



TEST DATA REPORT

Report Number: 100659878MIN-001

Project Number: G100659878

Testing performed on the

FWP - L4MT000MOD

to

47 CFR, Part 27:2010, Enclosure Spurious Radiated Emissions

For

ADC Telecommunications Inc. - a TE Connectivity Company

Test Performed by:

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7250 Hudson Blvd., Suite 100
Oakdale, MN 55128 USA

Test Authorized by:

ADC Telecommunications Inc.- a TE Connectivity
Company
541 E Trimble Road
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Date: March 20, 2012

Reviewed by: NShpilsher
Norman Shpilsher

Date: March 20, 2012

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TABLE OF CONTENTS

1.0 DESCRIPTION OF THE SAMPLE (EUT)..... 3

2.0 TEST SUMMARY..... 4

2.1 Statement of the Measurement Uncertainty..... 4

3.0 EQUIPMENT UNDER TEST 5

3.1 Power Configuration 5

3.2 EUT Configuration..... 5

3.3 Environmental conditions..... 6

4.0 TEST CONDITIONS AND RESULTS..... 7

4.1 Enclosure Spurious Radiated Emissions..... 7

5.0 TEST EQUIPMENT..... 18

1.0 DESCRIPTION OF THE SAMPLE (EUT)

Model:	FWP - L4MT000MOD		
Type of EUT:	700 Lower ABC Band MIMO		
Frequency Range:	728-746MHz		
Company:	ADC Telecommunications Inc. - a TE Connectivity Company		
Customer:	Sue Cyr		
Address:	541 E. Trimble Road San Jose, CA 95131 USA		
Phone:	408-952-2445		
Fax:	408-952-2645		
e-mail:	sue.cyr@te.com		
Test Standards:	<input type="checkbox"/> EN 55022:2006 +A1:2007, Class T <input type="checkbox"/> EN 55011:2007 +A2:2007, Group T , Class T <input checked="" type="checkbox"/> 47 CFR, Part 27:2010, Enclosure Spurious Radiated Emissions <input type="checkbox"/> ICES-003, Issue 4:2004 <input type="checkbox"/> EN 55014-1:2006 <input type="checkbox"/> EN 61326-1:2006 <input type="checkbox"/> Class T for Radiated and Conducted Emissions <input type="checkbox"/> Basic Immunity Test Requirements <input type="checkbox"/> Immunity Test Requirements for Industrial Locations <input type="checkbox"/> EN 60601-1-2:2001 +A1:2006 <input type="checkbox"/> EN 61000-6-3:2007 <input type="checkbox"/> EN 61000-6-4:2007 <input type="checkbox"/> EN 61000-3-2:2006 <input type="checkbox"/> EN 61000-3-3:1995 +A1:2001 +A2:2006 <input type="checkbox"/> EN 61000-6-1:2007 <input type="checkbox"/> EN 61000-6-2:2005 <input type="checkbox"/> EN 55024:1998 + A1:2001 + A2:2003		
Date Sample Submitted:	March 19, 2012		
Test Work Started:	March 20, 2012		
Test Work Completed:	March 20, 2012		
Test Sample Conditions:	<input type="checkbox"/> Damaged <input type="checkbox"/> Poor (Usable) <input checked="" type="checkbox"/> Good <input type="checkbox"/> Prototype <input checked="" type="checkbox"/> Production <input type="checkbox"/> Used		

2.0 TEST SUMMARY

Referring to the performance criteria and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards.

TEST STANDARD	TEST	RESULT
Part 27	Enclosure Spurious Radiated Emissions	Pass

2.1 Statement of the Measurement Uncertainty

Note: The measured result in this report is within the specification limits by more than the measurement uncertainty; the measured result indicates that the product tested complies with the specification limit.

The expanded uncertainty ($k = 2$) for radiated emissions from 30 to 1000 MHz has been determined to be: ± 4 dB at 10m and ± 5.4 dB at 3m

The expanded uncertainty ($k = 2$) for conducted emissions from 150 kHz to 30 MHz has been determined to be:
 ± 2.6 dB

3.0 EQUIPMENT UNDER TEST

3.1 Power Configuration

Rated voltage:	<input checked="" type="checkbox"/> 120VAC <input type="checkbox"/> 230VAC <input type="checkbox"/> 400VAC Supply <input type="checkbox"/> Other: <input type="text"/>
Rated current:	<input type="text"/> Amp.
Rated frequency:	<input type="checkbox"/> 50Hz <input checked="" type="checkbox"/> 60Hz
Number of phases:	<input checked="" type="checkbox"/> 1 Phase <input type="checkbox"/> 3 Phases

3.2 EUT Configuration

The equipment under test was operated during the measurement under the following conditions:

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☒ - Continuous Operation (see details below)
- ☐ - Specific test program
- ☐ -

Operating modes of the EUT:

No.	Description
1	Continuous transmission of RF signals at 729MHz, 737MHz, and 745MHz into two paths.
2	The EUT antenna ports were terminated.

Cables:

No.	Type	Length	Designation	Note
1	Two RF coax	10m each	RF signal cables to the Support Equipment	

Support equipment/Services:

No.	Item	Description
1	Agilent 8648B (located outside Test site)	Signal Generator
2	Prism Host Unit	
3	Prism Host 28VDC Power Supply	
4	30dB Attenuator (2)	

General notes: None

3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	<u>15-35 °C</u>
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Humidity:	<u>30-60 %</u>
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Atmospheric pressure:	<u>86-106 kPa</u>
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4.0 TEST CONDITIONS AND RESULTS

