



## TEST DATA REPORT

Report Number: 100616112MIN-001

Project Number: G100616112

Testing performed on the  
SPT-S1-8019-22

to

47 CFR, Part 24:2010, Enclosure Spurious Radiated Emissions  
47 CFR, Part 90:2010, Enclosure Spurious Radiated Emissions

For

ADC Telecommunications Inc. - a TE Connectivity Company

Test Performed by:  
Intertek Testing Services NA, Inc.  
7250 Hudson Blvd., Suite 100  
Oakdale, MN 55128 USA

Test Authorized by:  
ADC Telecommunications Inc.- a TE Connectivity  
Company  
541 E Trimble Road  
San Jose, CA 95131 USA

Prepared by: Richard Blonigen  
Richard Blonigen

Date: January 23, 2012

Reviewed by: Norman Shpilsher  
Norman Shpilsher

Date: January 23, 2012

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## 1.0 DESCRIPTION OF THE SAMPLE (EUT)

<b>Model:</b>	SPT-S1-8019-22
<b>Type of EUT:</b>	800P2_PCSP2_SRAU
<b>Frequency Range:</b>	851-869MHz (SMR Band) 1930-1990MHz (PCS Band)
<b>Company:</b>	ADC Telecommunications Inc. - a TE Connectivity Company
<b>Customer:</b>	Sue Cyr
<b>Address:</b>	541 E. Trimble Road San Jose, CA 95131 USA
<b>Phone:</b>	408-952-2445
<b>Fax:</b>	408-952-2645
<b>e-mail:</b>	<a href="mailto:sue.cyr@te.com">sue.cyr@te.com</a>
<b>Test Standards:</b>	<input type="checkbox"/> EN 55022:2006 +A1:2007, Class [REDACTED] <input type="checkbox"/> EN 55011:2007 +A2:2007, Group [REDACTED], Class [REDACTED] <input checked="" type="checkbox"/> 47 CFR, Part 24:2010, Enclosure Spurious Radiated Emissions <input checked="" type="checkbox"/> 47 CFR, Part 90:2010, 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 [REDACTED] 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
<b>Date Sample Submitted:</b>	January 17, 2012
<b>Test Work Started:</b>	January 17, 2012
<b>Test Work Completed:</b>	January 18, 2012
<b>Test Sample Conditions:</b>	<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 24	Enclosure Spurious Radiated Emissions	Pass
Part 90	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:  $\pm 4$  dB at 10m and  $\pm 5.4$  dB at 3m

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

### 3.0 EQUIPMENT UNDER TEST

#### 3.1 Power Configuration

<b>Rated voltage:</b>	<input type="checkbox"/> 120VAC <input type="checkbox"/> 230VAC <input type="checkbox"/> 400VAC <input checked="" type="checkbox"/> 54VDC from external support Power Supply <input type="checkbox"/> Other: <input type="text"/>
<b>Rated current:</b>	<input type="text"/> Amp.
<b>Rated frequency:</b>	<input type="checkbox"/> 50Hz <input type="checkbox"/> 60Hz
<b>Number of phases:</b>	<input 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 transmitting at 852MHz, 860MHz, and 868MHz
2	Continuous transmitting at 1931MHz, 1960MHz, and 1989MHz
3	RF Input setting: -11dBm; CW. The EUT antenna port was 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	SMR 20	Signal Generator
2	Prism Host Unit p/n 1449226	Host Unit
3	IFEU p/n MR2216G7	54 V Power Supply
4	Prism DRU unit	DRU
5	Spectrum IFEU Unit	IFEU
6	Spectrum Main RAU	Remote Antenna

**General notes:** None

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### 3.3 Environmental conditions

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

**Temperature:** 15-35 °C

**Humidity:** 30-60 %

**Atmospheric pressure:** 86-106 kPa



## 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 for SMR Band  
  30MHz-20GHz for PCS Band

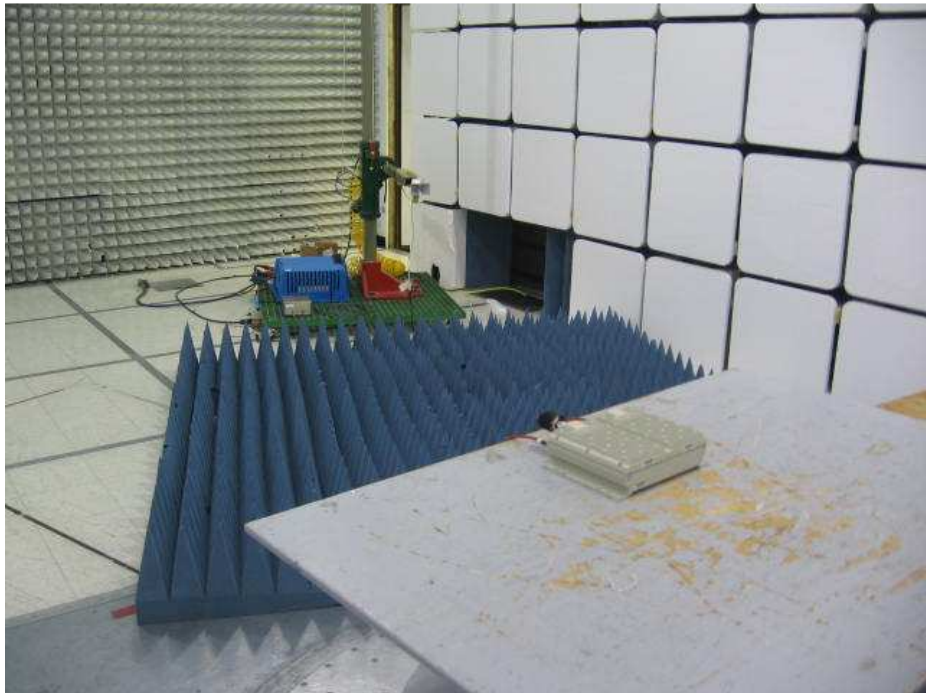
**Max. Emissions margin:**            21.8 dB below the Limits

- Notes:**
1. The Radiated Emissions testing was performed in the Anechoic chamber at 3m measurement distance (see Tables 1, 2, 3 and 4 and Graphs 1-48)
  2. The Spurious Radiated Power limits of -13dBm was correlated with field strength Reference Limit of 82.2dB $\mu$ V/m during field strength reference testing at 3m measurement distance (Graphs 1-30)
  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



<b>Date:</b>	January 17, 2012	<b>Result: Pass</b>
<b>Tested by:</b>	Richard Blonigen	
<b>Standard:</b>	FCC Part 90, SMR Band	
<b>Test Point:</b>	Enclosure	
<b>Operation mode:</b>	See page 5	
<b>Note:</b>	Frequency Range:30MHz-10GHz	

**Table 1**

Frequency	Ant. Polarity	Peak Reading dBμV	Ant.Factor dB1/m	Total at 3m dBμV/m	Limit dBμV/m	Margin dB
<b>852MHz</b>						
30.384 MHz	V	15.2	20.1	35.3	82.2	-46.9
37.063 MHz	V	19.4	16.4	35.8	82.2	-46.4
45.494 MHz	V	26.7	12.1	38.9	82.2	-43.3
79.438 MHz	V	35.3	8.6	43.9	82.2	-38.3
79.729 MHz	V	35.9	8.7	44.6	82.2	-37.7
30.985 MHz	H	11.8	19.8	31.6	82.2	-50.6
46.096 MHz	H	15.9	11.9	27.7	82.2	-54.5
78.97 MHz	H	28.8	8.6	37.4	82.2	-44.8
89.281 MHz	H	17.1	10.0	27.0	82.2	-55.2
118.87 MHz	H	13.8	13.9	27.7	82.2	-54.6
<b>860MHz</b>						
30.07 MHz	V	16.8	20.3	37.1	82.2	-45.1
37.847 MHz	V	19.9	15.9	35.9	82.2	-46.3
45.132 MHz	V	27.7	12.3	40.0	82.2	-42.2
79.018 MHz	V	34.0	8.6	42.6	82.2	-39.7
994.47 MHz	V	13.8	26.4	40.2	82.2	-42.0
31.914 MHz	H	12.1	19.3	31.4	82.2	-50.8
79.131 MHz	H	30.1	8.6	38.7	82.2	-43.5
119.86 MHz	H	13.6	13.9	27.6	82.2	-54.6
217.74 MHz	H	20.7	12.1	32.8	82.2	-49.4
468.5 MHz	H	15.5	20.2	35.7	82.2	-46.5
<b>868MHz</b>						
30.678 MHz	V	16.9	20.0	36.9	82.2	-45.3
36.72 MHz	V	20.1	16.6	36.7	82.2	-45.5
45.33 MHz	V	28.6	12.2	40.8	82.2	-41.4
79.519 MHz	V	32.9	8.6	41.6	82.2	-40.6
80.245 MHz	V	32.6	8.7	41.3	82.2	-40.9
30.307 MHz	H	10.7	20.2	30.8	82.2	-51.4
45.619 MHz	H	16.8	12.1	28.9	82.2	-53.3
79.47 MHz	H	29.6	8.6	38.2	82.2	-44.0
119.98 MHz	H	14.1	13.9	28.0	82.2	-54.2
309.5 MHz	H	13.8	16.2	30.0	82.2	-52.2



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
<b>852MHz</b>							
1.705 GHz	V	56.9	28.7	43.2	42.4	82.2	-39.8
3.409 GHz	V	58.3	34.8	43.6	49.5	82.2	-32.7
4.258 GHz	V	64.5	36.7	42.6	58.6	82.2	-23.6
4.87 GHz	V	52.1	37.5	42.0	47.6	82.2	-34.6
9.727 GHz	V	44.4	44.1	41.1	47.5	82.2	-34.7
3.409 GHz	H	60.4	34.7	43.6	51.5	82.2	-30.7
4.258 GHz	H	66.8	36.7	42.6	60.8	82.2	-21.4
4.87 GHz	H	54.7	37.4	42.0	50.2	82.2	-32.1
5.113 GHz	H	50.5	37.9	41.9	46.5	82.2	-35.7
9.712 GHz	H	45.1	44.1	41.0	48.2	82.2	-34.0
<b>860MHz</b>							
1.72 GHz	V	57.9	28.8	43.3	43.5	82.2	-38.7
3.442 GHz	V	58.2	34.9	43.6	49.5	82.2	-32.8
4.3 GHz	V	56.5	36.7	42.6	50.6	82.2	-31.6
4.87 GHz	V	51.9	37.5	42.0	47.4	82.2	-34.8
9.394 GHz	V	44.3	43.8	40.7	47.4	82.2	-34.8
2.578 GHz	H	53.4	31.9	43.5	41.7	82.2	-40.5
3.442 GHz	H	57.4	34.8	43.6	48.6	82.2	-33.6
4.3 GHz	H	57.2	36.7	42.6	51.3	82.2	-30.9
4.87 GHz	H	54.6	37.4	42.0	50.0	82.2	-32.2
9.712 GHz	H	45.0	44.1	41.0	48.1	82.2	-34.1
<b>868MHz</b>							
2.602 GHz	V	53.3	32.1	43.5	41.9	82.2	-40.4
3.472 GHz	V	56.0	35.0	43.6	47.4	82.2	-34.8
4.339 GHz	V	60.3	36.7	42.5	54.5	82.2	-27.7
4.87 GHz	V	51.2	37.5	42.0	46.7	82.2	-35.5
9.22 GHz	V	44.2	43.6	40.5	47.3	82.2	-34.9
2.602 GHz	H	53.6	32.0	43.5	42.1	82.2	-40.2
3.472 GHz	H	58.4	34.9	43.6	49.7	82.2	-32.5
4.339 GHz	H	58.0	36.7	42.5	52.2	82.2	-30.0
4.87 GHz	H	54.9	37.4	42.0	50.4	82.2	-31.9
9.715 GHz	H	44.7	44.1	41.0	47.8	82.2	-34.4



