



TEST DATA

Test Data Number: 3166037MIN-001A
Project Number: 3166037

Testing performed on the
InterReach Fusion AWS

To
47 CFR, Part 27

For
ADC Telecommunications Inc.

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

Test Authorized by:
ADC Telecommunications Inc.
1187 Park Place
Shakopee, MN 55379

Prepared by: Richard Blonigen
Richard Blonigen

Date: November 7, 2008

Reviewed by: Norman Shpilsher
Norman Shpilsher

Date: November 7, 2008

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1.0 DESCRIPTION OF THE SAMPLE (EUT)

Model:	InterReach Fusion AWS
Type of EUT:	Indoor Fiber / Coaxial Repeater
Serial Number:	N/A
Company:	ADC Telecommunications Inc.
Customer:	Mr. Mark Miska
Address:	1187 Park Place Shakopee, MN 55379
Phone:	952-403-8340
Fax:	952-403-8858
Test Standards:	<input type="checkbox"/> EN 55022:2006, Class A <input type="checkbox"/> EN 55011:1998 + A1:1999 + A2:2002, Group <input type="checkbox"/> , Class <input type="checkbox"/> <input type="checkbox"/> 47 CFR, Part 15:2007, §15.107 and §15.109, Class A <input type="checkbox"/> 47 CFR, Part 22:2007 <input checked="" type="checkbox"/> 47 CFR, Part 27:2007 <input type="checkbox"/> 47 CFR, Part 90:2007 <input type="checkbox"/> EN 55014-1:2000 + A1:2001 + A2:2002 <input type="checkbox"/> EN 61326-1:2006 <input type="checkbox"/> Class <input type="checkbox"/> for Radiated and Conducted Emissions <input type="checkbox"/> EN 60601-1-2:2001 +A1:2006 <input type="checkbox"/> Class <input type="checkbox"/> Radiated and Conducted Emissions <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"/> Other <input type="checkbox"/>

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	Spurious Enclosure 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

General notes:

1. Test was performed in RX mode with the EUT tuned to the low frequency (1.710MHz), middle frequency (1.7325MHz), and upper frequency (1.755MHz) of the operating band.
2. Test was also performed in TX mode with the EUT tuned to the low frequency (2.110MHz), middle frequency (2.1325MHz), and upper frequency (2.155MHz) of the operating band.
3. Testing was performed in frequency range from 30MHz to 22GHz. EUT tuned frequencies 1.710MHz, 1.7325MHz, 1.755MHz, 2.110MHz, 2.1325MHz, and 2.155MHz were excluded from the table.
4. The Spurious Radiated Power limits of -13dBm was correlated with field strength reference level of 82.2dB μ V/m during field strength measurements at 3m measurement distance

3.0 TEST RESULTS

3.1 Spurious Radiated Emissions

Tables 1-4 show detected Radiated Emissions.

Graphs 1 to 36 show the EUT peak Radiated Emissions.

No Emissions were detected above 18GHz (see graphs 25-36)

No emissions were chosen for substitution measurements as the maximum emission is more than 20dB below the reference limit.



TILE Instrument Control System EMI Measurement Software

Radiated Emissions from 30MHz to 1GHz

Date: 11-06-2008

Company: ADC Telecommunications Inc.
Model: InterReach Fusion, AWS_RX
Test Engineer: Uri Spector
Standard: FCC Part 27
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
 Measurements were taken using a Peak detector

Table # 1

Frequency	Ant. Polarity	Peak Reading dBµV	Ant.Factor dB1/m	Total at 3m dBµV/m	QP Limit dBµV/m	Margin dB
Operating Frequency 1710MHz						
31.87 MHz	V	15.2	19.6	34.8	82.2	-47.4
46.832 MHz	V	22.0	11.6	33.6	82.2	-48.7
179.76 MHz	V	24.8	11.0	35.8	82.2	-46.4
610.31 MHz	V	27.6	21.8	49.4	82.2	-32.8
949.78 MHz	V	15.6	25.3	40.9	82.2	-41.3
Operating Frequency 1732.5MHz						
30.139 MHz	H	14.1	20.5	34.6	82.2	-47.7
91.047 MHz	H	20.1	10.3	30.4	82.2	-51.8
98.508 MHz	H	19.1	11.6	30.7	82.2	-51.5
179.76 MHz	H	19.7	11.0	30.7	82.2	-51.6
610.31 MHz	H	25.8	21.8	47.6	82.2	-34.7
Operating Frequency 1755MHz						
30.0 MHz	V	13.7	20.5	34.2	82.2	-48.0
46.97 MHz	V	21.1	11.5	32.6	82.2	-49.6
202.26 MHz	V	27.9	11.2	39.1	82.2	-43.1
610.31 MHz	V	27.1	21.8	48.9	82.2	-33.3
951.9 MHz	V	15.4	25.3	40.7	82.2	-41.5
Operating Frequency 1775MHz						
30.0 MHz	H	14.7	20.5	35.2	82.2	-47.0
91.047 MHz	H	19.2	10.3	29.5	82.2	-52.7
202.26 MHz	H	25.7	11.2	36.8	82.2	-45.4
610.31 MHz	H	25.1	21.8	46.9	82.2	-35.3
987.27 MHz	H	15.6	25.8	41.4	82.2	-40.8
Operating Frequency 1795MHz						
30.208 MHz		14.2	20.4	34.6	82.2	-47.6
46.278 MHz		19.8	11.9	31.7	82.2	-50.5
225.09 MHz		23.9	11.9	35.8	82.2	-46.4
610.31 MHz		27.3	21.8	49.0	82.2	-33.2
972.41 MHz		15.1	25.6	40.7	82.2	-41.5
Operating Frequency 1815MHz						
30.0 MHz		14.1	20.5	34.7	82.2	-47.6
91.047 MHz		19.1	10.3	29.4	82.2	-52.8
119.4 MHz		15.4	13.8	29.2	82.2	-53.0
225.09 MHz		25.5	11.9	37.4	82.2	-44.8
610.31 MHz		25.4	21.8	47.2	82.2	-35.0



TILE Instrument Control System EMI Measurement Software

Radiated Emissions from 30MHz to 1GHz

Date: 11-06-2008

Company: ADC Telecommunications Inc.
Model: InterReach Fusion, AWS_TX
Test Engineer: Uri Spector
Standard: FCC Part 27
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
 Measurements were taken using a Peak detector

