

## **Exhibit I: Spurious RF Conducted Emissions**

**FCC ID: CW21669-3**

## Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

### Channels in Specified Operating Band Investigated:

Low Channel - 152.87 MHz

Mid Channel - 161 MHz

High Channel - 170 MHz

### Operating Modes Investigated:

Modulated with Random Data

### Data Rates Investigated:

1200 baud (only data rate available)

### Output Power Investigated:

+20 dBm (not user adjustable)

### Power Input Settings Investigated:

Battery operated. Cannot be operated while connected to AC mains or any other power source.

### Frequency range Investigated

Start Frequency	30 MHz	Stop Frequency	2 GHz
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### Software\Firmware Applied During Test

Exercise software	1669-3 Firmware	Version	1.4
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#### Description

The system was tested using standard operating production software to exercise the functions of the device during the testing.

## Equipment Modifications

No EMI suppression devices were added or modified. The EUT was tested as delivered.

## EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
Test Box	Rothenbuhler Engineering	1669-3	111

## Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial	No	1.8	No	Test Box	Unterminated
Test Probe	No	0.5	No	Test Box	Antenna Terminal

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

## Measurement Equipment

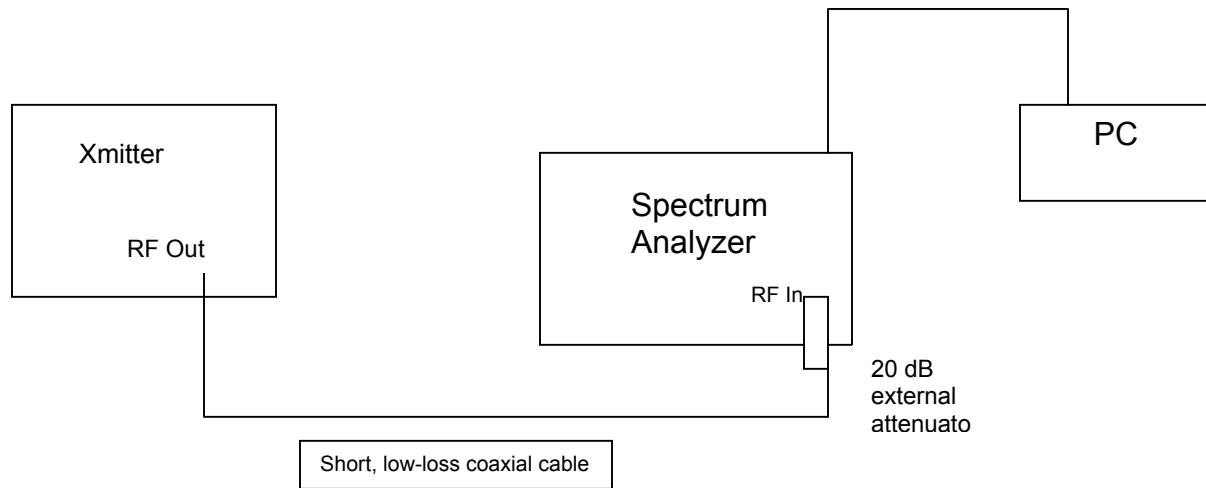
Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Tektronix	2784	AAO	03/08/2001	12 mo
Power Meter	Hewlett Packard	E4418A	SPA	04/09/2001	12 mo
Power Sensor	Hewlett-Packard	8481H	SPB	07/10/2000	24 mo

## Test Description

**Requirement:** Per 47 CFR 90.217(b), any emission appearing on a frequency 25 kHz or more removed from the assigned frequency must be attenuated at least 30 dB below the un-modulated carrier. Per 47 CFR 2.1051, the spurious emissions were measured at the RF output terminals with analyzer plots made for each modulation type.

**Configuration:** A spectrum analyzer was used to scan from 0 to 2 GHz. A 10kHz resolution bandwidth was used below 1GHz and 1MHz above 1GHz. No video filtering was employed. A 20dB external attenuator was used on the RF input of the spectrum analyzer.

