EXHIBIT 1. INTRODUCTION

1.1. SCOPE

Reference:	FCC Parts 2 and 90 (Subpart 90): 1999
Title	Telecommunication - Code of Federal Regulations, CFR 47, Parts 2 & 90
Purpose of Test:	To gain FCC Certification Authorization for Radio operating in the frequency bands 403-405.9875 MHz and 406.125-512 MHz (25 kHz Channel Spacing).
Test Procedures	Both conducted and radiated emissions measurements were conducted in accordance with American National Standards Institute ANSI C63.4 - American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

1.2. RELATED SUBMITAL(S)/GRANT(S)

None

1.3. NORMATIVE REFERENCES

Note: When the international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	YEAR	Title
FCC CFR Parts 0-19, 80-End	1998	Code of Federal Regulations – Telecommunication
ANSI C63.4	1992	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
CISPR 22 & EN 55022	1997 1998	Limits and Methods of Measurements of Radio Disturbance Characteristics of Information Technology Equipment
CISPR 16-1		Specification for Radio Disturbance and Immunity measuring apparatus and methods

EXHIBIT 2. PERFORMANCE ASSESSMENT

2.1. CLIENT INFORMATION

APPLICANT:	
Name:	TEKLOGIX INC.
Address:	2100 Meadowvale Blvd. Mississauga, Ontario Canada, L5N 7J9
Contact Person:	Mr. Sada Dharwarkar Phone #: 905-813-9900 Fax #: 905-812-6301 Email Address: N/A

MANUFACTURER:	
Name:	DATARADIO COR. LTD.
Address:	299 Johnson Ave.,Box 1249 Waseca, MN 56093-0514 USA
Contact Person:	Mr. Mark A. Christensen Director of Engineering Phone #: 507-835-6249

2.2. EQUIPMENT UNDER TEST (EUT) INFORMATION

The following information (with the exception of the Date of Receipt) has been supplied by the applicant.

Brand Name	TEKLOGIX INC.
Product Name	OEM NARROW BAND UHF DATA TRANSCEIVER MODULE
Model Name or Number	TRX7370
Serial Number	Pre-production sample
Type of Equipment	Radio Communication Equipment
External Power Supply	None
Transmitting/Receiving Antenna Type	Non-integral
Primary User Functions of EUT:	To provide through-air data communication link

2.3. EUT'S TECHNICAL SPECIFICATIONS

TRANSMITTER	
Equipment Type:	Portable, Mobile and Base station (fixed use)
Intended Operating Environment:	Commercial, light industry & heavy industry
Power Supply Requirement:	7.2 Vdc Nominal
RF Output Power Rating:	2.0 Watts max.
Operating Frequency Range:	403-405.9875 MHz and 406.125-512 MHz
RF Output Impedance:	50 Ohms
Channel Spacing:	25 kHz
Occupied Bandwidth (99%):	14 kHz
Emission Designation*:	19K6F1D
Oscillator Frequencies:	17.5 MHz, L.O.: 52.95 MHz (High Side)
Antenna Connector Type:	SMA at the OEM Data Radio Module
Antenna Description:	Not applicable.

* For an average case of commercial telephony, the Necessary Bandwidth is calculated as follows:

1. For FM Digital Modulation:

(e) Channel Spacing = 25 KHz, D = 5 KHz max., K = 1, Level of FM Modulation = 4
M = DataRate in kb/s/Level of FM = 19.2/4 kb/s
$B_n = 2M + 2DK = 2(19.2/4) + 2(4.5)(1) =$ **19.6KHz**
emission designation: 19K6F1D

2.4. LIST OF EUT'S PORTS

Port Number	EUT's Port Description	Number of Identical Ports	Connector Type	Cable Type (Shielded/Non-shielded)
1	RF IN/OUT	1	SMA	Shielded

NOTES:

1. ***Ports of the EUT which in normal operation*** *were connected to ancillary equipment through interconnecting cables via a representative interconnecting cable to simulate the input/output characteristics. RF input/output was correctly terminated to the 50 Ohm RF Load.*
2. ***The TRX7370 Radio Module was tested by itself (interconnect with a test jig) and with 4 Teklogix Systems 7035, 9150, 8255 & 8260 respectively for transmitter radiated interference, other tests were conducted on one of a representative sample and the results would be identical for all Teklogix Systems with TRX7370 Radio.***
3. ***Ports which are not connected to cables during normal intended operation*** *(for factory/technical services uses only)*

2.5. SPECIAL CHANGES ON THE EUT'S HARDWARE/SOFTWARE FOR TESTING PURPOSES

None

2.6. ANCILLARY EQUIPMENT

The EUT was tested while connected to the following representative configuration of ancillary equipment necessary to exercise the ports during tests:

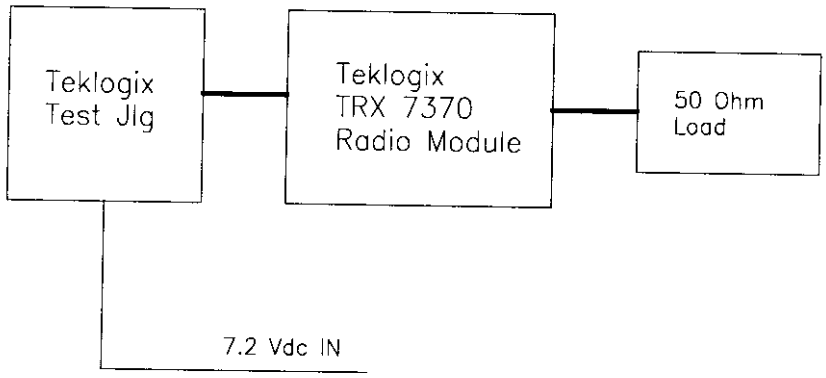
2.6.1. Test Configuration #1: Teklogix TRX7370 by itself interconnecting with a test jig using a non-shielded ribbon cable.

Ancillary Equipment # 1	
Description:	Teklogix test Jig
Brand name:	N/A
Model Name or Number:	N/A
Serial Number:	N/A
Cable Length & Type:	½ foot ribbon cable between the test jig and the radio module 1 foot coaxial cable from the RF SMA connector to 50 Ohm Load

Ancillary Equipment # 2	
Description:	50 Ohm RF Load
Brand name:	Coaxial Dynamics
Model Name or Number:	4050
Serial Number:	N/A
Cable Length & Type:	6 feet, coaxial
Connected to EUT's Port:	RF Port

Comments: This test configuration is only for FCC Compliance of an OEM Radio Module, it is not a configuration for real application.

Test Setup



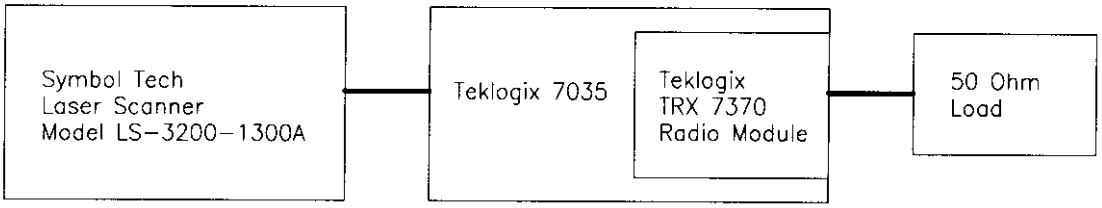
2.6.2. Test Configuration #2: Teklogix TRX7370 installed inside Teklogix Model 7035

Ancillary Equipment # 1	
Description:	Handheld Terminal
Brand name:	Teklogix
Model Name or Number:	7035
Serial Number:	N/A
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Scanner Port (28-pin PCR) of the Teklogix 7035
Power Supply:	7.2 V rechargeable battery

Ancillary Equipment # 2	
Description:	Laser Scanner
Brand name:	Symbol Tech
Model Name or Number:	LS-3200-1300A
Serial Number:	M374765
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Peripheral Port (28-pin PCR) of the Teklogix 7035

Ancillary Equipment # 3	
Description:	50 Ohm RF Load
Brand name:	Coaxial Dynamics
Model Name or Number:	4050
Serial Number:	N/A
Cable Length & Type:	6 feet, coaxial
Connected to EUT's Port:	RF Port

Test Setup



2.6.3. Test Configuration #3: Teklogix TRX7370 installed inside Teklogix Model 8255

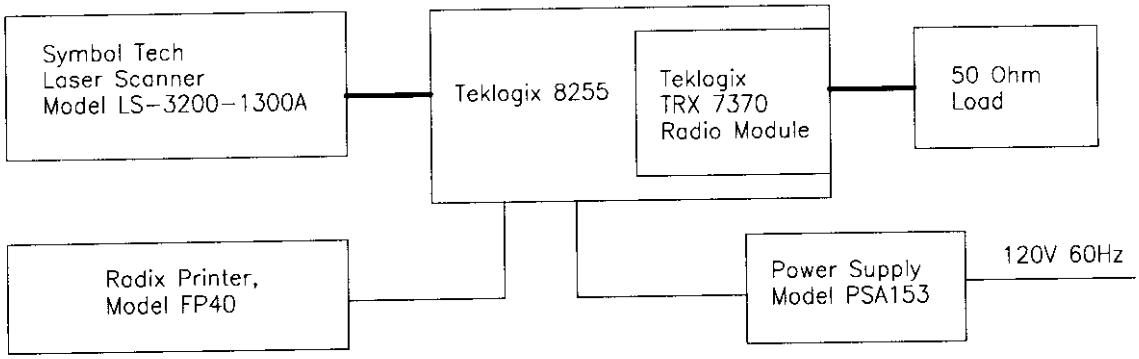
Ancillary Equipment # 1	
Description:	Mobile/Fixed Station
Brand name:	Teklogix
Model Name or Number:	8255
Serial Number:	N/A
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Peripheral Port (28-pin PCR) of the Teklogix 8255
Power Supply:	120V 60Hz using external power supply Teklogix Model PSA153

Ancillary Equipment # 2	
Description:	Laser Scanner
Brand name:	Symbol Tech
Model Name or Number:	LS-3200-1300A
Serial Number:	M374765
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Peripheral Port (28-pin PCR) of the Teklogix 8255

Ancillary Equipment # 3	
Description:	Printer
Brand name:	Radix
Model Name or Number:	FP40
Serial Number:	N/A
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Expansion Port (36-pin PCR) of the Teklogix 8255

Ancillary Equipment # 4	
Description:	50 Ohm RF Load
Brand name:	Coaxial Dynamics
Model Name or Number:	4050
Serial Number:	N/A
Cable Length & Type:	6 feet, coaxial
Connected to EUT's Port:	RF Port

Test Setup



2.6.4. Test Configuration #4: Teklogix TRX7370 installed inside Teklogix Model 8260

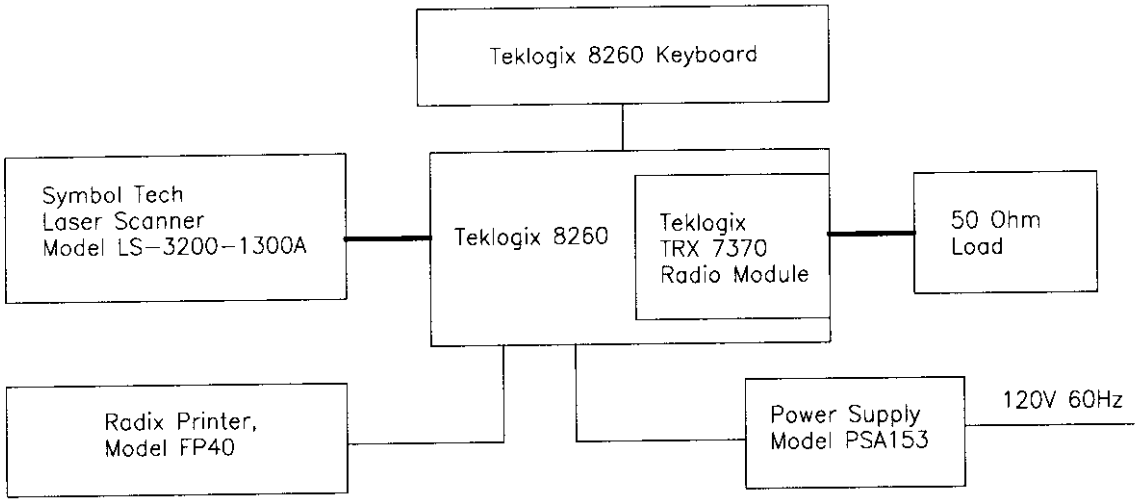
Ancillary Equipment # 1	
Description:	Mobile/Fixed Station
Brand name:	Teklogix
Model Name or Number:	8260
Serial Number:	N/A
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Peripheral Port (28-pin PCR) of the Teklogix 8260
Power Supply:	120V 60Hz using external power supply Teklogix Model PSA153

Ancillary Equipment # 2	
Description:	Laser Scanner
Brand name:	Symbol Tech
Model Name or Number:	LS-3200-1300A
Serial Number:	M374765
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Peripheral Port (28-pin PCR) of the Teklogix 8260

Ancillary Equipment # 3	
Description:	Printer
Brand name:	Radix
Model Name or Number:	FP40
Serial Number:	N/A
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	Expansion Port (36-pin PCR) of the Teklogix 8260

Ancillary Equipment # 4	
Description:	50 Ohm RF Load
Brand name:	Coaxial Dynamics
Model Name or Number:	4050
Serial Number:	N/A
Cable Length & Type:	6 feet, coaxial
Connected to EUT's Port:	RF Port

Test Setup


Teklogix 8260 Keyboard
Symbol Tech
Laser Scanner
Model LS-3200-1300A
Teklogix 8260
Teklogix
TRX 7370
Radio Module
50 Ohm
Load
Radix Printer,
Model FP40
Power Supply
Model PSA153
120V 60Hz

2.6.5. Test Configuration #5: Teklogix TRX7370 installed inside Teklogix Model 9150

Ancillary Equipment # 1	
Description:	Fixed Station
Brand name:	Teklogix
Model Name or Number:	9150
Serial Number:	N/A
Cable Length & Type:	1. 10Base-T Port (RJ45), 10 feet long, shielded 2. 10Base-5 Port (DB15), 10 feet long, shielded 3. 10Base-2 Port (BNC), 10 feelt long, shielded 4. Console Port (RS232), 6 feet long, shielded 5. AC Power cable, non-shielded
Power Supply:	120V 60Hz

Ancillary Equipment # 2	
Description:	ThinkPad Laptop Computer
Brand name:	IBM
Model Name or Number:	IBM ThinkPad
Serial Number:	78-HXHA7
Cable Length & Type:	6 feet long, shielded
Connected to EUT's Port:	RS232 Port of the Teklogix 9150

Ancillary Equipment # 3	
Description:	50 Ohm RF Load
Brand name:	Coaxial Dynamics
Model Name or Number:	4050
Serial Number:	N/A
Cable Length & Type:	6 feet, coaxial
Connected to EUT's Port:	RF Port

Test Setup

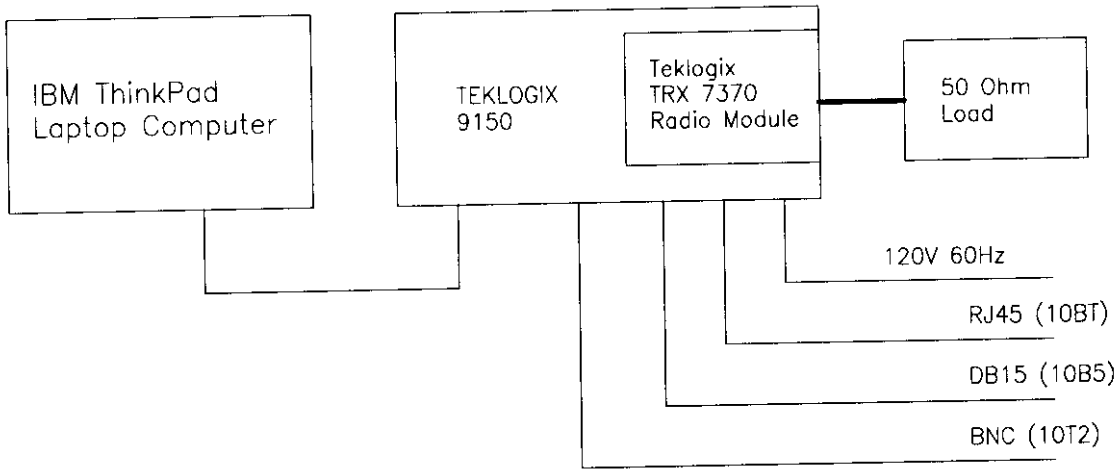


EXHIBIT 3. EUT OPERATING CONDITIONS AND CONFIGURATIONS DURING TESTS

3.1. CLIMATE TEST CONDITIONS

The climate conditions of the test environment are as follows:

Temperature:	21°C
Humidity:	51%
Pressure:	102 kPa
Power input source:	7.2 Vdc Nominal applied to the radio

3.2. OPERATIONAL TEST CONDITIONS & ARRANGEMENT FOR TEST SIGNALS

Operating Modes:	Transmit & receive RF signal with the RF signal FM (4 level) modulated with internal random data at 19200 b/s.
Special Test Software:	Teklogix Window utility software is used to operate the radio and to change the radio parameters.
Special Hardware Used:	None
Transmitter Test Antenna:	The EUT is tested with the transmitter antenna port terminated to a 50 Ohm RF Load.

Transmitter Test Signals:	
Frequencies: 403-405.9875 MHz and 406.125-512 MHz	Near lowest, near middle & near highest frequencies each frequency bands that the transmitter covers: ▪ 403 MHz ▪ 450 MHz ▪ 512 MHz
Transmitter Wanted Output Test Signals: ▪ RF Power Output (measured maximum output power): ▪ Normal Test Modulation ▪ Modulating signal source:	 ▪ 2.1 Watts ▪ FM (4 Level) with a random data source at 19.2 kb/s ▪ Internal

EXHIBIT 4. SUMMARY OF TEST RESULTS

4.1. LOCATION OF TESTS

All of the measurements described in this report were performed at Ultratech Group of Labs located in the city of Oakville, Province of Ontario, Canada.

- AC Powerline Conducted Emissions were performed in UltraTech's shielded room, 16'(L) by 12'(W) by 12'(H).
- Radiated Emissions were performed at the Ultratech's 3 Meter Open Field Test Site (OFTS) situated in the Town of Oakville, province of Ontario.

  The above sites have been calibrated in accordance with ANSI C63.4, and found to be in compliance with the requirements of Sec. 2.948 of the FCC Rules. The descriptions and site measurement data of the Oakville Open Field Test Site has been filed with FCC office (FCC File No.: 31040/SIT 1300B3) and Industry Canada office (Industry Canada File No.: IC2049). Last Date of Site Calibration: Sep. 20, 1998.

4.2. APPLICABILITY & SUMMARY OF EMC EMISSION TEST RESULTS

FCC PARAGRAPH.	TEST REQUIREMENTS	APPLICABILITY (YES/NO)
90.205 & 2.985	RF Power Output	Yes
90.213 & 2.995	Frequency Stability	Yes
90.242(b)(8) & 2.987(a)	Audio Frequency Response	Not applicable for data radio
90.210 & 2.987(b)	Modulation Limiting	Not applicable for data radio with a fixed frequency deviation setting.
90.209 90.210 & 2.989	Emission Limitation & Emission Mask	Yes
90.210, 2.997 & 2.991	Emission Limits - Spurious Emissions at Antenna Terminal	Yes
90.210, 2.997 & 2.993	Emission Limits - Field Strength of Spurious Emissions	Yes
90.214	Transient Frequency Behavior	Yes

OEM NARROW BAND UHF DATA TRANSCEIVER MODULE, Model No.: TRX7370, by **TEKLOGIX INC.** has also been tested and found to comply with **FCC Part 15, Subpart B - Radio Receivers and Class A Digital Devices**. Tests were performed with all five different configurations as described in section 2.8 of this test report. The engineering test report has been documented and kept in file and it is available anytime upon FCC request.