Table # 2

Frequency	Ant. Polarity	Peak Reading dBµV	Ant.Factor dB1/m	Total at 3m dBµV/m	QP Limit dBµV/m	Margin dB
Operating Frequency 2110MHz						
30.0 MHz	V	13.7	20.5	34.3	82.2	-47.9
47.594 MHz	V	19.9	11.2	31.1	82.2	-51.1
473.17 MHz	V	36.7	19.7	56.3	82.2	-25.9
610.31 MHz	V	24.7	21.8	46.5	82.2	-35.7
977.37 MHz	V	14.9	25.7	40.5	82.2	-41.7
Operating Frequency 2132.5MHz						
30.0 MHz	V	13.4	20.5	34.0	82.2	-48.2
495.33 MHz	V	35.1	20.1	55.2	82.2	-27.0
610.31 MHz	V	25.2	21.8	46.9	82.2	-35.3
976.66 MHz	V	14.9	25.7	40.6	82.2	-41.6
Operating Frequency 2155MHz						
30.069 MHz	V	14.7	20.5	35.2	82.2	-47.0
46.97 MHz	V	20.7	11.5	32.2	82.2	-50.0
518.19 MHz	V	32.9	20.4	53.3	82.2	-28.9
610.31 MHz	V	25.0	21.8	46.8	82.2	-35.4
968.17 MHz	V	15.5	25.6	41.0	82.2	-41.2
Operating Frequency 2155MHz						
30.139 MHz	H	14.6	20.5	35.0	82.2	-47.2
518.19 MHz	H	33.0	20.4	53.4	82.2	-28.8
610.31 MHz	H	24.4	21.8	46.1	82.2	-36.1
999.29 MHz	H	15.0	26.0	41.0	82.2	-41.3



TILE Instrument Control System EMI Measurement Software

Radiated Emissions from 1GHz to 18GHz

Date: 11-06-2008

Company: ADC Telecommunications Inc.
Model: InterReach Fusion, AWS_RX
Test Engineer: Uri Spector
Special Info:
Standard: FCC Part 27
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
 All measurements were taken using a Peak detector

Table # 3

Frequency MHz	Antenna Polarity	Reading dBµV	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dBµV/m	QP Limit dBµV/m	Margin dB
Operating Frequency 1710 MHz							
1.6375 GHz	V	58.0	29.3	40.8	46.4	82.2	-35.8
3.584 GHz	V	51.5	36.0	40.2	47.3	82.2	-34.9
4.5955 GHz	V	50.4	38.9	39.9	49.4	82.2	-32.8
5.3775 GHz	V	49.3	40.9	39.7	50.5	82.2	-31.7
8.038 GHz	V	43.9	45.0	39.3	49.7	82.2	-32.6
13.844 GHz	V	42.7	50.8	39.5	54.0	82.2	-28.2
17.957 GHz	V	40.9	56.5	38.4	59.0	82.2	-23.3
Operating Frequency 1732.5 MHz							
1.6375 GHz	V	56.3	29.3	40.8	44.7	82.2	-37.5
3.278 GHz	V	52.0	35.0	40.2	46.8	82.2	-35.4
5.3775 GHz	V	49.8	40.9	39.7	50.9	82.2	-31.3
7.171 GHz	V	45.5	43.4	40.1	48.8	82.2	-33.4
13.86 GHz	V	42.5	50.8	39.5	53.8	82.2	-28.4
17.983 GHz	V	41.1	56.6	38.4	59.3	82.2	-22.9
Operating Frequency 1755 MHz							
1.6375 GHz	V	56.6	29.3	40.8	45.0	82.2	-37.2
3.278 GHz	V	53.7	35.0	40.2	48.6	82.2	-33.6
5.3775 GHz	V	49.3	40.9	39.7	50.5	82.2	-31.8
7.171 GHz	V	45.5	43.4	40.1	48.8	82.2	-33.5
14.557 GHz	V	42.9	51.8	40.2	54.5	82.2	-27.7
17.983 GHz	V	40.6	56.6	38.4	58.8	82.2	-23.4
Operating Frequency 1770 MHz							
1.6375 GHz	H	59.0	29.3	40.8	47.4	82.2	-34.8
3.278 GHz	H	55.1	35.0	40.2	49.9	82.2	-32.3
4.5955 GHz	H	52.4	38.9	39.9	51.4	82.2	-30.8
11.251 GHz	H	41.2	48.6	38.6	51.2	82.2	-31.0
13.759 GHz	H	42.5	50.8	39.4	53.9	82.2	-28.3
17.974 GHz	H	41.0	56.6	38.4	59.2	82.2	-23.1
Operating Frequency 1785 MHz							
1.6375 GHz	H	59.0	29.3	40.8	47.4	82.2	-34.8
3.278 GHz	H	55.1	35.0	40.2	49.9	82.2	-32.3
4.5955 GHz	H	52.4	38.9	39.9	51.4	82.2	-30.8
11.251 GHz	H	40.7	48.6	38.6	50.7	82.2	-31.5
13.69 GHz	H	42.3	50.8	39.3	53.8	82.2	-28.4
17.966 GHz	H	41.5	56.5	38.4	59.6	82.2	-22.6
Operating Frequency 1800 MHz							
1.6375 GHz	H	58.5	29.3	40.8	46.9	82.2	-35.3
3.278 GHz	H	55.4	35.0	40.2	50.2	82.2	-32.0
4.5955 GHz	H	52.7	38.9	39.9	51.8	82.2	-30.5
11.251 GHz	H	40.6	48.6	38.6	50.6	82.2	-31.6
13.656 GHz	H	42.0	50.8	39.3	53.5	82.2	-28.7
18.0 GHz	H	40.9	56.7	38.3	59.2	82.2	-23.0