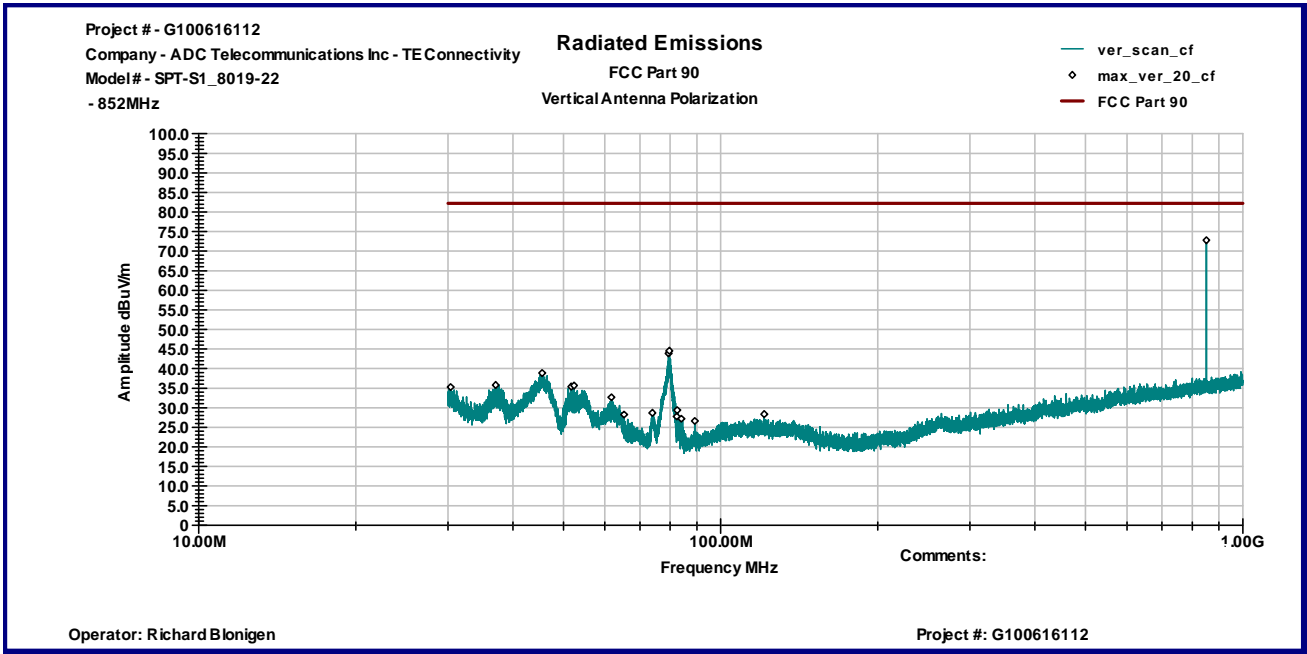
<b>Date:</b>	January 18, 2012	<b>Result: Pass</b>
<b>Tested by:</b>	Richard Blonigen	
<b>Standard:</b>	FCC Part 24, PCS Band	
<b>Test Point:</b>	Enclosure	
<b>Operation mode:</b>	See page 5	
<b>Note:</b>	Frequency Range: 30MHz-20GHz	

**Table 3**

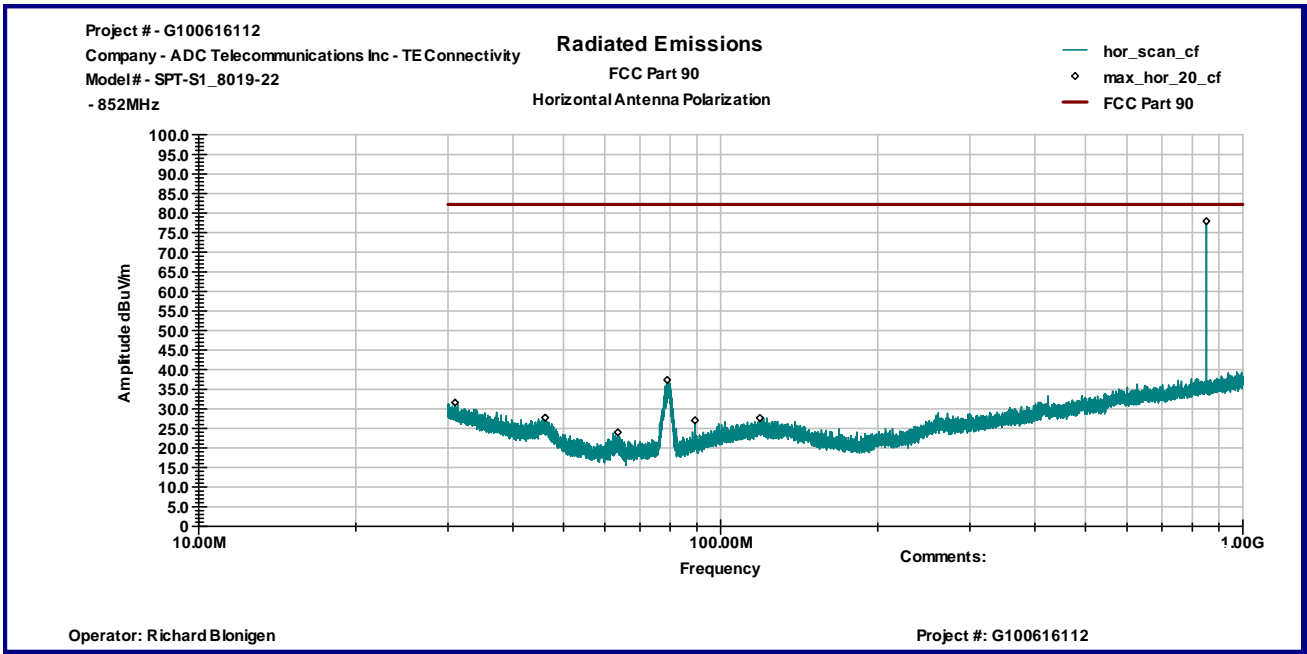
Frequency	Ant. Polarity	Peak Reading dB $\mu$ V	Ant.Factor dB1/m	Total at 3m dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
<b>1931MHz</b>						
30.929 MHz	V	11.5	19.8	31.3	82.2	-50.9
43.479 MHz	V	17.1	13.1	30.2	82.2	-52.0
122.87 MHz	V	13.6	14.0	27.6	82.2	-54.6
713.69 MHz	V	21.4	23.1	44.4	82.2	-37.8
975.54 MHz	V	13.5	26.2	39.7	82.2	-42.5
32.27 MHz	H	12.5	19.1	31.6	82.2	-50.6
81.165 MHz	H	14.2	8.9	23.0	82.2	-59.2
118.73 MHz	H	12.9	13.9	26.8	82.2	-55.4
713.69 MHz	H	16.5	23.1	39.5	82.2	-42.7
995.49 MHz	H	12.9	26.4	39.3	82.2	-42.9
<b>1960MHz</b>						
30.314 MHz	V	11.7	20.2	31.8	82.2	-50.4
42.11 MHz	V	16.1	13.7	29.8	82.2	-52.4
46.479 MHz	V	18.7	11.7	30.4	82.2	-51.8
742.74 MHz	V	26.2	23.7	50.0	82.2	-32.3
983.99 MHz	V	13.1	26.2	39.3	82.2	-42.9
30.608 MHz	H	11.0	20.0	31.0	82.2	-51.2
134.73 MHz	H	13.4	13.7	27.1	82.2	-55.1
174.12 MHz	H	14.1	11.4	25.4	82.2	-56.8
742.74 MHz	H	22.7	23.7	46.5	82.2	-35.7
972.34 MHz	H	13.4	26.2	39.5	82.2	-42.7
<b>1989MHz</b>						
31.174 MHz	V	11.8	19.7	31.5	82.2	-50.7
39.664 MHz	V	15.5	14.9	30.4	82.2	-51.8
40.163 MHz	V	15.9	14.6	30.6	82.2	-51.6
771.79 MHz	V	26.5	24.1	50.6	82.2	-31.6
995.63 MHz	V	12.8	26.4	39.2	82.2	-43.0
30.915 MHz	H	12.6	19.8	32.5	82.2	-49.8
80.519 MHz	H	15.0	8.8	23.7	82.2	-58.5
123.41 MHz	H	13.4	14.0	27.3	82.2	-54.9
771.79 MHz	H	20.5	24.1	44.6	82.2	-37.6
946.13 MHz	H	12.8	25.8	38.6	82.2	-43.6

**Table 4**

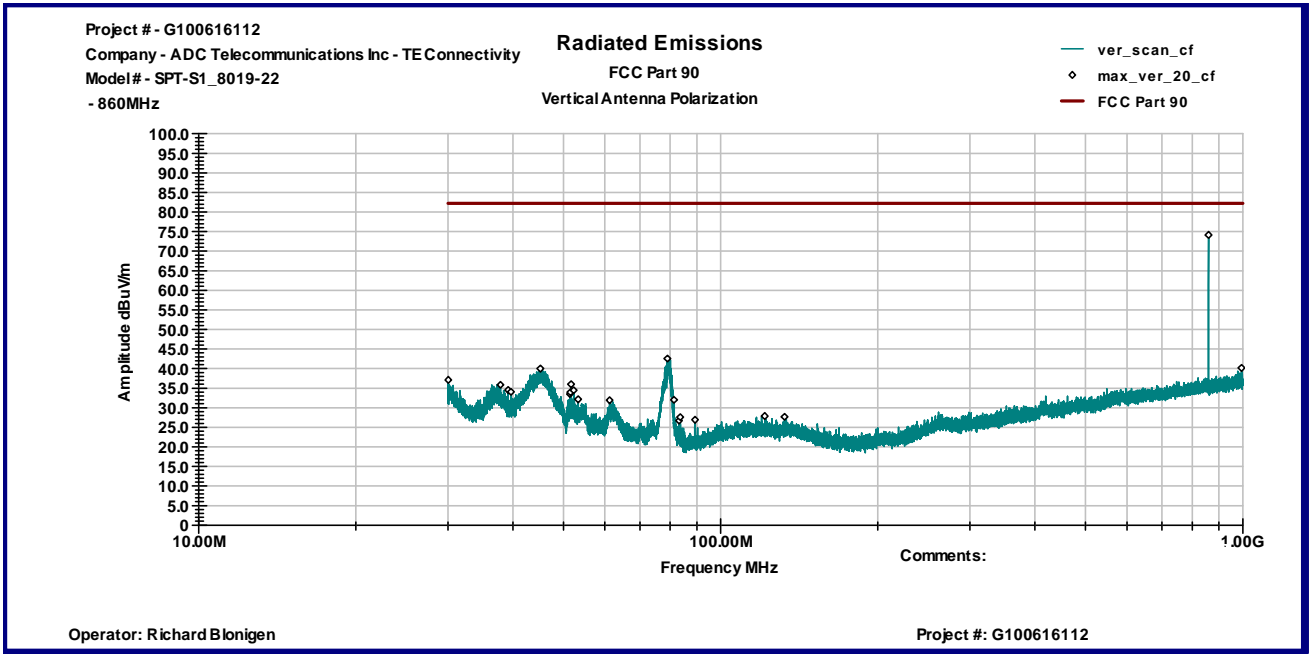
Frequency MHz	Antenna Polarity	Peak Reading dB $\mu$ V	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
<b>1931MHz</b>							
1.9826 GHz	V	53.8	30.1	43.5	40.4	82.2	-41.8
2.4382 GHz	V	54.9	31.5	43.5	43.0	82.2	-39.2
4.8692 GHz	V	50.6	37.5	42.0	46.1	82.2	-36.1
13.75 GHz	V	53.1	48.1	41.4	59.8	82.2	-22.4
19.916 GHz	V	51.7	54.0	49.1	56.7	82.2	-25.5
1.9826 GHz	H	52.4	30.0	43.5	38.9	82.2	-43.3
4.8692 GHz	H	54.4	37.4	42.0	49.8	82.2	-32.4
14.865 GHz	H	53.0	48.3	41.1	60.2	82.2	-22.0
19.916 GHz	H	51.7	54.0	49.1	56.7	82.2	-25.5
<b>1960MHz</b>							
1.017 GHz	V	60.4	26.0	42.8	43.6	82.2	-38.6
1.9826 GHz	V	53.8	30.1	43.5	40.4	82.2	-41.8
2.4348 GHz	V	55.4	31.5	43.5	43.4	82.2	-38.8
4.8692 GHz	V	49.7	37.5	42.0	45.2	82.2	-37.0
14.797 GHz	V	53.5	48.5	41.1	60.8	82.2	-21.4
1.9826 GHz	H	53.8	30.0	43.5	40.4	82.2	-41.9
4.8692 GHz	H	54.8	37.4	42.0	50.2	82.2	-32.0
14.879 GHz	H	52.8	48.3	41.1	59.9	82.2	-22.3
19.84 GHz	H	51.6	53.8	49.1	56.3	82.2	-25.9
<b>1989MHz</b>							
2.4586 GHz	V	56.3	31.6	43.5	44.4	82.2	-37.8
2.4722 GHz	V	57.9	31.6	43.5	46.0	82.2	-36.2
4.8692 GHz	V	51.3	37.5	42.0	46.7	82.2	-35.5
13.886 GHz	V	53.2	48.5	41.3	60.4	82.2	-21.8
19.888 GHz	V	51.8	54.0	49.1	56.7	82.2	-25.5
2.4654 GHz	H	53.1	31.5	43.5	41.2	82.2	-41.0
4.8692 GHz	H	54.9	37.4	42.0	50.4	82.2	-31.8
14.79 GHz	H	52.4	48.5	41.1	59.8	82.2	-22.4
19.78 GHz	H	52.5	53.8	49.1	57.1	82.2	-25.1



