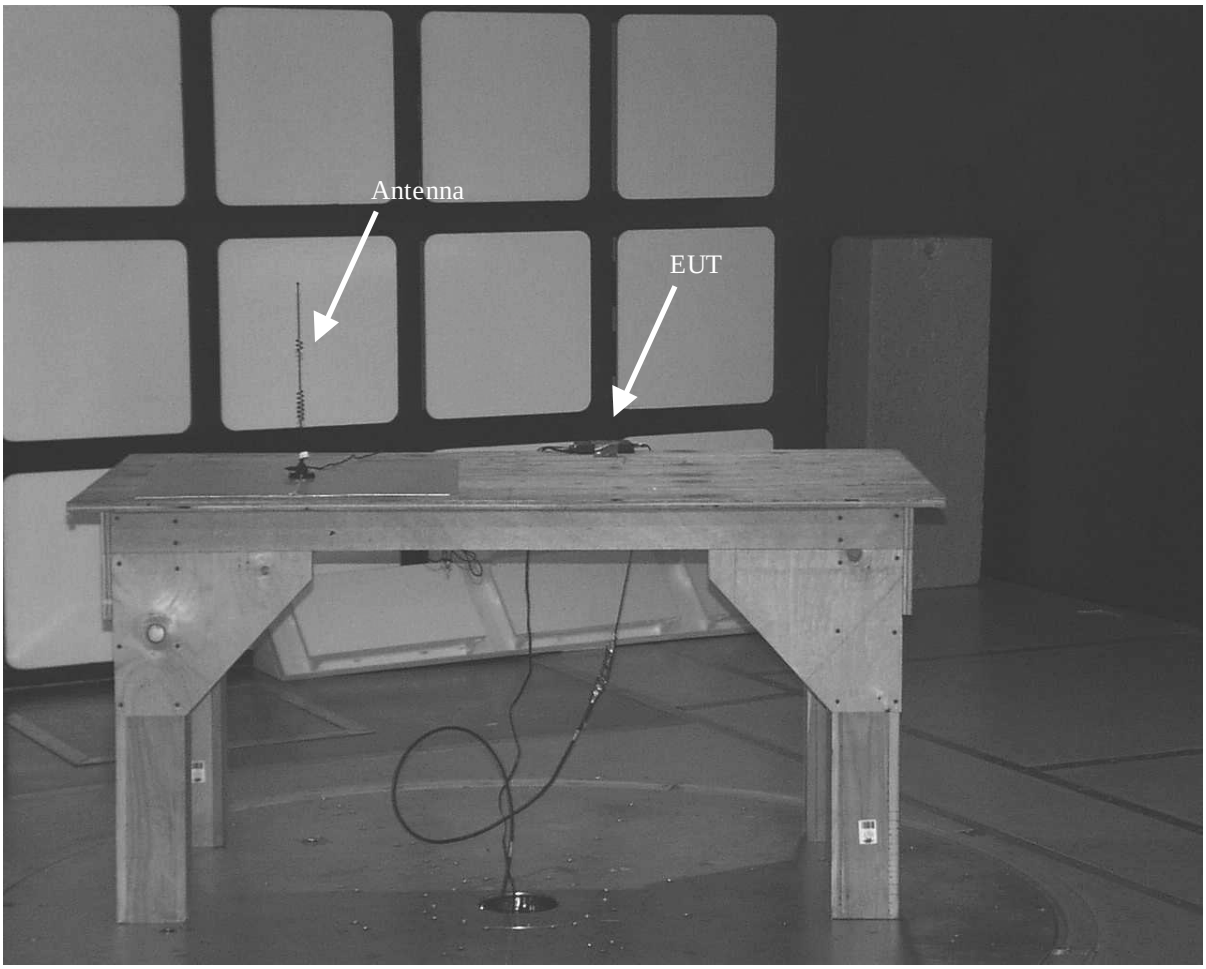
Maximum Power/Harmonics/Spurious/Environmental