TILE Instrument Control System EMI Measurement Software

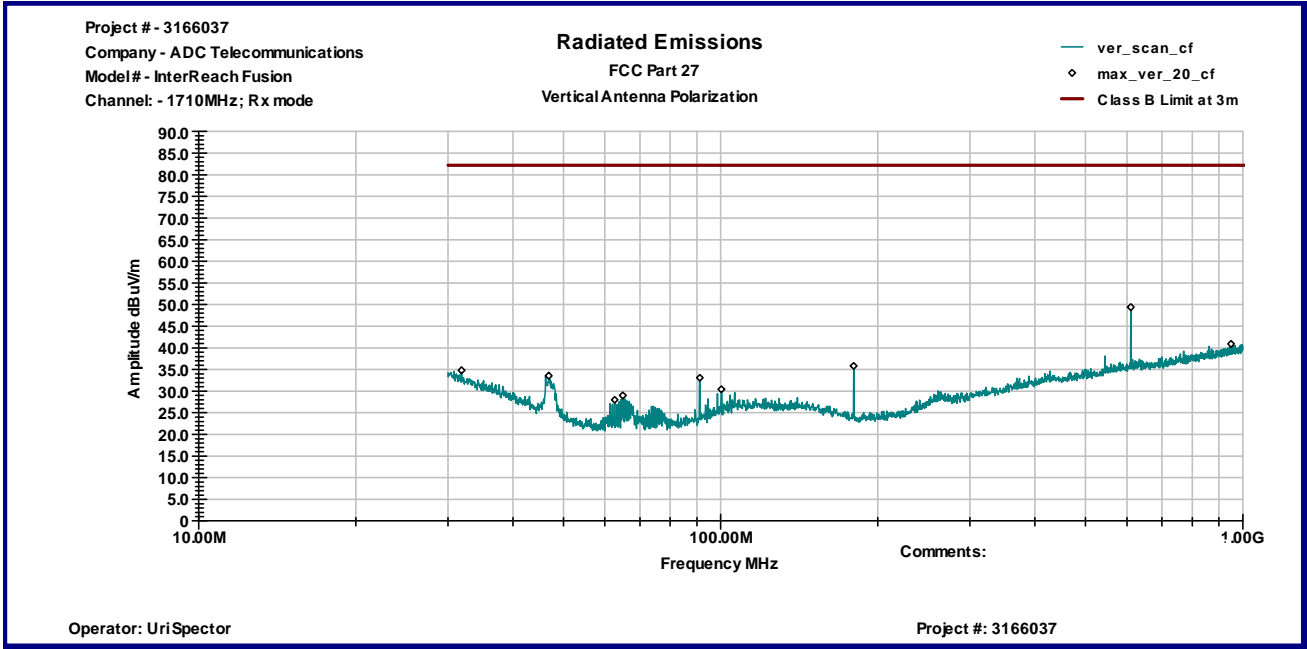
Radiated Emissions from 1GHz to 18GHz

Date: 11-06-2008

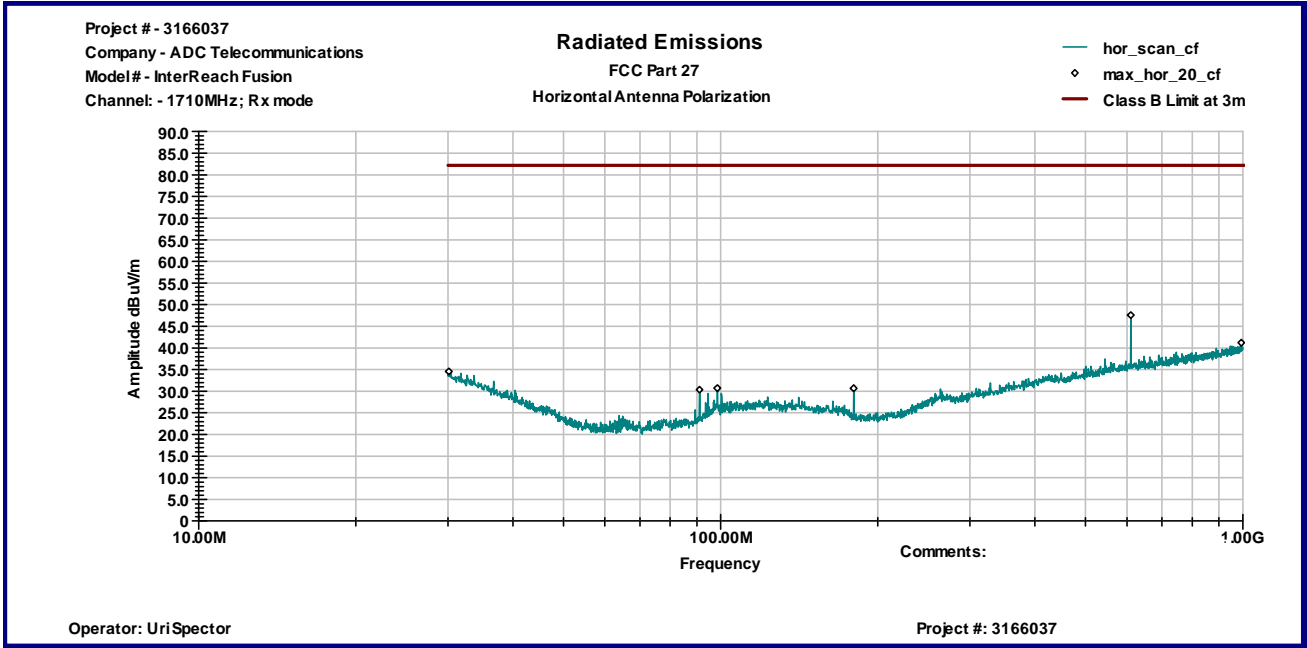
Company: ADC Telecommunications Inc.
Model: InterReach Fusion, AWS_TX
Test Engineer: Uri Spector
Special Info:
Standard: FCC Part 27
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
 All measurements were taken using a Peak detector