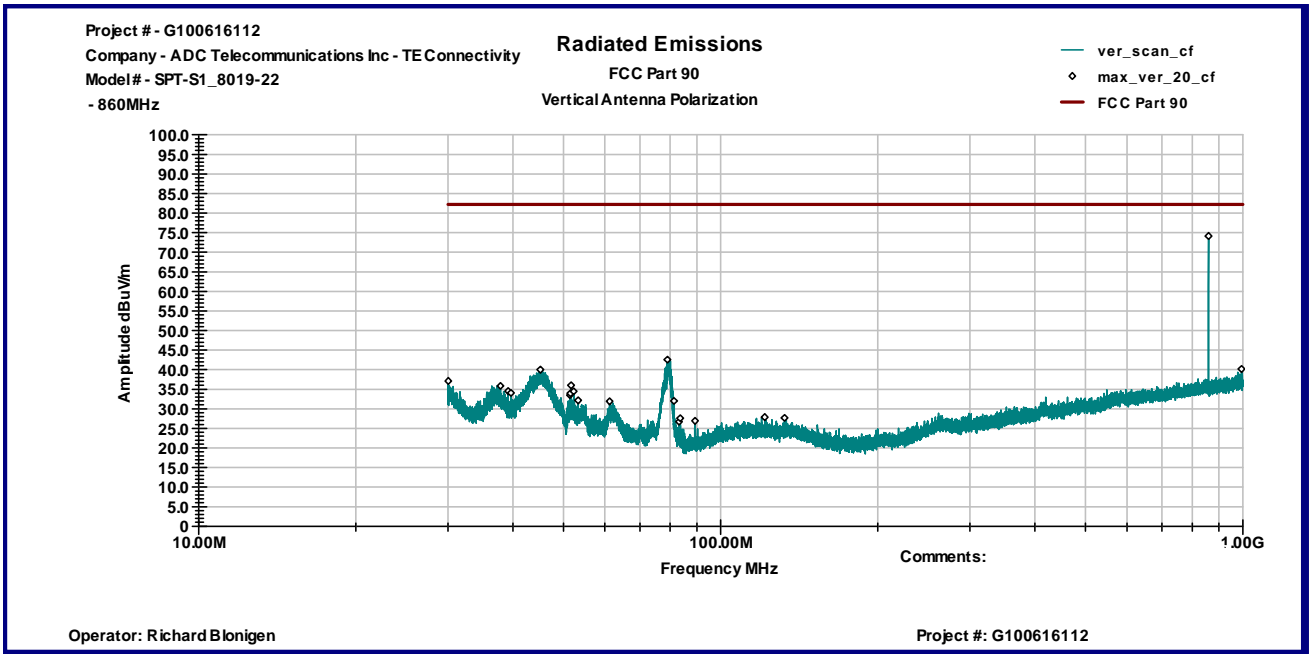
Graph 1



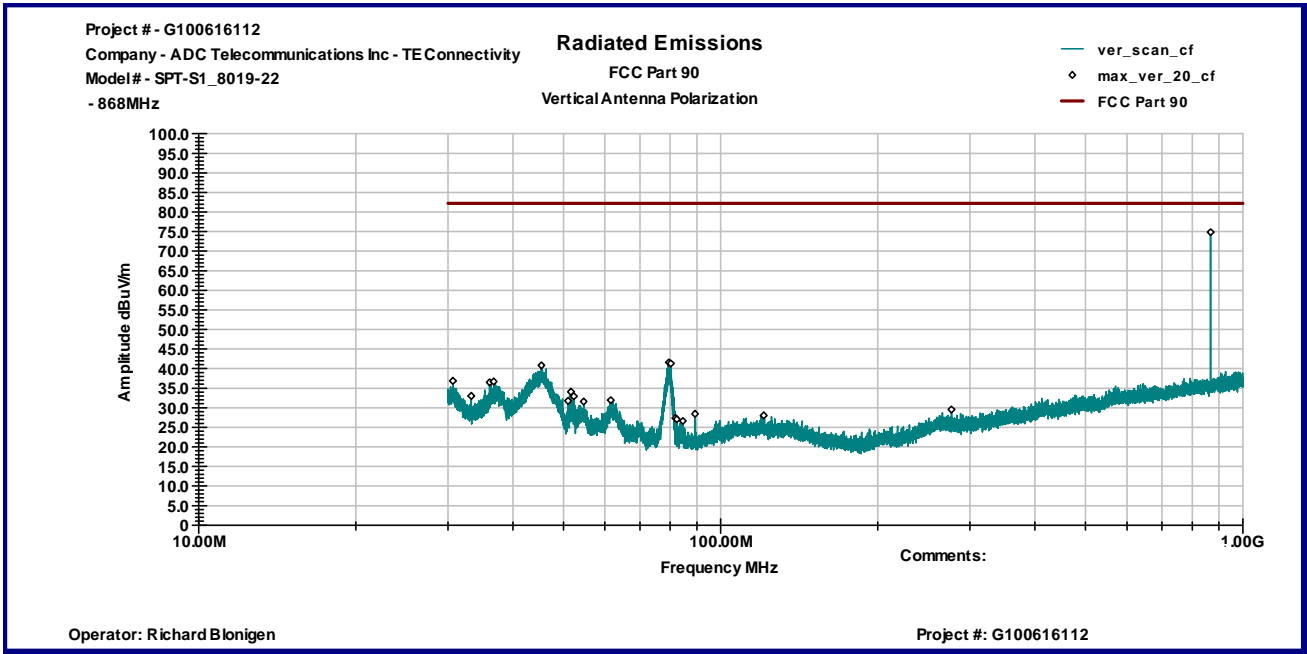
Graph 2



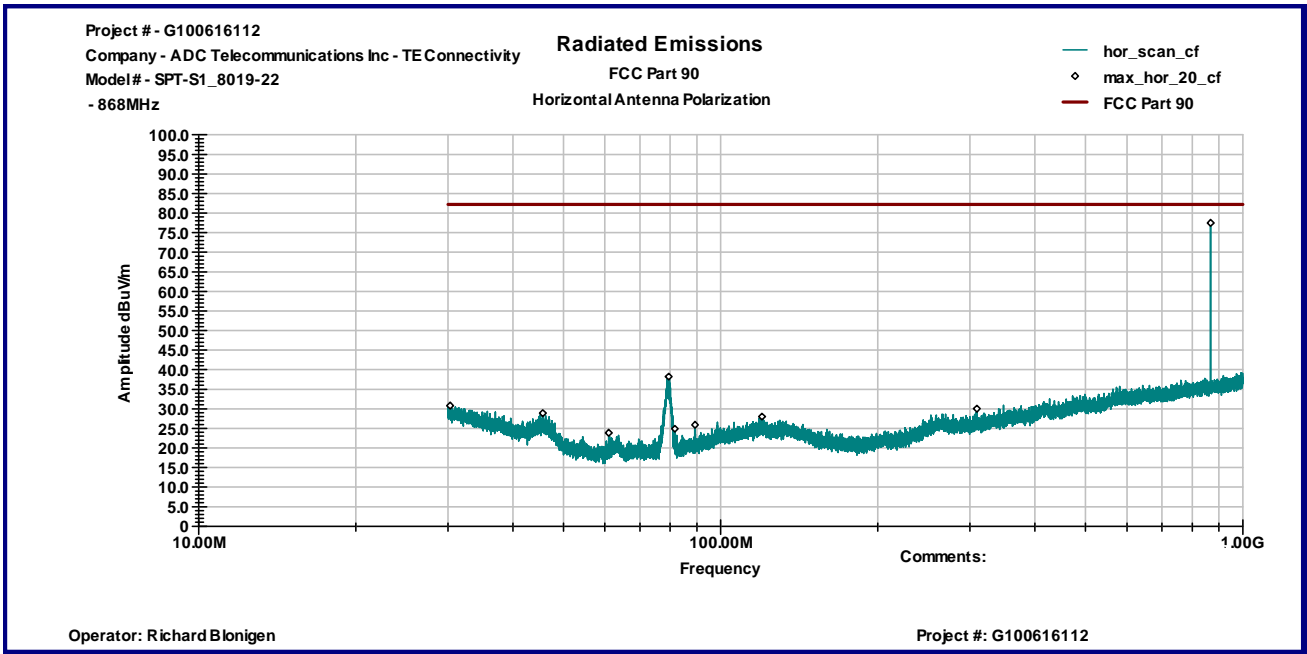
Graph 3



Graph 4

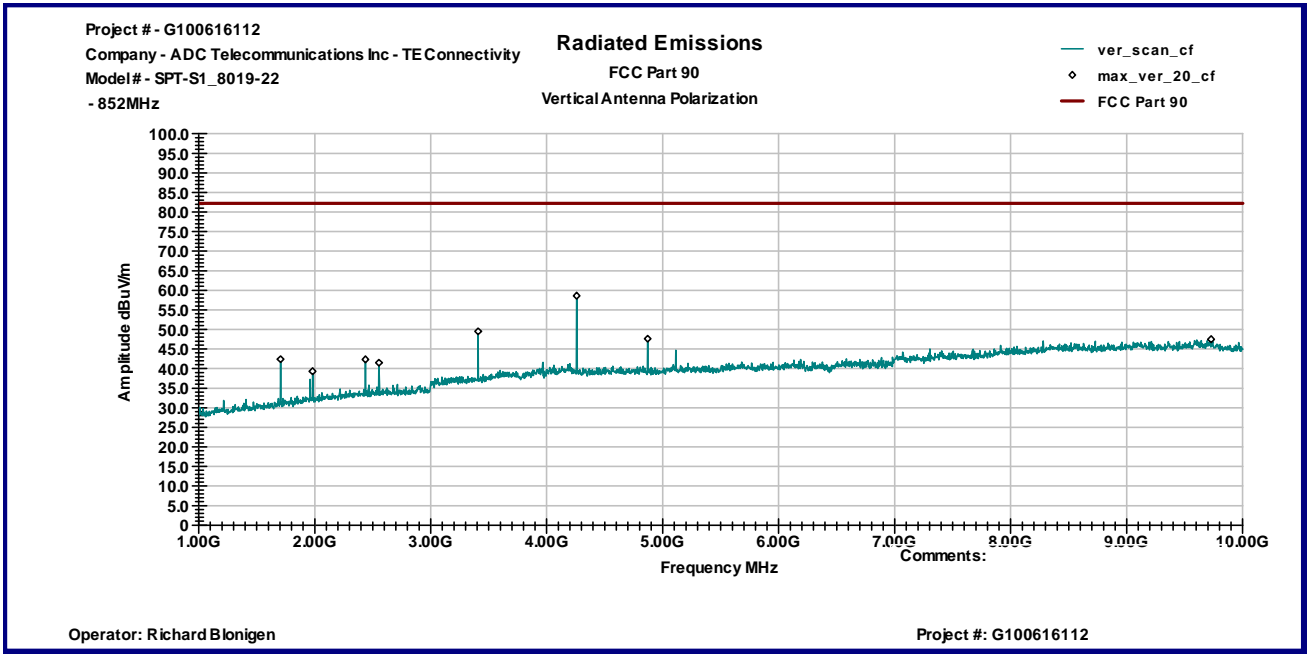


Graph 5

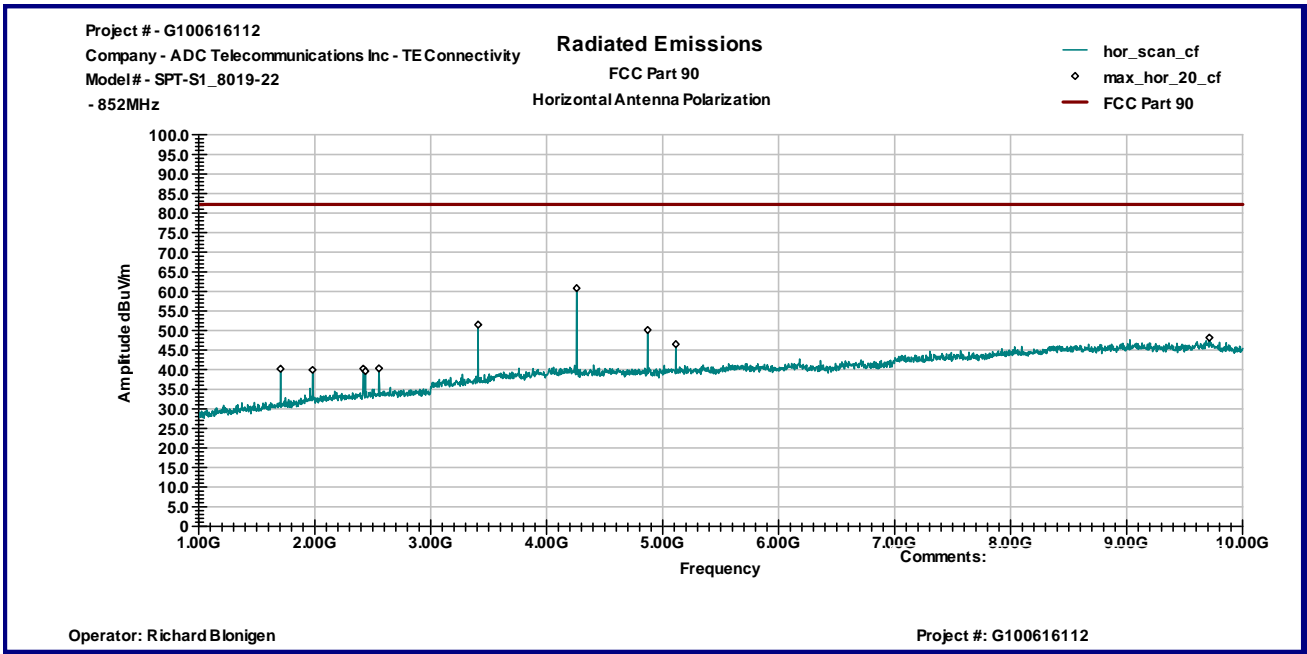


Graph 6

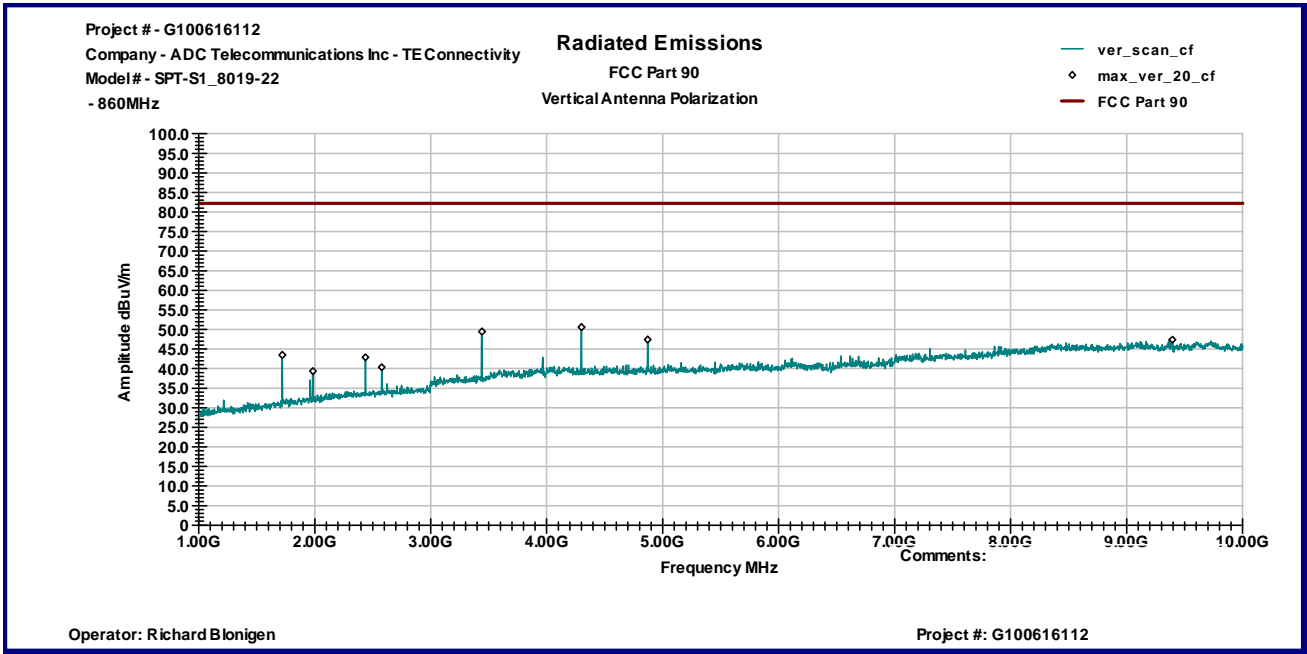




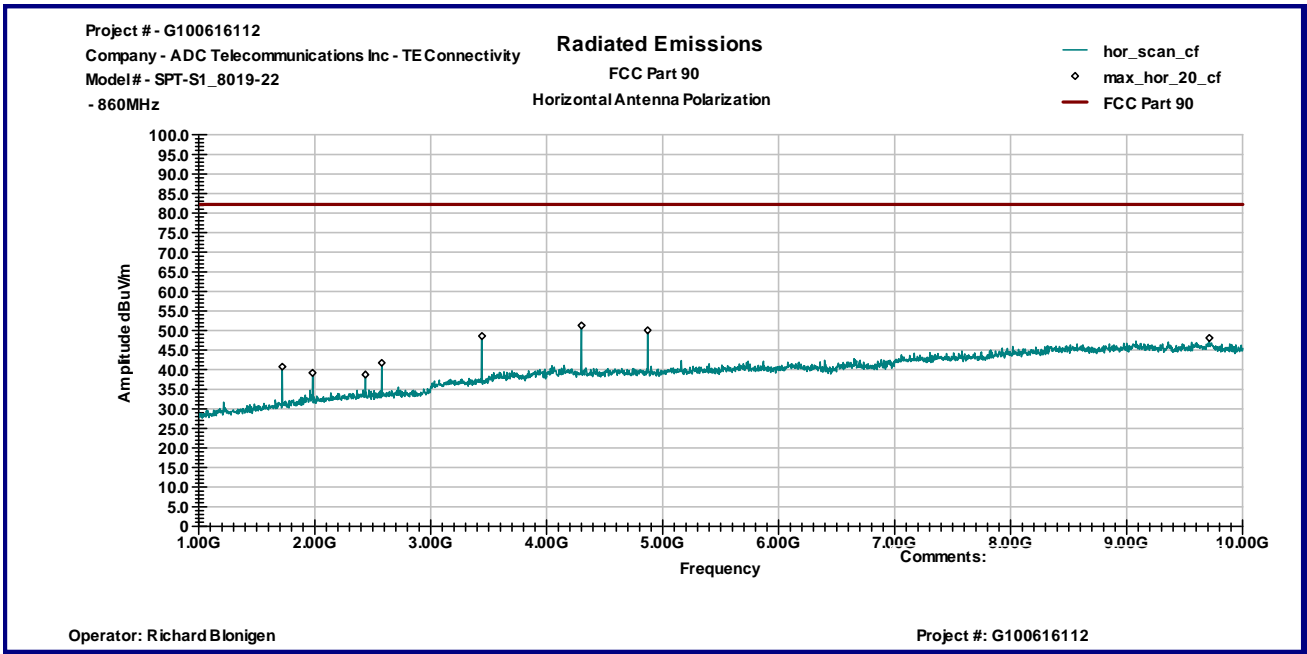