4.3. MODIFICATIONS INCORPORATED IN THE EUT FOR COMPLIANCE PURPOSES

None

EXHIBIT 5. MEASUREMENTS, EXAMINATIONS & TEST DATA FOR EMC EMISSIONS

5.1. TEST PROCEDURES

This section contains test results only. Details of test methods and procedures can be found in Exhibit 7 of this report

5.2. MEASUREMENT UNCERTAINTIES

The measurement uncertainties stated were calculated in accordance with requirements of UKAS Document NIS 81 with a confidence level of 95%. Please refer to Exhibit 6 for Measurement Uncertainties.

5.3. MEASUREMENT EQUIPMENT USED:

The measurement equipment used complied with the requirements of the Standards referenced in the Methods & Procedures ANSI C63.4:1992 and CISPR 16-1.

5.4. ESSENTIAL/PRIMARY FUNCTIONS AS DECLARED BY THE MANUACTURER:

The essential function of the EUT is to correctly communicate data to and from radios over RF link.

5.5. RF POWER OUTPUT @ FCC 2.985 & 90.205

5.5.1. Limits @ FCC 90.205

Please refer to FCC CFR 47, Part 90, Subpart I, Para. 90.205 for specification details.

5.5.2. Method of Measurements

FCC @ 2.985 – The rf output power of the transmitter was measured at the RF output terminals when the transmitter is adjusted by the manufacturer in accordance with the tune-up procedure to give the values of the current and voltage on the circuit elements specified in 2.983(d)(5). The electrical characteristics of the radio frequency load attached to the output terminals was 50 Ohms.

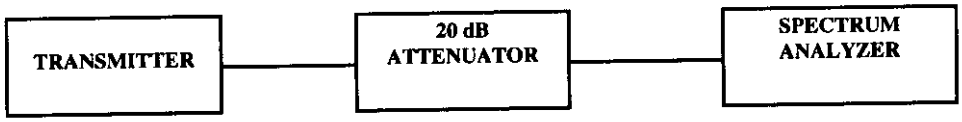
The detailed test method is as follows:

- *The transmitter terminal was coupled to the Spectrum Analyzer through a 20 dB attenuator*
- *Power of the transmitter channel near the lowest, middle and highest of each frequency block/band were measured using the power meter, and the reading was corrected by added the calibrated attenuator's attenuation value and cable loss.*
- *The RF Output was turned on with standard modulation applied.*

5.5.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Hewlett Packard	HP 8593EM	3412A00103	9 kHz – 26.5 GHz
Attenuator(s)	Bird	..	...	DC – 22 GHz

5.5.4. Test Arrangement



5.5.5. Test data

TRANSMITTER CHANNEL OUTPUT	FUNDAMENTAL FREQUENCY (MHz)	MEASURED PEAK POWER (Watts)	PEAK POWER RATING (Watts)
Lowest	403	2.1	2.0
Middle	450	2.1	2.0
Highest	512	2.0	2.0

***EIRP Measurements**: -Appropriate antenna type, and adjustment of power output for effective radiated power (ERP) to meet FCC limits will be performed by the manufacturer at location of installation.*

5.5.6. Plots

None

5.5.7. Photographs of Test Setup

None

5.6. FREQUENCY STABILITY @ FCC 2.995 & 90.213

5.6.1. Limits @ FCC 90.213

Please refer to FCC CFR 47, Part 90, Subpart I, Para. 90.213 for specification details.

FREQUENCY RANGE (MHz)	FIXED & BASE STATIONS (ppm)			MOBILE STATIONS (ppm)					
				> 2 W			≤ 2 W		
	6.25 kHz	12.5 kHz	25 kHz	6.25 kHz	12.5 kHz	25 kHz	6.25 kHz	12.5 kHz	25 kHz
403-512 MHz	0.5	1.5	2.5	1.0	2.5	5.0	1.0	2.5	5.0

5.6.2. Method of Measurements

Refer to FCC @ 2.995

(a) The frequency stability shall be measured with variation of ambient temperature as follows: From -30 to +50 centigrade except that specified in subparagraph (2) & (3) of this paragraph.

(b) Frequency measurements shall be made at extremes of the specified temperature range and at intervals of not more than 10 centigrade through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement. The short term transient effects on the frequency of the transmitter due to keying (except for broadcast transmitters) and any heating element cycling normally occurring at each ambient temperature level also shall be shown. Only the portion or portions of the transmitter containing the frequency determining and stability circuitry need be subjected to the temperature variation test.

(d) The frequency stability supply shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.

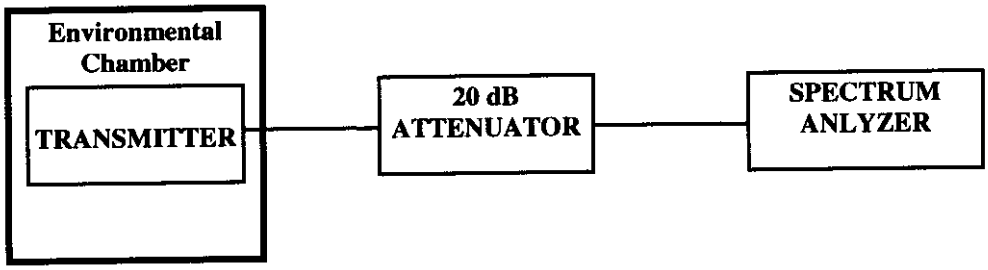
(3) The supply voltage shall be measured at the input to the cable normally provide with the equipment, or at the power supply terminals if cables are not normally provided. Effects on frequency of transmitter keying (except for broadcast transmitters) and any heating element cycling at the nominal supply voltage and at each extreme also shall be shown.

(e) When deemed necessary, the Commission may require tests of frequency stability under conditions in addition to those specifically set out in paragraphs (a), (b), (c) and (d) of this section. (For example, measurements showing the effect of proximity to large metal objects, or of various types of antennas, may be required for portable equipment).

5.6.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Hewlett Packard	HP 8593EM	3412A00103	9 kHz – 26.5 GHz
Attenuator(s)	Bird	..	...	DC – 22 GHz
Temperature & Humidity Chamber	Tenney	T5	9723B	-40° to +60 ° C range

5.6.4. Test Arrangement



5.6.5. Test data

Product Name Model No.	**OEM NARROW BAND UHF DATA TRANSCEIVER MODULE TRX7370**
Center Frequency	403 MHz
Full Power Level	2.1 Watts
Frequency Tolerance Limit	+2.5 ppm or 1007.5 Hz at 403 MHz
Max. Frequency Tolerance Measured	-449 Hz or -1.1 ppm
Input Voltage Rating	7.2 Vdc nominal

		CENTER FREQUENCY & RF POWER OUTPUT VARIATION					
AMBIENT TEMP. (°C)	KEYED-ON TIME (Minutes)	Supply Voltage (Nominal) 7.2 Volts dc		Supply Voltage (85% of Nominal) 6.12 Volts dc		Supply Voltage (115% of Nominal) 8.28 Volts dc	
		Hz	dB	Hz	dB	Hz	dB
-30	0	-449	N/A	N/A	N/A	N/A	N/A
	1	-449	N/A	N/A	N/A	N/A	N/A
	2	-440	N/A	N/A	N/A	N/A	N/A
	3	-433	N/A	N/A	N/A	N/A	N/A
	4	-430	N/A	N/A	N/A	N/A	N/A
	5	-424	N/A	N/A	N/A	N/A	N/A
	6	-436	N/A	N/A	N/A	N/A	N/A
	7	-423	N/A	N/A	N/A	N/A	N/A
	8	-417	N/A	N/A	N/A	N/A	N/A
	9	-433	N/A	N/A	N/A	N/A	N/A
	10	-423	N/A	N/A	N/A	N/A	N/A
-20	0	-300	N/A	N/A	N/A	N/A	N/A
	1	-314	N/A	N/A	N/A	N/A	N/A
	2	-321	N/A	N/A	N/A	N/A	N/A
	3	-335	N/A	N/A	N/A	N/A	N/A
	4	-350	N/A	N/A	N/A	N/A	N/A
	5	-364	N/A	N/A	N/A	N/A	N/A
	6	-371	N/A	N/A	N/A	N/A	N/A
	7	-385	N/A	N/A	N/A	N/A	N/A
	8	-400	N/A	N/A	N/A	N/A	N/A
	9	-395	N/A	N/A	N/A	N/A	N/A
	10	-392	N/A	N/A	N/A	N/A	N/A
-10	0	-128	N/A	N/A	N/A	N/A	N/A
	1	-114	N/A	N/A	N/A	N/A	N/A
	2	-121	N/A	N/A	N/A	N/A	N/A
	3	-135	N/A	N/A	N/A	N/A	N/A
	4	-142	N/A	N/A	N/A	N/A	N/A
	5	-157	N/A	N/A	N/A	N/A	N/A
	6	-157	N/A	N/A	N/A	N/A	N/A
	7	-164	N/A	N/A	N/A	N/A	N/A
	8	-164	N/A	N/A	N/A	N/A	N/A
	9	-170	N/A	N/A	N/A	N/A	N/A
	10	-178	N/A	N/A	N/A	N/A	N/A
0	0	-57	N/A	N/A	N/A	N/A	N/A
	1	-64	N/A	N/A	N/A	N/A	N/A
	2	-71	N/A	N/A	N/A	N/A	N/A
	3	-57	N/A	N/A	N/A	N/A	N/A
	4	-64	N/A	N/A	N/A	N/A	N/A
	5	-78	N/A	N/A	N/A	N/A	N/A
	6	-71	N/A	N/A	N/A	N/A	N/A
	7	-78	N/A	N/A	N/A	N/A	N/A
	8	-71	N/A	N/A	N/A	N/A	N/A
	9	-71	N/A	N/A	N/A	N/A	N/A
	10	-71	N/A	N/A	N/A	N/A	N/A

ULTRATECH GROUP OF LABS
3000 Bristol Circle, Oakville, Ontario, Canada L6H 6G4
Tel. #: 905-829-1570, Fax. #: 905-829-8050, Email: vhk.ultratech@sympatico.ca, Website: http://www.ultratech-labs.com

AMBIENT TEMP. (°C)	KEYED-ON TIME (Minutes)	Supply Voltage (Nominal) 7.2 Volts dc		Supply Voltage (85% of Nominal) 6.12 Volts dc		Supply Voltage (115% of Nominal) 8.28 Volts dc	
		Hz	dB	Hz	dB	Hz	dB
+10	0	+15	N/A	N/A	N/A	N/A	N/A
	1	+8	N/A	N/A	N/A	N/A	N/A
	2	+8	N/A	N/A	N/A	N/A	N/A
	3	0	N/A	N/A	N/A	N/A	N/A
	4	+22	N/A	N/A	N/A	N/A	N/A
	5	0	N/A	N/A	N/A	N/A	N/A
	6	+8	N/A	N/A	N/A	N/A	N/A
	7	+8	N/A	N/A	N/A	N/A	N/A
	8	0	N/A	N/A	N/A	N/A	N/A
	9	0	N/A	N/A	N/A	N/A	N/A
	10	+8	N/A	N/A	N/A	N/A	N/A
+20	0	+8	0	-178	-1.2	-100	+0.5
	1	0	0	-121	-1.4	-71	+0.8
	2	+8	0	-121	-1.3	-64	+0.4
	3	+22	0	-107	-1.1	-57	+0.4
	4	+8	0	-121	-1.1	-64	+0.1
	5	+15	0	-102	-0.9	-57	+0.4
	6	+16	0	-107	-1.2	-64	+0.4
	7	+22	0	-92	-1.2	-50	+0.2
	8	+29	0	-100	-1.1	-50	+0.3
	9	+30	0	-95	-1.0	-50	+0.3
	10	+36	0	-92	-1.0	-42	+0.4
+30	0	-42	N/A	N/A	N/A	N/A	N/A
	1	-50	N/A	N/A	N/A	N/A	N/A
	2	-42	N/A	N/A	N/A	N/A	N/A
	3	-50	N/A	N/A	N/A	N/A	N/A
	4	-35	N/A	N/A	N/A	N/A	N/A
	5	-42	N/A	N/A	N/A	N/A	N/A
	6	-35	N/A	N/A	N/A	N/A	N/A
	7	-28	N/A	N/A	N/A	N/A	N/A
	8	-21	N/A	N/A	N/A	N/A	N/A
	9	-21	N/A	N/A	N/A	N/A	N/A
	10	-14	N/A	N/A	N/A	N/A	N/A
+40	0	+93	N/A	N/A	N/A	N/A	N/A
	1	+86	N/A	N/A	N/A	N/A	N/A
	2	+79	N/A	N/A	N/A	N/A	N/A
	3	+100	N/A	N/A	N/A	N/A	N/A
	4	+93	N/A	N/A	N/A	N/A	N/A
	5	+108	N/A	N/A	N/A	N/A	N/A
	6	+115	N/A	N/A	N/A	N/A	N/A
	7	+108	N/A	N/A	N/A	N/A	N/A
	8	+115	N/A	N/A	N/A	N/A	N/A
	9	+129	N/A	N/A	N/A	N/A	N/A
	10	+120	N/A	N/A	N/A	N/A	N/A

CENTER FREQUENCY & RF POWER OUTPUT VARIATION

ULTRATECH GROUP OF LABS
3000 Bristol Circle, Oakville, Ontario, Canada L6H 6G4
Tel. #: 905-829-1570, Fax. #: 905-829-8050, Email: vhk.ultratech@sympatico.ca, Website: http://www.ultratech-labs.com

AMBIENT TEMP. (°C)	KEYED-ON TIME (Minutes)	Supply Voltage (Nominal) 7.2 Volts dc		Supply Voltage (85% of Nominal) 6.12 Volts dc		Supply Voltage (115% of Nominal) 8.28 Volts dc	
		Hz	dB	Hz	dB	Hz	dB
+50	0	+143	N/A	N/A	N/A	N/A	N/A
	1	+143	N/A	N/A	N/A	N/A	N/A
	2	+143	N/A	N/A	N/A	N/A	N/A
	3	+129	N/A	N/A	N/A	N/A	N/A
	4	+136	N/A	N/A	N/A	N/A	N/A
	5	+143	N/A	N/A	N/A	N/A	N/A
	6	+136	N/A	N/A	N/A	N/A	N/A
	7	+129	N/A	N/A	N/A	N/A	N/A
	8	+136	N/A	N/A	N/A	N/A	N/A
	9	+136	N/A	N/A	N/A	N/A	N/A
	10	+136	N/A	N/A	N/A	N/A	N/A
+60	0	+158	N/A	N/A	N/A	N/A	N/A
	1	+165	N/A	N/A	N/A	N/A	N/A
	2	+172	N/A	N/A	N/A	N/A	N/A
	3	+186	N/A	N/A	N/A	N/A	N/A
	4	+186	N/A	N/A	N/A	N/A	N/A
	5	+186	N/A	N/A	N/A	N/A	N/A
	6	+200	N/A	N/A	N/A	N/A	N/A
	7	+193	N/A	N/A	N/A	N/A	N/A
	8	+215	N/A	N/A	N/A	N/A	N/A
	9	+229	N/A	N/A	N/A	N/A	N/A
	10	+220	N/A	N/A	N/A	N/A	N/A

5.6.6. Plots

None

5.6.7. Photographs of Test Setup

None

5.7. MODULATION LIMITING @ FCC 2.987(B) & 90.210

5.7.1. Limits @ FCC 2.987(b) and 90.210

The EUT shall be installed with a modulation limiter which limits the deviation of the FM carrier less than manufacturer's setting provided that the rf output spectrum must meet the required MASK

Recommendation:

- 1.25 kHz for 6.25 kHz Channel Spacing System,
- 2.5 kHz for 25 kHz Channel Spacing ,
- 5 kHz for 25 kHz Channel Spacing System).

5.7.2. Method of Measurements

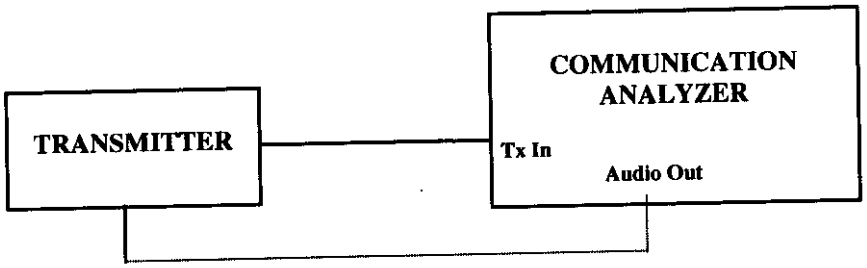
For Audio Transmitter:- The carrier frequency deviation was measured with the tone input signal level varied from 0 Vp to audio input rating level plus 16 dB at frequencies 0.1, 0.5, 1.0, 3.0 and 5.0 kHz. The maximum deviation was recorded at each test condition.

For Data Transmitter with Maximum Frequency Deviation set by Factory:- The EUT was set at maximum frequency deviation, and its peak frequency deviation was then measured using EUT's internal random data source.

5.7.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Communication Analyzer	Rohde & Schawrz	SMF02	879988/057	400 kHz - 1000 MHz including AF & RF Signal Generators, SINAD, DISTORTION, DEVIATION meters and etc

5.7.4. Test Arrangement



5.7.5. Test data

5.7.5.1. Data Modulation Limiting: FM modulation with random data and Modulation Limiter set at a Maximum Frequency Deviation (Factory Setting).

DATA BAUD RATE	PEAK DEVIATION (KHz)	MAXIMUM LIMIT (KHz)
19200	+5.0 kHz	No Limit

5.7.6. Plots

None

5.7.7. Photographs of Test Setup

None

5.8. EMISSION LIMITATION & EMISSION MASK @ FCC 2.989, 90.208 & 90.210

5.8.1. Limits @ FCC 90.209 & 90.210

Emissions shall be attenuated below the mean output power of the transmitter as follows:

FREQUENCY RANGE (MHz)	Maximum Authorized BW (KHz)	CHANNEL SPACING (KHz)	Recommended FREQ. DEVIATION (KHz)	FCC APPLICABLE MASK
403-512	20.0	25.0	5.0	90.210(c): Mask C –Data

FCC RULES	FREQUENCY RANGE	ATTENUATION LIMIT (dBc)
90.210(c): Mask C –Data	> Fc – 5 kHz - < Fc + 5. kHz Fc ± 5 kHz - Fc ± 10 kHz Fc ± 10 kHz - Fc ± 2.5*BW > Fc – 2.5*BW - < Fc + 2.5*BW	0 83log(fd/5) dB 29log(fd^2/11) or 50 dB whichever is less 43 + 10$\log_{10}$(P).

5.8.2. Method of Measurements

FCC CFR 47, Para. 2.989 - Out-of-Band Emissions:

The Emission Masks was measured with the Spectrum Analyzer controls set as shown on the test results (RBW ≥ 300 Hz, VBW ≥ 300 Hz and SWEEP TIME = AUTO). The transmitter was operated at a full rated power output, and modulated as follows:

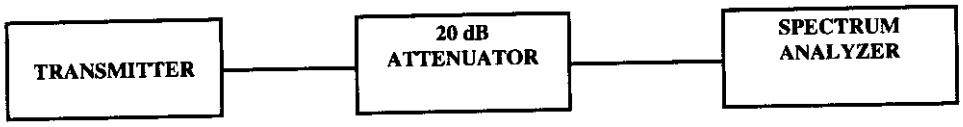
Voice or Digital Modulation Through a Voice Input Port @ 2.989(c)(i):- The transmitter was modulated by a 2.5 KHz tone signal at an input level 16 dB greater than that required to produce 50% modulation (e.g.: ±2.5 KHz peak deviation at 1 KHz modulating frequency). The input level was established at the frequency of maximum response of the audio modulating circuit.