Asset	Characteristics	Manufacturer	Model #	Serial #	Cal Date	Cal Due Date
002345	Field Probe Set	Amplifier Research	FP 2000	12439	Jul 30, 1999	Jul 30, 2000
002831	Spectrum Analyzer	Advantest	R4136	71220067	Dec 29, 1999	Dec 29, 2000
5019	Environ. Chamber	Thermotron Corp.	F-30-CHM-3	5093	Monitored	Monitored
002430	Bi-directional Coupler	Werlatone	03414	4341	Feb 4, 2000	Feb 4, 2001
003736	Signal Generator	Marconi Instruments	2022A	119062	Jul 21, 1999	Jul 21, 2000

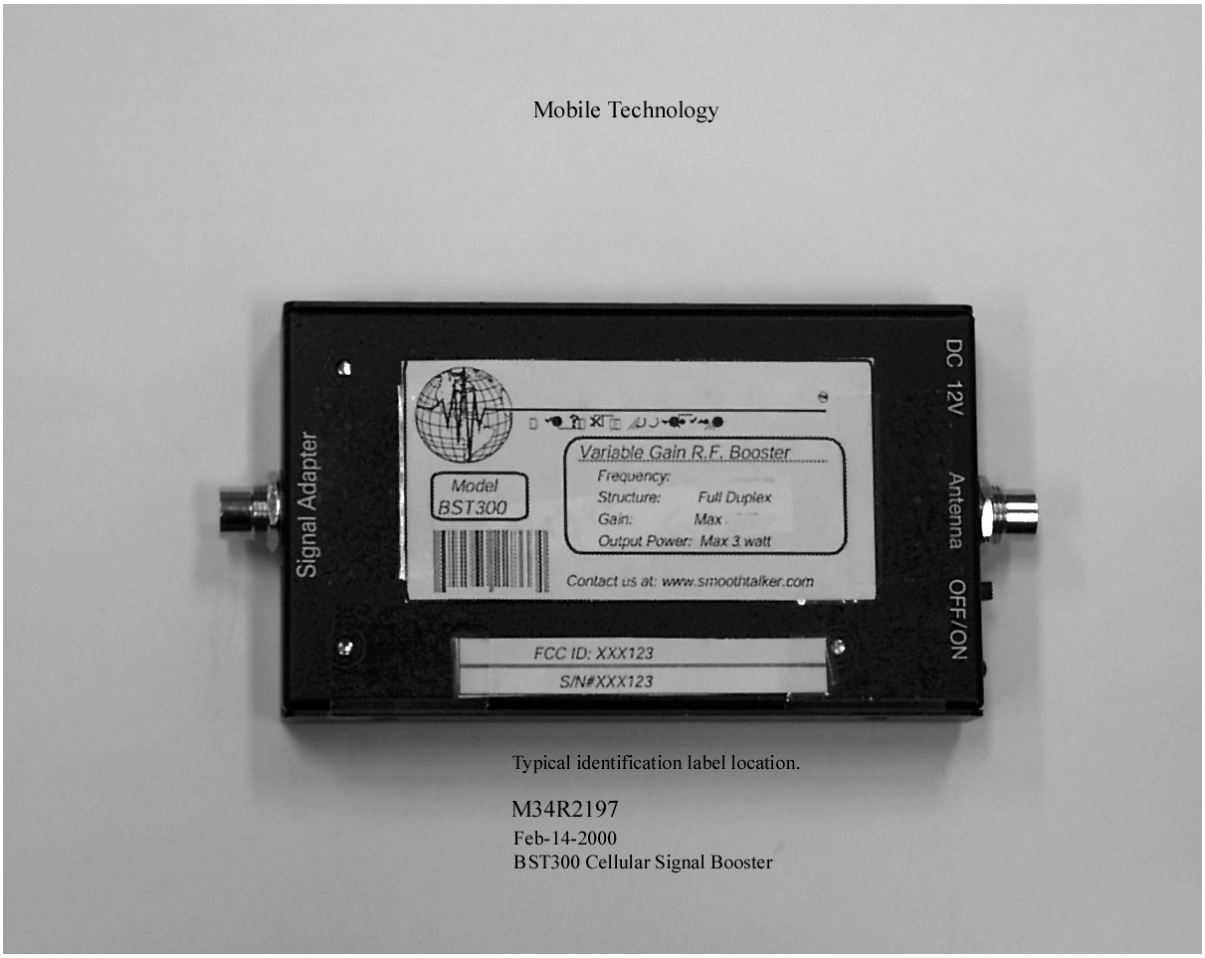