Graph 7



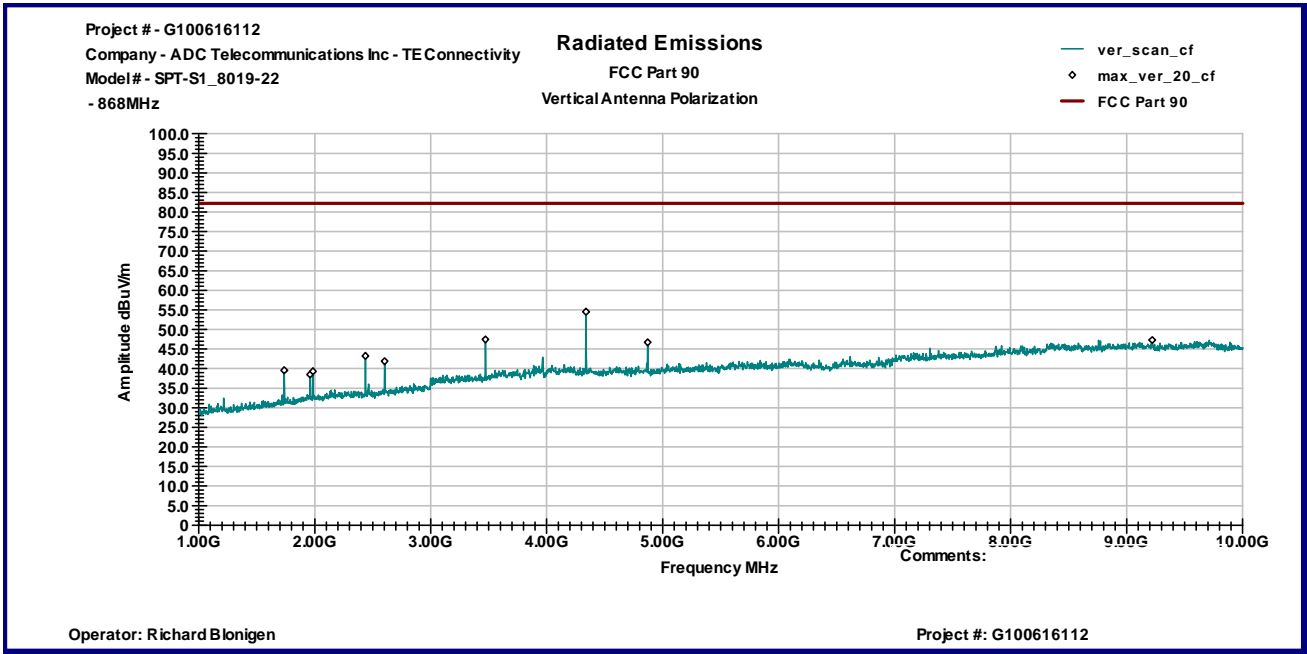
Graph 8



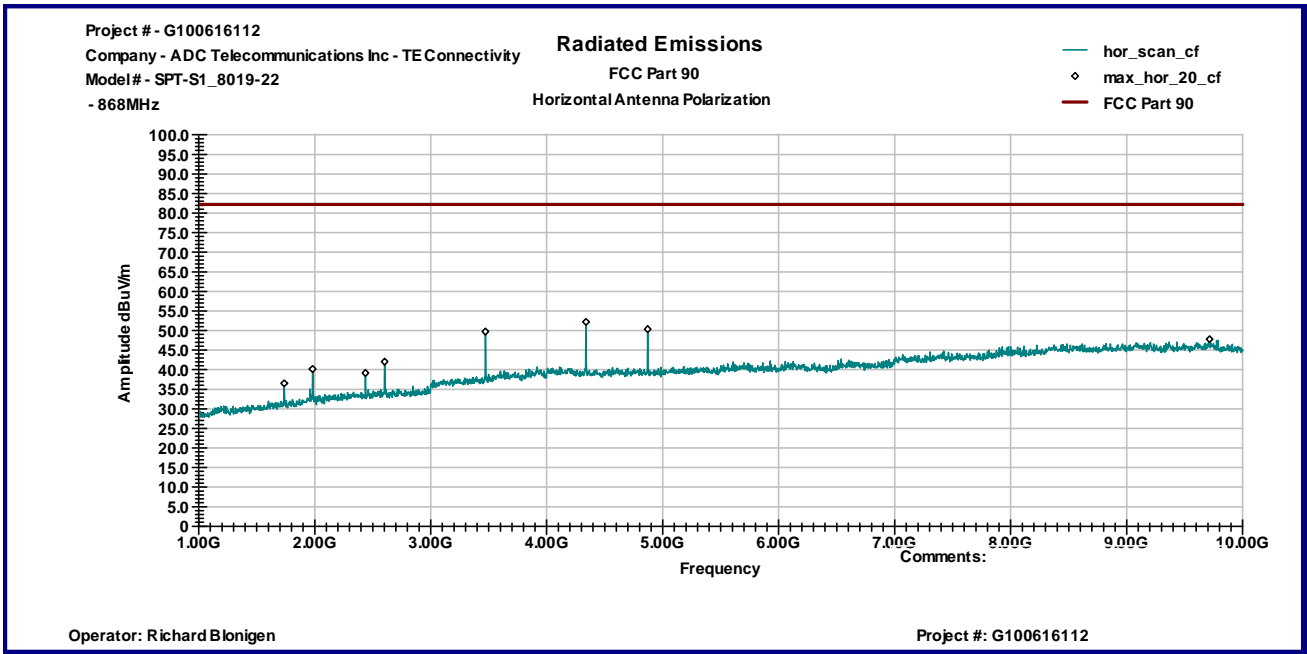
**Graph 9**



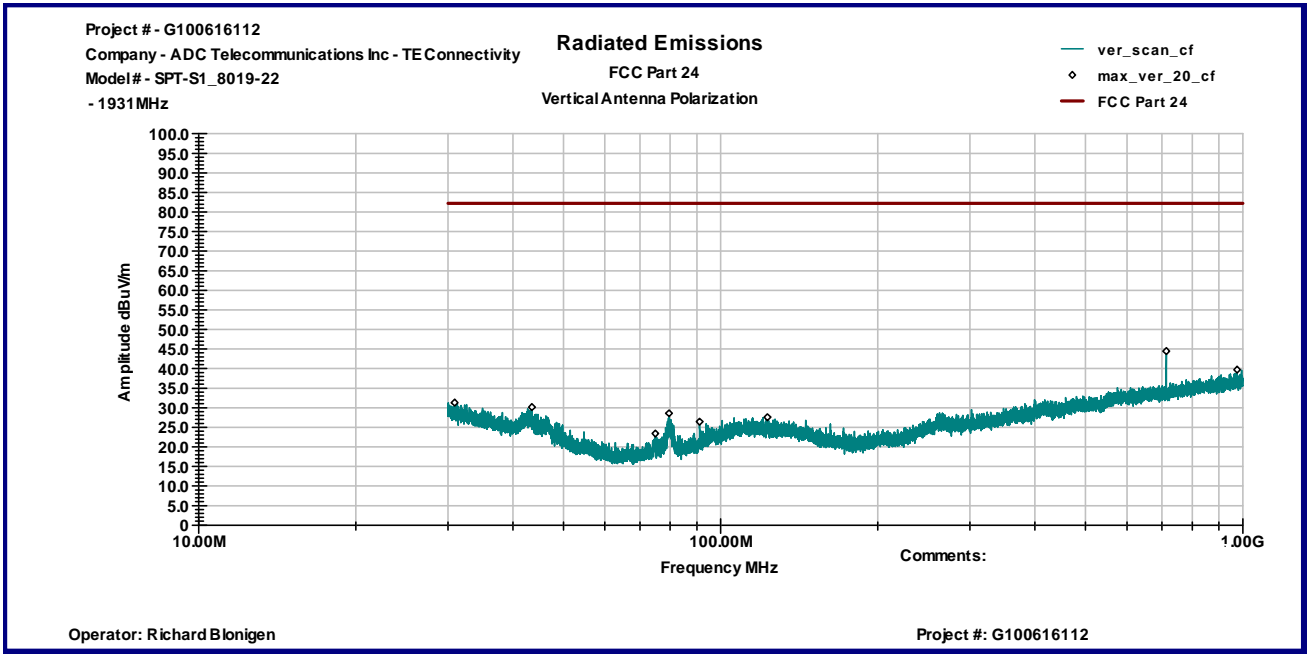
**Graph 10**



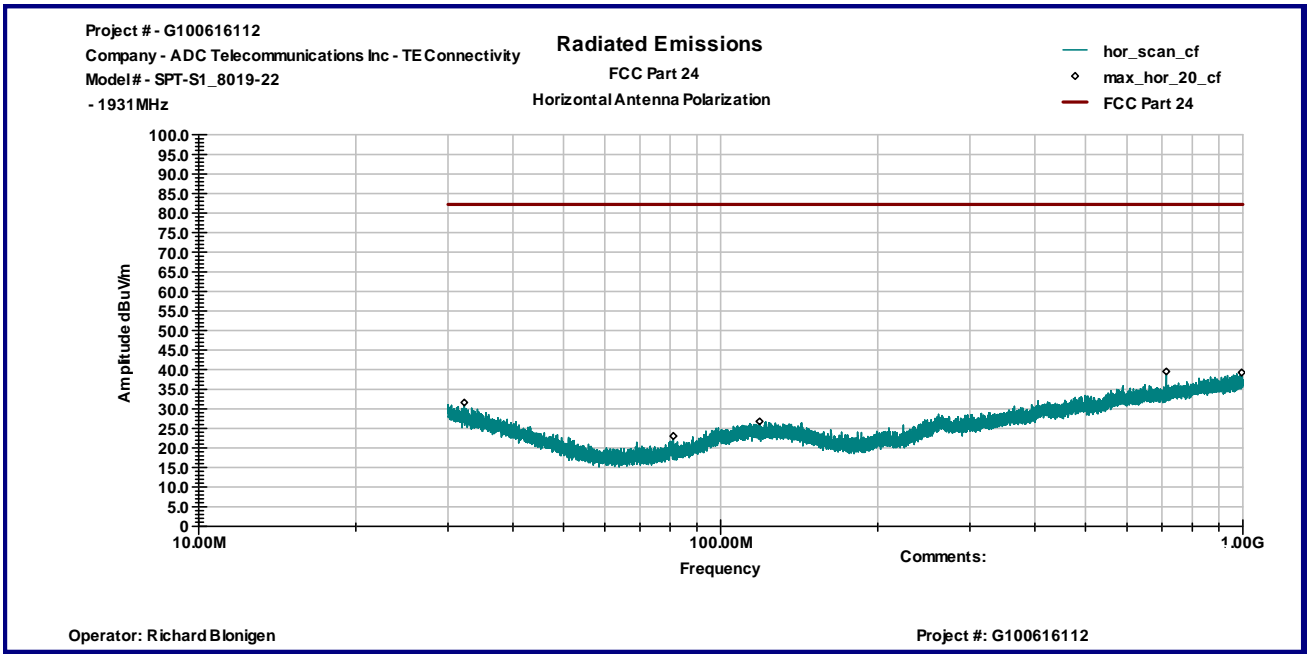
Graph 11



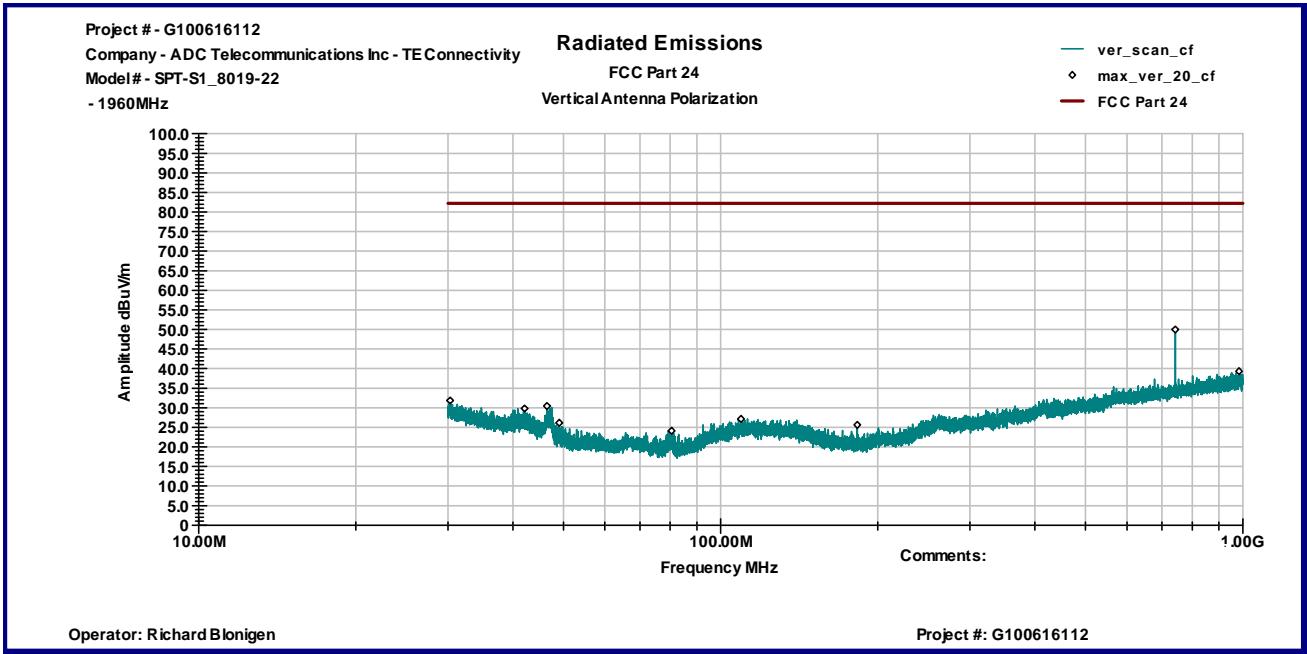
Graph 12



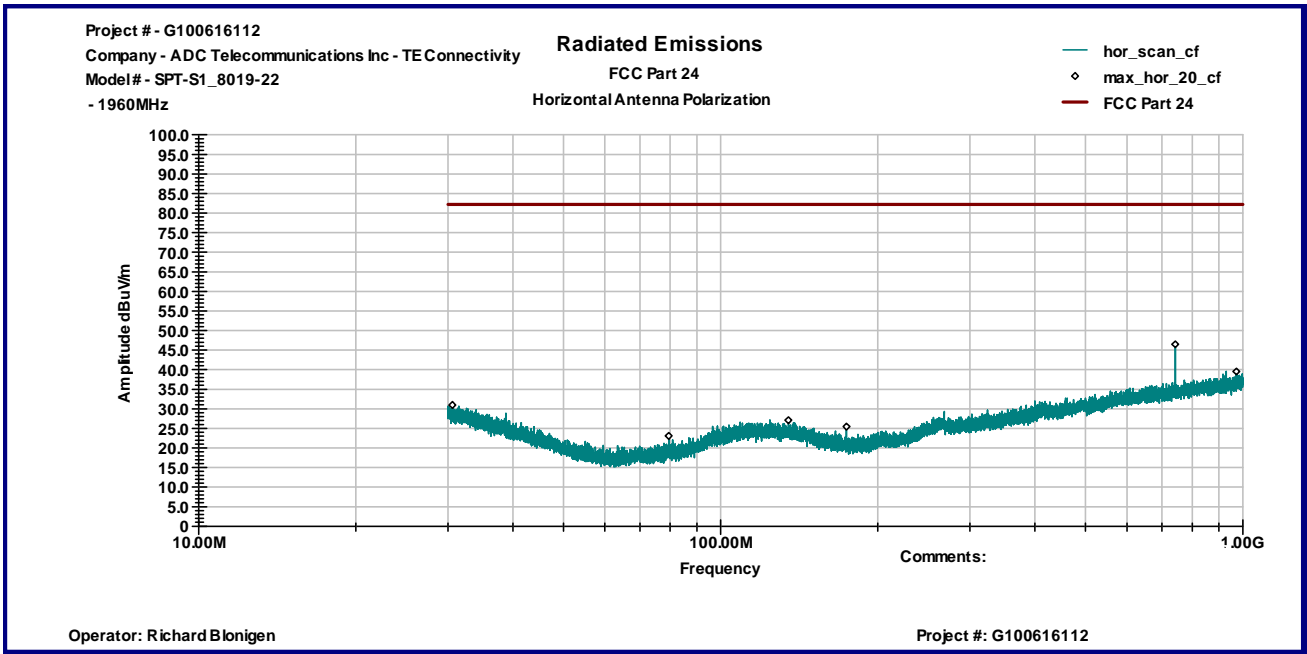