Table # 4

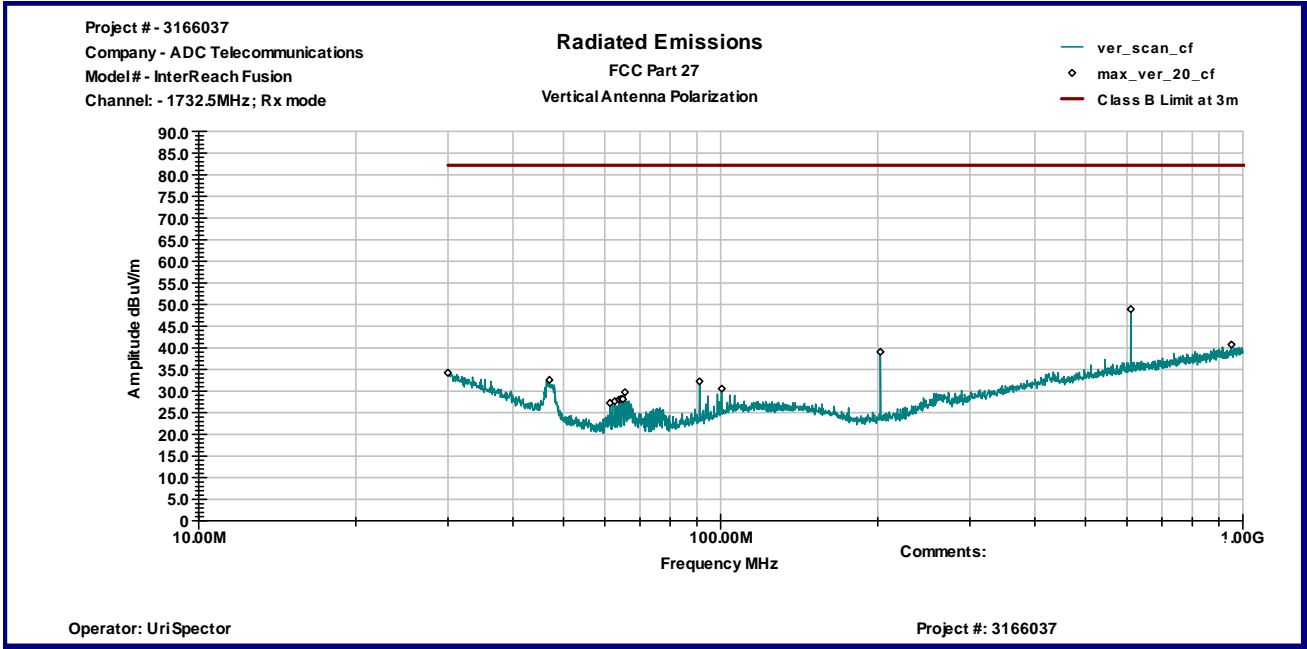
Frequency MHz	Antenna Polarity	Reading dBµV	Total C.F. dB1/m	Pre-Amp. Gain (dB)	Total at 3m dBµV/m	QP Limit dBµV/m	Margin dB
Operating Frequency 2110 MHz							
1.6375 GHz	V	59.5	29.3	40.8	47.9	82.2	-34.3
3.278 GHz	V	56.8	35.0	40.2	51.7	82.2	-30.5
5.3775 GHz	V	48.7	40.9	39.7	49.8	82.2	-32.4
7.171 GHz	V	45.6	43.4	40.1	48.9	82.2	-33.3
13.665 GHz	V	42.6	50.8	39.3	54.1	82.2	-28.1
17.974 GHz	V	41.4	56.6	38.4	59.6	82.2	-22.7
Operating Frequency 2132.5 MHz							
1.6375 GHz	V	59.5	29.3	40.8	47.9	82.2	-34.3
3.278 GHz	V	54.3	35.0	40.2	49.2	82.2	-33.0
5.3775 GHz	V	49.3	40.9	39.7	50.4	82.2	-31.8
11.251 GHz	V	38.3	48.6	38.6	48.3	82.2	-33.9
13.724 GHz	V	42.5	50.8	39.3	53.9	82.2	-28.3
17.966 GHz	V	40.8	56.5	38.4	58.9	82.2	-23.3
Operating Frequency 2155 MHz							
1.6375 GHz	H	55.7	29.3	40.8	44.2	82.2	-38.0
3.278 GHz	H	56.6	35.0	40.2	51.4	82.2	-30.8
4.5955 GHz	H	54.1	38.9	39.9	53.1	82.2	-29.1
11.251 GHz	H	39.7	48.6	38.6	49.7	82.2	-32.5
13.699 GHz	H	43.1	50.8	39.3	54.6	82.2	-27.6
17.949 GHz	H	41.0	56.4	38.4	59.0	82.2	-23.2
Operating Frequency 2155 MHz							
1.6375 GHz	V	55.1	29.3	40.8	43.5	82.2	-38.7
3.278 GHz	V	57.8	35.0	40.2	52.6	82.2	-29.6
5.3775 GHz	V	49.7	40.9	39.7	50.9	82.2	-31.3
11.251 GHz	V	39.1	48.6	38.6	49.1	82.2	-33.1
13.801 GHz	V	42.3	50.8	39.4	53.6	82.2	-28.6
17.966 GHz	V	40.7	56.5	38.4	58.8	82.2	-23.4
Operating Frequency 2155 MHz							
1.6375 GHz	H	55.9	29.3	40.8	44.3	82.2	-37.9
3.278 GHz	H	55.2	35.0	40.2	50.0	82.2	-32.2
4.5955 GHz	H	53.7	38.9	39.9	52.7	82.2	-29.5
11.251 GHz	H	40.2	48.6	38.6	50.1	82.2	-32.1
13.86 GHz	H	42.5	50.8	39.5	53.8	82.2	-28.4
18.0 GHz	H	41.7	56.7	38.3	60.1	82.2	-22.1