4.1 Enclosure Spurious Radiated Emissions

Description of the test location

Test location: ☐ OATS ☒ Anechoic Chamber

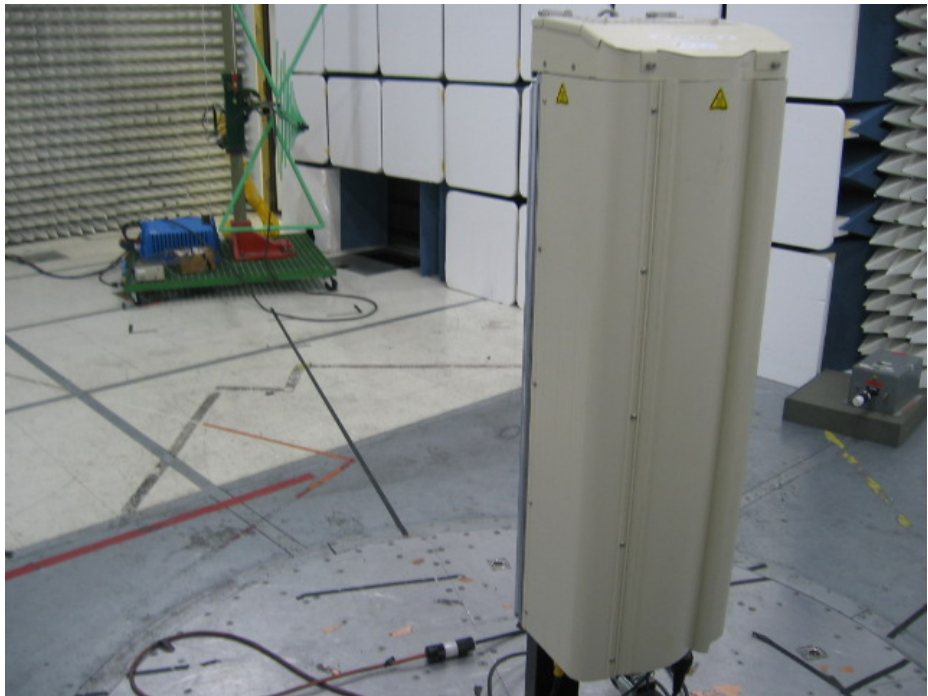
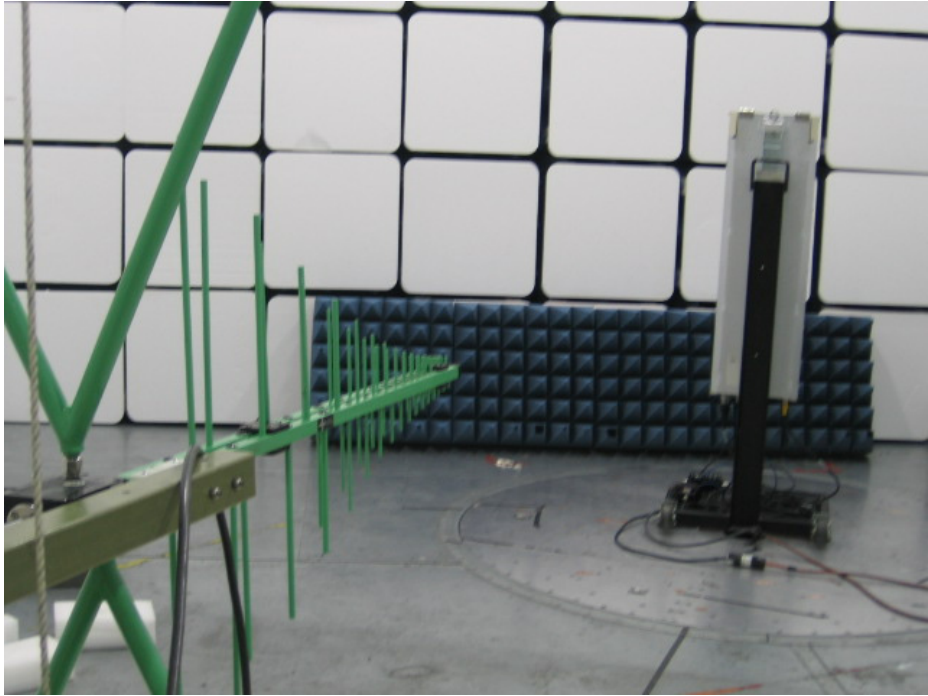
Test distance: ☐ 10 meters ☒ 3 meters

Test result: **Pass**

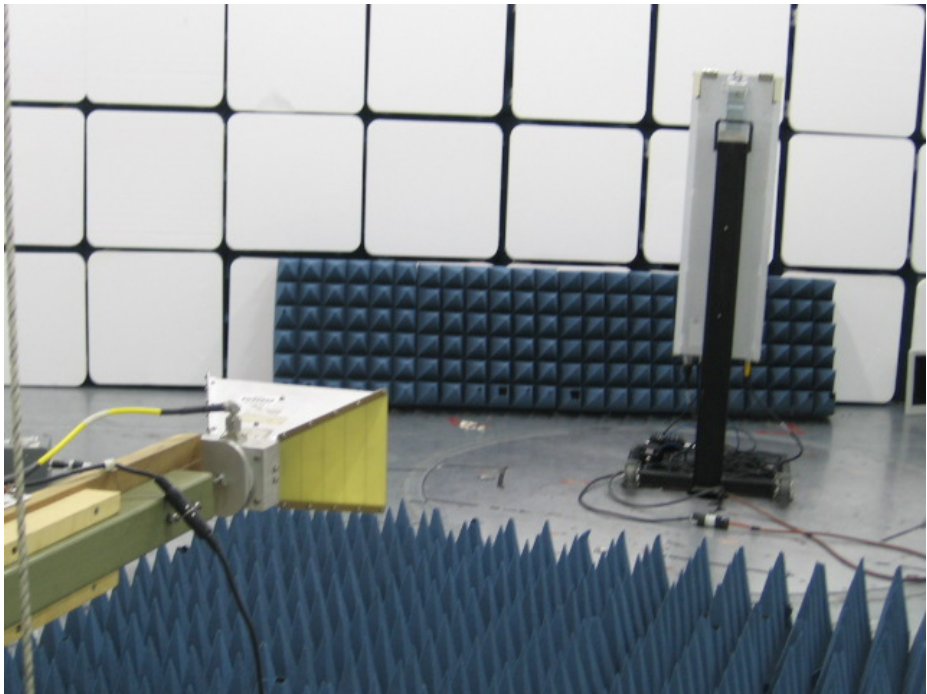
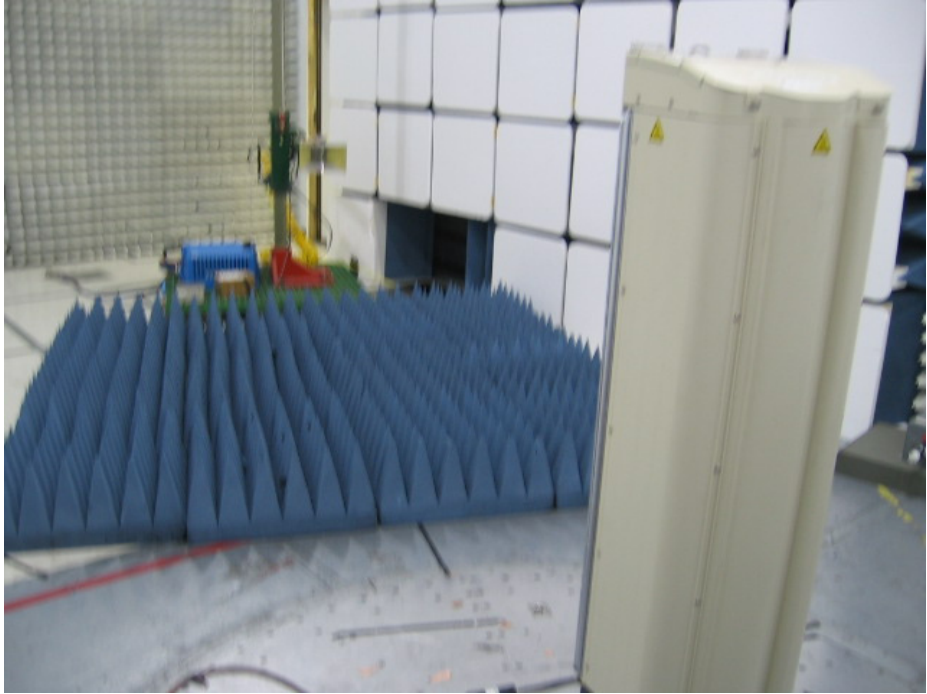
Frequency range: 30MHz-10GHz