## Test Setup



Completed by:

*U. K. J.*

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## EMISSIONS DATA SHEET

Rev BETA  
01/30/01

EUT:	Test Box Model 1669-3	Work Order:	ROTH0001
Serial Number:	111	Date:	01/07/02
Customer:	Rothenbuhler Engineering	Temperature:	73 F
Attendees:	Herb Hainey	Tested by:	Greg Kiemel
Customer Ref. No.:	N/A	Power:	N/A
			Job Site: SU03

## TEST SPECIFICATIONS

Specification: 47 CFR 2.1051 & 90.217(b)      Year: Most Current      Method: TIA/EIA-603      Year: 1993

## COMMENTS

## FUT OPERATING MODES

1200 baud, random data. Max and only data rate

#### DEVIATIONS FROM TEST STANDARD

DEVI  
N

### None

## **REQUIREMENTS**

## Maximum

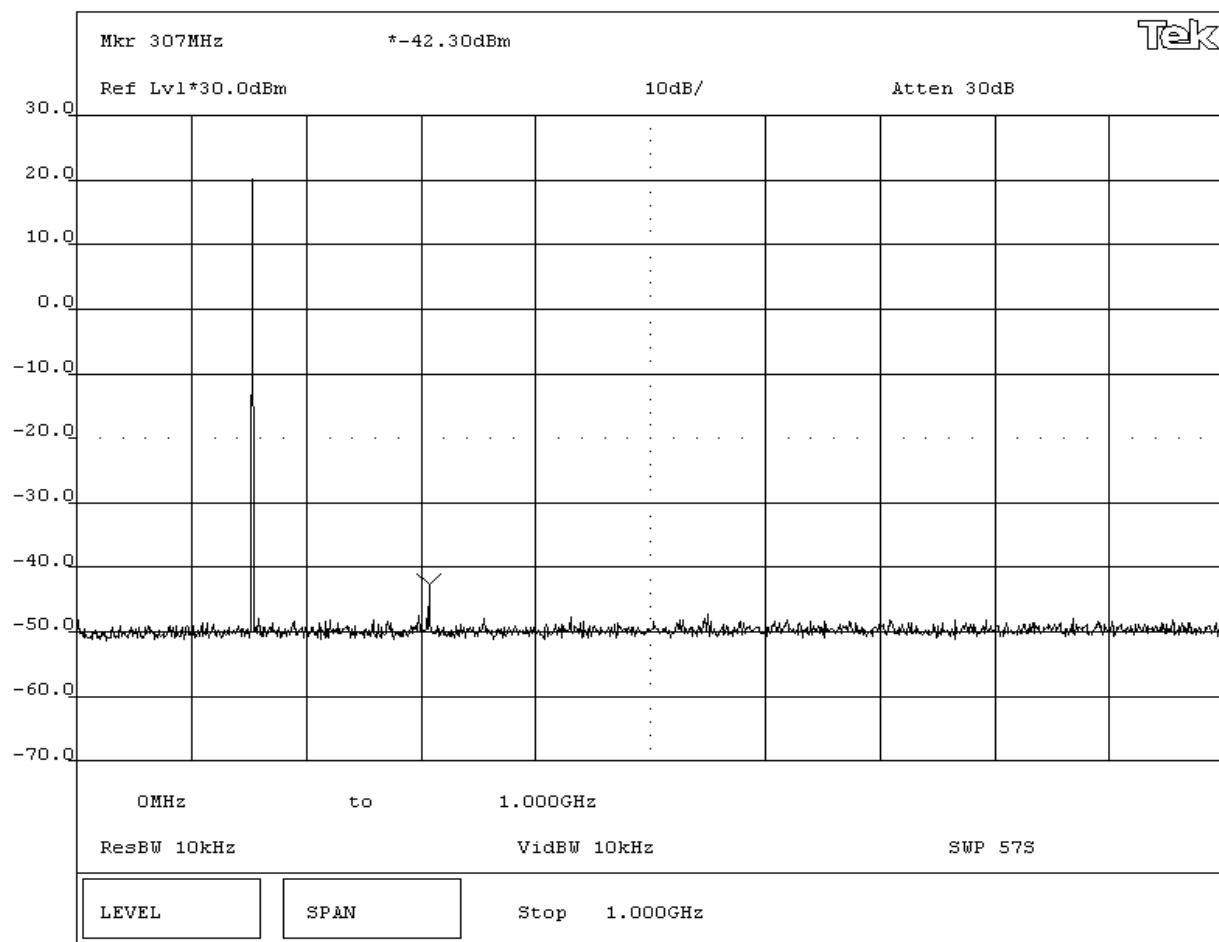
## RESULTS

Pass

Tested By: 

## DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions - Low Channel 0MHz-1GHz

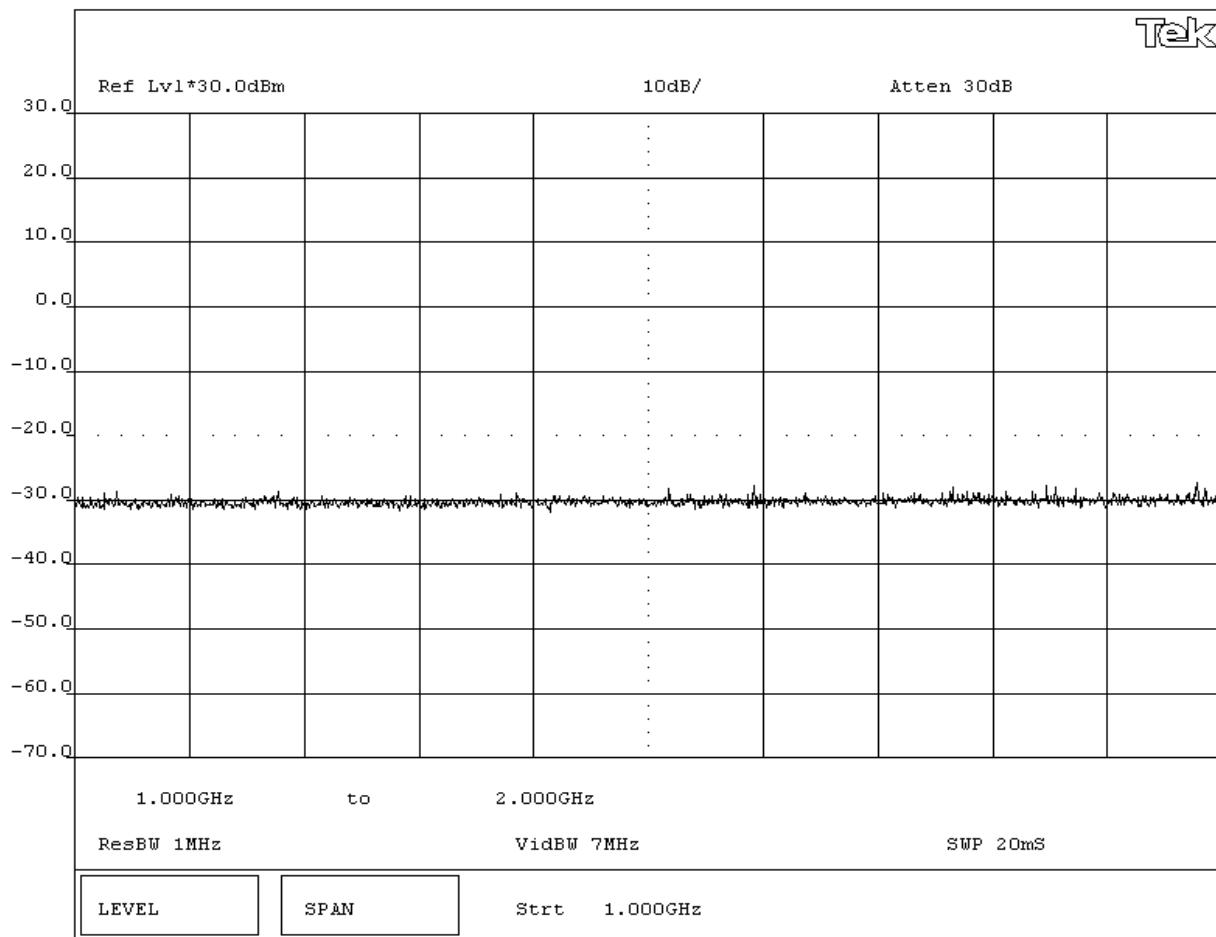


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# EMISSIONS DATA SHEET

Rev BETA  
01/30/01

EUT:	Test Box Model 1669-3		Work Order:	ROTH0001
Serial Number:	111		Date:	01/07/02
Customer:	Rothenbuhler Engineering		Temperature:	73 F
Attendees:	Herb Hainey	Tested by:	Greg Kiemel	
Customer Ref. No.:	N/A	Power:	N/A	
TEST SPECIFICATIONS				
Specification:	47 CFR 2.1051 & 90.217(b)	Year:	Most Current	
SAMPLE CALCULATIONS				
COMMENTS				
EUT OPERATING MODES 1200 baud, random data. Max and only data rate.				
DEVIATIONS FROM TEST STANDARD None				
REQUIREMENTS Maximum level of any spurious emission outside of the authorized band is 30 dB down from the fundamental				
RESULTS Pass				
SIGNATURE 				
Tested By:	<hr/>			
DESCRIPTION OF TEST Antenna Conducted Spurious Emissions - Low Channel 1GHz-2GHz				



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## EMISSIONS DATA SHEET

Rev BETA  
01/30/01

EUT:	Test Box Model 1669-3	Work Order:	ROTH0001
Serial Number:	111	Date:	01/07/02
Customer:	Rothenbuhler Engineering	Temperature:	73 F
Attendees:	Herb Hainey	Tested by:	Greg Kiemel
Customer Ref. No.:	N/A	Power:	N/A

## TEST SPECIFICATIONS

Specification: 47 CFR 2.1051 &amp; 90.217(b) Year: Most Current Method: TIA/EIA-603 Year: 1993

## SAMPLE CALCULATIONS

## COMMENTS

## EUT OPERATING MODES

1200 baud, random data. Max and only data rate.

## DEVIATIONS FROM TEST STANDARD

None

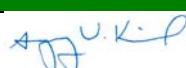
## REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 30 dB down from the fundamental