Digital Modulation Through a Data Input Port @ 2.989(h):- Transmitters employing digital modulation techniques - when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter networks, pseudo-random generators or other devices required in normal service. Additionally, the Emission Masks shall be shown for operation with any devices used for modifying the spectrum when such devices are operational at the discretion of the user.

5.8.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Hewlett Packard	HP 8593EM	3412A00103	9 kHz – 26.5 GHz
Attenuator(s)	Bird	..	...	DC – 22 GHz

5.8.4. Test Arrangement



5.8.5. Test data

Conform. Please refer to the plots below for detailed information.

5.8.6. Plots

Please refer to Plots # 1, 2 and 3 in Exhibit 8 for Emission Mask Measurements

Plots # 4 and 5 in Exhibit 8 show the 99% occupied bandwidth at lowest and highest frequencies.

5.8.7. Photographs of Test Setup

None

5.9. TRANSMITTER ANTENNA POWER SPURIOUS/HARMONIC CONDUCTED EMISSIONS @ FCC 90.210

5.9.1. Limits @ 90.210

Emissions shall be attenuated below the mean output power of the transmitter as follows:

FREQUENCY RANGE (MHz)	Recommended OBW (KHz)	CHANNEL SPACING (KHz)	Recommended FREQ. DEVIATION (KHz)	FCC APPLICABLE MASK
403-512	10.0	12.5	2.5	90.210(c): Mask C –Data

FCC RULES	FREQUENCY RANGE	ATTENUATION LIMIT (dBc)
90.210(c): Mask C – Data	> Fc – 2.5*BW - < Fc + 2.5*BW	$43 + 10\log_{10}(P)$

5.9.2. Method of Measurements

With transmitter modulation characteristics described in Out-of-Band Emissions measurements @ 2.989, the transmitter spurious and harmonic emissions were scanned. The spurious and harmonic emissions were measured with the Spectrum Analyzer controls set as RBW = 30 kHz minimum , VBW ≥ RBW and SWEEP TIME = AUTO). The transmitter was operated at a full rated power output, and modulated as follows:

FCC CFR 47, Para. 2.997 - Frequency spectrum to be investigated:- The spectrum was investigated from the lowest radio generated in the equipment up to at least the 10^{th} harmonic of the carrier frequency or to the highest frequency practicable in the present state of the art of measuring techniques, whichever is lower. Particular attention should be paid to harmonics and subharmonics of the carrier frequency. Radiation at the frequencies of multiplier stages should be checked. The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

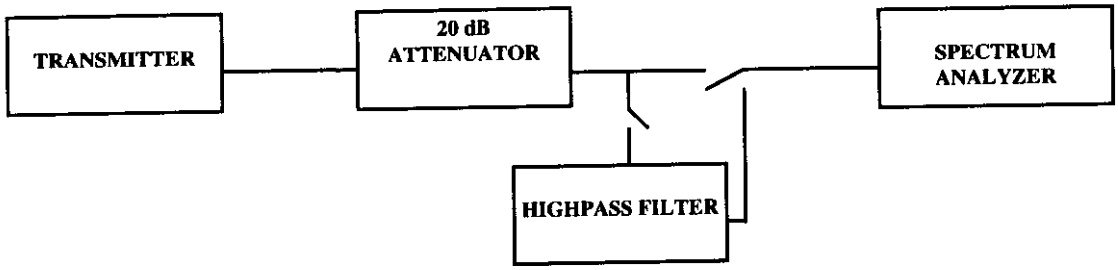
FCC CFR 47, Para. 2.991 - Spurious Emissions at Antenna Terminal:- The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of the harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in 2.989 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

5.9.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Hewlett Packard	HP 8593EM	3412A00103	9 kHz – 26.5 GHz
Attenuator(s)	Bird	..	...	DC – 22 GHz
Audio Oscillator	Hewlett Packard	HP 204C	0989A08798	DC to 1.2 MHz
Hihpass Filter, Microphase	Microphase	CR220HID	IITI11000AC	Cut-off Frequency at 600 MHz, 1.3 GHz or 4 GHz

5.9.4. Test Arrangement

- *The transmitter was coupled to the Spectrum Analyzer through a 20 dB attenuator.*
- *The insertion loss between the transmitter output terminal and the spectrum analyzer was measured to be 20 dB*
- *The channel frequencies (Low, Middle and High) was established on the extreme edges of the operating band, both upper and lower at its full rated output power. The emissions was investigated up to the tenth harmonic of the fundamental emissions in each case*



5.9.5. Test data

5.9.5.1. Near Lowest Frequency (403 MHz)

Fundamental Frequency:	403.0000 MHz
RF Output Power:	2.1 Watts
Modulation:	FM modulation with 19.2 kb/s internal random data source
No significant rf emissions were found at the transmitter's antenna terminal when it was scanned from 10 MHz to 5 GHz. Please refer to Plot #6 in Exhibit 8 for detailed information of measurements.	

5.9.5.2. Near Middle Frequency (450.0000 MHz)

Fundamental Frequency:	450.000 MHz
RF Output Power:	2.1 Watts
Modulation:	FM modulation with 19.2 kb/s internal random Data source
No significant rf emissions were found at the transmitter's antenna terminal when it was scanned from 10 MHz to 5 GHz. Please refer to Plot #7 in Exhibit 8 for detailed information of measurements.	

5.9.5.3. Near Highest Frequency (512.0000 MHz)

Fundamental Frequency:	512.000 MHz
RF Output Power:	2.0 Watts
Modulation:	FM modulation with 19.2 kb/s internal random data source
No significant rf emissions were found at the transmitter's antenna terminal when it was scanned from 10 MHz to 5 GHz. Please refer to Plot #8 in Exhibit 8 for detailed information of measurements.	

5.9.6. Plots

Please refer to Plots # 6 through # 8 in Exhibit 8 for details of measurements

5.9.7. Photographs of Test Setup

None

5.10. TRANSMITTER SPURIOUS/HARMONIC RADIATED EMISSIONS @ FCC 90.210

5.10.1. Limits @ FCC 90.210

Emissions shall be attenuated below the mean output power of the transmitter as follows:

FREQUENCY RANGE (MHz)	Recommended OBW (KHz)	CHANNEL SPACING (KHz)	Recommended FREQ. DEVIATION (KHz)	FCC APPLICABLE MASK
403-512	10.0	12.5	2.5	90.210(c): Mask C –Data

FCC RULES	FREQUENCY RANGE	ATTENUATION LIMIT (dBc)
90.210(c): Mask C – Data	> Fc – 2.5*BW - < Fc + 2.5*BW	$43 + 10\log_{10}(P)$

5.10.2. Method of Measurements

Please refer to the Exhibit 7 of this test report and ANSI C63-4:1992 for radiated emissions test method.

With transmitter modulation characteristics described in Out-of-Band Emissions measurements @ 2.989, the transmitter spurious and harmonic emissions were scanned. The spurious and harmonic emissions were measured with the Spectrum Analyzer controls set as RBW = 100 kHz minimum , VBW ≥ RBW and SWEEP TIME = AUTO). The transmitter was operated at a full rated power output, and modulated as follows:

FCC CFR 47, Para. 2.997 - Frequency spectrum to be investigated:- The spectrum was investigated from the lowest radio generated in the equipment up to at least the 10^{th} harmonic of the carrier frequency or to the highest frequency practicable in the present state of the art of measuring techniques, whichever is lower. Particular attention should be paid to harmonics and subharmonics of the carrier frequency. Radiation at the frequencies of multiplier stages should be checked. The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

FCC CFR 47, Para. 2.993 - Field Strength Spurious Emissions

(a) Measurements was made to detect spurious emissions radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data were supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph 2.989(c) as appropriate. For equipment operating on frequencies below 1 GHz , an Open Field Test is normally required, with the measuring instrument antenna located in the far field at all test frequencies. In event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurement will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with the reference to the rated power output of the transmitter, assuming all emissions are radiated from half-wave dipole antennas.

(b) Measurements specified in paragraph (a) of this section shall be made for the following equipment:

(1) Those in which the spurious emission are required to be 60 dB or more below the mean power of the transmitter.
(2) All equipment operating on frequencies higher than 25 MHz
(3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.
(4) Other types of equipment as required, when deemed necessary by the Commission.

METHOD OF CALCULATION FOR TRANSMITTED POWER (P) FROM THE MEASURED FIELD STRENGTH LEVEL (E):

According to IEC 801-3, the power density can be calculated as follows:

$S = P / (4xPIxD^2)$ Where: S: Power density in watts per square feet
P: Transmitted power in watts
PI: 13.1415
D: Distance in meters

The power density S (W/m^2) and electric field E (V/m) is related by:

$$S = E^2/(120xPI)$$

Accordingly, the field intensity of isotropic radiator in free space can be expressed as follows:

$$E = (30xP)^{1/2}/D = 5.5x(P)^{1/2}/D$$

For Halfwave dipole antenna or other antennas correlated to dipole in direction of maximum radiation:

$$S = (1.64xP)/(4xPIxD^2)$$
$$E = (49.2xP)^{1/2}xD = 7.01x(P)^{1/2}/D$$

$$P = (ExD/7.01)^2$$

Calculation of transmitted power P (dBM) given a measured field intensity E (dBuV/m):

$$P(W) = [E(V/m)xD/7.01]^2$$
$$P(mW) = P(W)x1000$$
=> $P(dBm) = 10logP(mW)$
$= 20logE(V/m) + 20log(D) - 20log(7.01) + 10log1000$
$= E(dBV/m) + 20logD + 13$
$= E(dBuV/m) - 120 + 20log(D) + 13$
$= E(dBuV/m) + 20log(D) - 107$

The Transmitted Power @ D = 3 Meters

P(dBm) = E(dBuV/m) - 97.5

5.10.3. Test Arrangement

Please refer to Section 2.6 of this report for arrangement of equipment under test.

5.10.4. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Advantest	R3271	15050203	100 Hz to 32 GHz with external mixer for frequency above 32 GHz
Microwave Amplifier	Hewlett Packard	HP 83017A		1 GHz to 26.5 GHz
Active Loop Antenna	EMCO	6507	8906-1167	1 kHz – 30 MHz
Biconilog Antenna	EMCO	3143	1029	20 MHz to 2 GHz
Horn Antenna	EMCO	3155	9701-5061	1 GHz – 18 GHz
Horn Antenna	EMCO	3160-09	..	18 GHz – 26.5 GHz
Horn Antenna	EMCO	3160-10	..	26.5 GHz – 40 GHz
Mixer	Tektronix	118-0098-00	..	18 GHz – 26.5 GHz
Mixer	Tektronix	119-0098-00	..	26.5 GHz – 40 GHz

5.10.5. Test data

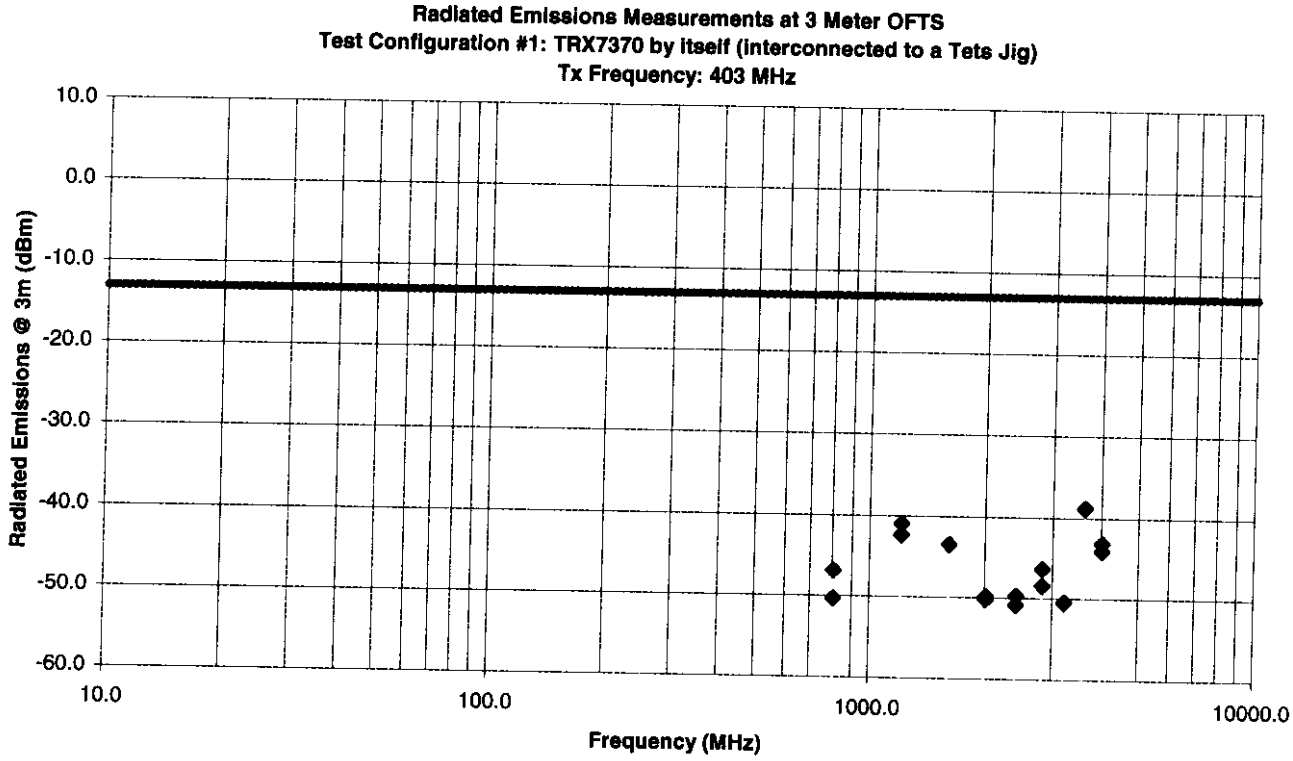
5.10.5.1. Test Configuration #1: Teklogix TRX7370 by itself interconnecting with a test jig using a non-shielded ribbon cable (Refer to Sec. 2.6.1 of this report for test setup)

5.10.5.1.1. Near Lowest Frequency (403.0000 MHz)

Fundamental Frequency: 403.0000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
806.00	50.7	-46.8	PEAK	V	-13.0	-33.8	PASS
806.00	47.2	-50.3	PEAK	H	-13.0	-37.3	PASS
1209.00	55.2	-42.3	PEAK	V	-13.0	-29.3	PASS
1209.00	56.6	-40.9	PEAK	H	-13.0	-27.9	PASS
1612.00	54.1	-43.4	PEAK	V	-13.0	-30.4	PASS
1612.00	54.1	-43.4	PEAK	H	-13.0	-30.4	PASS
2015.00	47.3	-50.2	PEAK	V	-13.0	-37.2	PASS
2015.00	47.7	-49.8	PEAK	H	-13.0	-36.8	PASS
2418.00	46.7	-50.8	PEAK	V	-13.0	-37.8	PASS
2418.00	47.8	-49.7	PEAK	H	-13.0	-36.7	PASS
2821.00	49.1	-48.4	PEAK	V	-13.0	-35.4	PASS
2821.00	51.2	-46.3	PEAK	H	-13.0	-33.3	PASS
3224.00	47.0	-50.5	PEAK	V	-13.0	-37.5	PASS
3224.00	47.1	-50.4	PEAK	H	-13.0	-37.4	PASS
3627.00	58.7	-38.8	PEAK	V	-13.0	-25.8	PASS
3627.00	58.7	-38.8	PEAK	H	-13.0	-25.8	PASS
4030.00	54.4	-43.1	PEAK	V	-13.0	-30.1	PASS
4030.00	53.4	-44.1	PEAK	H	-13.0	-31.1	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

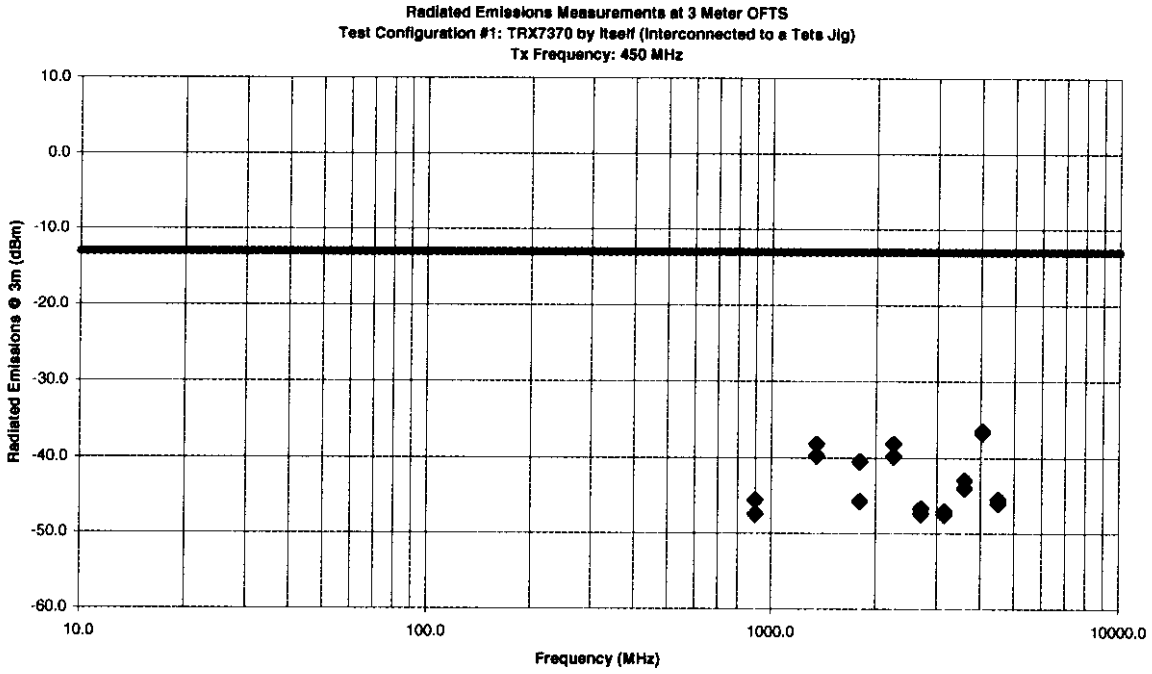

Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 by itself (interconnected to a Tets Jig)
Tx Frequency: 403 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

5.10.5.1.2. Near Middle Frequency (450.0000 MHz)

Fundamental Frequency: 450.000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
900.00	50.0	-47.5	PEAK	V	-13.0	-34.5	PASS
900.00	51.9	-45.6	PEAK	H	-13.0	-32.6	PASS
1350.00	57.8	-39.7	PEAK	V	-13.0	-26.7	PASS
1350.00	59.3	-38.2	PEAK	H	-13.0	-25.2	PASS
1800.00	51.7	-45.8	PEAK	V	-13.0	-32.8	PASS
1800.00	57.0	-40.5	PEAK	H	-13.0	-27.5	PASS
2250.00	57.7	-39.8	PEAK	V	-13.0	-26.8	PASS
2250.00	59.3	-38.2	PEAK	H	-13.0	-25.2	PASS
2700.00	50.1	-47.4	PEAK	V	-13.0	-34.4	PASS
2700.00	50.8	-46.7	PEAK	H	-13.0	-33.7	PASS
3150.00	50.0	-47.5	PEAK	V	-13.0	-34.5	PASS
3150.00	50.4	-47.1	PEAK	H	-13.0	-34.1	PASS
3600.00	53.5	-44.0	PEAK	V	-13.0	-31.0	PASS
3600.00	54.6	-42.9	PEAK	H	-13.0	-29.9	PASS
4050.00	60.8	-36.7	PEAK	V	-13.0	-23.7	PASS
4050.00	61.0	-36.5	PEAK	H	-13.0	-23.5	PASS
4500.00	51.4	-46.1	PEAK	V	-13.0	-33.1	PASS
4500.00	52.0	-45.5	PEAK	H	-13.0	-32.5	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