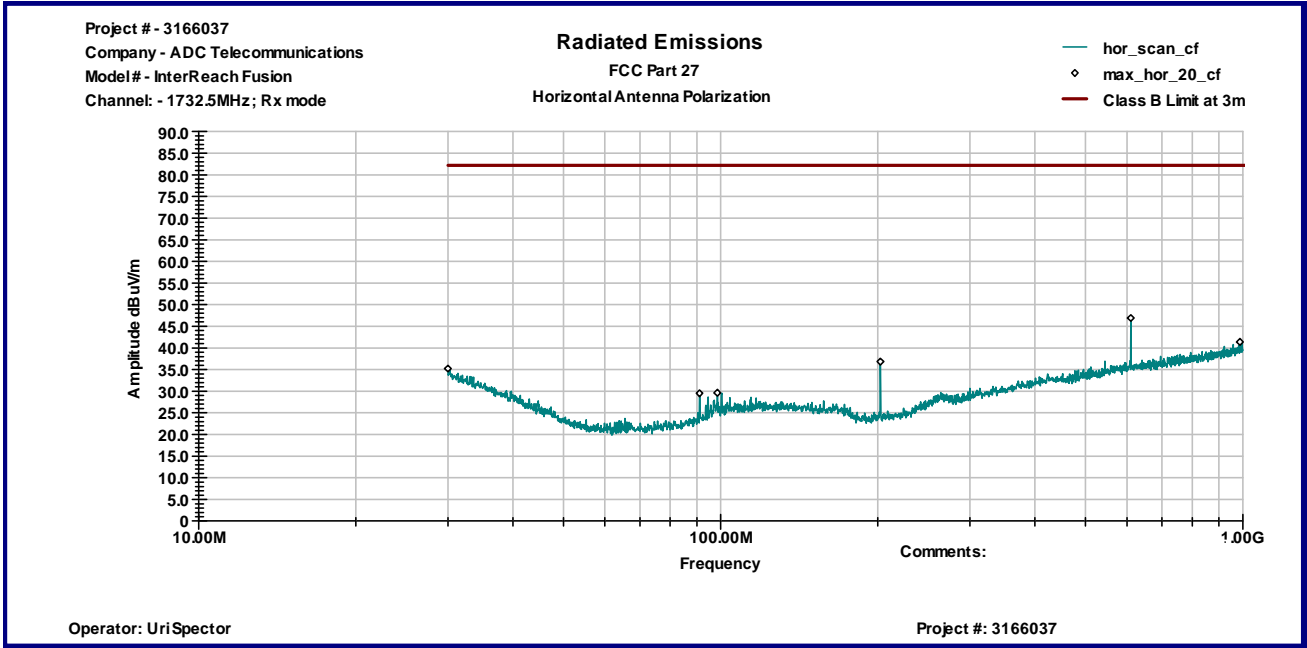
Graph 1



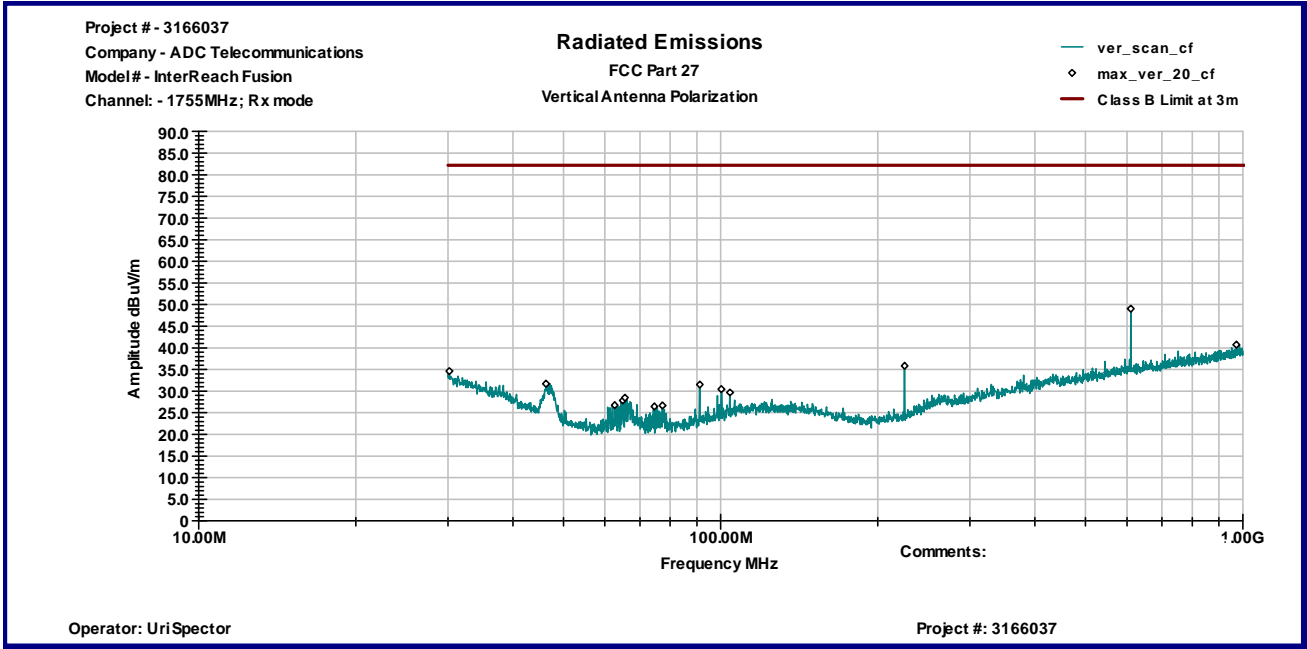
Graph 2



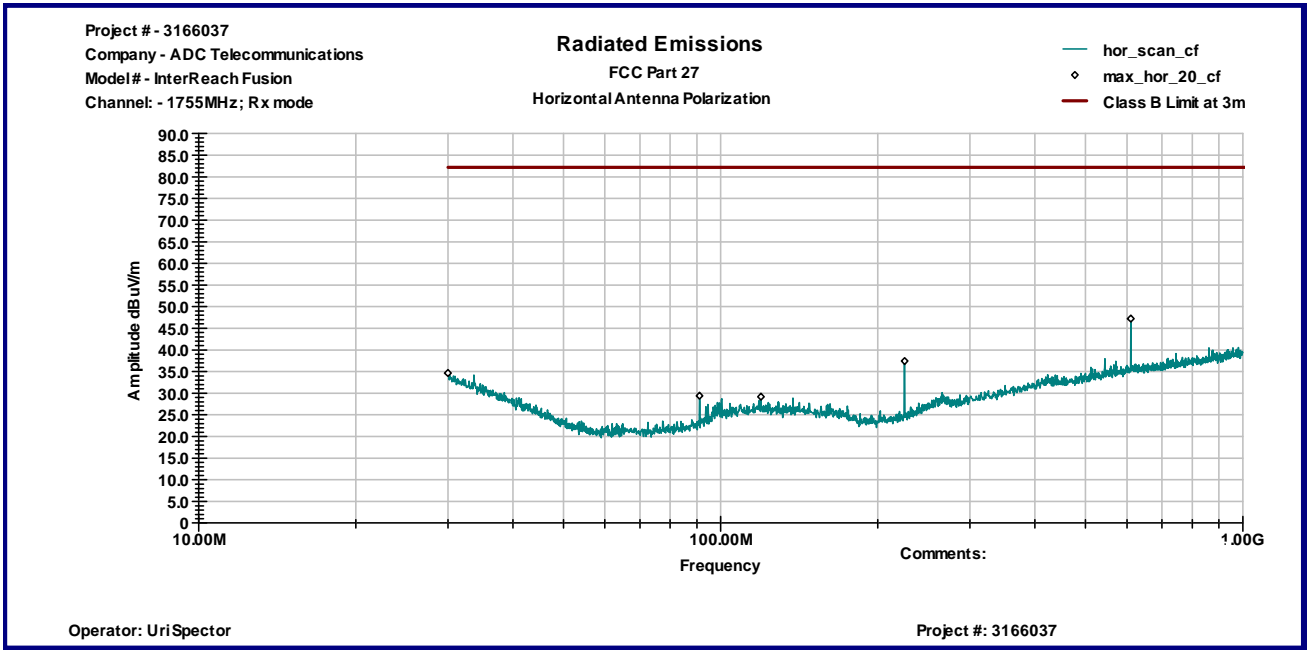