Graph 13



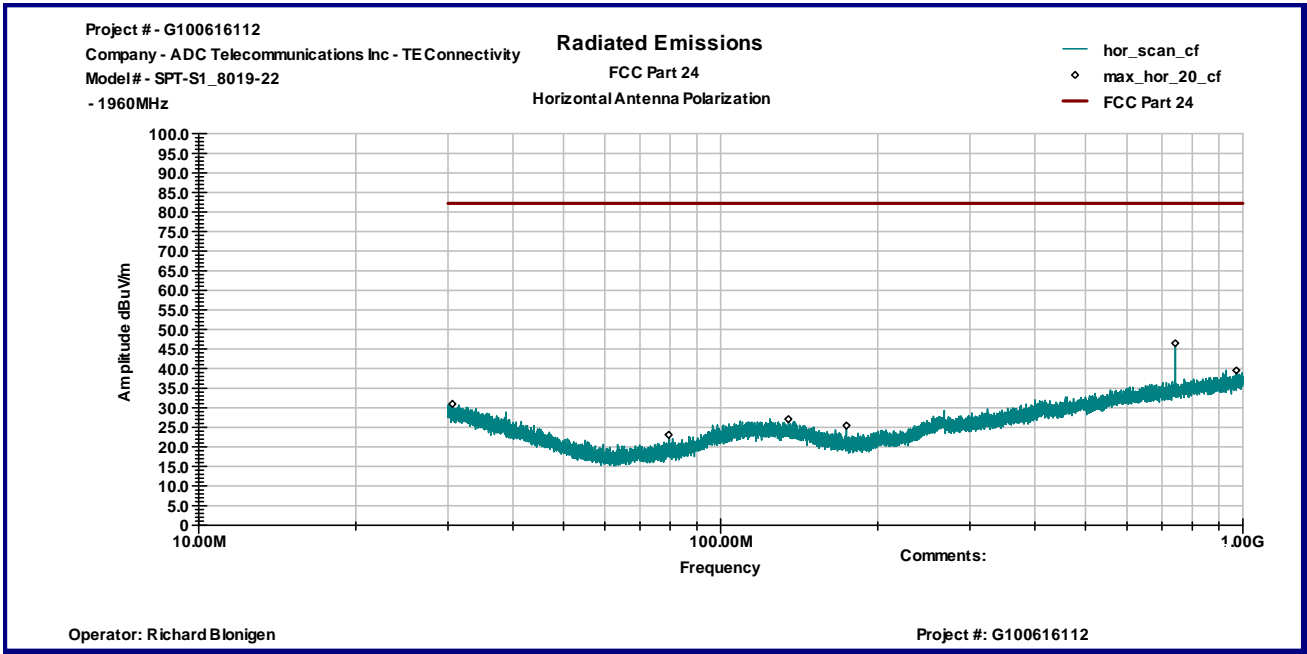
Graph 14



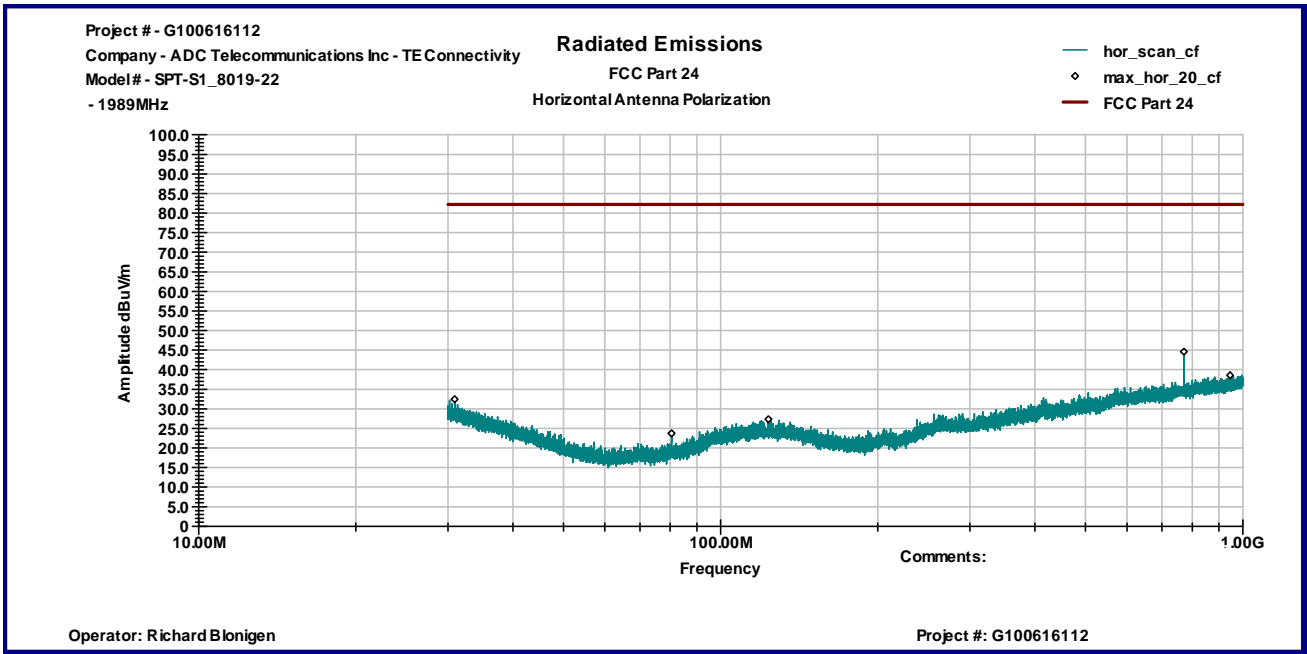
Graph 15



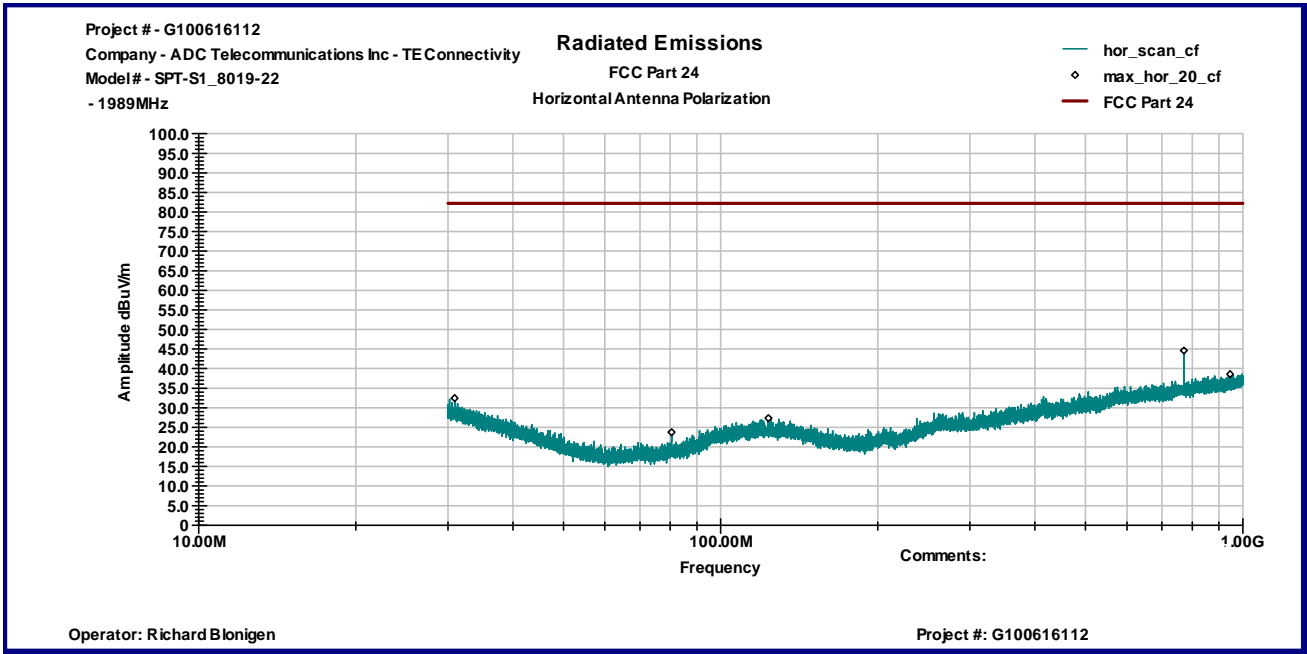
Graph 16



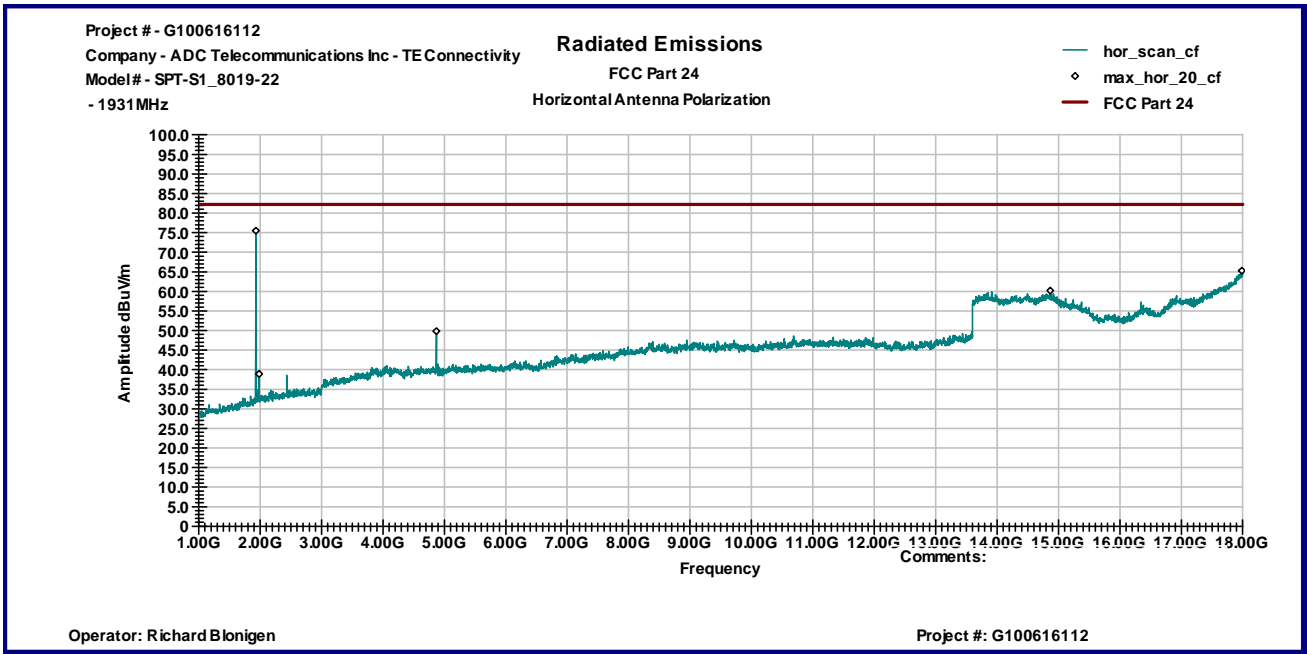
Graph 17



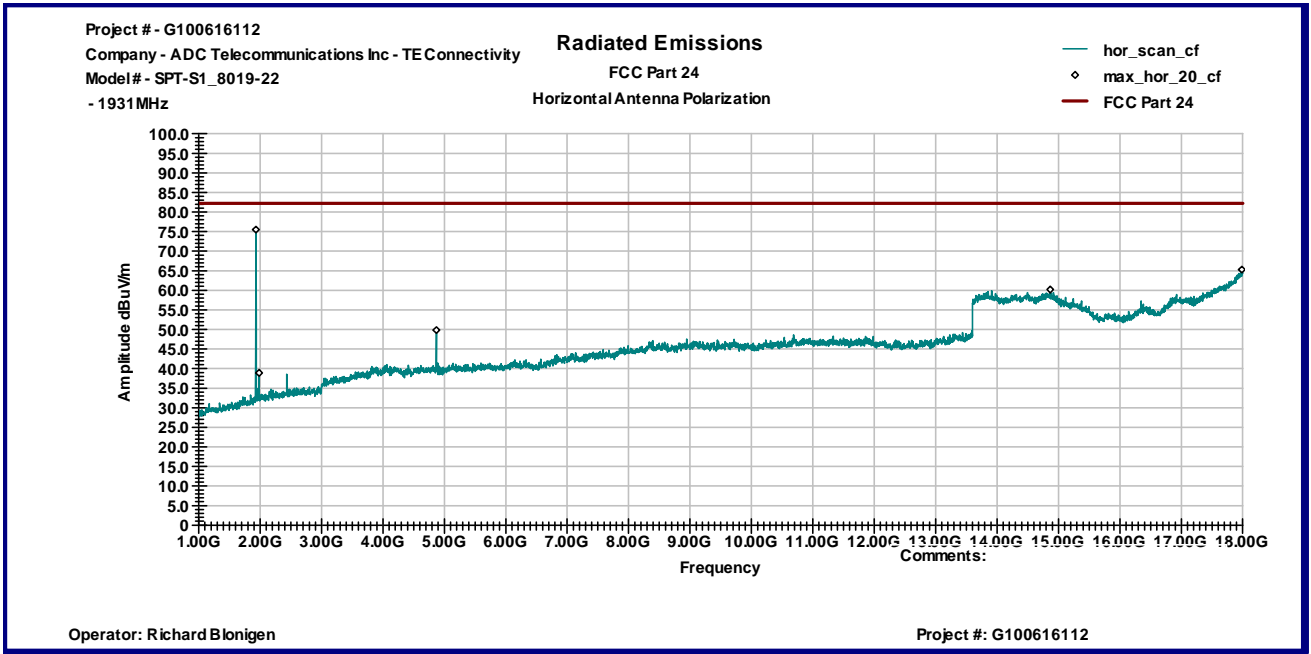
Graph 18



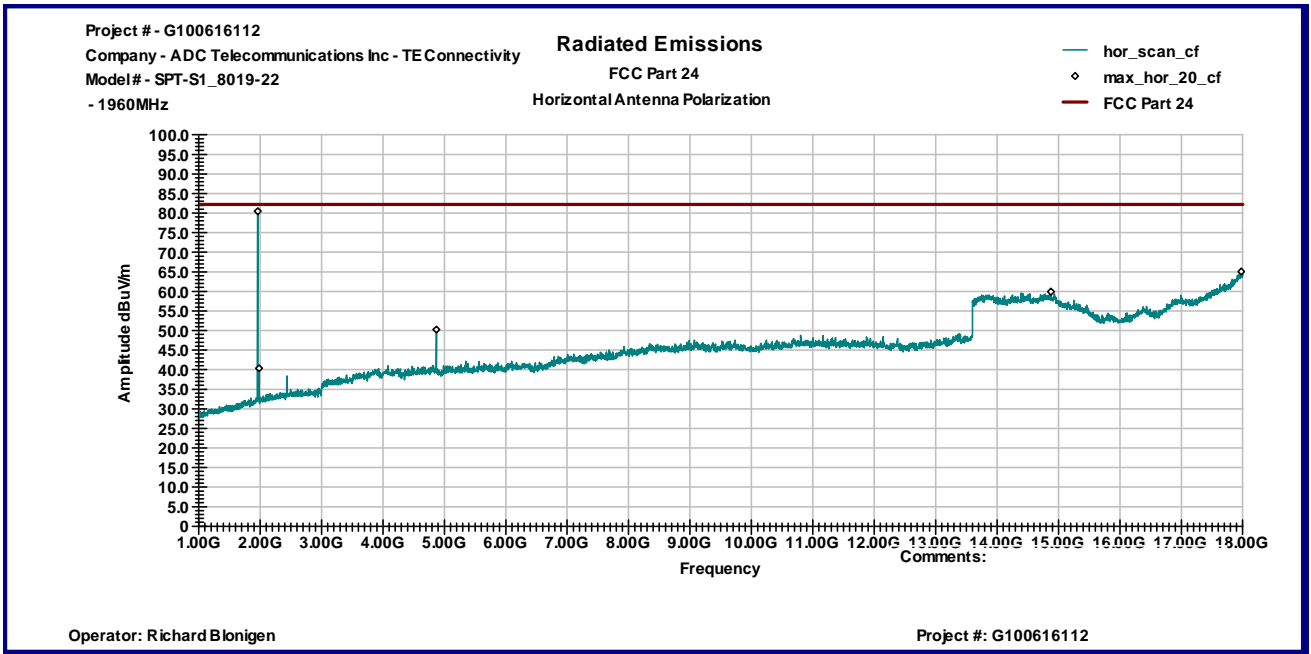