Max. Emissions margin: 21.7dB below the Limits

- Notes:**
1. The Radiated Emissions testing was performed in the Anechoic chamber at 3m measurement distance (see Tables 1 and 2 and Graphs 1-12)
 2. The Spurious Radiated Power limits of -13dBm was correlated with field strength Reference Limit of 82.2dB μ V/m during field strength reference testing at 3m measurement distance (Graphs 1-12)
 3. No emissions were chosen for substitution measurements as the maximum field strength emission is more than 20dB below the Reference Limit
 4. Emissions at operating frequencies were excluded from the Tables
-



Test Setup Photos



Test Setup Photos

Date:	March 20, 2012	Result: Pass
Tested by:	Simon Khazon	
Standard:	FCC Part 27	
Test Point:	Enclosure	
Operation mode:	See page 5	
Note:	Frequency Range 30-1000MHz	

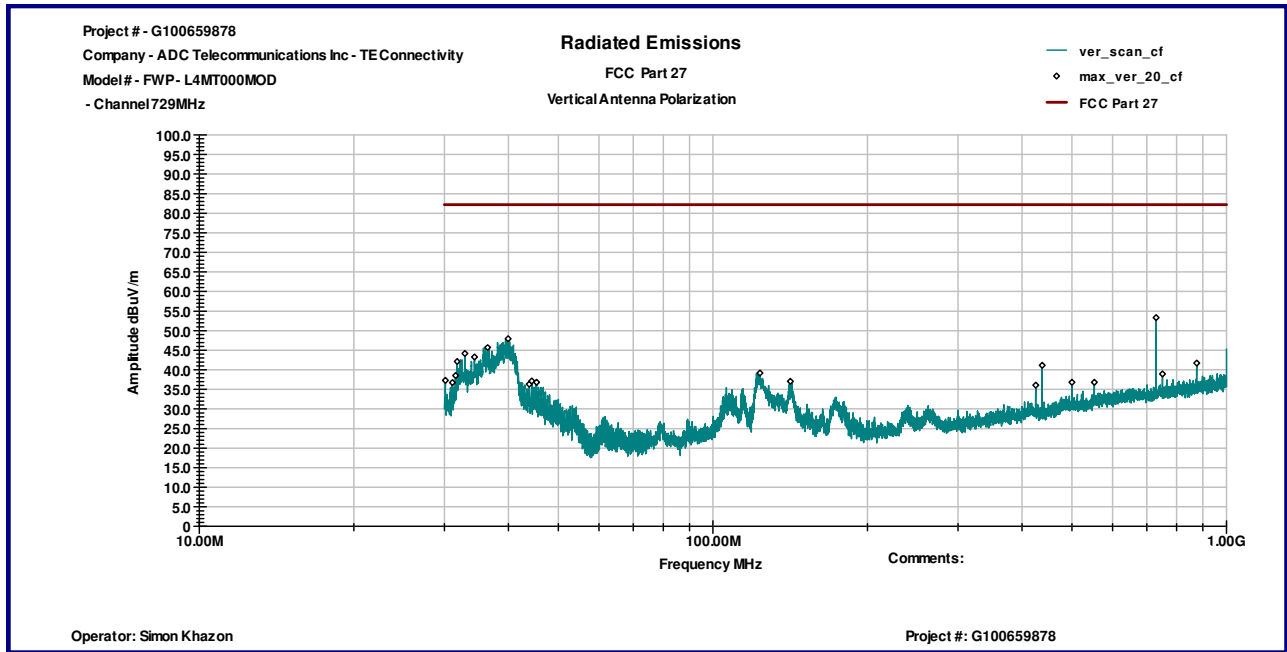
Table 1

Frequency	Ant. Polarity	Peak Reading dBμV	Ant.Factor dB1/m	Total at 3m dBμV/m	Limit dBμV/m	Margin dB
Channel 729MHz						
36.405 MHz	V	28.9	16.8	45.7	82.2	-36.5
39.931 MHz	V	33.1	14.8	47.9	82.2	-34.3
437.57 MHz	V	21.6	19.6	41.2	82.2	-41.0
875.06 MHz	V	16.7	25.1	41.7	82.2	-40.5
171.26 MHz	H	32.0	11.5	43.5	82.2	-38.7
499.94 MHz	H	18.1	20.7	38.8	82.2	-43.4
750.23 MHz	H	17.8	23.8	41.5	82.2	-40.7
Channel 737MHz						
36.685 MHz	V	30.1	16.6	46.7	82.2	-35.5
38.089 MHz	V	30.9	15.8	46.7	82.2	-35.5
40.16 MHz	V	34.7	14.6	49.3	82.2	-32.9
875.06 MHz	V	17.9	25.1	43.0	82.2	-39.2
170.57 MHz	H	31.9	11.6	43.5	82.2	-38.7
437.57 MHz	H	19.1	19.6	38.7	82.2	-43.5
750.23 MHz	H	15.6	23.8	39.3	82.2	-42.9
Channel 745MHz						
32.22 MHz	V	26.2	19.1	45.3	82.2	-36.9
35.726 MHz	V	30.4	17.2	47.5	82.2	-34.7
437.47 MHz	V	21.9	19.6	41.5	82.2	-40.7
170.43 MHz	H	31.2	11.6	42.7	82.2	-39.5
437.54 MHz	H	20.4	19.6	40.0	82.2	-42.3
750.0 MHz	H	18.7	23.8	42.4	82.2	-39.8