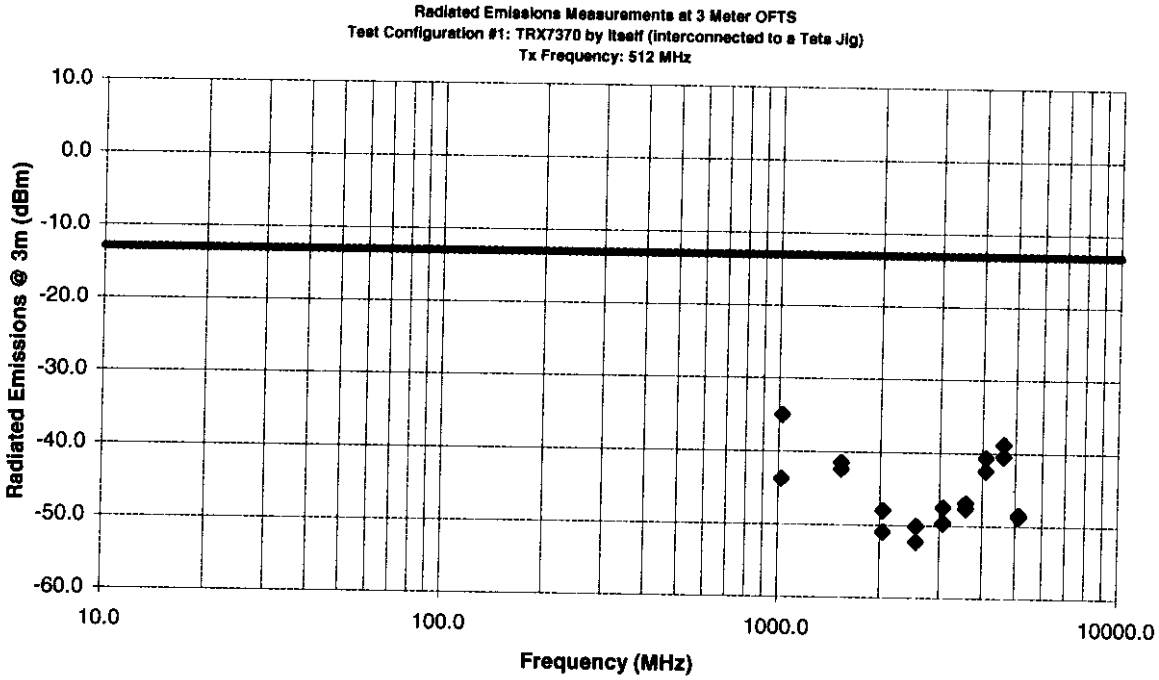

Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 by Itself (Interconnected to a Tets Jig)
Tx Frequency: 450 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

5.10.5.1.3. ***Near Highest Frequency (512.0000 MHz)***

Fundamental Frequency: 512.000 MHz
RF Output Power: 2.0 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
1024.00	62.5	-35.0	PEAK	V	-13.0	-22.0	PASS
1024.00	53.8	-43.7	PEAK	H	-13.0	-30.7	PASS
1536.00	55.2	-42.3	PEAK	V	-13.0	-29.3	PASS
1536.00	56.1	-41.4	PEAK	H	-13.0	-28.4	PASS
2048.00	46.6	-50.9	PEAK	V	-13.0	-37.9	PASS
2048.00	49.5	-48.0	PEAK	H	-13.0	-35.0	PASS
2560.00	45.3	-52.2	PEAK	V	-13.0	-39.2	PASS
2560.00	47.4	-50.1	PEAK	H	-13.0	-37.1	PASS
3072.00	47.9	-49.6	PEAK	V	-13.0	-36.6	PASS
3072.00	50.0	-47.5	PEAK	H	-13.0	-34.5	PASS
3584.00	50.6	-46.9	PEAK	V	-13.0	-33.9	PASS
3584.00	49.9	-47.6	PEAK	H	-13.0	-34.6	PASS
4096.00	55.1	-42.4	PEAK	V	-13.0	-29.4	PASS
4096.00	56.9	-40.6	PEAK	H	-13.0	-27.6	PASS
4608.00	57.1	-40.4	PEAK	V	-13.0	-27.4	PASS
4608.00	58.7	-38.8	PEAK	H	-13.0	-25.8	PASS
5120.00	49.0	-48.5	PEAK	V	-13.0	-35.5	PASS
5120.00	48.8	-48.7	PEAK	H	-13.0	-35.7	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.


Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 by itself (interconnected to a Tata Jig)
Tx Frequency: 512 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

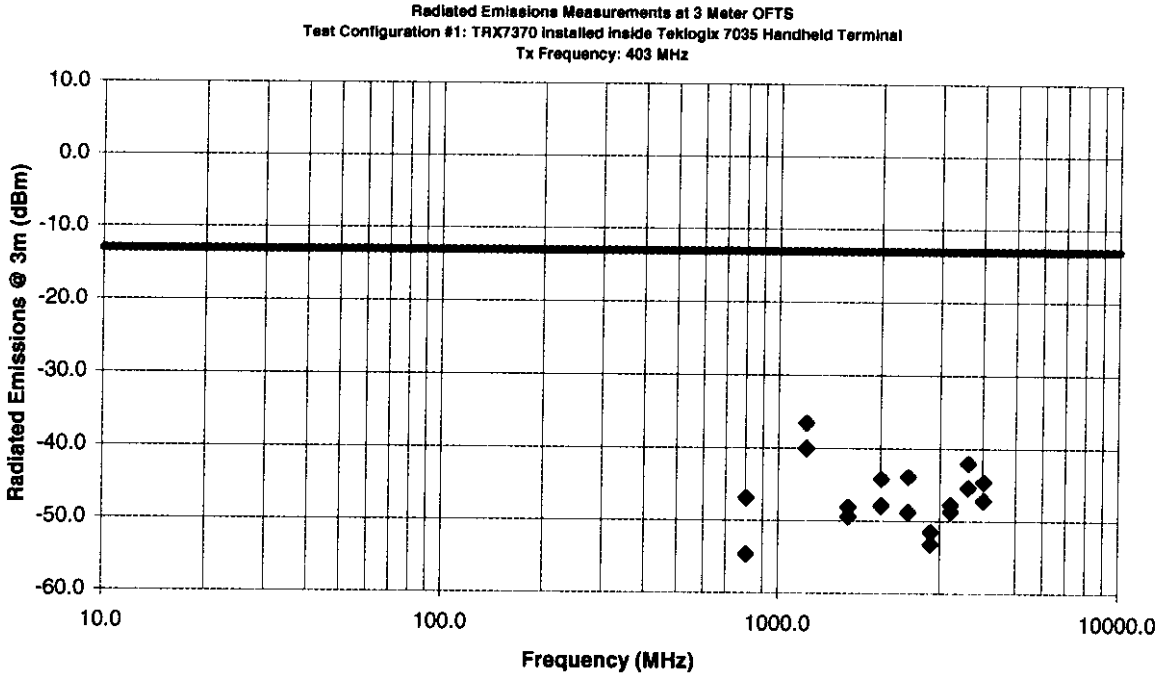
5.10.5.2. Test Configuration #2: Teklogix TRX7370 installed inside Teklogix Model 7035 (Refer to Sec. 2.6.2 of this report for test setup)

5.10.5.2.1. Near Lowest Frequency (403.0000 MHz)

Fundamental Frequency: 403.0000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
806.00	42.8	-54.7	PEAK	V	-13.0	-41.7	PASS
806.00	50.6	-46.9	PEAK	H	-13.0	-33.9	PASS
1209.00	57.5	-40.0	PEAK	V	-13.0	-27.0	PASS
1209.00	60.9	-36.6	PEAK	H	-13.0	-23.6	PASS
1612.00	49.4	-48.1	PEAK	V	-13.0	-35.1	PASS
1612.00	48.1	-49.4	PEAK	H	-13.0	-36.4	PASS
2015.00	53.3	-44.2	PEAK	V	-13.0	-31.2	PASS
2015.00	49.6	-47.9	PEAK	H	-13.0	-34.9	PASS
2418.00	53.6	-43.9	PEAK	V	-13.0	-30.9	PASS
2418.00	48.7	-48.8	PEAK	H	-13.0	-35.8	PASS
2821.00	46.0	-51.5	PEAK	V	-13.0	-38.5	PASS
2821.00	44.3	-53.2	PEAK	H	-13.0	-40.2	PASS
3224.00	49.7	-47.8	PEAK	V	-13.0	-34.8	PASS
3224.00	48.8	-48.7	PEAK	H	-13.0	-35.7	PASS
3627.00	52.1	-45.4	PEAK	V	-13.0	-32.4	PASS
3627.00	55.5	-42.0	PEAK	H	-13.0	-29.0	PASS
4030.00	52.9	-44.6	PEAK	V	-13.0	-31.6	PASS
4030.00	50.3	-47.2	PEAK	H	-13.0	-34.2	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

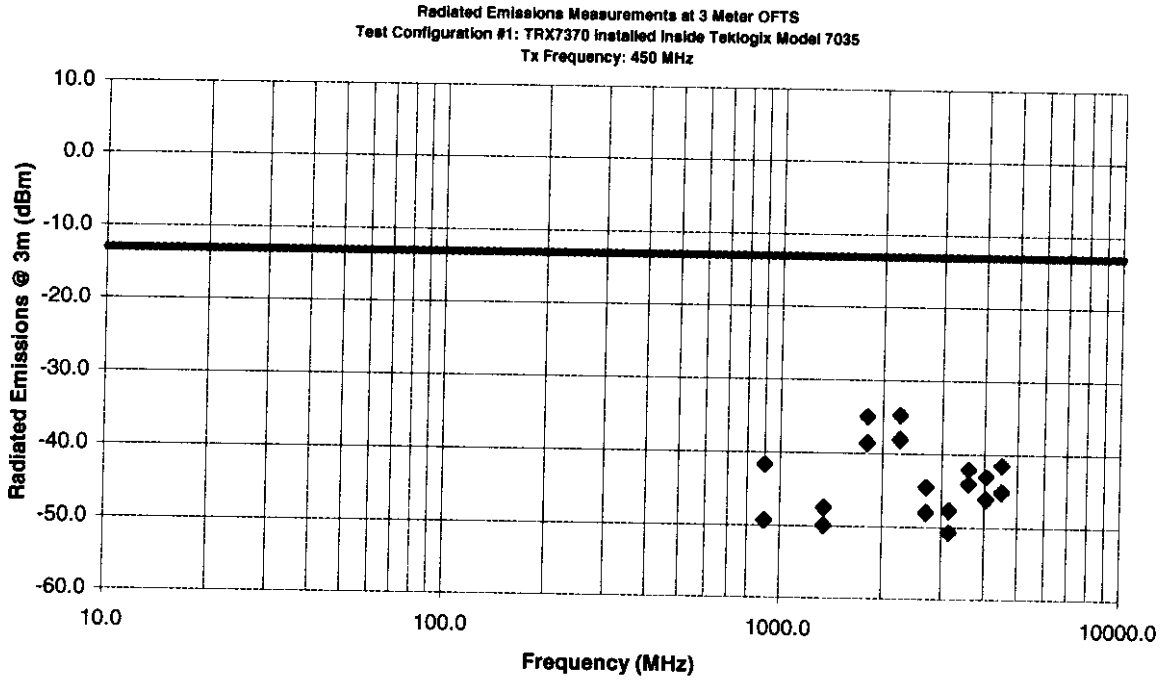

Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 installed inside Teklogix 7035 Handheld Terminal
Tx Frequency: 403 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

5.10.5.2.2. Near Middle Frequency (450.0000 MHz)

Fundamental Frequency: 450.000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
900.00	48.2	-49.3	PEAK	V	-13.0	-36.3	PASS
900.00	55.8	-41.7	PEAK	H	-13.0	-28.7	PASS
1350.00	50.0	-47.5	PEAK	V	-13.0	-34.5	PASS
1350.00	47.6	-49.9	PEAK	H	-13.0	-36.9	PASS
1800.00	62.5	-35.0	PEAK	V	-13.0	-22.0	PASS
1800.00	58.9	-38.6	PEAK	H	-13.0	-25.6	PASS
2250.00	59.4	-38.1	PEAK	V	-13.0	-25.1	PASS
2250.00	62.7	-34.8	PEAK	H	-13.0	-21.8	PASS
2700.00	52.9	-44.6	PEAK	V	-13.0	-31.6	PASS
2700.00	49.5	-48.0	PEAK	H	-13.0	-35.0	PASS
3150.00	49.8	-47.7	PEAK	V	-13.0	-34.7	PASS
3150.00	46.8	-50.7	PEAK	H	-13.0	-37.7	PASS
3600.00	55.4	-42.1	PEAK	V	-13.0	-29.1	PASS
3600.00	53.4	-44.1	PEAK	H	-13.0	-31.1	PASS
4050.00	54.4	-43.1	PEAK	V	-13.0	-30.1	PASS
4050.00	51.3	-46.2	PEAK	H	-13.0	-33.2	PASS
4500.00	56.0	-41.5	PEAK	V	-13.0	-28.5	PASS
4500.00	52.3	-45.2	PEAK	H	-13.0	-32.2	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

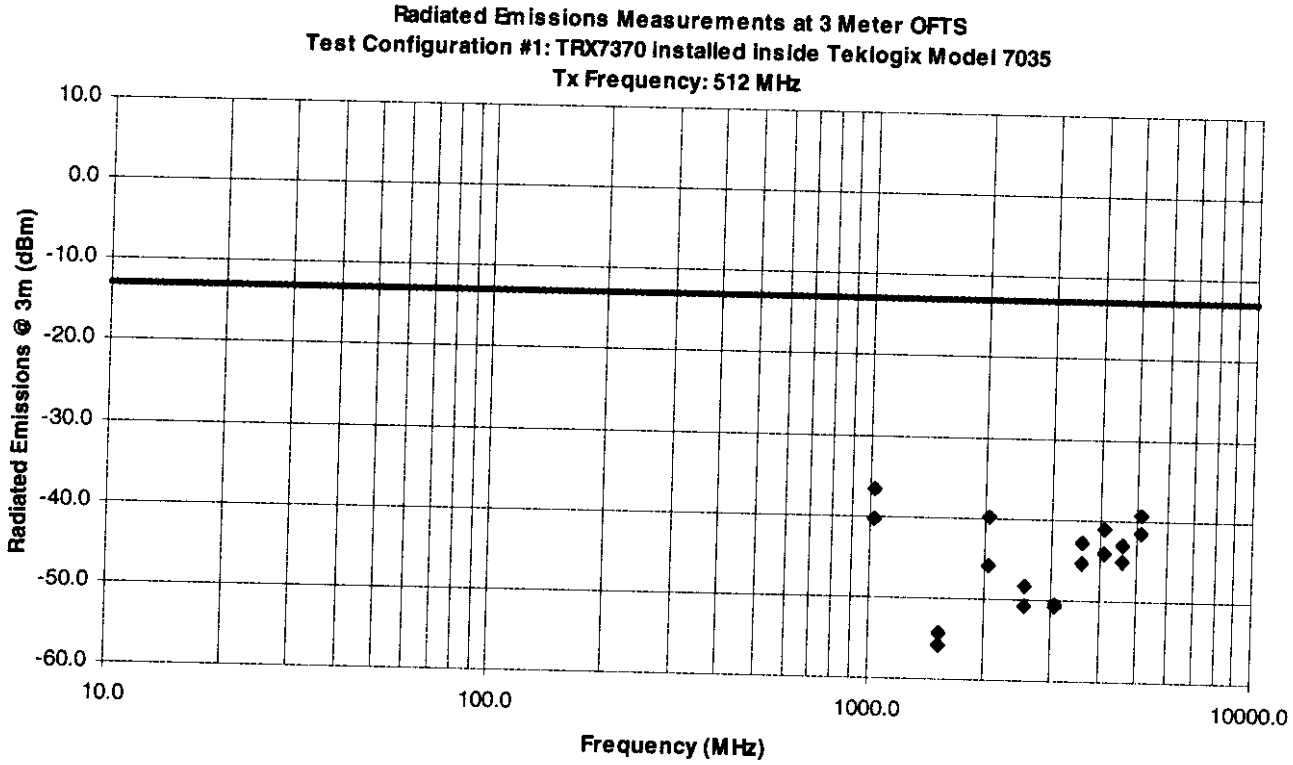

Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 installed inside Teklogix Model 7035
Tx Frequency: 450 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

5.10.5.2.3. Near Highest Frequency (512.0000 MHz)

Fundamental Frequency: 512.000 MHz
RF Output Power: 2.0 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
1024.00	57.1	-40.4	PEAK	V	-13.0	-27.4	PASS
1024.00	60.9	-36.6	PEAK	H	-13.0	-23.6	PASS
1536.00	43.2	-54.3	PEAK	V	-13.0	-41.3	PASS
1536.00	41.7	-55.8	PEAK	H	-13.0	-42.8	PASS
2048.00	57.8	-39.7	PEAK	V	-13.0	-26.7	PASS
2048.00	51.6	-45.9	PEAK	H	-13.0	-32.9	PASS
2560.00	49.3	-48.2	PEAK	V	-13.0	-35.2	PASS
2560.00	46.7	-50.8	PEAK	H	-13.0	-37.8	PASS
3072.00	47.0	-50.5	PEAK	V	-13.0	-37.5	PASS
3072.00	46.7	-50.8	PEAK	H	-13.0	-37.8	PASS
3584.00	54.7	-42.8	PEAK	V	-13.0	-29.8	PASS
3584.00	52.2	-45.3	PEAK	H	-13.0	-32.3	PASS
4096.00	56.4	-41.1	PEAK	V	-13.0	-28.1	PASS
4096.00	53.4	-44.1	PEAK	H	-13.0	-31.1	PASS
4608.00	54.5	-43.0	PEAK	V	-13.0	-30.0	PASS
4608.00	52.5	-45.0	PEAK	H	-13.0	-32.0	PASS
5120.00	58.3	-39.2	PEAK	V	-13.0	-26.2	PASS
5120.00	56.0	-41.5	PEAK	H	-13.0	-28.5	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.


Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 installed inside Teklogix Model 7035
Tx Frequency: 512 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

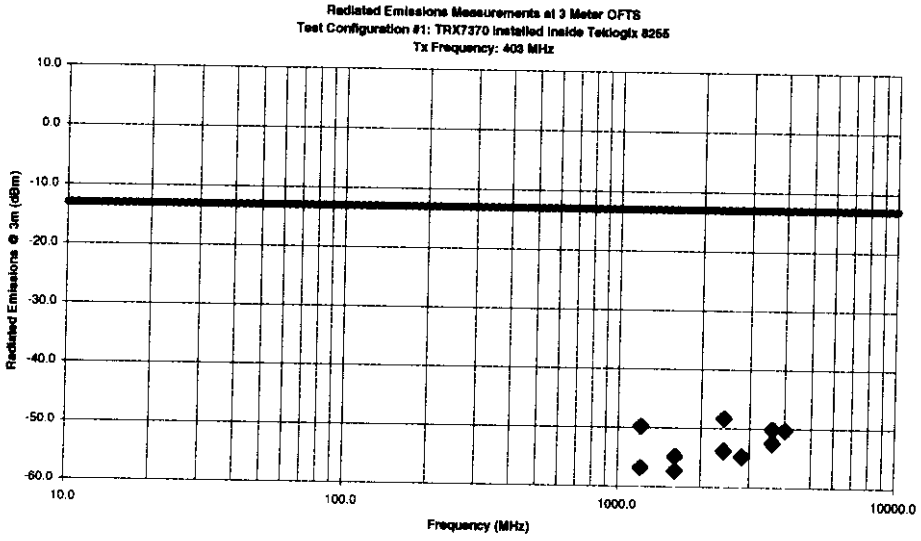
5.10.5.3. Test Configuration #3: Teklogix TRX7370 installed inside Teklogix Model 8255 (Refer to Sec. 2.6.3 of this report for test setup)

5.10.5.3.1. Near Lowest Frequency (403.0000 MHz)

Fundamental Frequency: 403.0000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
806.00	32.0	-65.5	PEAK	V	-13.0	-52.5	PASS
806.00	31.6	-65.9	PEAK	H	-13.0	-52.9	PASS
1209.00	47.7	-49.8	PEAK	V	-13.0	-36.8	PASS
1209.00	40.8	-56.7	PEAK	H	-13.0	-43.7	PASS
1612.00	42.8	-54.7	PEAK	V	-13.0	-41.7	PASS
1612.00	40.3	-57.2	PEAK	H	-13.0	-44.2	PASS
2418.00	49.2	-48.3	PEAK	V	-13.0	-35.3	PASS
2418.00	43.8	-53.7	PEAK	H	-13.0	-40.7	PASS
2821.00	42.9	-54.6	PEAK	V	-13.0	-41.6	PASS
3627.00	47.4	-50.1	PEAK	V	-13.0	-37.1	PASS
3627.00	45.1	-52.4	PEAK	H	-13.0	-39.4	PASS
4030.00	47.2	-50.3	PEAK	V	-13.0	-37.3	PASS
4030.00	47.2	-50.3	PEAK	H	-13.0	-37.3	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

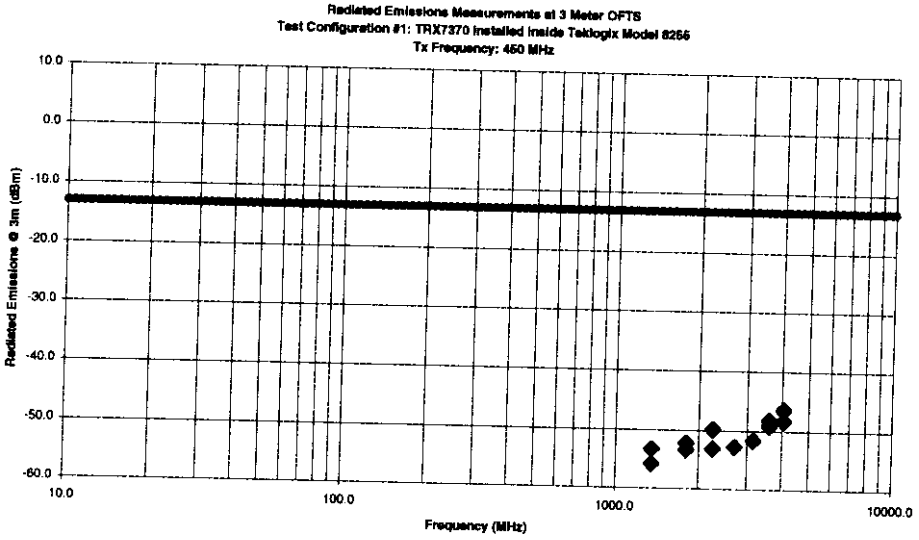


5.10.5.3.2. Near Middle Frequency (450.0000 MHz)

Fundamental Frequency: 450.000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
900.00	37.3	-60.2	PEAK	V	-13.0	-47.2	PASS
900.00	36.2	-61.3	PEAK	H	-13.0	-48.3	PASS
1350.00	44.3	-53.2	PEAK	V	-13.0	-40.2	PASS
1350.00	41.7	-55.8	PEAK	H	-13.0	-42.8	PASS
1800.00	45.4	-52.1	PEAK	V	-13.0	-39.1	PASS
1800.00	44.2	-53.3	PEAK	H	-13.0	-40.3	PASS
2250.00	47.7	-49.8	PEAK	V	-13.0	-36.8	PASS
2250.00	44.4	-53.1	PEAK	H	-13.0	-40.1	PASS
2700.00	44.8	-52.7	PEAK	V	-13.0	-39.7	PASS
3150.00	45.9	-51.6	PEAK	V	-13.0	-38.6	PASS
3600.00	48.4	-49.1	PEAK	V	-13.0	-36.1	PASS
3600.00	49.3	-48.2	PEAK	H	-13.0	-35.2	PASS
4050.00	51.0	-46.5	PEAK	V	-13.0	-33.5	PASS
4050.00	49.2	-48.3	PEAK	H	-13.0	-35.3	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

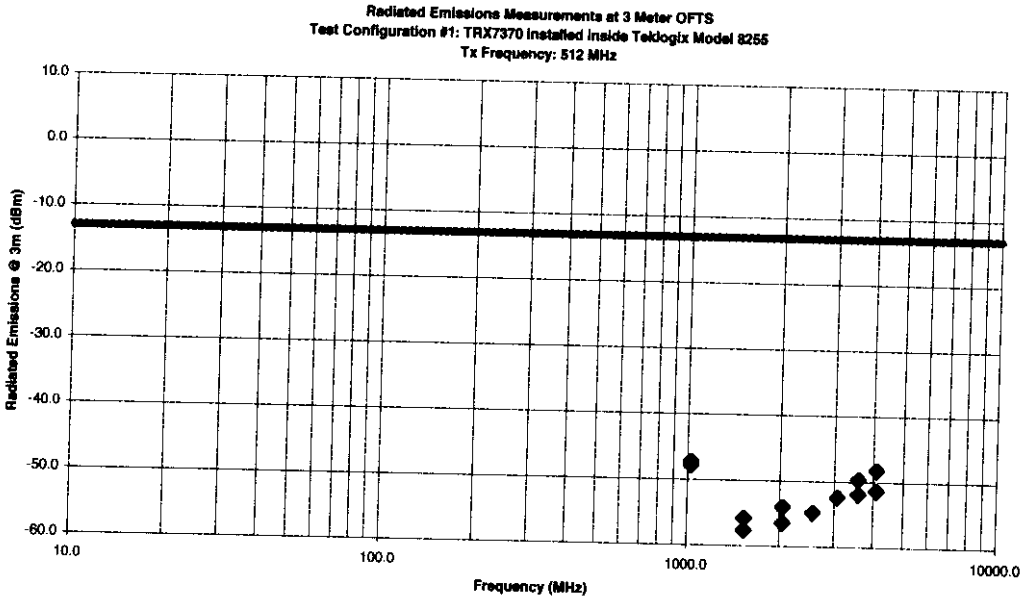


5.10.5.3.3. Near Highest Frequency (512.0000 MHz)

Fundamental Frequency: 512.000 MHz
RF Output Power: 2.0 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
1024.00	50.3	-47.2	PEAK	V	-13.0	-34.2	PASS
1024.00	49.7	-47.8	PEAK	H	-13.0	-34.8	PASS
1536.00	41.7	-55.8	PEAK	V	-13.0	-42.8	PASS
1536.00	39.9	-57.6	PEAK	H	-13.0	-44.6	PASS
2048.00	43.5	-54.0	PEAK	V	-13.0	-41.0	PASS
2048.00	41.1	-56.4	PEAK	H	-13.0	-43.4	PASS
2560.00	42.7	-54.8	PEAK	V	-13.0	-41.8	PASS
3072.00	45.1	-52.4	PEAK	V	-13.0	-39.4	PASS
3584.00	47.9	-49.6	PEAK	V	-13.0	-36.6	PASS
3584.00	45.6	-51.9	PEAK	H	-13.0	-38.9	PASS
4096.00	49.3	-48.2	PEAK	V	-13.0	-35.2	PASS
4096.00	46.1	-51.4	PEAK	H	-13.0	-38.4	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.



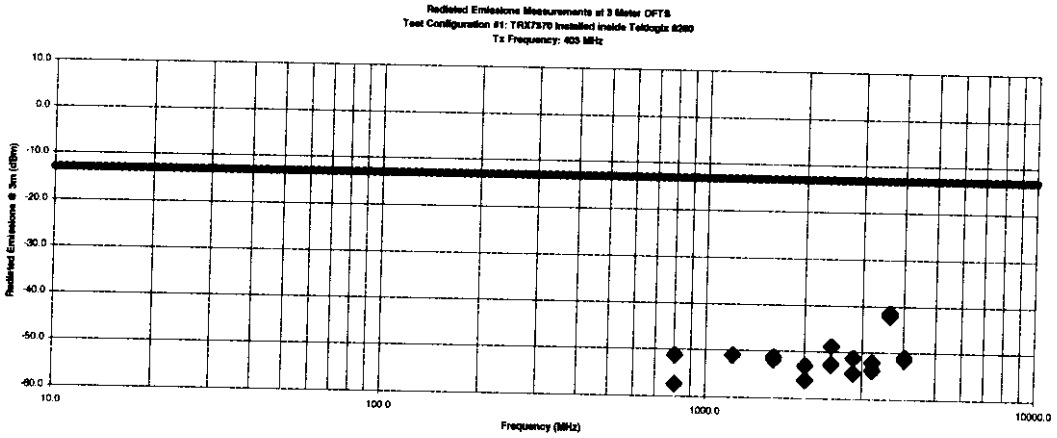
5.10.5.4. Test Configuration #4: Teklogix TRX7370 installed inside Teklogix Model 8260 (Refer to Sec. 2.6.4 of this report for test setup)

5.10.5.4.1. Near Lowest Frequency (403.0000 MHz)

Fundamental Frequency: 403.0000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
806.00	40.2	-57.3	PEAK	V	-13.0	-44.3	PASS
806.00	46.3	-51.2	PEAK	H	-13.0	-38.2	PASS
1209.00	46.5	-51.0	PEAK	V	-13.0	-38.0	PASS
1209.00	46.5	-51.0	PEAK	H	-13.0	-38.0	PASS
1612.00	45.7	-51.8	PEAK	V	-13.0	-38.8	PASS
1612.00	46.3	-51.2	PEAK	H	-13.0	-38.2	PASS
2015.00	41.5	-56.0	PEAK	V	-13.0	-43.0	PASS
2015.00	44.5	-53.0	PEAK	H	-13.0	-40.0	PASS
2418.00	44.8	-52.7	PEAK	V	-13.0	-39.7	PASS
2418.00	48.7	-48.8	PEAK	H	-13.0	-35.8	PASS
2821.00	43.1	-54.4	PEAK	V	-13.0	-41.4	PASS
2821.00	46.3	-51.2	PEAK	H	-13.0	-38.2	PASS
3224.00	43.7	-53.8	PEAK	V	-13.0	-40.8	PASS
3224.00	45.4	-52.1	PEAK	H	-13.0	-39.1	PASS
3627.00	55.5	-42.0	PEAK	V	-13.0	-29.0	PASS
3627.00	56.1	-41.4	PEAK	H	-13.0	-28.4	PASS
4030.00	46.5	-51.0	PEAK	V	-13.0	-38.0	PASS
4030.00	46.0	-51.5	PEAK	H	-13.0	-38.5	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

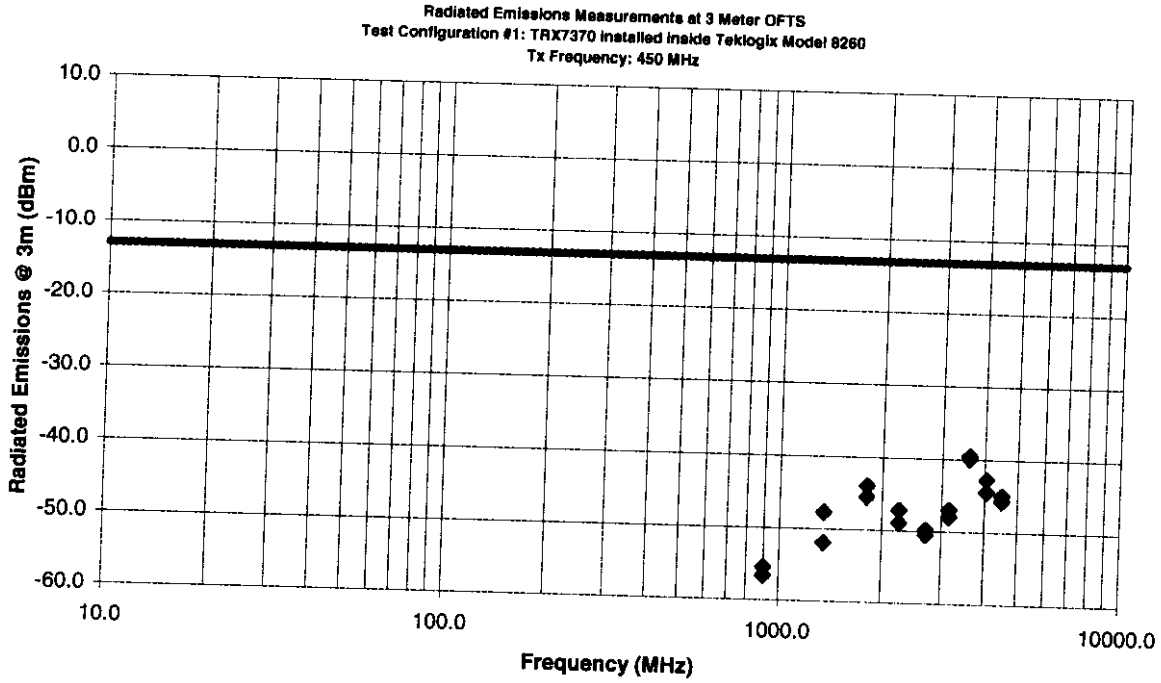

Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 Installed inside Teldogix 8280
Tx Frequency: 403 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

5.10.5.4.2. Near Middle Frequency (450.0000 MHz)

Fundamental Frequency: 450.000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
900.00	42.0	-55.5	PEAK	V	-13.0	-42.5	PASS
900.00	40.8	-56.7	PEAK	H	-13.0	-43.7	PASS
1350.00	49.8	-47.7	PEAK	V	-13.0	-34.7	PASS
1350.00	45.6	-51.9	PEAK	H	-13.0	-38.9	PASS
1800.00	53.5	-44.0	PEAK	V	-13.0	-31.0	PASS
1800.00	52.0	-45.5	PEAK	H	-13.0	-32.5	PASS
2250.00	50.3	-47.2	PEAK	V	-13.0	-34.2	PASS
2250.00	48.6	-48.9	PEAK	H	-13.0	-35.9	PASS
2700.00	47.7	-49.8	PEAK	V	-13.0	-36.8	PASS
2700.00	47.0	-50.5	PEAK	H	-13.0	-37.5	PASS
3150.00	49.6	-47.9	PEAK	V	-13.0	-34.9	PASS
3150.00	50.5	-47.0	PEAK	H	-13.0	-34.0	PASS
3600.00	57.6	-39.9	PEAK	V	-13.0	-26.9	PASS
3600.00	58.0	-39.5	PEAK	H	-13.0	-26.5	PASS
4050.00	54.7	-42.8	PEAK	V	-13.0	-29.8	PASS
4050.00	53.0	-44.5	PEAK	H	-13.0	-31.5	PASS
4500.00	52.5	-45.0	PEAK	V	-13.0	-32.0	PASS
4500.00	51.8	-45.7	PEAK	H	-13.0	-32.7	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

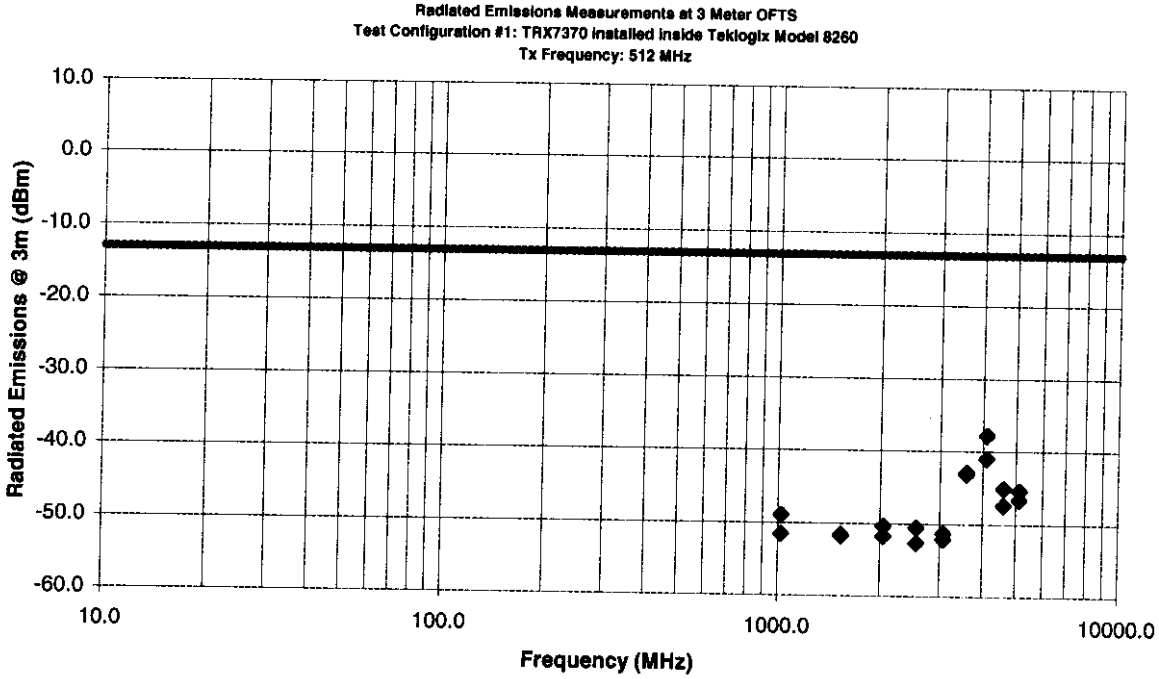

Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 installed inside Teklogix Model 8260
Tx Frequency: 450 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

5.10.5.4.3. Near Highest Frequency (512.0000 MHz)

Fundamental Frequency: 512.000 MHz
RF Output Power: 2.0 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
1024.00	46.0	-51.5	PEAK	V	-13.0	-38.5	PASS
1024.00	48.6	-48.9	PEAK	H	-13.0	-35.9	PASS
1536.00	45.8	-51.7	PEAK	V	-13.0	-38.7	PASS
1536.00	46.0	-51.5	PEAK	H	-13.0	-38.5	PASS
2048.00	45.8	-51.7	PEAK	V	-13.0	-38.7	PASS
2048.00	47.2	-50.3	PEAK	H	-13.0	-37.3	PASS
2560.00	44.9	-52.6	PEAK	V	-13.0	-39.6	PASS
2560.00	47.0	-50.5	PEAK	H	-13.0	-37.5	PASS
3072.00	46.2	-51.3	PEAK	V	-13.0	-38.3	PASS
3072.00	45.4	-52.1	PEAK	H	-13.0	-39.1	PASS
3584.00	54.6	-42.9	PEAK	V	-13.0	-29.9	PASS
3584.00	54.3	-43.2	PEAK	H	-13.0	-30.2	PASS
4096.00	59.7	-37.8	PEAK	V	-13.0	-24.8	PASS
4096.00	56.5	-41.0	PEAK	H	-13.0	-28.0	PASS
4608.00	52.4	-45.1	PEAK	V	-13.0	-32.1	PASS
4608.00	50.1	-47.4	PEAK	H	-13.0	-34.4	PASS
5120.00	52.1	-45.4	PEAK	V	-13.0	-32.4	PASS
5120.00	50.9	-46.6	PEAK	H	-13.0	-33.6	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.