**Graph 19**



**Graph 20**

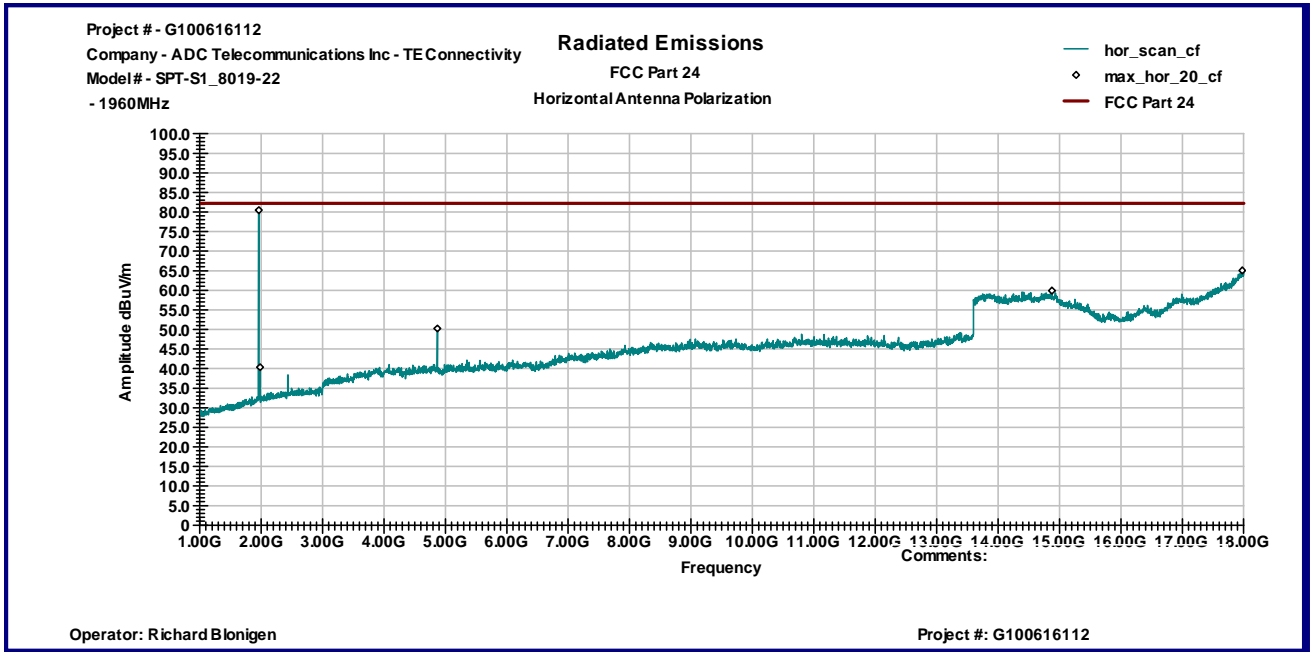


Graph 21

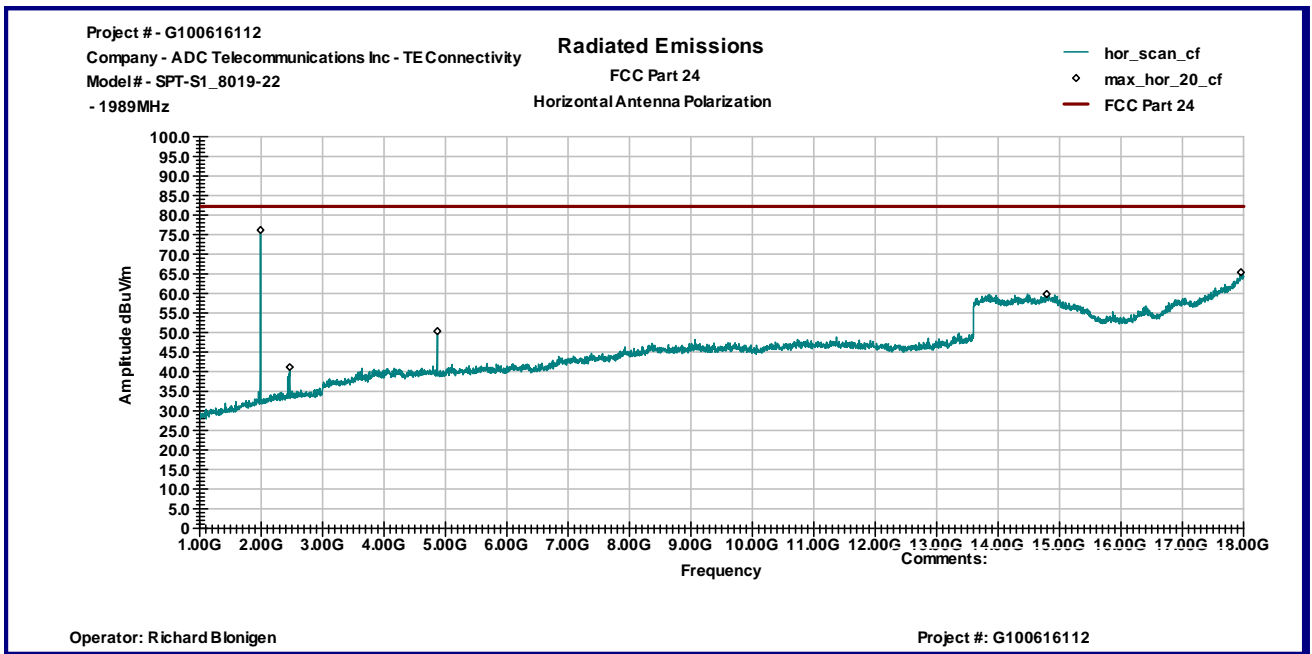


Graph 22

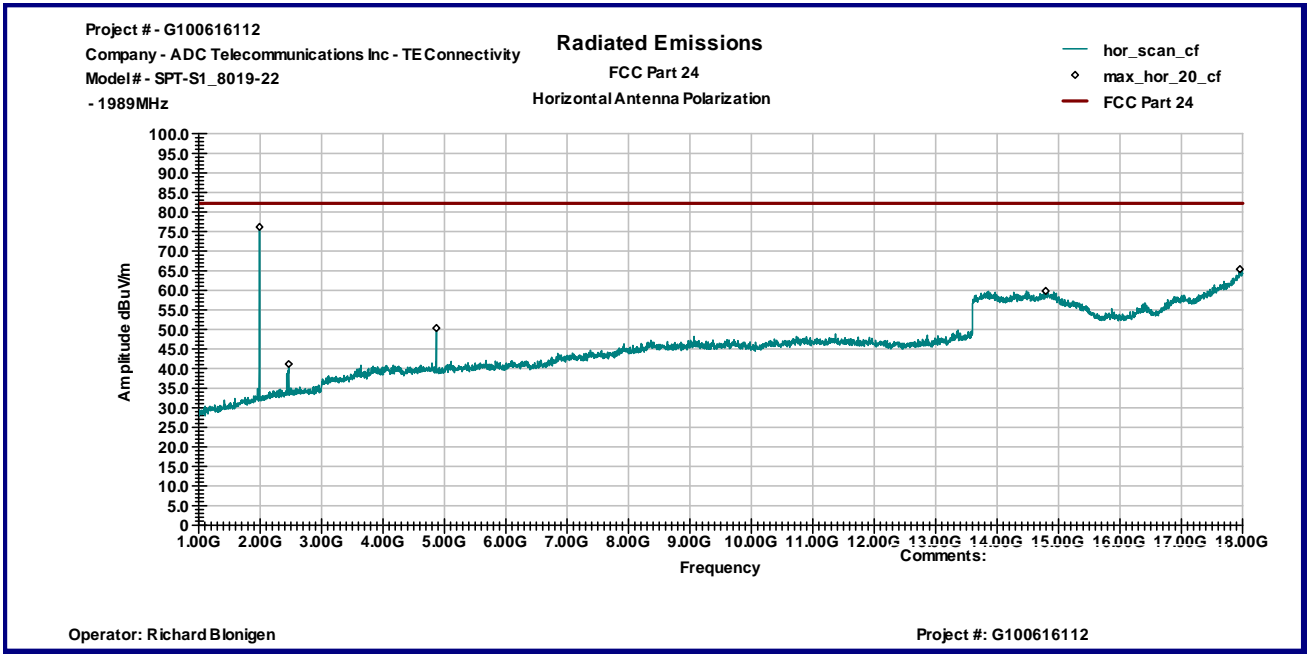




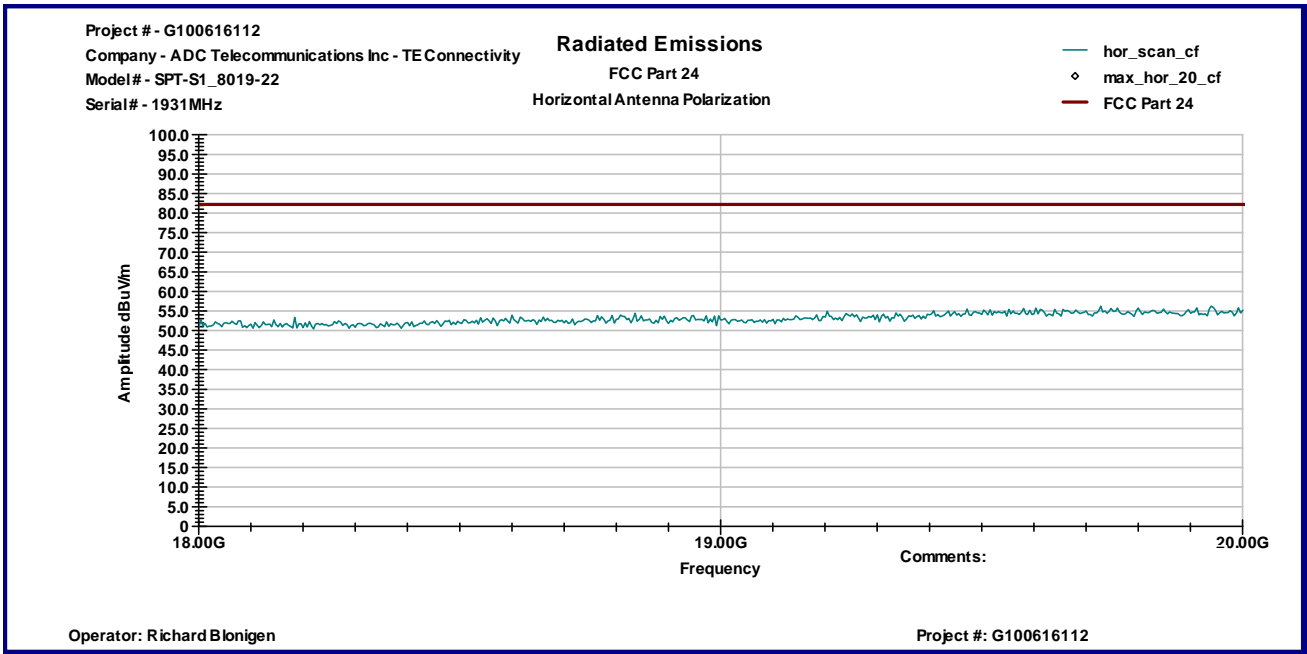
Graph 23



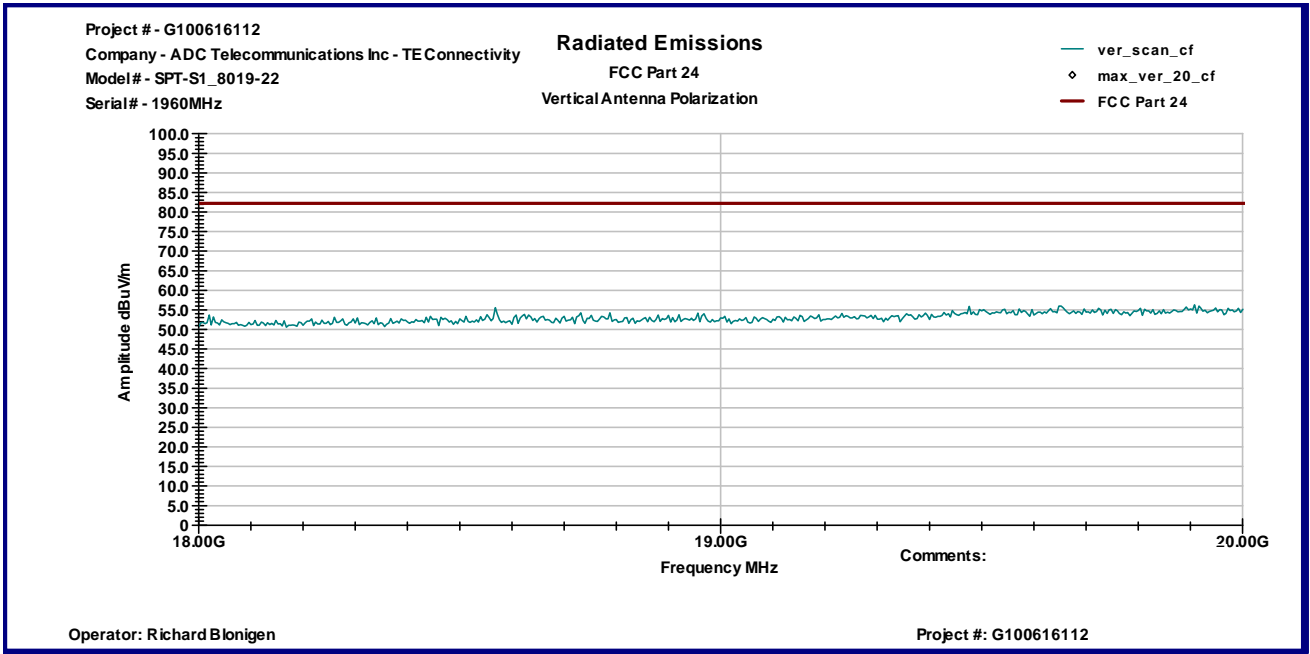
Graph 24



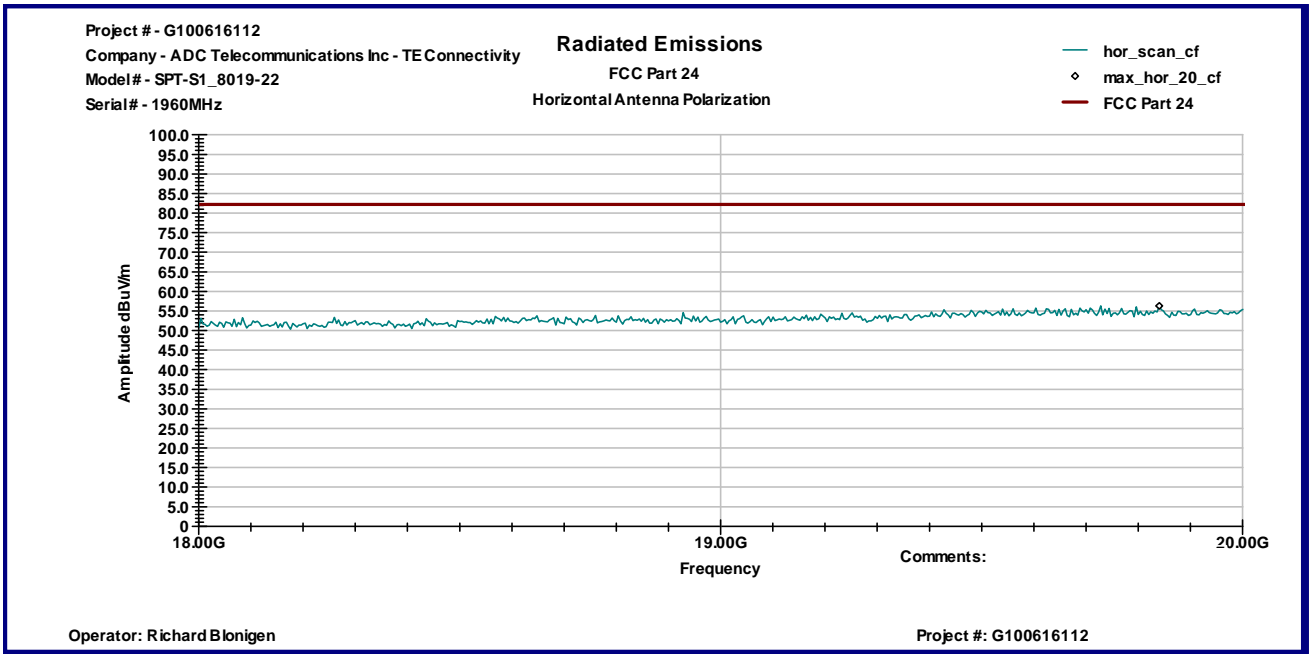
**Graph 25**



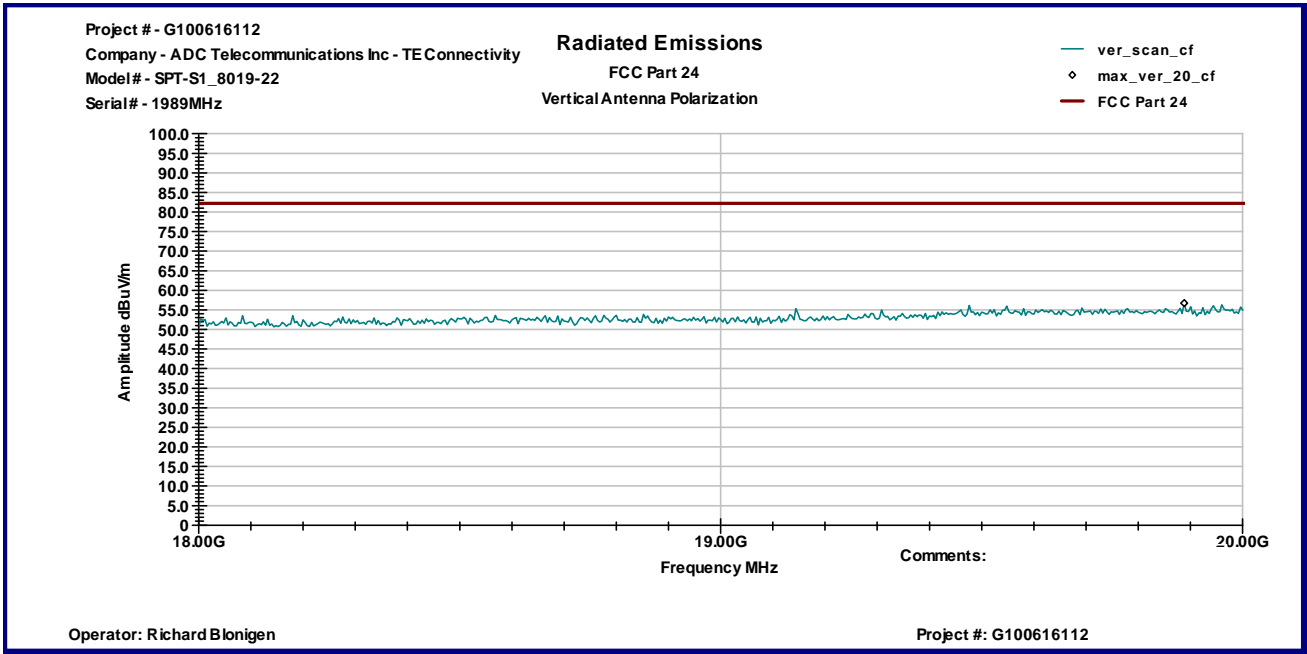