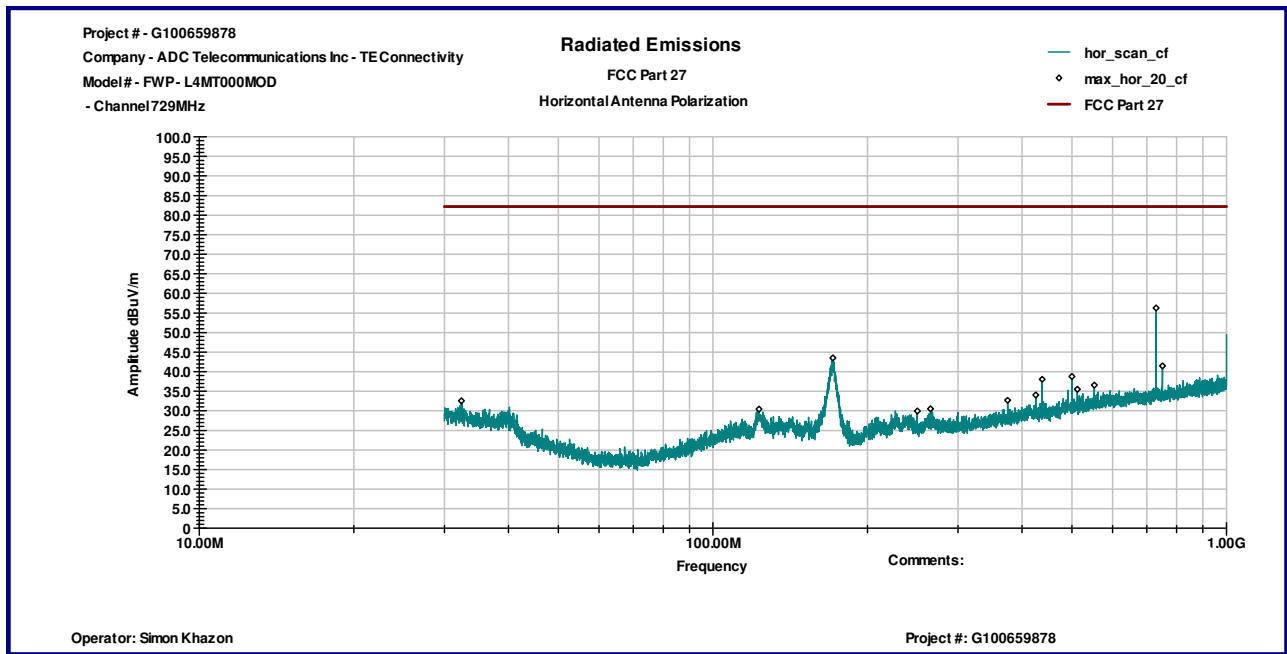
Date:	March 19, 2012	Result: Pass
Tested by:	Simon Khazon	
Standard:	FCC Part 27	
Test Point:	Enclosure	
Operation mode:	See page 5	
Note:	Frequency Range 1.0-10.0GHz	

Table 2

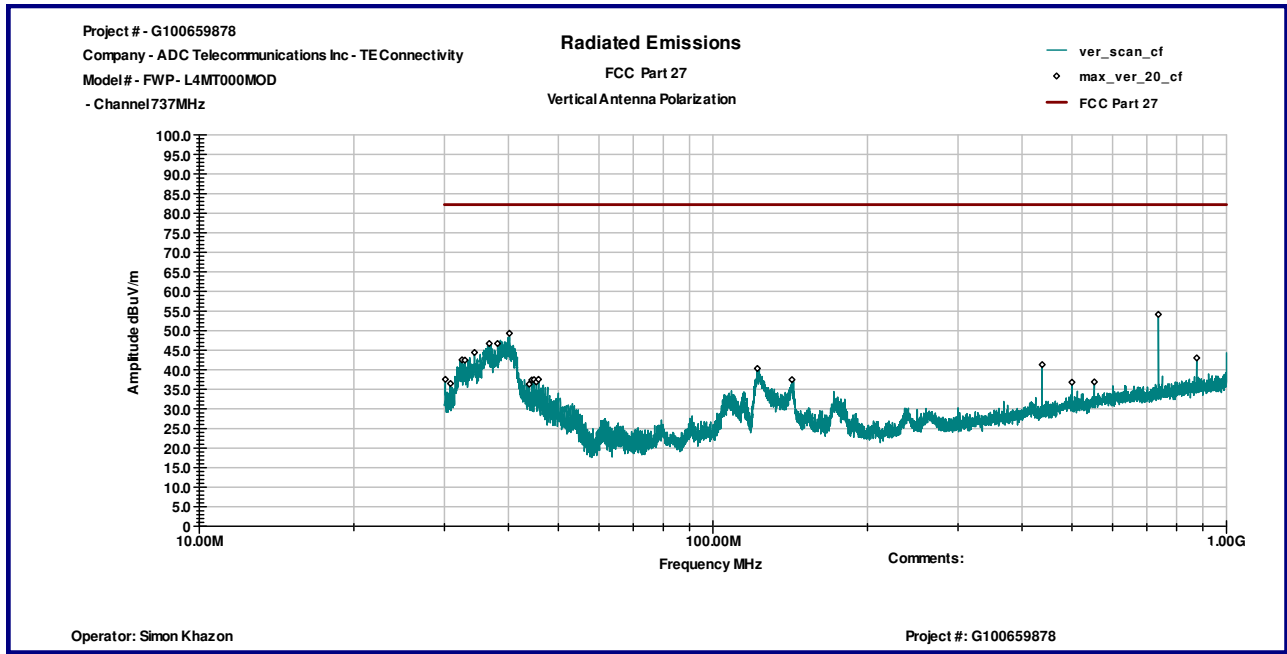
Frequency MHz	Antenna Polarity	Peak Reading dBμV	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dBμV/m	Limit dBμV/m	Margin dB
Channel 729MHz							
1.459 GHz	V	63.6	27.5	43.0	48.1	82.2	-34.1
2.335 GHz	V	57.1	31.2	43.5	44.8	82.2	-37.4
2.467 GHz	V	56.4	31.6	43.5	44.6	82.2	-37.6
9.013 GHz	V	43.4	43.5	40.3	46.6	82.2	-35.7
1.249 GHz	H	66.7	26.7	42.9	50.5	82.2	-31.8
1.459 GHz	H	64.9	27.5	43.0	49.4	82.2	-32.8
2.113 GHz	H	66.9	30.5	43.5	53.9	82.2	-28.3
2.335 GHz	H	67.4	31.1	43.5	55.1	82.2	-27.1
2.914 GHz	H	61.9	33.1	43.8	51.2	82.2	-31.0
Channel 737MHz							
1.474 GHz	V	60.3	27.6	43.0	44.8	82.2	-37.4
2.113 GHz	V	61.4	30.6	43.5	48.5	82.2	-33.7
2.422 GHz	V	62.2	31.5	43.5	50.2	82.2	-32.0
9.745 GHz	V	43.6	44.1	41.1	46.7	82.2	-35.5
1.249 GHz	H	66.0	26.7	42.9	49.8	82.2	-32.4
1.474 GHz	H	63.4	27.6	43.0	47.9	82.2	-34.3
2.113 GHz	H	66.7	30.5	43.5	53.6	82.2	-28.6
2.335 GHz	H	67.2	31.1	43.5	54.8	82.2	-27.4
3.502 GHz	H	56.4	35.0	43.6	47.9	82.2	-34.3
4.084 GHz	H	53.7	36.6	42.9	47.4	82.2	-34.8
4.669 GHz	H	49.7	37.1	42.1	44.6	82.2	-37.6
8.911 GHz	H	43.6	43.5	40.3	46.8	82.2	-35.4
Channel 745MHz							
2.113 GHz	V	62.5	30.55	43.5	49.6	82.2	-32.6
2.335 GHz	V	57.9	31.22	43.5	45.7	82.2	-36.5
2.422 GHz	V	72.5	31.48	43.5	60.5	82.2	-21.7
9.7 GHz	V	44.0	44.08	41.0	47.1	82.2	-35.1
1.249 GHz	H	66.5	26.69	42.9	50.3	82.2	-31.9
2.113 GHz	H	67.6	30.47	43.5	54.5	82.2	-27.7
2.335 GHz	H	67.5	31.12	43.5	55.2	82.2	-27.0
2.98 GHz	H	57.9	33.28	43.8	47.3	82.2	-34.9
3.502 GHz	H	56.4	34.98	43.6	47.8	82.2	-34.4
4.084 GHz	H	53.9	36.56	42.9	47.6	82.2	-34.6
4.666 GHz	H	49.5	37.07	42.1	44.4	82.2	-37.8
9.613 GHz	H	43.5	43.95	40.9	46.5	82.2	-35.7