Graph 3



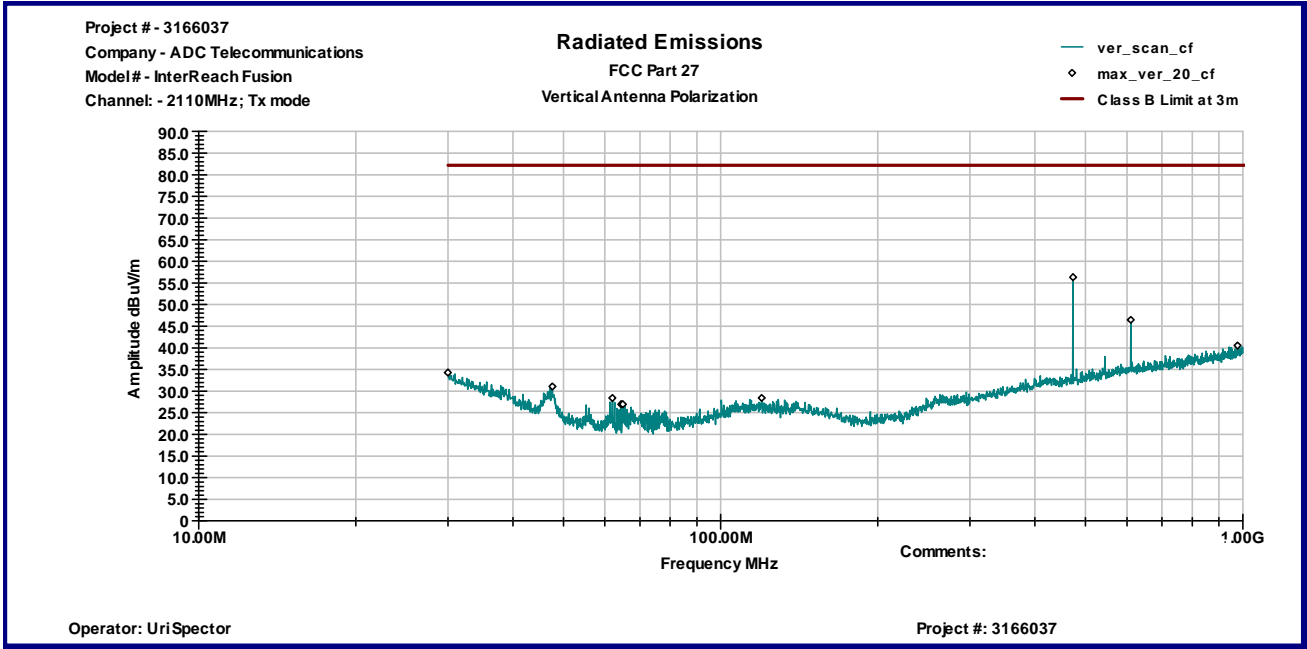
Graph 4



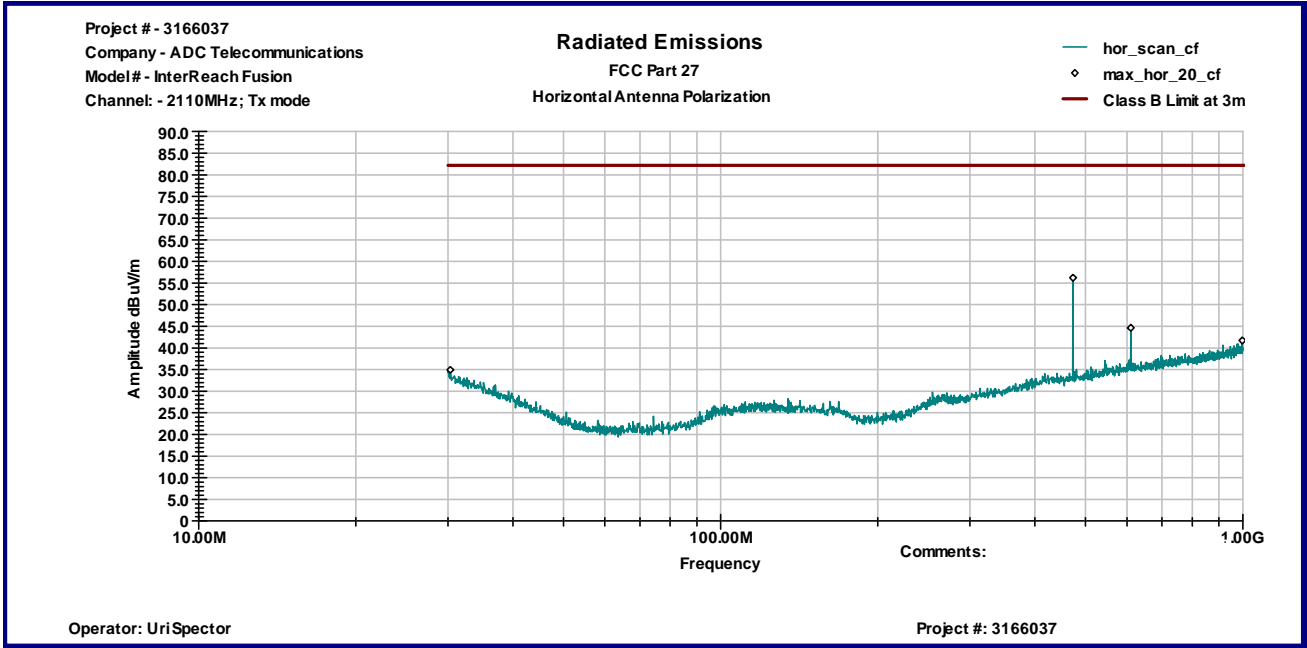
Graph 5