**Graph 26**



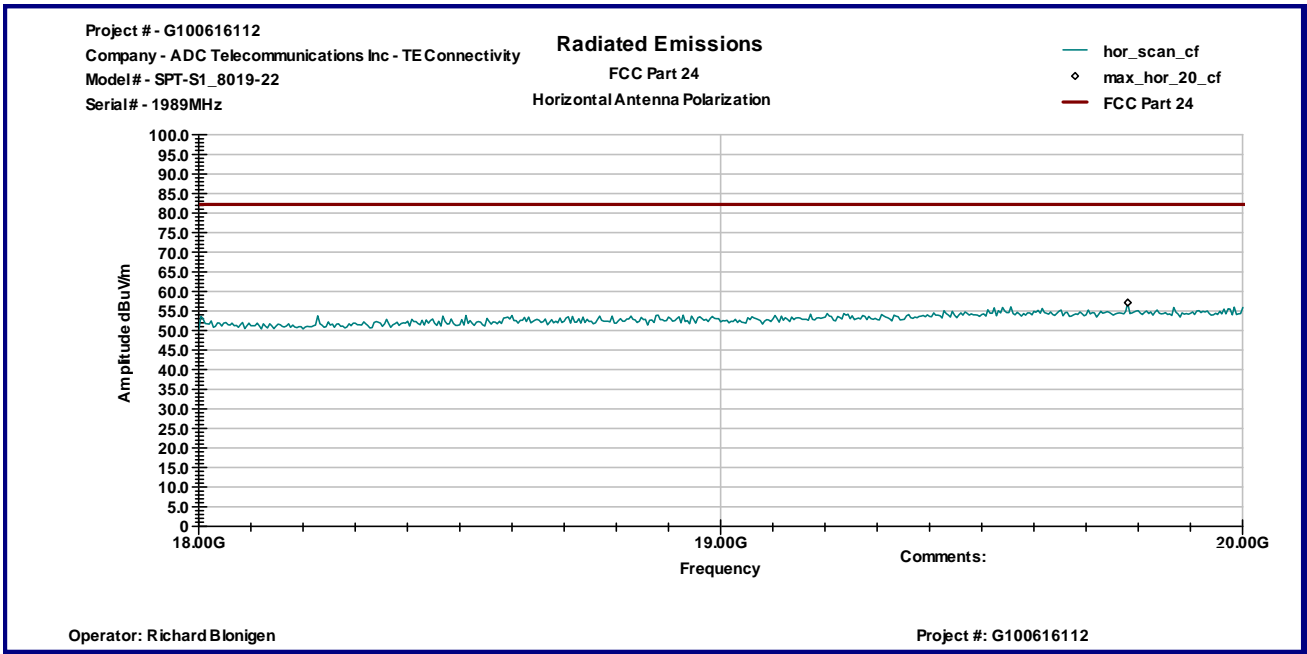
Graph 27



Graph 28



Graph 29



Graph 30



## 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	9507-4513	9936	04/29/2012	<input checked="" type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-5D-00501800-28-13P	1402232	172081	10/31/2012	<input checked="" type="checkbox"/>
System	TILE! Instrument Control		Ver. 3.4.K.29	15259	VBU	<input checked="" type="checkbox"/>
Waveguide Horn Antenna	EMCO	3116	9904-2423	9705	10/31/2012	<input checked="" type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-6F-16002600-25-10P	1222383	MIN-0065	10/31/2012	<input checked="" type="checkbox"/>