Radiated Emissions Measurements at 3 Meter OFTS
Test Configuration #1: TRX7370 installed inside Teklogix Model 8260
Tx Frequency: 512 MHz
Radiated Emissions @ 3m (dBm)
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
10.0
100.0
1000.0
10000.0
Frequency (MHz)

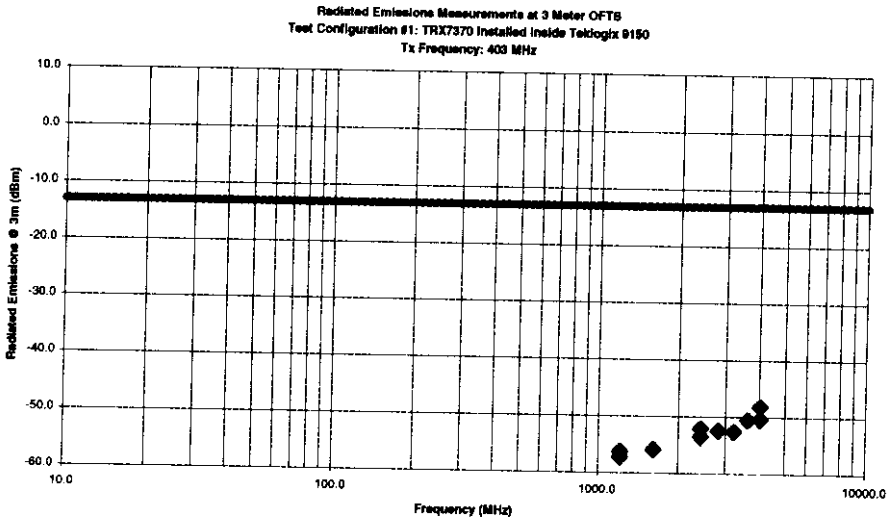
5.10.5.5. Test Configuration #5: Teklogix TRX7370 installed inside Teklogix Model 9150 (Refer to Sec. 2.6.5 of this report for test setup)

5.10.5.5.1. Near Lowest Frequency (403.0000 MHz)

Fundamental Frequency: 403.0000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
1209.00	40.3	-57.2	PEAK	V	-13.0	-44.2	PASS
1209.00	41.3	-56.2	PEAK	H	-13.0	-43.2	PASS
1612.00	41.7	-55.8	PEAK	V	-13.0	-42.8	PASS
1612.00	41.7	-55.8	PEAK	H	-13.0	-42.8	PASS
2418.00	45.4	-52.1	PEAK	V	-13.0	-39.1	PASS
2418.00	44.0	-53.5	PEAK	H	-13.0	-40.5	PASS
2821.00	45.1	-52.4	PEAK	V	-13.0	-39.4	PASS
3224.00	44.9	-52.6	PEAK	V	-13.0	-39.6	PASS
3627.00	47.0	-50.5	PEAK	V	-13.0	-37.5	PASS
4030.00	49.4	-48.1	PEAK	V	-13.0	-35.1	PASS
4030.00	47.1	-50.4	PEAK	H	-13.0	-37.4	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

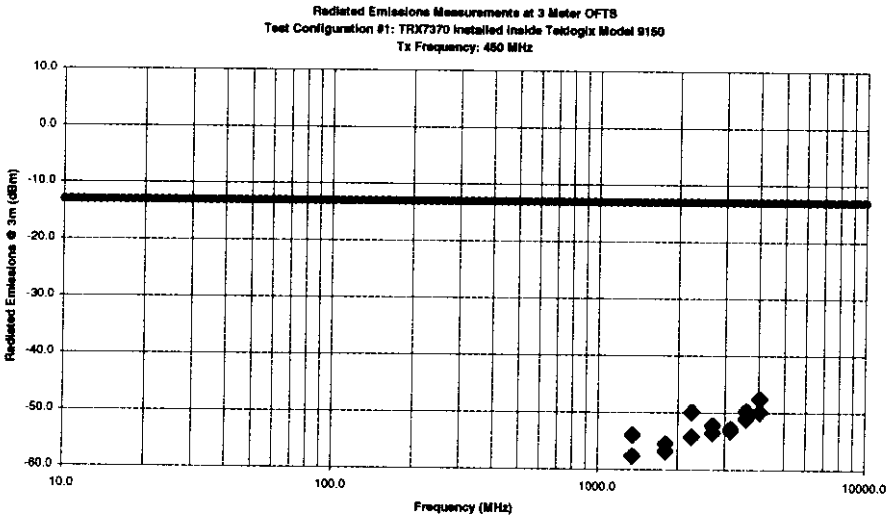


5.10.5.5.2. Near Middle Frequency (450.0000 MHz)

Fundamental Frequency: 450.000 MHz
RF Output Power: 2.1 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
900.00	34.1	-63.4	PEAK	V	-13.0	-50.4	PASS
900.00	33.0	-64.5	PEAK	H	-13.0	-51.5	PASS
1350.00	43.6	-53.9	PEAK	V	-13.0	-40.9	PASS
1350.00	39.9	-57.6	PEAK	H	-13.0	-44.6	PASS
1800.00	42.1	-55.4	PEAK	V	-13.0	-42.4	PASS
1800.00	40.7	-56.8	PEAK	H	-13.0	-43.8	PASS
2250.00	47.6	-49.9	PEAK	V	-13.0	-36.9	PASS
2250.00	43.3	-54.2	PEAK	H	-13.0	-41.2	PASS
2700.00	45.3	-52.2	PEAK	V	-13.0	-39.2	PASS
2700.00	44.0	-53.5	PEAK	H	-13.0	-40.5	PASS
3150.00	44.4	-53.1	PEAK	V	-13.0	-40.1	PASS
3150.00	44.7	-52.8	PEAK	H	-13.0	-39.8	PASS
3600.00	47.8	-49.7	PEAK	V	-13.0	-36.7	PASS
3600.00	46.5	-51.0	PEAK	H	-13.0	-38.0	PASS
4050.00	49.9	-47.6	PEAK	V	-13.0	-34.6	PASS
4050.00	47.6	-49.9	PEAK	H	-13.0	-36.9	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.

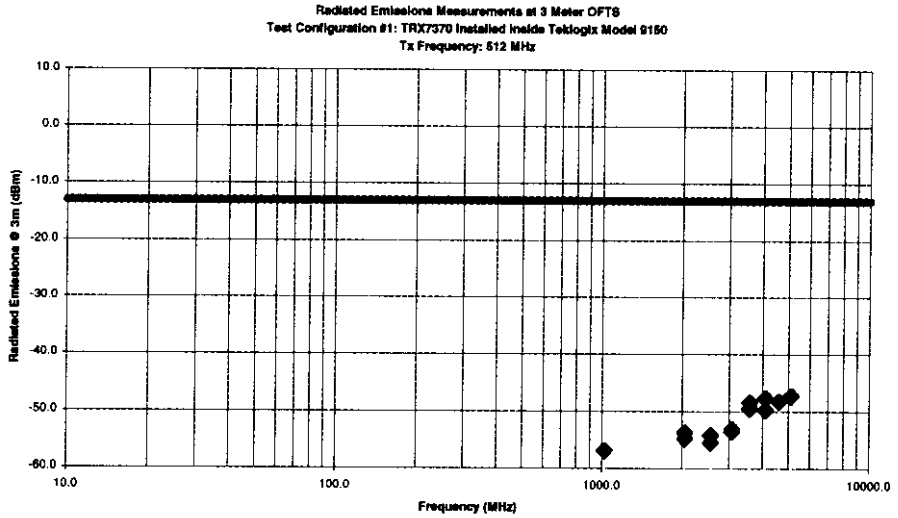


5.10.5.5.3. Near Highest Frequency (512.0000 MHz)

Fundamental Frequency: 512.000 MHz
RF Output Power: 2.0 Watts
Modulation: FM modulation with 19.2 kb/s internal random data source

FREQUENCY (MHz)	RF Field Strength Level (dBuV/m)	RF Power Level (dBm)	DETECTOR USED (PEAK/QP)	ANTENNA PLANE (H/V)	LIMIT (dBm)	MARGIN (dB)	PASS/ FAIL
1024.00	40.6	-56.9	PEAK	V	-13.0	-43.9	PASS
1024.00	40.6	-56.9	PEAK	H	-13.0	-43.9	PASS
2048.00	42.7	-54.8	PEAK	V	-13.0	-41.8	PASS
2048.00	43.8	-53.7	PEAK	H	-13.0	-40.7	PASS
2560.00	42.0	-55.5	PEAK	V	-13.0	-42.5	PASS
2560.00	43.3	-54.2	PEAK	H	-13.0	-41.2	PASS
3072.00	44.0	-53.5	PEAK	V	-13.0	-40.5	PASS
3072.00	44.4	-53.1	PEAK	H	-13.0	-40.1	PASS
3584.00	49.1	-48.4	PEAK	V	-13.0	-35.4	PASS
3584.00	48.1	-49.4	PEAK	H	-13.0	-36.4	PASS
4096.00	49.9	-47.6	PEAK	V	-13.0	-34.6	PASS
4096.00	47.8	-49.7	PEAK	H	-13.0	-36.7	PASS
4608.00	49.3	-48.2	PEAK	V	-13.0	-35.2	PASS
5120.00	50.3	-47.2	PEAK	V	-13.0	-34.2	PASS

The emissions were scanned from 10 MHz to 5 GHz and all emissions less 40 dB below the limits were recorded.



5.11. TRANSIENT FREQUENCY BEHAVIOR @ 90.214

5.11.1. Limits

Transient frequencies must be within the maximum frequency difference limits during the time intervals indicated:

Transient Frequency Behavior for equipment Designed to Operate on 25 kHz Channels

	All Equipment	
Time Interval [1,2]	Maximum Frequency Difference [3]	421 to 512 MHz
t1[4]	± 25.0 KHz	10.0 ms
t2	± 12.5 KHz	25.0 ms
t3[4]	± 25.0 KHz	10.0 ms

(1) ton: the instant when a 1 KHz test signal is completely suppressed, including any capture time due to phasing.
t1: tme period immediately after ton
t2: time period after t1
t3: time period from the instant when the transmitter is turned off until toff
toff: the instant when the 1 KHz test signal starts to rise.

(2) During the time from the end of t2 to the beginning of t3, the frequency difference must not exceed the limits specified in @ 90.213

(3) Difference between the actual transmitter frequency and assigned transmitter frequency.

(4) If the transmitter carrier output power rating is 6 watts or less, the frequency difference during this time period may exceed the maximum frequency difference for this time period.

5.11.2. Method of Measurements

Refer to efer to ANSI/TIA/EIA - 603 - 1992, Sec. 2.2.19, Page 83

1. Connect the transmitter under tests as shown in the above block diagram
2. Set the signal generator to the assigned frequency and modulate with a 1 kHz tone at ±25 kHz deviation and its output level to be 50 dB below the transmitter rf output at the test receiver end.
3. Set the horizontal sweep rate on the storage scope to 10 milliseconds per division and adjust the display to continuously view the 1000 Hz tone from the Demodulator Output Port (DOP) of the Test Receiver. Adjust the vertical scale amplitude control of the scope to display the 1000 Hz at ±4 divisions vertical Center at the display.
4. Adjust the scope so it will trigger on an increasing magnitude from the RF trigger signal of the transmitter under test when the transmitter was turned on. Set the controls to store the display.
5. The output at the DOP, due to the change in the ratio of the power between the signal generator input power and transmitter output power will, because of the capture effect of the test receiver, produce a change in display: For the first part of the sweep it will show the 1 kHz test signal. Then once the receiver's demodulator has been captured by the transmitter power, the display will show the frequency difference from the assigned frequency to the actual transmitter frequency versus time. The instant when the 1 kHz test signal is completely suppressed (including any capture time due to phasing) is considered to be t_{on}. The trace should be maintained within the allowed divisions during the period t_1 and t_2.

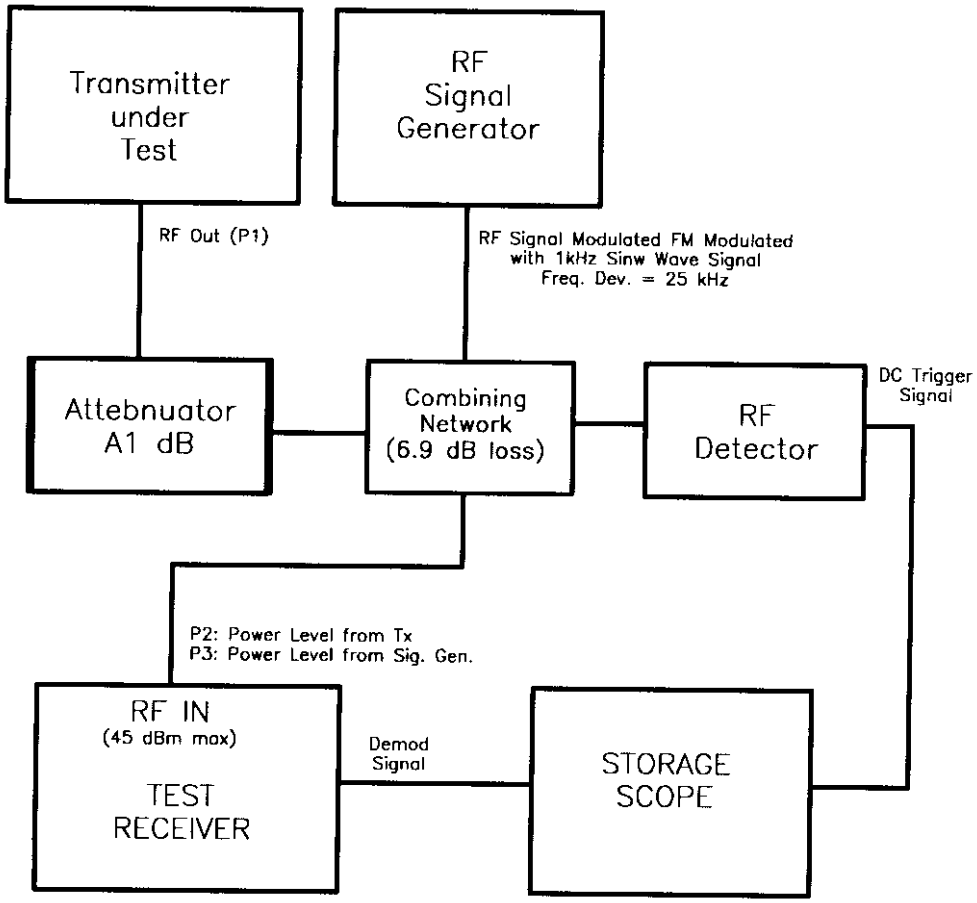
6. During the time from the end of t_2 to the beginning of t_3 the frequency difference should not exceed the limits set by the FCC in Part 90.214 and the outlined in the Carrier Frequency Stability sections. The allowed limit is equal to FCC frequency tolerance limits specified in FCC 90.213.
7. Repeat the above steps when the transmitter was turned off for measuring t_3.

5.11.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
RF Synthesized Signal Generator	Fluke	6061A	...	10 kHz – 1GHz 13 dBm output max. @ 50 Ohms
Communication Analyzer (Test Receiver)	Rohde & Schwarz	SMFP2	879988/057	400 GHz including SINAD, S/N, Modulation meters, AF & RF signal generators and etc....
Network Combiner	Mini-circuit	15542	...	DC to 22 GHz (7 dB insertion loss)
Digital Storage Scope	Phillips	3320A	DQ 646	DC - 5 MHz
67297 RF Detector,	Herotex	DZ122-553	63400	..

5.11.4. Test Arrangement

The following drawings show details of the test setup for radiated emissions measurements



5.11.5. Test Data

- Attenuator A1 = 40 dB
- Measured Transmitter RF Output P1: 33 dBm
- Measured Transmitter RF Output P2 @ Standard Test Receiver (Max. RF IN: 45 dBm): -13 dBm
- Measured Signal generator Output P3 @ Standard Test Receiver (Max. RF IN: 45 dBm): -27 dBm

5.11.5.1. Test Configuration #1: Unmodulated

Time Interval	Transient Frequency	Transient Frequency Limit
t1 (10 mS) SWITCH ON CONDITION	<-25 kHz at ton	no limit for RF Output PWR < 6 Watts
t2 (25 mS) SWITCH ON CONDITION	0 Hz	6.25 kHz
After t2 (10 mS) SWITCH ON CONDITION	0 Hz	FCC Limit = ± 1.007kHz (0.00025% @403 MHz)
Before t3 (10 mS) SWITCH OFF CONDITION	0 Hz	FCC Limit = ± 1.007kHz (0.00025% @403 MHz)
t3 (10 mS) SWITCH OFF CONDITION	<-25 kHz at toff	no limit for RF Output PWR < 6 Watts

5.11.5.2. Test Configuration #3: FM modulation with .... B/s random data, , Freq. Dev.: ... KHz

Time Interval	Transient Frequency	Transient Frequency Limit
t1 (10 mS) SWITCH ON CONDITION	<-25 kHz at ton	no limit for RF Output PWR < 6 Watts
t2 (25 mS) SWITCH ON CONDITION	0 Hz	6.25 kHz
After t2 (10 mS) SWITCH ON CONDITION	0 Hz	FCC Limit = ± 1.007kHz (0.00025% @403 MHz)
Before t3 (10 mS) SWITCH OFF CONDITION	0 Hz	FCC Limit = ± 1.007kHz (0.00025% @403 MHz)
t3 (10 mS) SWITCH OFF CONDITION	<-25 kHz at toff	no limit for RF Output PWR < 6 Watts

5.11.6. Plots

Please refer to Plots #9 & #10 in Exhibit 8 for detailed information of measurements.

5.11.7. Photographs of Test Setup

None

EXHIBIT 6. MEASUREMENT UNCERTAINTY

The measurement uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 and NIS 81 (1994)

6.1. LINE CONDUCTED EMISSION MEASUREMENT UNCERTAINTY

CONTRIBUTION (Line Conducted)	PROBABILITY DISTRIBUTION	UNCERTAINTY (dB)	
		9-150 kHz	0.15-30 MHz
EMI Receiver specification	Rectangular	±1.5	±1.5
LISN coupling specification	Rectangular	±1.5	±1.5
Cable and Input Transient Limiter calibration	Normal (k=2)	±0.3	±0.5
Mismatch: Receiver VRC $\Gamma_1 = 0.03$ LISN VRC $\Gamma_R = 0.8$(9 kHz) 0.2 (30 MHz) Uncertainty limits $20\text{Log}(1\pm\Gamma_1\Gamma_R)$	U-Shaped	±0.2	±0.3
System repeatability	Std. deviation	±0.2	±0.05
Repeatability of EUT	--	--	--
Combined standard uncertainty	Normal	±1.25	±1.30
Expanded uncertainty U	Normal (k=2)	±2.50	±2.60

Sample Calculation for Measurement Accuracy in 150 kHz to 30 MHz Band:

$$u_c(y) = \sqrt{\sum_{i=1}^{m} u_i^2(y)} = \pm\sqrt{(1.5^2 + 1.5^2)/3 + (0.5/2)^2 + (0.05/2)^2 + 0.35^2} = \pm 1.30 \text{ dB}$$

$$U = 2u_c(y) = \pm 2.6 \text{ dB}$$

6.2. RADIATED EMISSION MEASUREMENT UNCERTAINTY

CONTRIBUTION (Radiated Emissions)	PROBABILITY DISTRIBUTION	UNCERTAINTY (± dB)	
		3 m	10 m
Antenna Factor Calibration	Normal (k=2)	±1.0	±1.0
Cable Loss Calibration	Normal (k=2)	±0.3	±0.5
EMI Receiver specification	Rectangular	±1.5	±1.5
Antenna Directivit	Rectangular	+0.5	+0.5
Antenna factor variation with height	Rectangular	±2.0	±0.5
Antenna phase center variation	Rectangular	0.0	±0.2
Antenna factor frequency interpolation	Rectangular	±0.25	±0.25
Measurement distance variation	Rectangular	±0.6	±0.4
Site imperfections	Rectangular	±2.0	±2.0
Mismatch: Receiver VRC $\Gamma_1 = 0.2$ Antenna VRC $\Gamma_R = 0.67$(Bi) 0.3 (Lp) Uncertainty limits $20\text{Log}(1\pm\Gamma_1\Gamma_R)$	U-Shaped	+1.1 -1.25	±0.5
System repeatability	Std. Deviation	±0.5	±0.5
Repeatability of EUT		-	-
Combined standard uncertainty	Normal	+2.19 / -2.21	+1.74 / -1.72
Expanded uncertainty U	Normal (k=2)	+4.38 / -4.42	+3.48 / -3.44

Calculation for maximum uncertainty when 3m biconical antenna including a factor of k=2 is used:

$U = 2u_c(y) = 2x(+2.19) = +4.38$ dB And $U = 2u_c(y) = 2x(-2.21) = -4.42$ dB

EXHIBIT 7. MEASUREMENT METHODS

7.1. GENERAL TEST CONDITIONS

7.1.1. Test Conditions

- The measurement shall be made in the operational mode producing the largest emission in the frequency band being investigated consistent with normal applications.
- An attempt shall be made to maximize the detected radiated emissions, for example moving cables of the equipment, rotating the equipment by 360° and moving the measuring receiving antenna up and down within 1 to 4 meters high.
- Where appropriate, a single tone or a bit stream shall be used to modulate the transmitter. The manufacturer shall define the modulation with the highest emission in transmit mode.