## RESULTS

Pass

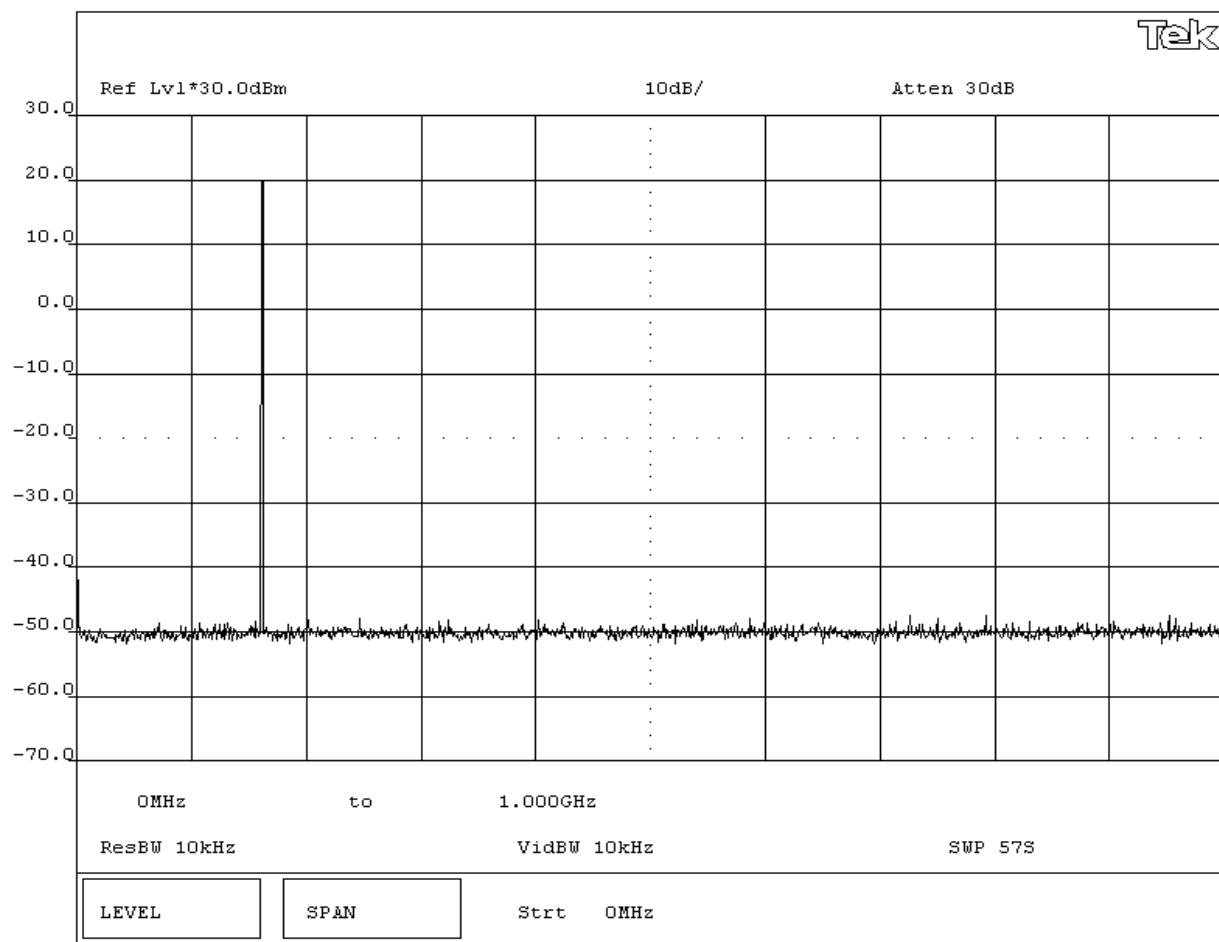
## SIGNATURE



Tested By: \_\_\_\_\_

## DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions - Mid Channel 0MHz-1GHz

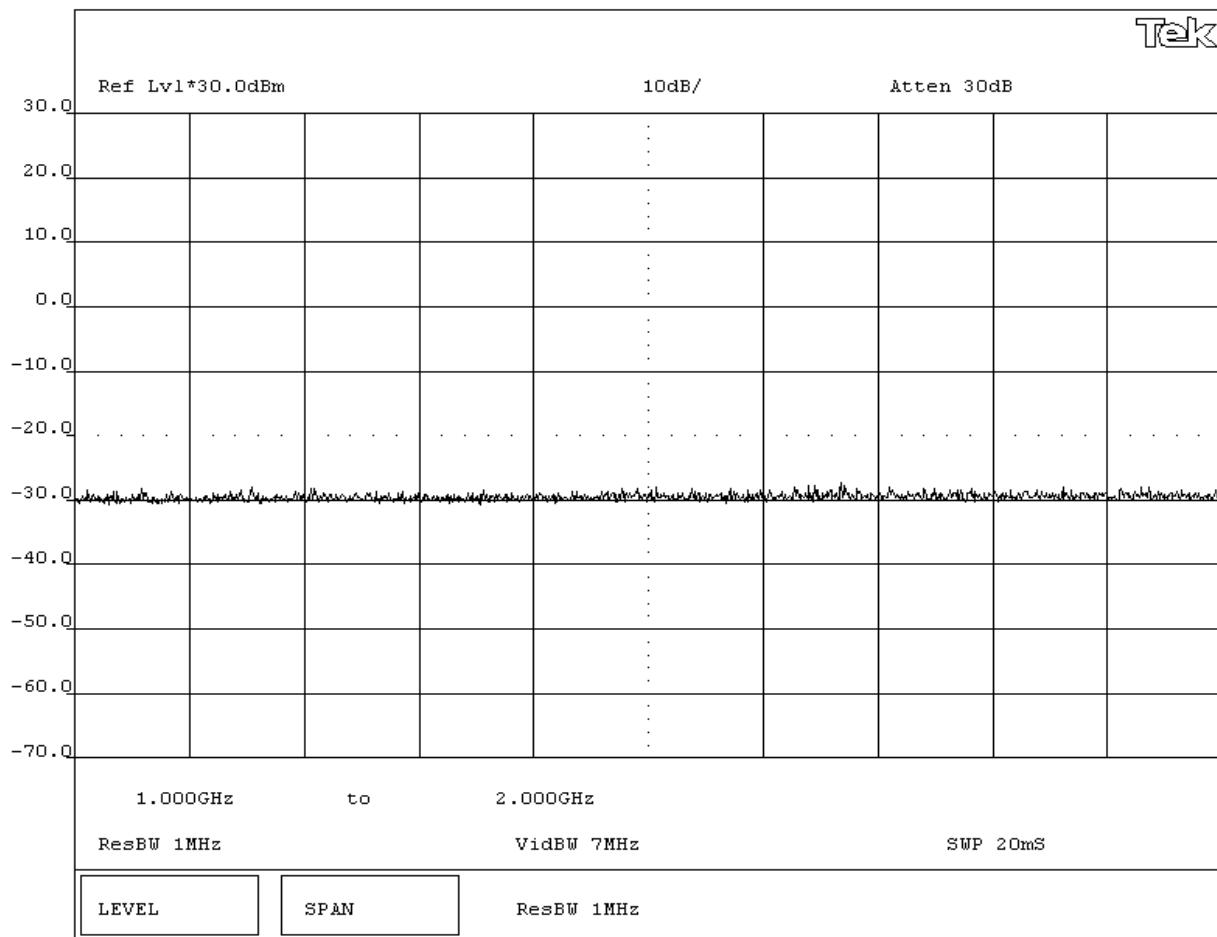


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## EMISSIONS DATA SHEET

Rev BETA  
01/30/01

EUT:	Test Box Model 1669-3		Work Order:	ROTH0001
Serial Number:	111		Date:	01/07/02
Customer:	Rothenbuhler Engineering		Temperature:	73 F
Attendees:	Herb Hainey	Tested by:	Greg Kiemel	
Customer Ref. No.:	N/A	Power:	N/A	
TEST SPECIFICATIONS				
Specification:	47 CFR 2.1051 & 90.217(b)	Year:	Most Current	
SAMPLE CALCULATIONS				
COMMENTS				
EUT OPERATING MODES 1200 baud, random data. Max and only data rate.				
DEVIATIONS FROM TEST STANDARD None				
REQUIREMENTS Maximum level of any spurious emission outside of the authorized band is 30 dB down from the fundamental				
RESULTS Pass				
SIGNATURE 				
Tested By:	<hr/>			
DESCRIPTION OF TEST Antenna Conducted Spurious Emissions - Mid Channel 1GHz-2GHz				



**NORTHWEST  
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01/30/01

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Customer:	Rothenbuhler Engineering	Temperature:	73 F
Attendees:	Herb Hainey	Tested by:	Greg Kiemel
Customer Ref. No.:	N/A	Power:	N/A
<b>TEST SPECIFICATIONS</b>			
Specification:	47 CFR 2.1051 & 90.217(b)	Year:	Most Current
<b>SAMPLE CALCULATIONS</b>			

**COMMENTS****EUT OPERATING MODES**

1200 baud, random data. Max and only data rate.