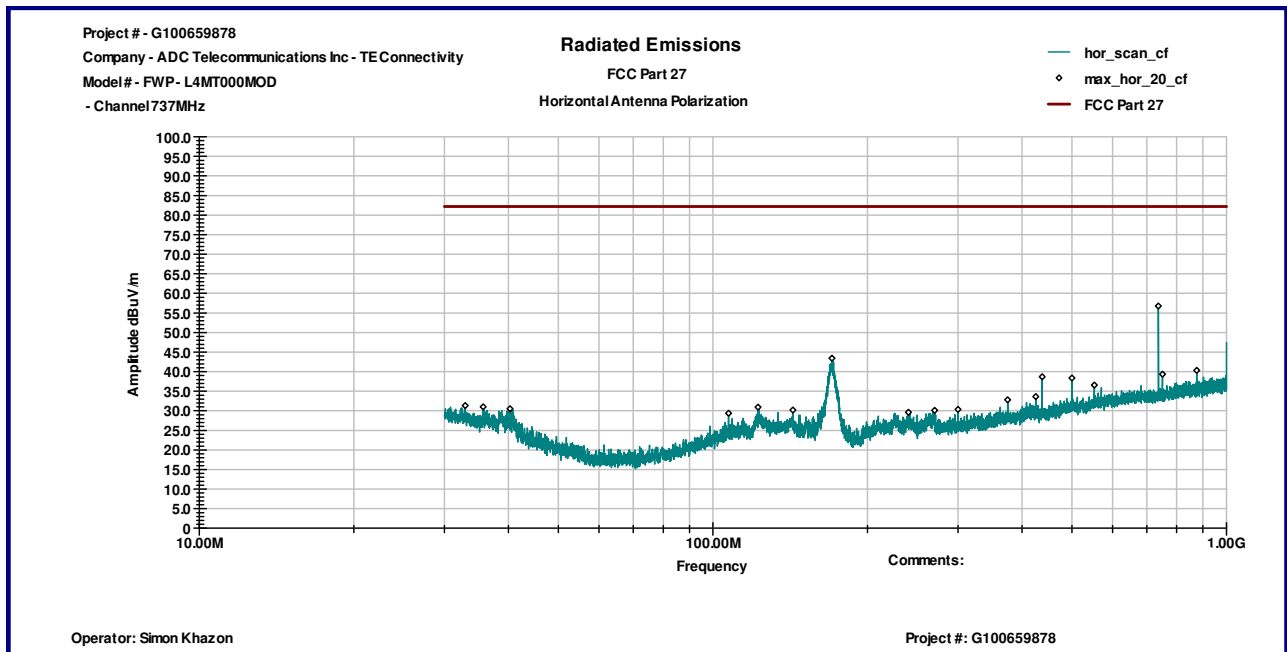
Graph 1



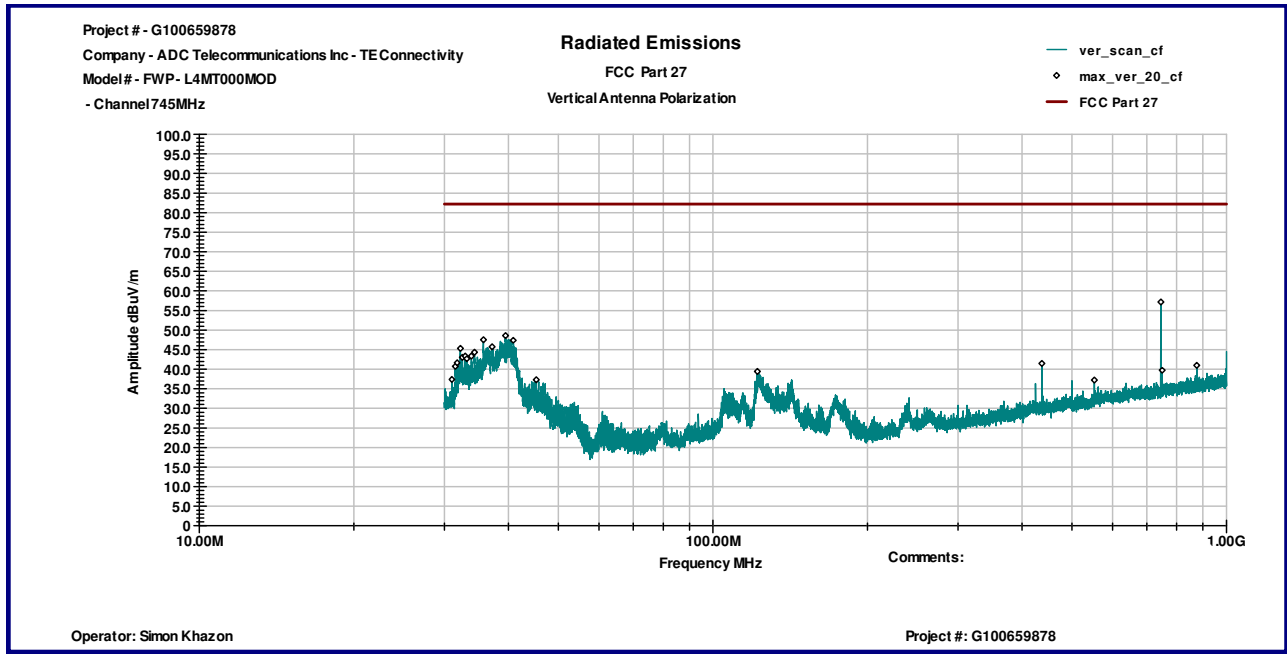
Graph 2



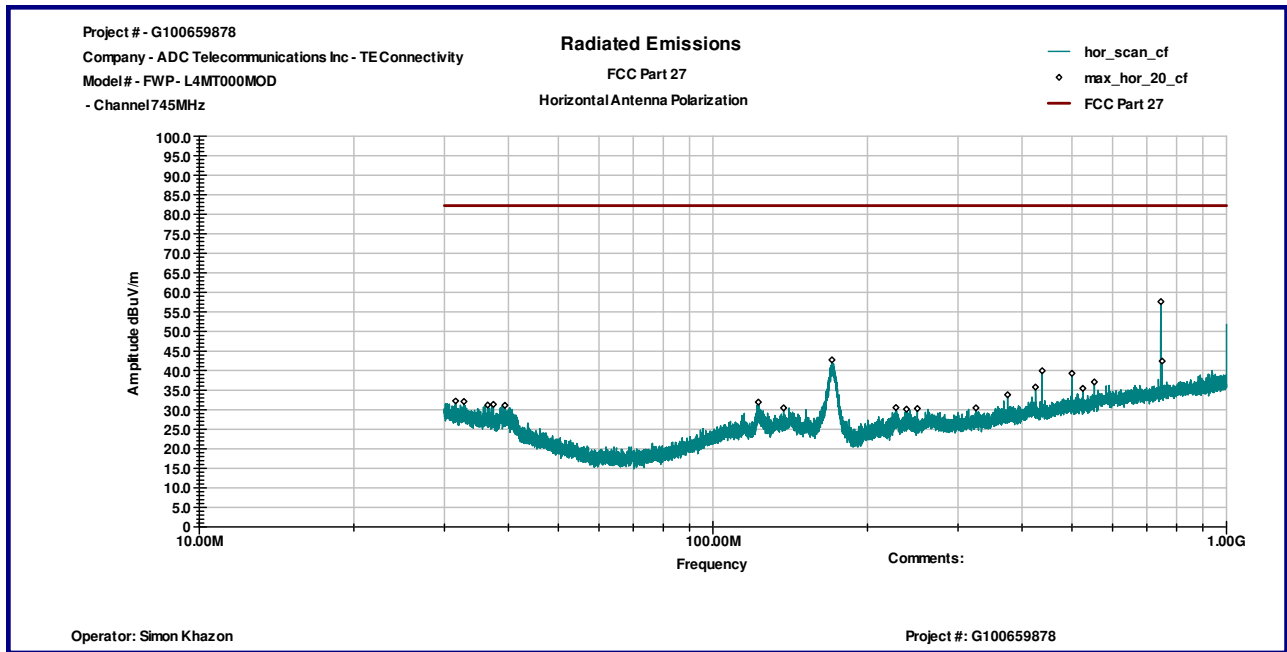
Graph 3



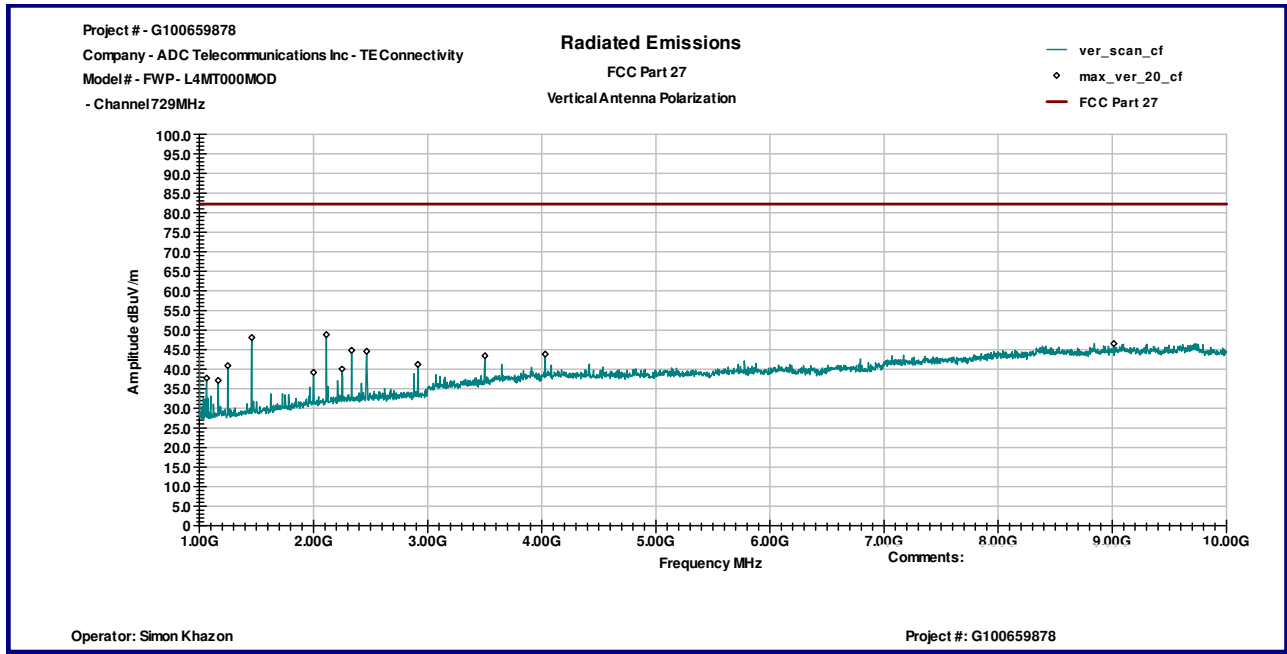
Graph 4



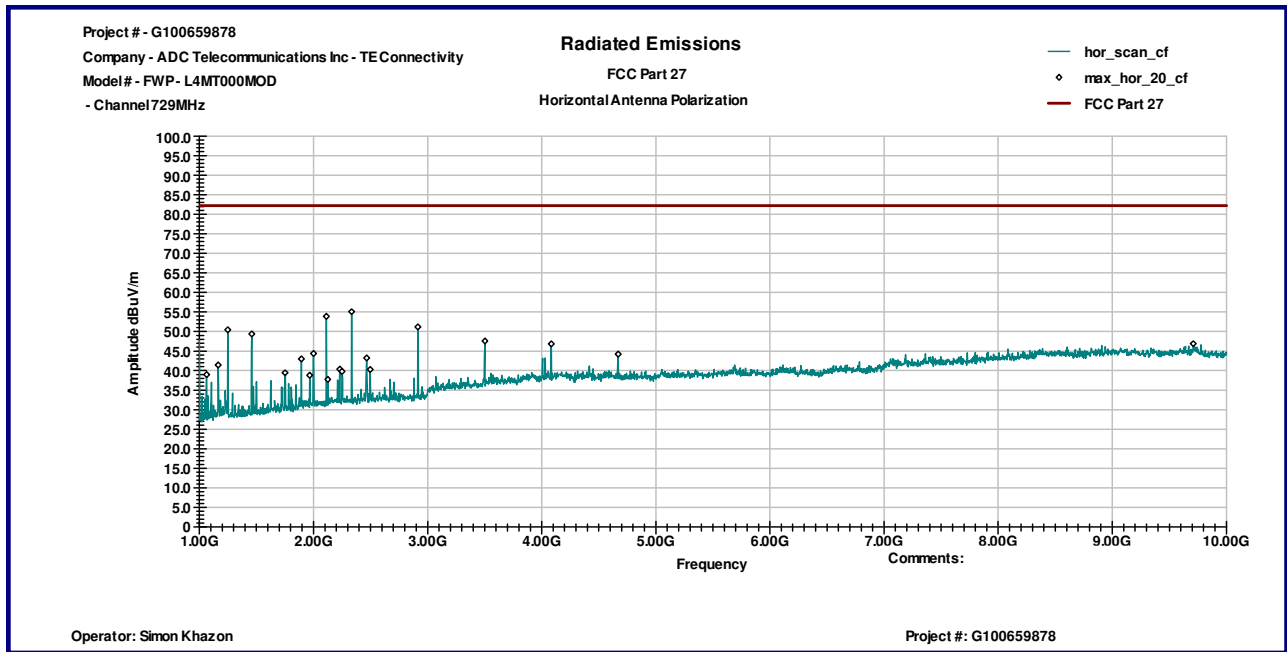
Graph 5



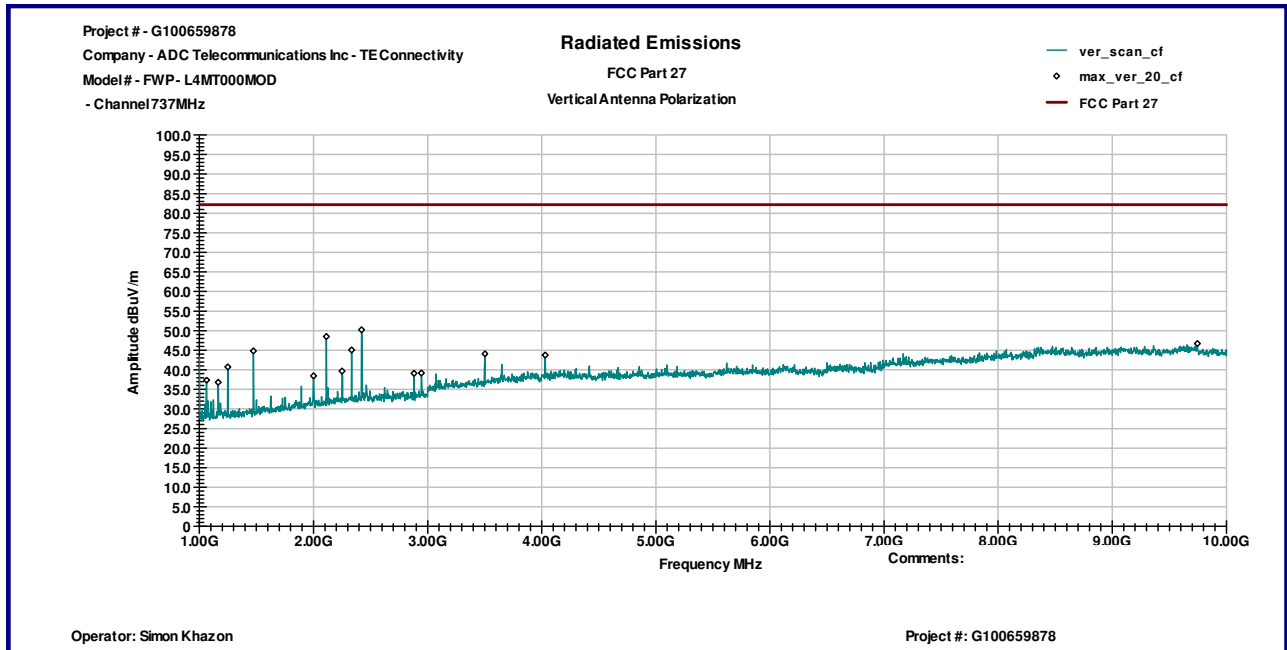