7.1.2. Method of Measurements - AC Mains Conducted Emissions

- AC Mains conducted emissions measurements were performed in accordance with the standard against appropriate limits for each detector function.
- The test was performed in the shielded room, 16'(L) by 16'(W) by 12'(H).
- The test was performed were made over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio noise voltage which was conducted from the EUT power-input terminals that were directly connected to a public power network.
- The EUT normally received power from another device that connects to the public utility ac power lines, measurements would be made on that device with the EUT in operation to ensure that the device continues to comply with the appropriate limits while providing the EUT with power.
- If the EUT operates only from internal or dedicated batteries, with no provisions for connection to the public utility ac power lines, AC Mains conducted measurements are not required.
- Table-top devices were placed on a platform of nominal size 1 m by 1.5m raised 80 cm above the conducting ground plane.
- The EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN to the power source. All unused 50-Ohm connectors of the LISN was terminated in 50-ohm when not connected to the measuring instruments.
- The line cord of the EUT connected to one LISN which was connected to the measuring instrument. Those power cords for the units of devices not under measurement were connected to a separate multiple ac outlFCC. Drawings and photographs of typically conducted emission test setups were shown in the Test Report. Each current-carrying conductor of the EUT shall be individually tested.
- The EUT was normally operated with a ground (safety) connection, the EUT was connected to the ground at the LISN through a conductor provided in the lead from the ac power mains to the LISN.
- The excess length of the power cord was folded back and forth in an 8-shape on a wooden strip with a vertical prong located on the top of the LISN case.
- The EUT was set-up in its typical configuration and operated in its various modes as described in 3.2 of the test report.
- A preliminary scan was made by using spectrum analyzer system with the detector function set to PEAK mode (9 KHz RBW, VBW > RBW), frequency span 150KHz-30MHz.

- The maximum conducted emission for a given mode of operation was found by using the following step-by-step procedure:

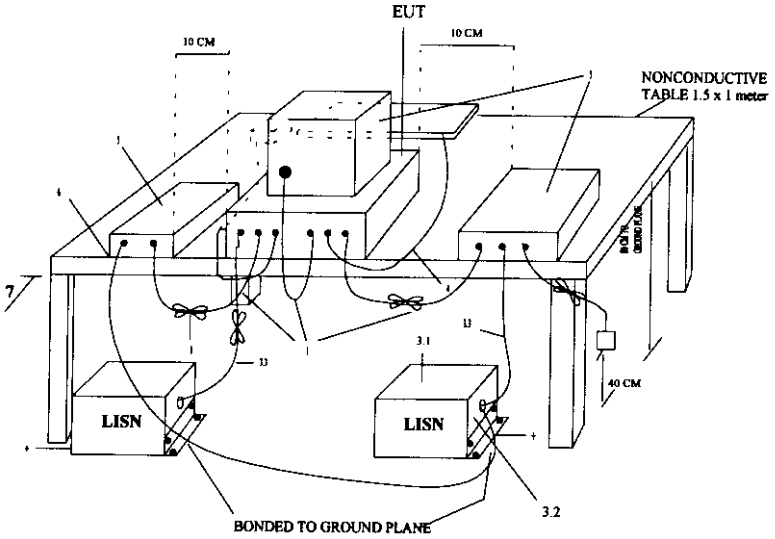
Step1. Monitor the frequency range of interest at a fixed EUT azimuth.

Step2. Manipulate the system cables and peripheral devices to produce highest amplitude signal relative to the limit. Note the amplitude and frequency of the suspect signal.

Step3. The effects of various modes of operation is examined. This is done by varying equipment operation modes as step 2 is being performed.

Step4. After completing step 1 through 3, record EUT and peripheral device configuration, mode of operation, cable configuration, signal levels and frequencies for final test.

- Each highest signal level at the maximized test configuration was zoomed in a small frequency span on the spectrum analyzer's display (the manipulation of cables and peripheral devices and EUT operation modes might have to be repeated to obtain the highest signal level with the spectrum analyzer set to PEAK detector mode 9 KHz RBW and VBW > RBW). The spectrum analyzer was then set to CISPR QUASI-PEAK detector mode (9 KHz RBW, 1 MHz VBW) and AVERAGE detector mode (9 kHz RBW, 1 MHz VBW). The final highest RF signal levels and frequencies were record.



+LISNs may have to be moved to the side to meet 3.3 below

LEGEND:

1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back at forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.

2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1m.

3. EUT connected to one LISN. Unused LISN connectors shall be terminated in 50 Ohm. LISN can be placed on top of, or immediately beneath, ground plane.
3.1 All other equipment powered from second LISN.
3.2 Multiple outlet strip can be used for multiple power cords of non-EUTequipment.
3.3 LISN at least 80 cm from nearest part of EUT chassis.

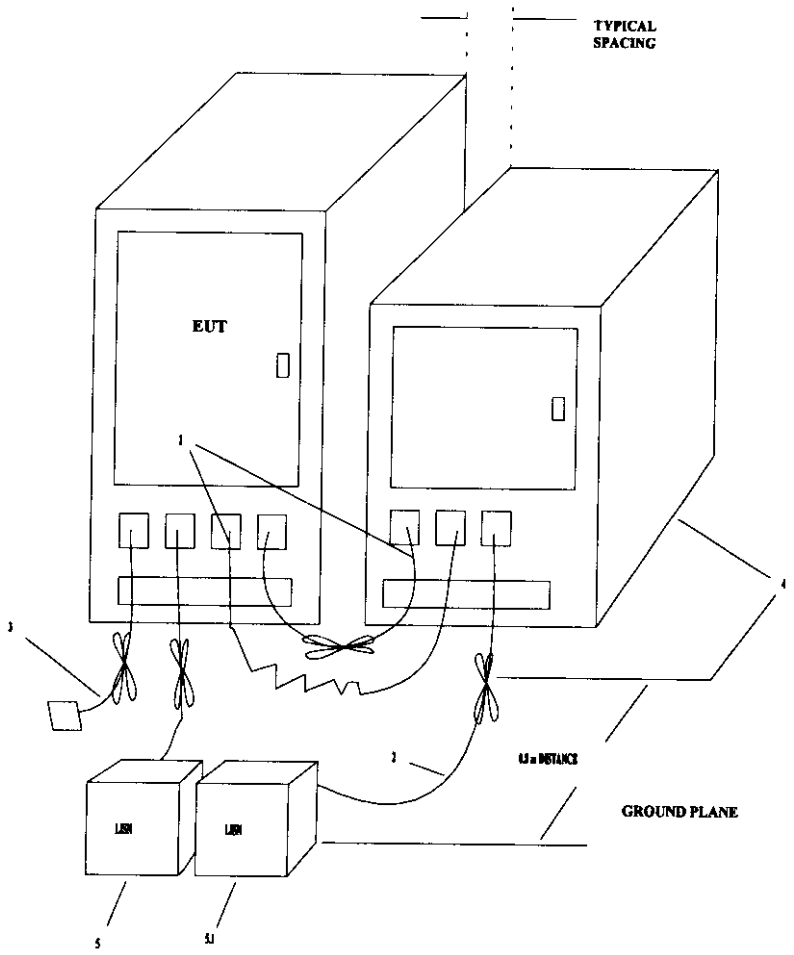
4. Cables of hand-operated devices, such as keyboards, mouses, etc., have to be placed as close as possible to the host.

5. Non-EUT components being tested.

6. Rear of EUT, including peripherals, shall be all aligned and flush with rear of tabletop.

7. Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the floor ground plane (see 5.2)

Tabletop Equipment Conducted Emissions



LEGENEND:

1. Excess I/O cables shall be bundled in center. If bundling is not possible, the cables shall be arranged in serpentine fashion. Bunding shall not exceed 40 cm in length.

2. Excess power cords shall be bundled in the center or shortened to appropriated length.

3. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated if required using correct terminating impedance. If bundling is not possible, the cable shall be arranged in serpentine fashion.

4. EUT and all cables shall be insulated from ground plane by 3 to 12 mm of insulating material.

5. EUT connected to one LISN. LISN can be placed on top of, or immediately beneath, ground plane.
5.1 All other equipment powered from second LISN.

Floor-Standing Equipment Conducted Emissions

7.1.3. Method of Measurements - Electric Field Radiated Disturbance

- The radiated emission measurements were performed at the UltraTech's 10 or 30 Meter Open Field Test Site (OFTS) situated in the Town of Oakville, province of Ontario. The Attenuation Characteristics of OFTS have been filed to FCC, Industry Canada, ACA/Austel, NVLap and ITI.
- Radiated emissions measurements were made using the following test instruments:

  1. Calibrated EMCO BiconiLog antenna in the frequency range from 30 MHz to 2000 MHz.
  2. Calibrated Emco Horn antennas in the frequency range above 1000 MHz (1GHz - 40 GHz).
  3. Calibrated Advantest spectrum analyzer and pre-selector. In general, the spectrum analyzer would be used as follows:

     - The rf electric field levels were measured with the spectrum analyzer set to PEAK detector (120 KHz VBW and VBW $\geq$ RBW).

     - If any rf emission was observed to be a broadband noise, the spectrum analyzer's CISPR QUASI-PEAK detector (120 KHz RBW and VBW $\geq$ RBW) was then set to measure the signal level.

     - If the signal being measured was narrowband and the ambient field was broadband, the bandwidth of the spectrum analyzer was reduced.

- The EUT was set-up in its typical configuration and operated in its various modes as described in 3.2 of the test report.
- The frequencies of emissions was first detected. Then the amplitude of the emissions was measured at the specified measurement distance using required antenna height, polarization, and detector characteristics.
- During this process, cables and peripheral devices were manipulated within the range of likely configuration.
- For each mode of operation required to be tested, the frequency spectrum was monitored. Variations in antenna heights (from 1 meter to 4 meters above the ground plane), antenna polarization (horizontal plane and vertical plane), cable placement and peripheral placement were explored to produce the highest amplitude signal relative to the limit.

The maximum radiated emission for a given mode of operation was found by using the following step-by-step procedure:

Step1: Monitor the frequency range of interest at a fixed antenna height and EUT azimuth.

Step2: Manipulate the system cables to produce highest amplitude signal relative to the limit. Note the amplitude and frequency of the suspect signal.

Step3: Rotate the EUT 360 degrees to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, go back to the azimuth and repeat Step 2. Otherwise, orient the EUT azimuth to repeat the highest amplitude observation and proceed.

Step4: Move the antenna over its full allowed range of travel (1 to 4 meters) to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, return to Step 2 with the highest amplitude observation and proceed.

Step5: Change the polarization of the antenna and repeat Step 2 through 4. Compare the resulting suspected highest amplitude signal with that found for the other polarization. Select and note the higher of the two signals. This signal is termed the highest observed signal with respect to the limit for this EUT operational mode.

Step6: The effects of various modes of operation is examined. This is done by varying the equipment modes as steps 2 through 5 are being performed.

Step7: After completing steps 1 through 6, record the final highest emission level, frequency, antenna polarization and detector mode of the measuring instrument.

Calculation of Field Strength:

The field strength is calculated by adding the calibrated antenna factor and cable factor, and subtracting the Amplifier gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

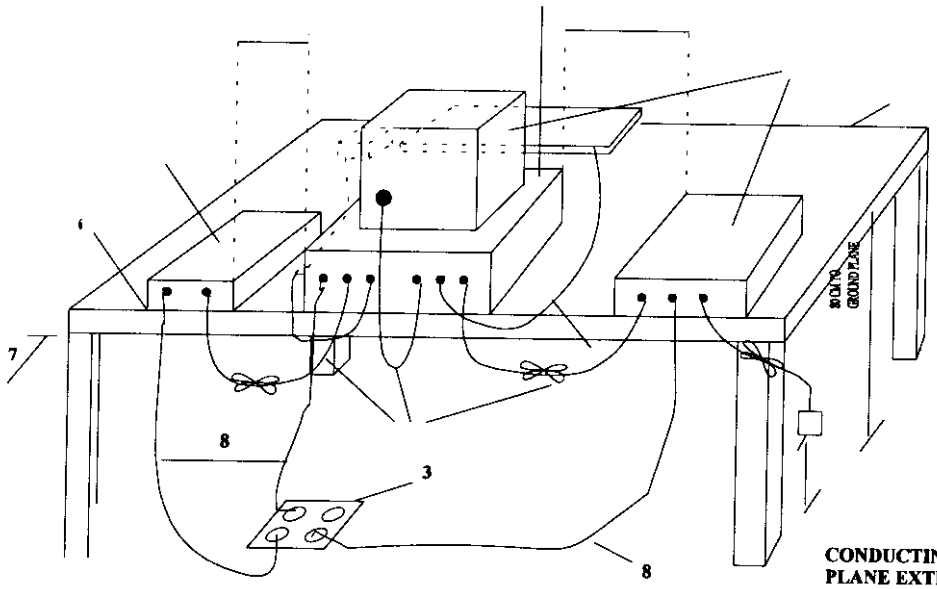
Where	FS	=	Field Strength
	RA	=	Receiver/Analyzer Reading
	AF	=	Antenna Factor
	CF	=	Cable Attenuation Factor
	AG	=	Amplifier Gain

Example: If a receiver reading of 60.0 dBuV is obtained, the antenna factor of 7.0 dB/m and cable factor of 1.0 dB are added, and the amplifier gain of 30 dB is subtracted. The actual field strength will be:.

Field Level = 60 + 7.0 + 1.0 - 30 = 38.0 dBuV/m.

Field Level = $10^{(38/20)}$ = 79.43 uV/m.

NOTE: The frequency and amplitude of at least six highest conducted emissions relative to the limit are recorded unless such emissions are more than 20 dB below the limit. If less than six emissions are within 20dB of the limit, the background or receiver noise level shall be reported at representative frequencies.



CONDUCTING GROUND PLANE EXTENDS 0.5 m BEYOND EUT SYSTEM FOOTPRINT

LEGEND:

1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.

2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1m.

3. If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground plane with the receptable flush with the ground plane.

4. Cables of hand-operated devices, such as keyboards, mouses, etc., have to be placed as close as possible to the controller.

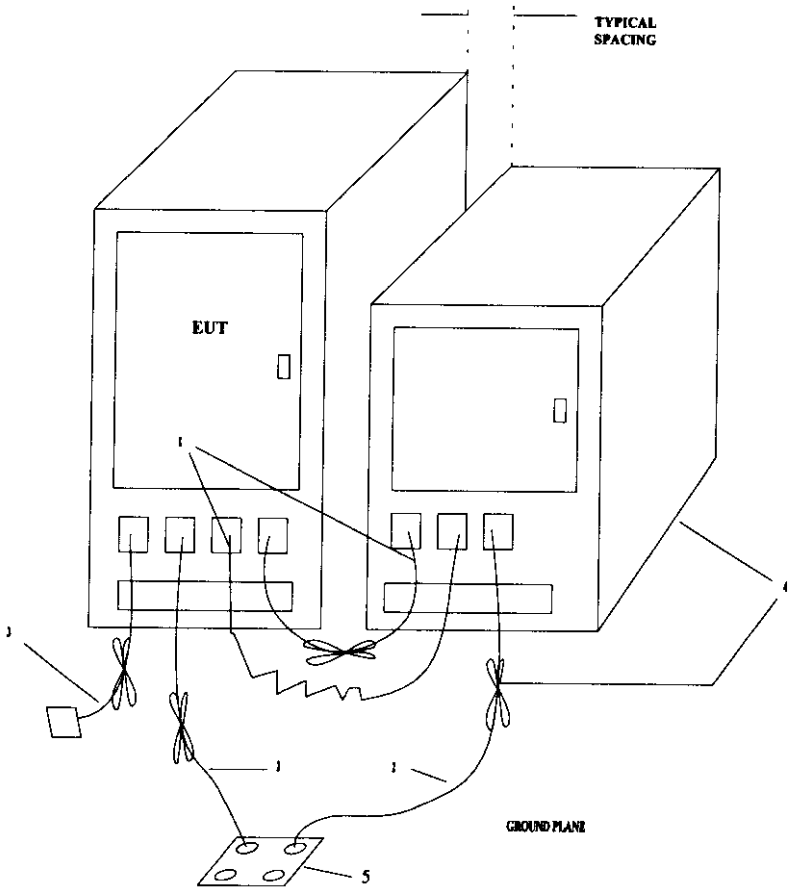
5. Non-EUT components of EUT system being tested.

6. The rear of all components of the system under test shall be located flush with the rear of the table.

7. No vertical conducting wall used.

8. Power cords drape to the floor and are routed over to receptacle.

Tabletop Equipment Radiated Emissions



LEGEND:

1. Excess I/O cables shall be bundled in center. If bundling is not possible, the cables shall be arranged in serpentine fashion.

2. Excess power cords shall be bundled in the center or shortened to appropriated length.

3. I/O cables that are not connected to aperipheral shall be bundled in the center. The end of the cable may be terminated if required using correct terminating impedance. If bundling is not possible, the cable shall be arranged in serpentine fashion.

4. EUT and all cables shall be inslulated from ground plane by 3 to 12 mm of insulating material.

5. If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground plane with the receptacle flush with the ground plane.

Floor-Standing Equipment Radiated Emissions

EXHIBIT 8. PLOTS OF MEASUREMENTS

UltraTech
Engineering Labs Inc.