**DEVIATIONS FROM TEST STANDARD**

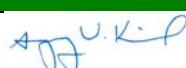
None

**REQUIREMENTS**

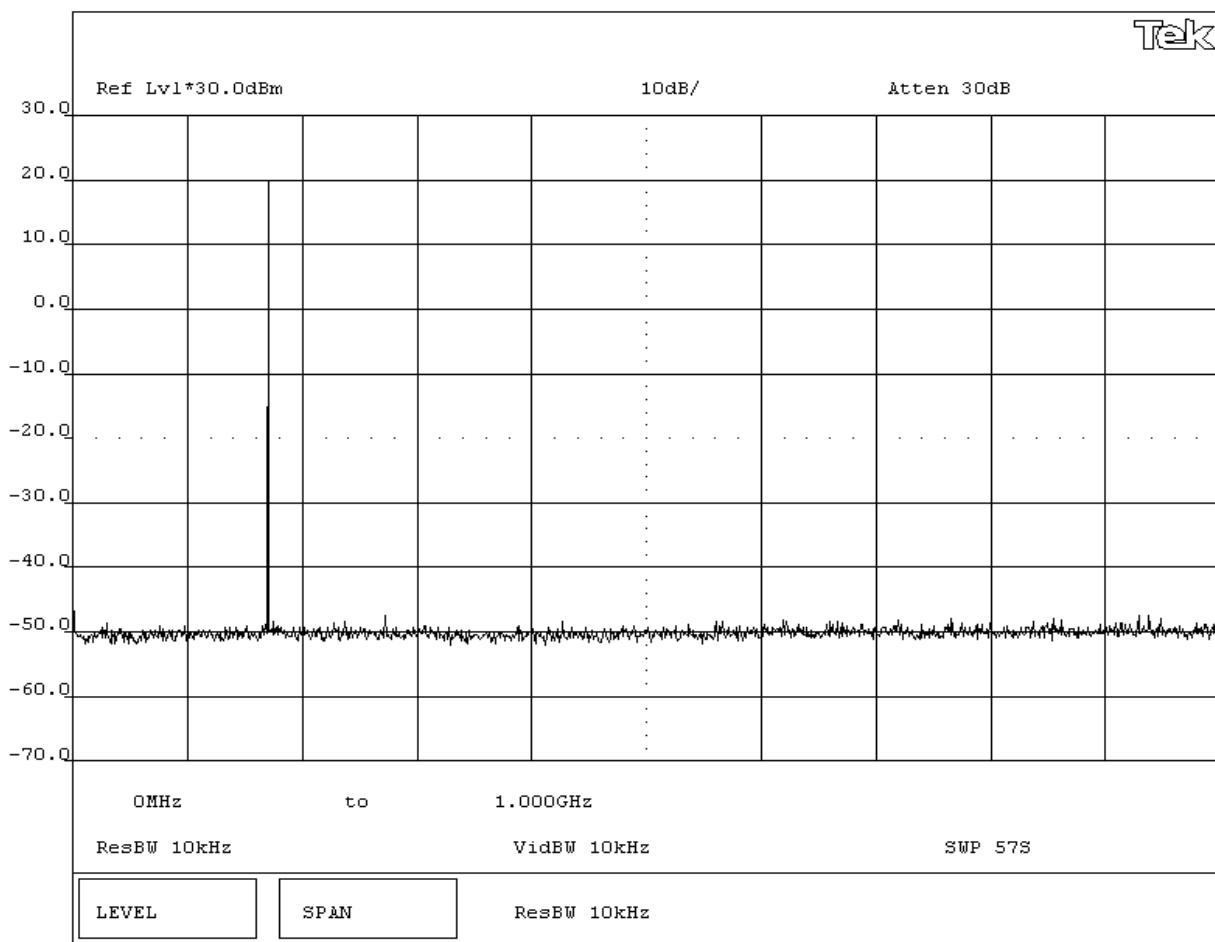
Maximum level of any spurious emission outside of the authorized band is 30 dB down from the fundamental

**RESULTS**

Pass

**SIGNATURE**

Tested By: \_\_\_\_\_

**DESCRIPTION OF TEST****Antenna Conducted Spurious Emissions - High Channel 0MHz-1GHz**

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## EMISSIONS DATA SHEET

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01/30/01

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Specification:	47 CFR 2.1051 & 90.217(b)	Year:	Most Current	
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DEVIATIONS FROM TEST STANDARD None				
REQUIREMENTS Maximum level of any spurious emission outside of the authorized band is 30 dB down from the fundamental				
RESULTS Pass				
SIGNATURE 				
Tested By:	<hr/>			
DESCRIPTION OF TEST Antenna Conducted Spurious Emissions - High Channel 1GHz-2GHz				