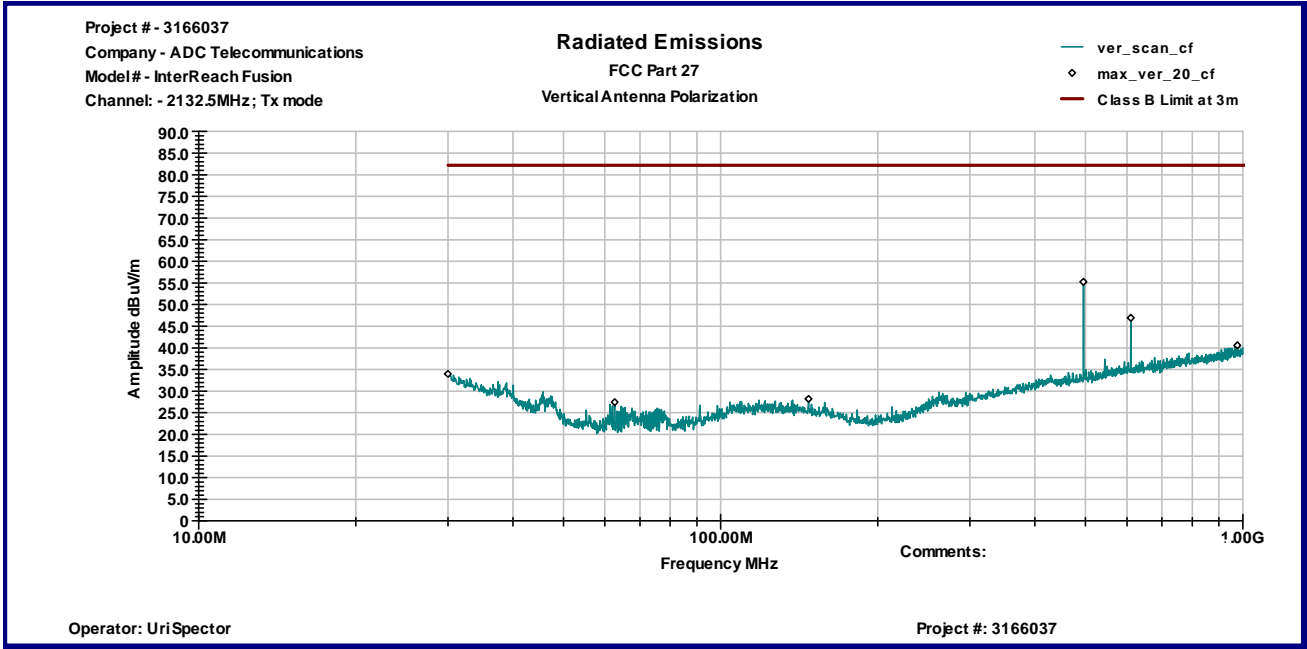
Graph 6



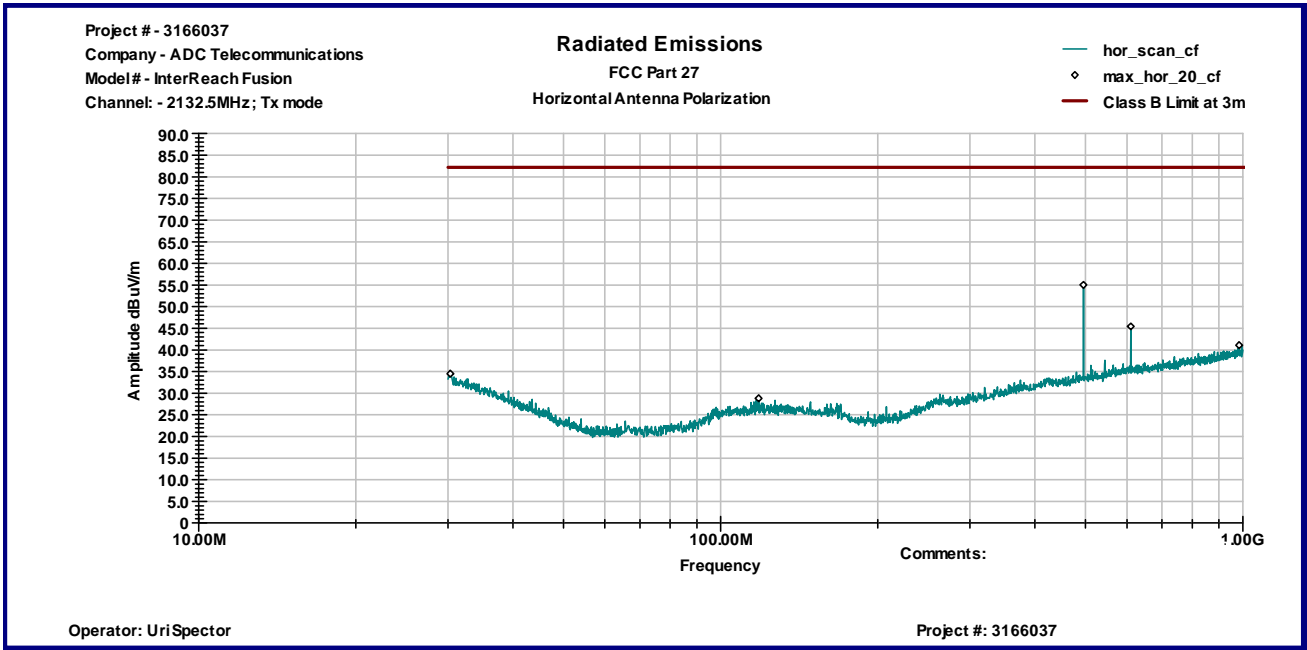
Graph 7



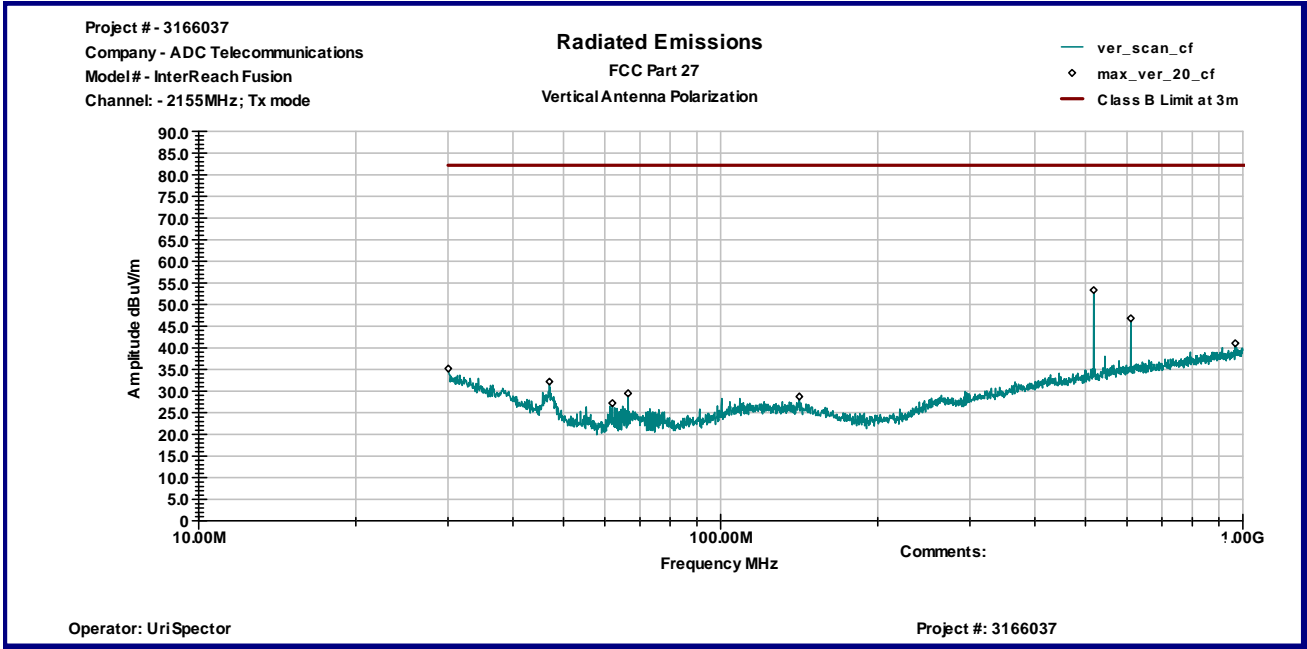