TEKLOGIX INC.
TEKLOGIX TRX 7370 UHF TRANSCEIVER
Channel #: 1 ,Tx Frequency: 403 MHz
Modulation: FM Modulation with 19200 b/s random data (INTERNAL)

Date: Sept. 12, 1999
Tested by: Hung Trinh

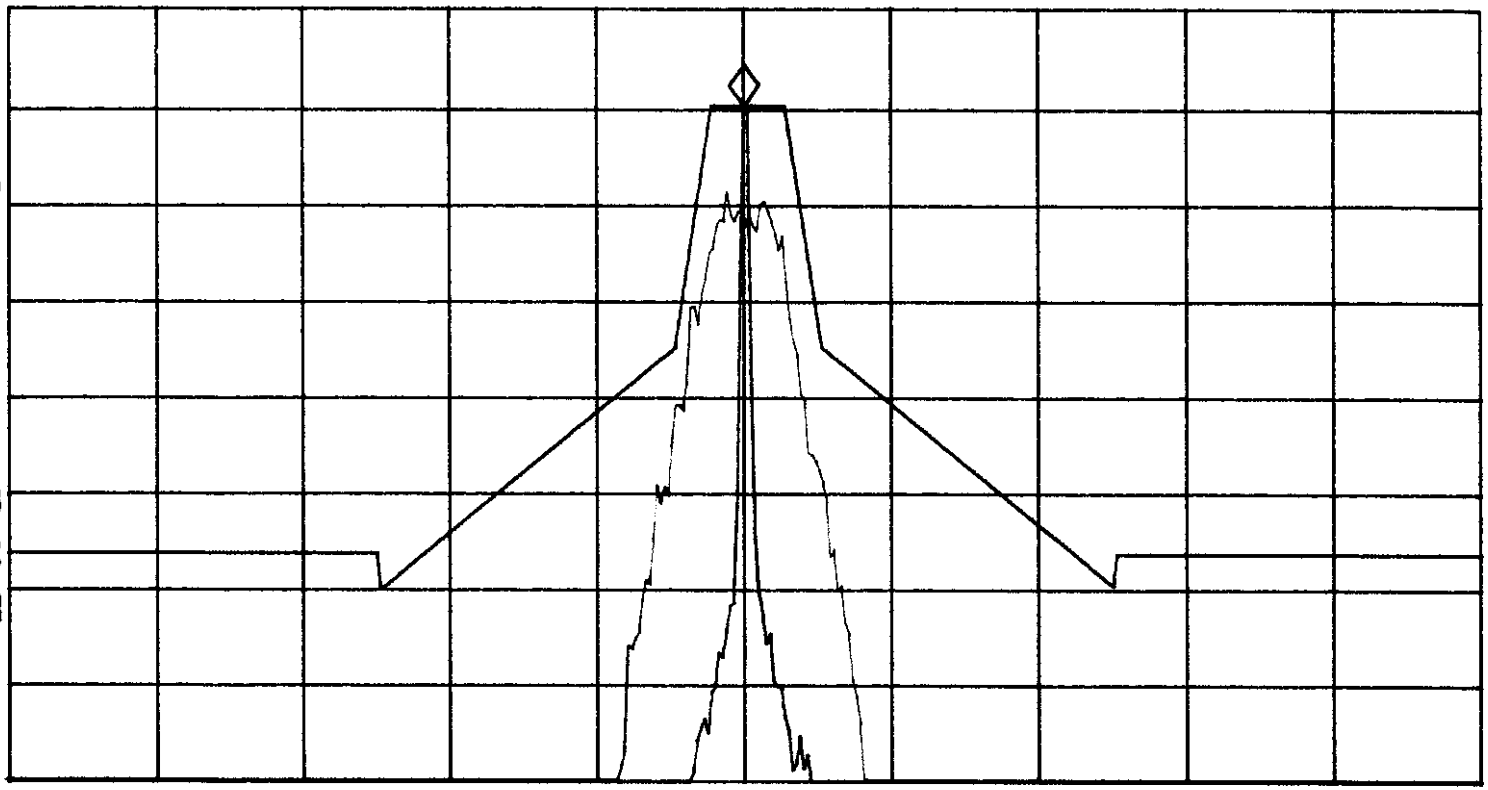
REF LEVEL
43.2 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 4Ø3.ØØØØ MHz
33.Ø3 dBm

No user Menu

PLOT #1

REF OFFST 2Ø.Ø dB
LOG REF 43.2 dBm
MASK C



CENTER 4Ø3.ØØØØ MHz
#IF BW 3ØØ Hz
AVG BW 3ØØ Hz
SPAN 2ØØ.Ø kHz
SWP 6.67 sec

UltraTech
Engineering Labs Inc.

TEKLOGIX INC.
TEKLOGIX TRX 7370 UHF TRANSCEIVER
Channel #: 2 **,Tx Frequency:** 450 **MHz**
Modulation: FM Modulation with 19200 b/s random data (INTERNAL)

Date: Sept. 17**, 1999**
Tested by: Hung Trinh

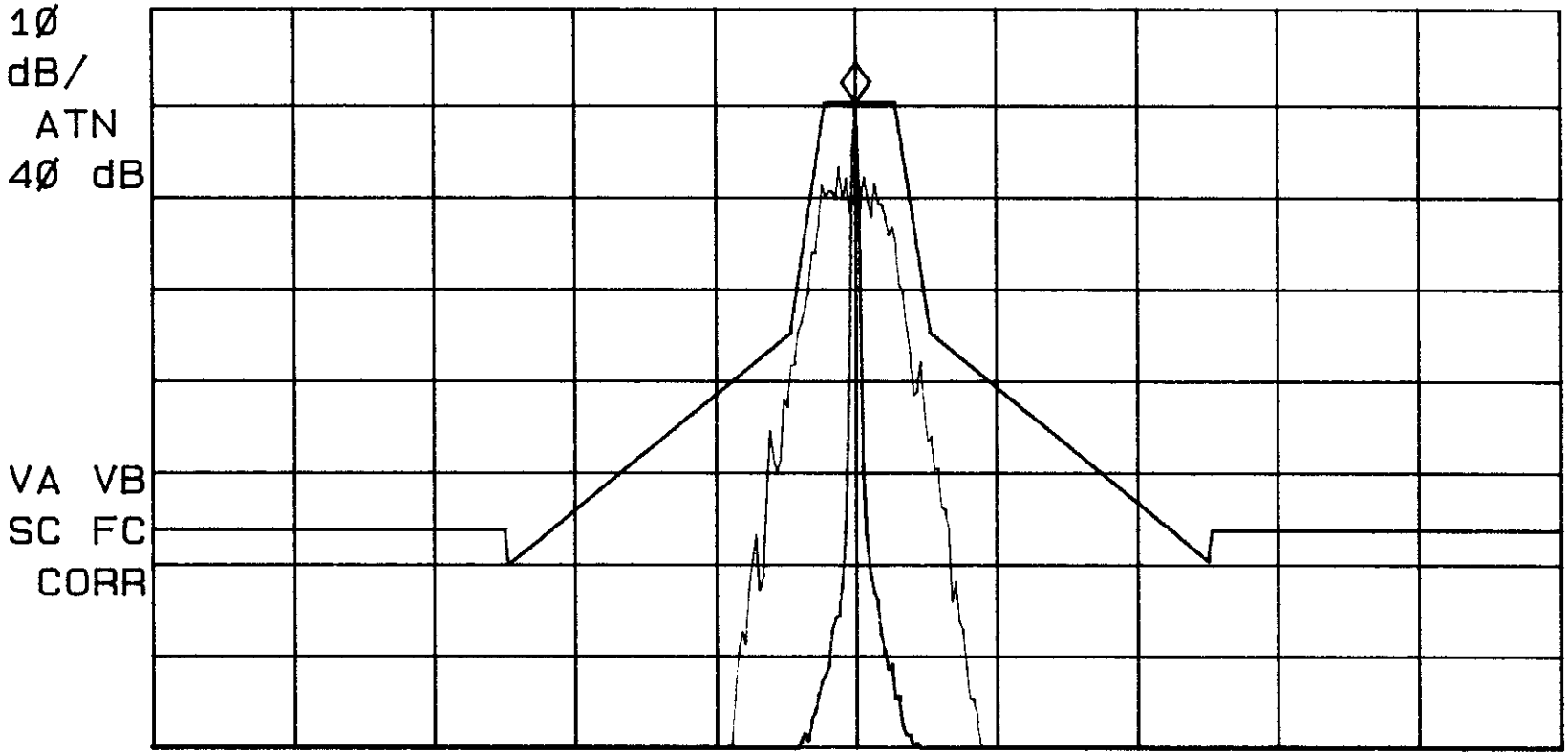
REF LEVEL
43.6 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 450.0000 MHz
33.43 dBm

No user Menu

PLOT #2

REF OFFST 20.0 dB
LOG REF 43.6 dBm
MASK C



CENTER 450.0000 MHz
#IF BW 300 Hz
AVG BW 300 Hz
SPAN 200.0 kHz
SWP 6.67 sec

UltraTech Engineering Labs Inc.

TEKLOGIX INC.

TEKLOGIX TRX 7370 UHF TRANSCEIVER

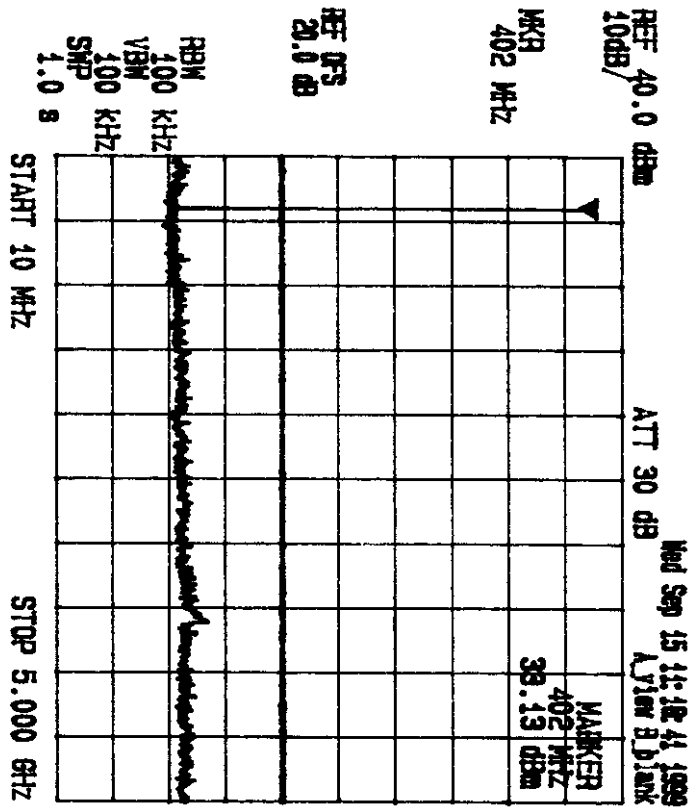
Channel #: 1 **,Tx Frequency:** 403 **MHz**

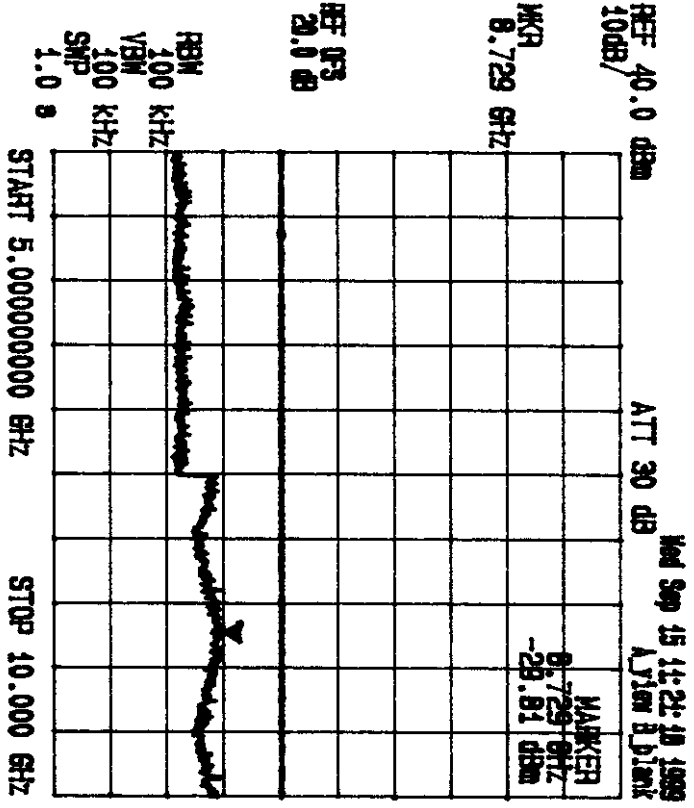
Modulation: FM Modulation with 19200 b/s INTERNAL RANDOM DATA

Date: Sept. 15**, 1999**
Tested by: Hung Trinh

TRANSMITTER ANTENNA POWER CONDUCTED EMISSIONS

PLOT # 6





UltraTech Engineering Labs Inc.

TEKLOGIX INC.

TEKLOGIX TRX 7370 UHF TRANSCEIVER (25 KHz CHANNEL SPACING)

TRANSIENT FREQUENCY BEHAVIOR

Modulation: NO MODULATION

Date: Sept. 21, 1999
Tested by: Hung Trinh

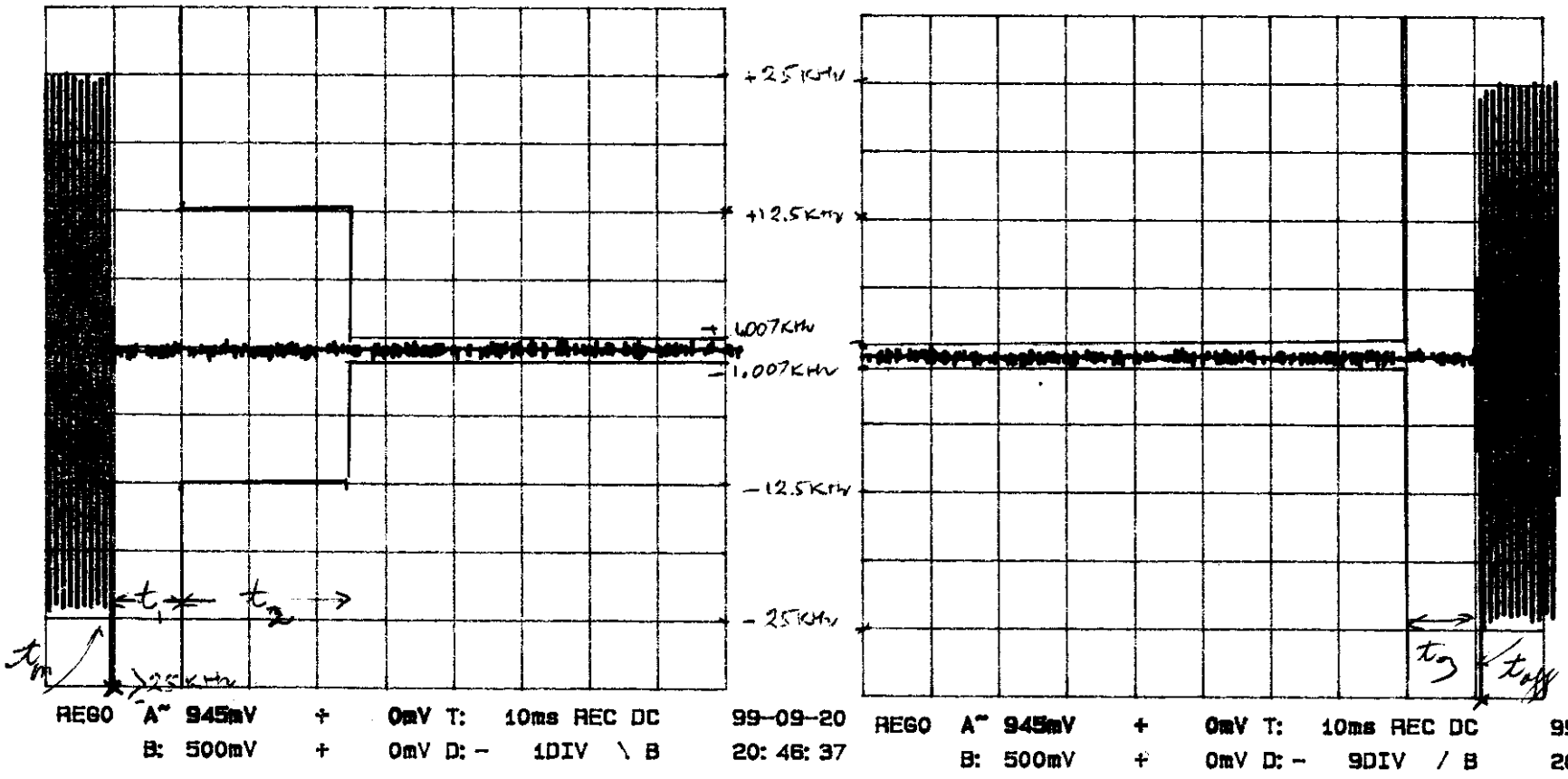
TRANSMITTER TURNED ON

TRANSMITTER TURNED OFF

PLOT #9

20: 50: 22 99 Sep 20

20: 44: 56 99 Sep 20



UltraTech Engineering Labs Inc.

TEKLOGIX INC.

TEKLOGIX TRX 7370 UHF TRANSCEIVER (25 KHz CHANNEL SPACING)

TRANSIENT FREQUENCY BEHAVIOR

Modulation: FM MODULATION WITH 19200 b/s RANDOM DATA (FREQ. DEVIATION: ±5KHz)

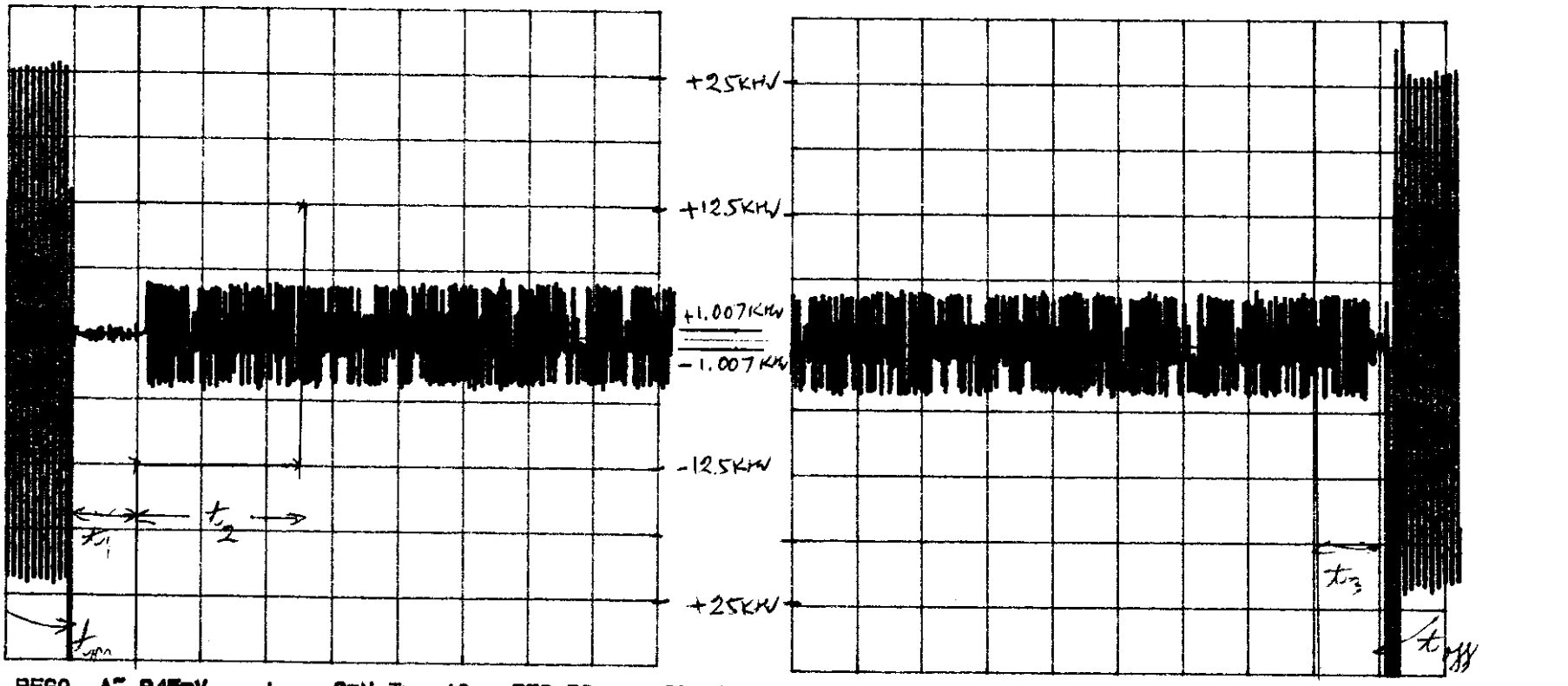
Date: Sept. 21, 1999
Tested by: Hung Trinh

TRANSMITTER TURNED ON | **TRANSMITTER TURNED OFF**

PLOT #10

20: 53: 57 99 Sep 20

21: 04: 45 99 Sep 20



REGO A" 945mV + 0mV T: 10ms REC DC 99-09-20
B: 500mV + 0mV D: - 1DIV \ B 20: 51: 32

REGO A" 945mV + 0mV T: 10ms REC DC 99-09-20
B: 500mV + 0mV D: - 9DIV / B 20: 57: 09