Appendix D

PHOTOGRAPHS

Representing Set Up and Maximized Emissions

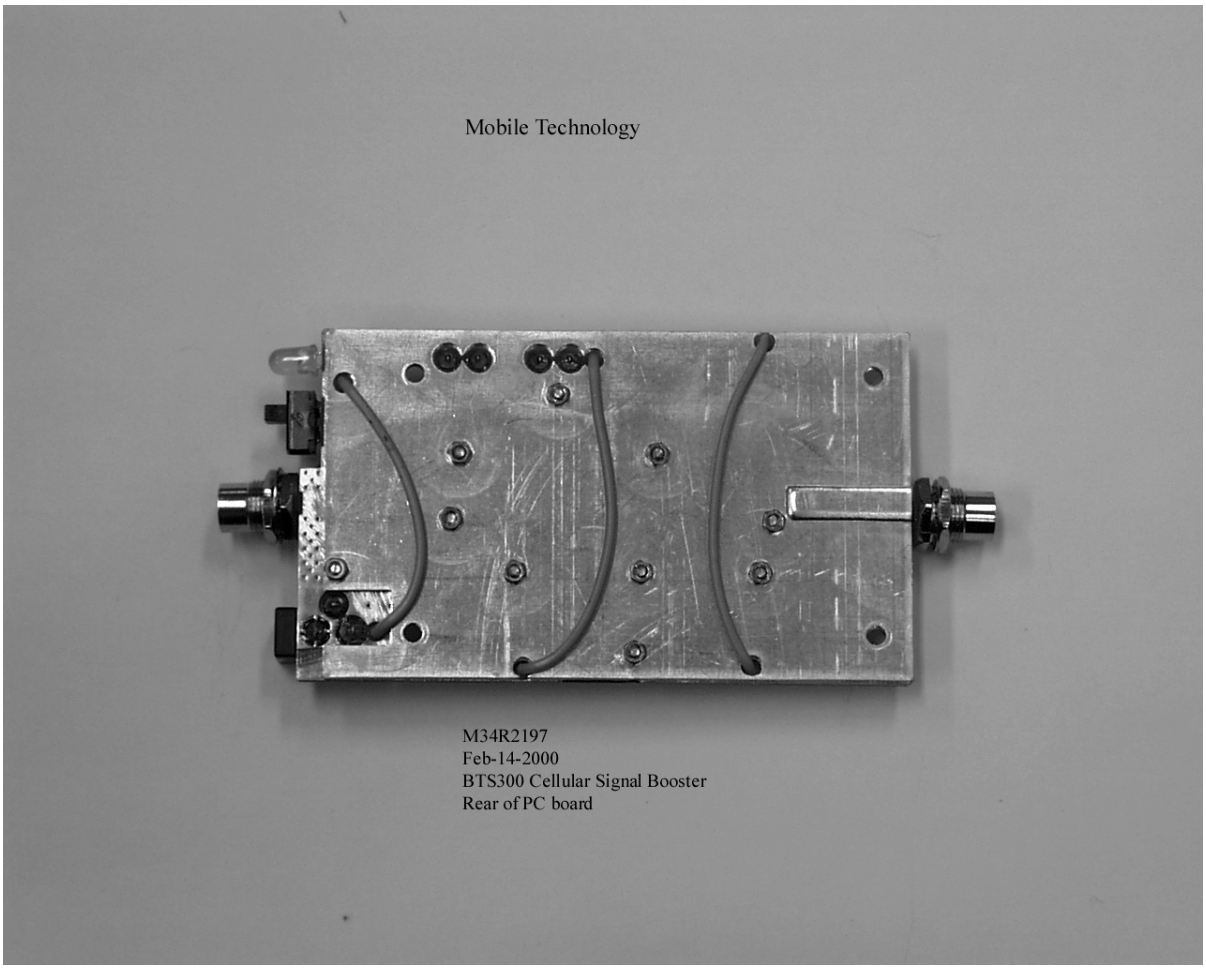


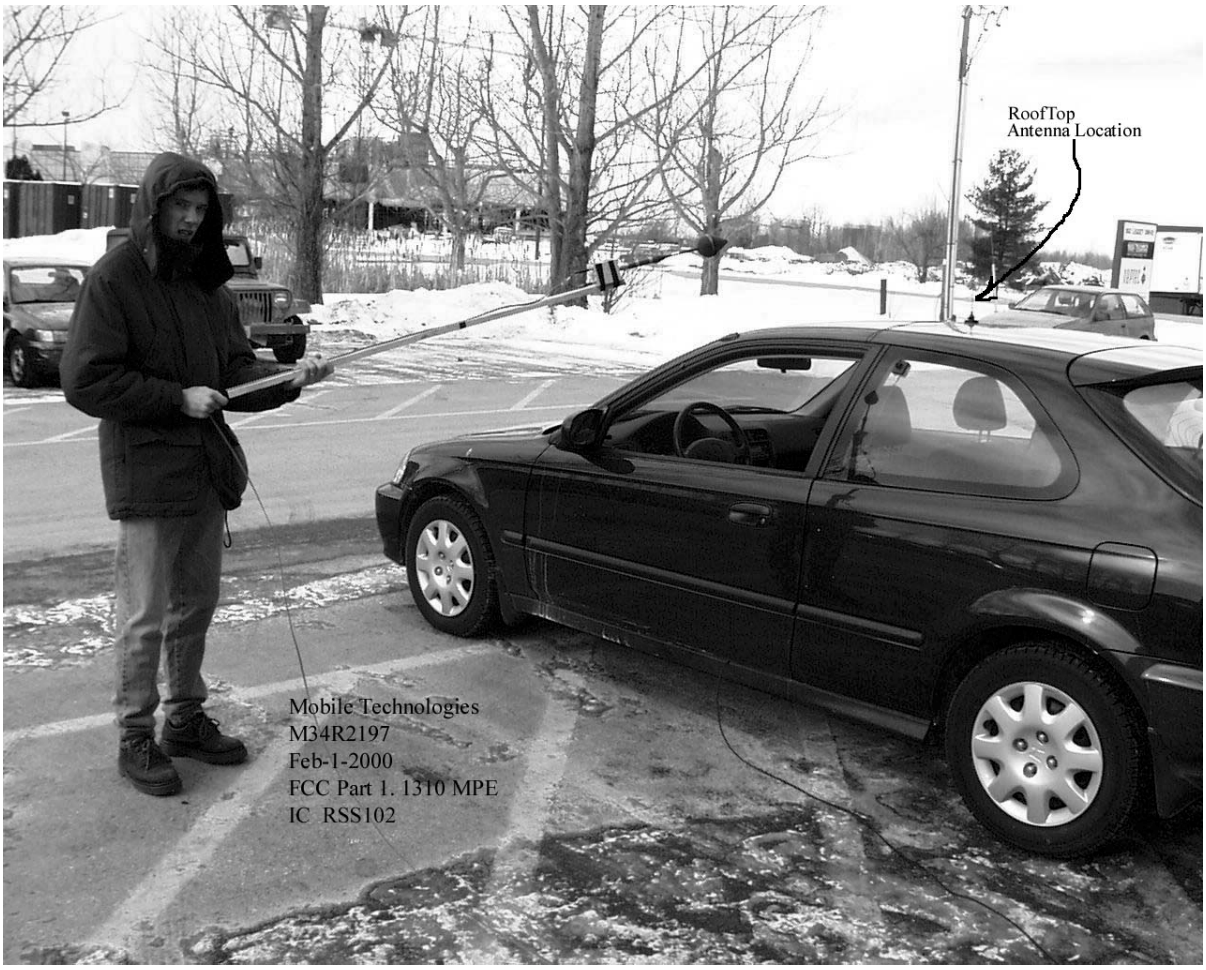
Radiated Emissions (Spurious)



Typical identification label location.