Graph 6



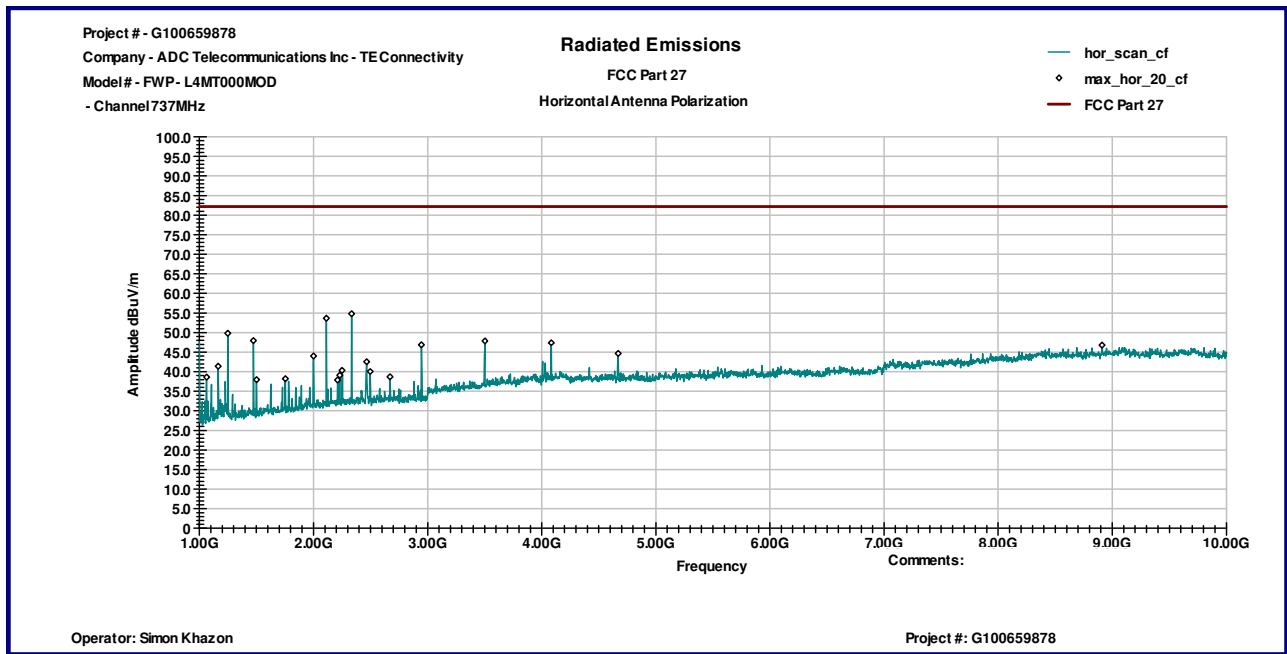
Graph 7



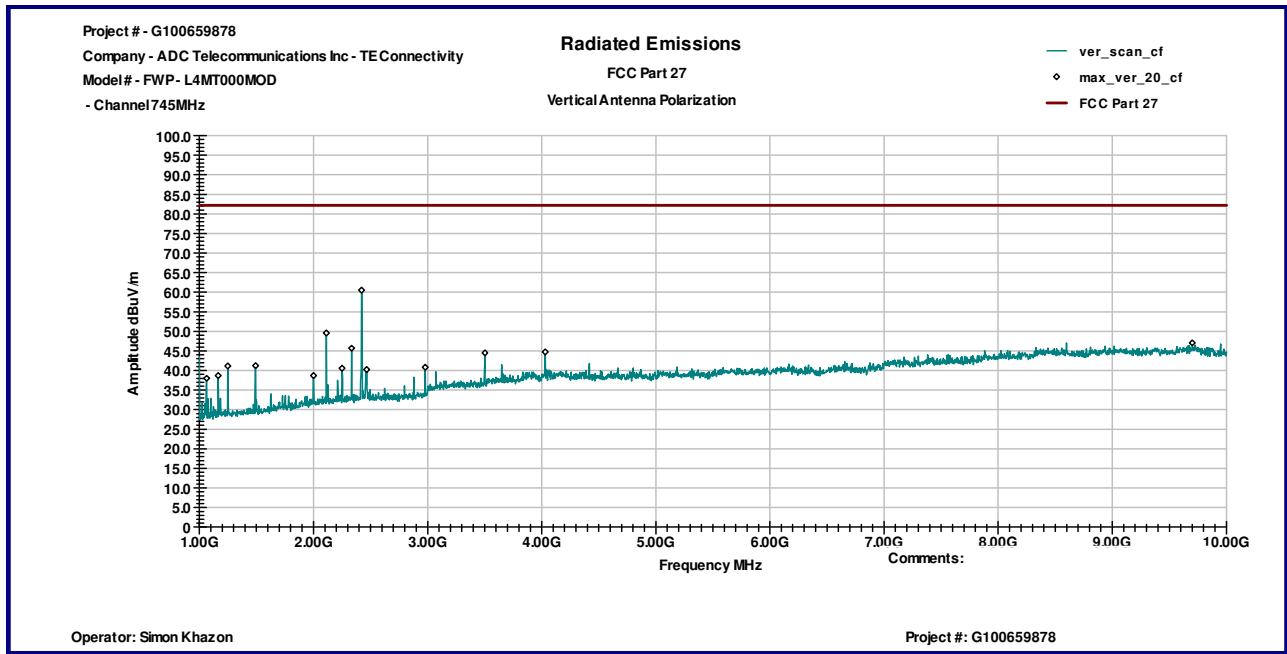
Graph 8



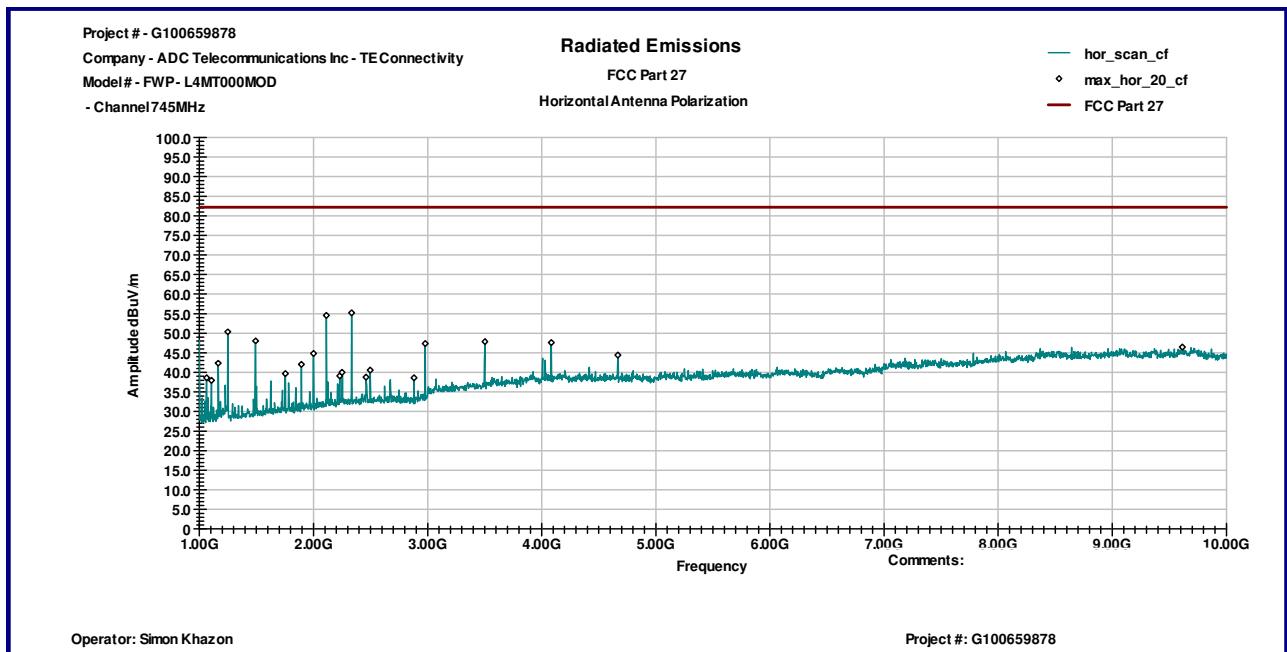
Graph 9



Graph 10



Graph 11



Graph 12

5.0 TEST EQUIPMENT

DESCRIPTION	MANUFACTURER	MODEL	SERIAL NO.	INTERTEK ID	CAL DUE	USED
Spectrum Analyzer	R & S	FSP 40	100024	12559	11/17/2012	<input checked="" type="checkbox"/>
Spectrum Analyzer	R & S	ESU	100398	25283	12/09/2012	<input checked="" type="checkbox"/>
Bicono-Log Antenna	Schaffner-Chase	CBL 6112 B	2468	9734	11/08/2012	<input checked="" type="checkbox"/>
Horn Antenna	EMCO	3115	6579	15580	05/25/2012	<input checked="" type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-5D-00501800-28-13P	1402232	172081	10/31/2012	<input checked="" type="checkbox"/>
System	Quantum Change	TILE! Instrument Control	Ver. 3.4.K.29	15259	VBV	<input checked="" type="checkbox"/>