M34R2197
Feb-14-2000
BST300 Cellular Signal Booster





Appendix E

SUPPLEMENTARY DATA

TEST REPORT DATA

Customer No: 1129	MPBT No.: M34R2197	Test Date: February 14, 2000
TEST COMP./PART:	TEST DESCRIPTION: ENVIRONMENTAL CONDITIONS	TEST CRITERIA:
MIL-SPECS./STDS.:	RSS 118 SECTION 8.1.2	QUAL ENG.: ✔
FACILITY: **MPB TECHNOLOGIES INC.**	TEST ENGINEER: B. WATERHOUSE	INTERNAL:
QA PERSONNEL:	OTHER: TEMP.: AS SPECIFIED HUMIDITY: 10%-40%	

TEST PROCEDURES	DETAILS/DEVIATIONS	PASS	FAIL	INIT
	+ 60 C @ 13.2 V (110%)	✔		B.W.
	+ 60 C @ 12.0 V (100%)	✔		B.W.
	+ 60 C @ 10.8 V (90%)	✔		B.W.
	+ 60 C @ 9.6 V (80%)	✔		B.W.
	+ 25 C @ 13.2 V (110%)	✔		B.W.
	+ 25 C @ 12.0 V (100%)	✔		B.W.
	+ 25 C @ 10.8 V (90%)	✔		B.W.
	+ 25 C @ 9.6 V (80%)	✔		B.W.
	-30 C @ 13.2 V (110%)	✔		B.W.
	-30 C @ 12.0 V (100%)	✔		B.W.
	-30 C @ 10.8 V (90%)	✔		B.W.
	-30 C @ 9.6 V (80%)	✔		B.W.
	Notes: The EUT must stay within +2dB to –4dB of it's			
	measured output power at 25 C, with 100% voltage.			

MPBT: D. ZANETTE.	CUSTOMER: M.C.T. INC.	6 OF 6

Sample #642	Frequency: 836 MHz				
	Signal Gen	Spec A	Losses*	Calculated	Gain
Temperature & Voltage	RF Out (dBm)	Reading (dBm)	(dB)	Out (dBm)	(dB)
+ 60 C @ 13.2 V (110%)	10	-19.9	52.3	32.4	22.4
+ 60 C @ 12.0 V (100%)	10	-20.2	52.3	32.1	22.1
+ 60 C @ 10.8 V (90%)	10	-21.3	52.3	31	21
+ 60 C @ 9.6 V (80%)	10	-21.4	52.3	30.9	20.9
+ 25 C @ 13.2 V (110%)	10	-18.9	52.3	33.4	23.4
+ 25 C @ 12.0 V (100%)	**10**	**-19.5**	**52.3**	**32.8**	**22.8**
+ 25 C @ 10.8 V (90%)	10	-20.7	52.3	31.6	21.6
+ 25 C @ 9.6 V (80%)	10	-21	52.3	31.3	21.3
-30 C @ 13.2 V (110%)	10	-17.8	52.3	34.5	24.5
-30 C @ 12.0 V (100%)	10	-18.8	52.3	33.5	23.5
-30 C @ 10.8 V (90%)	10	-20.1	52.3	32.2	22.2
-30 C @ 9.6 V (80%)	10	-20.9	52.3	31.4	21.4
Note: *Losses Incude Cable1 (0.9), Cable2 (0.9), Coupler (50), Cable3 (0.5)					
= 52.3					
Signal Gen RF Out taken at 1dB compression point					

The EUT complies with the Environmental Conditions requirements