Graph 8



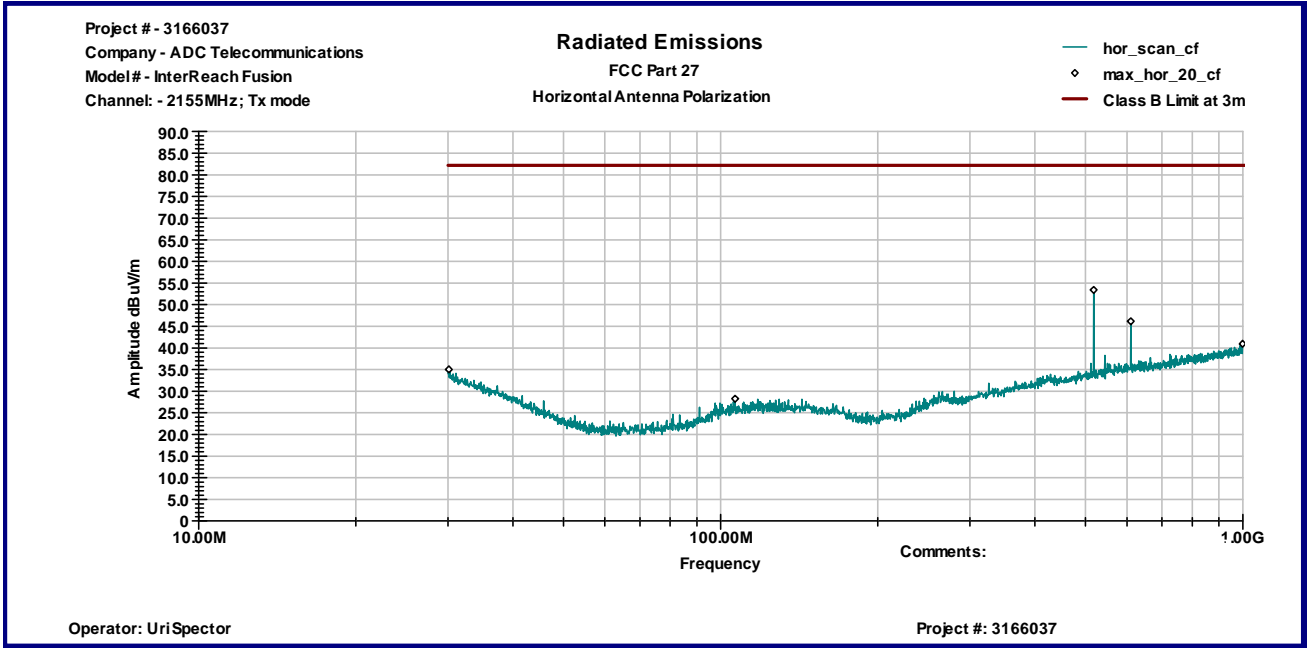
Graph 9



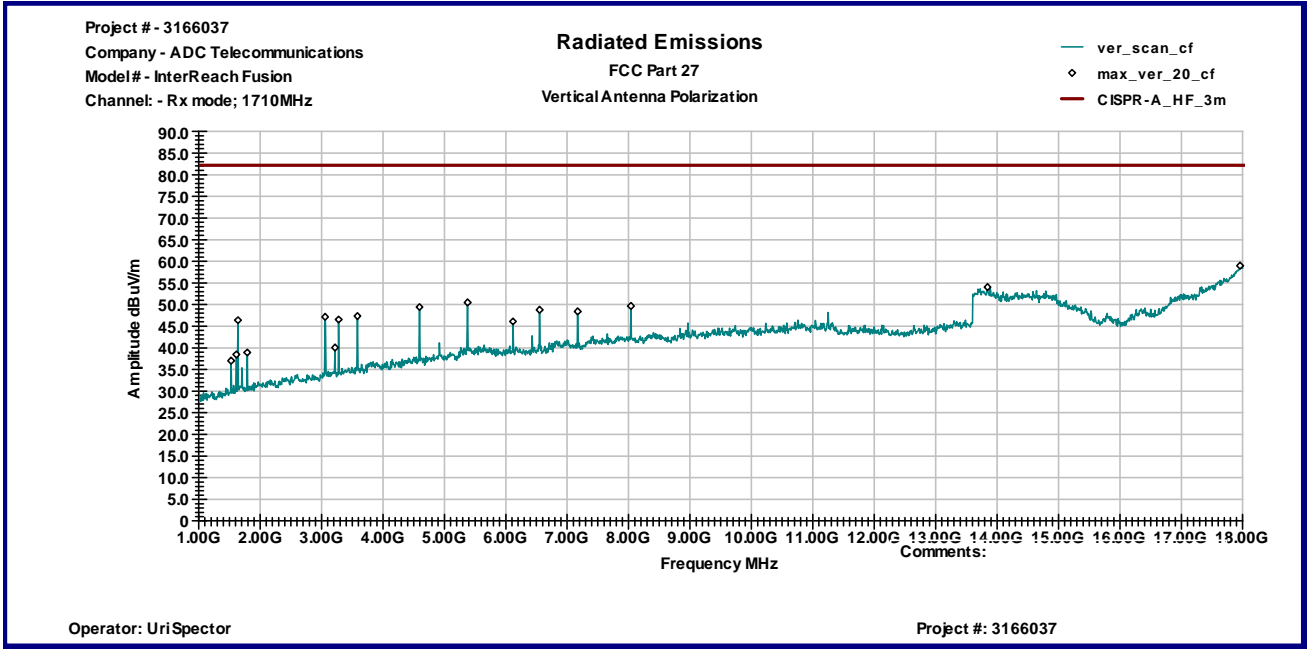
Graph 10



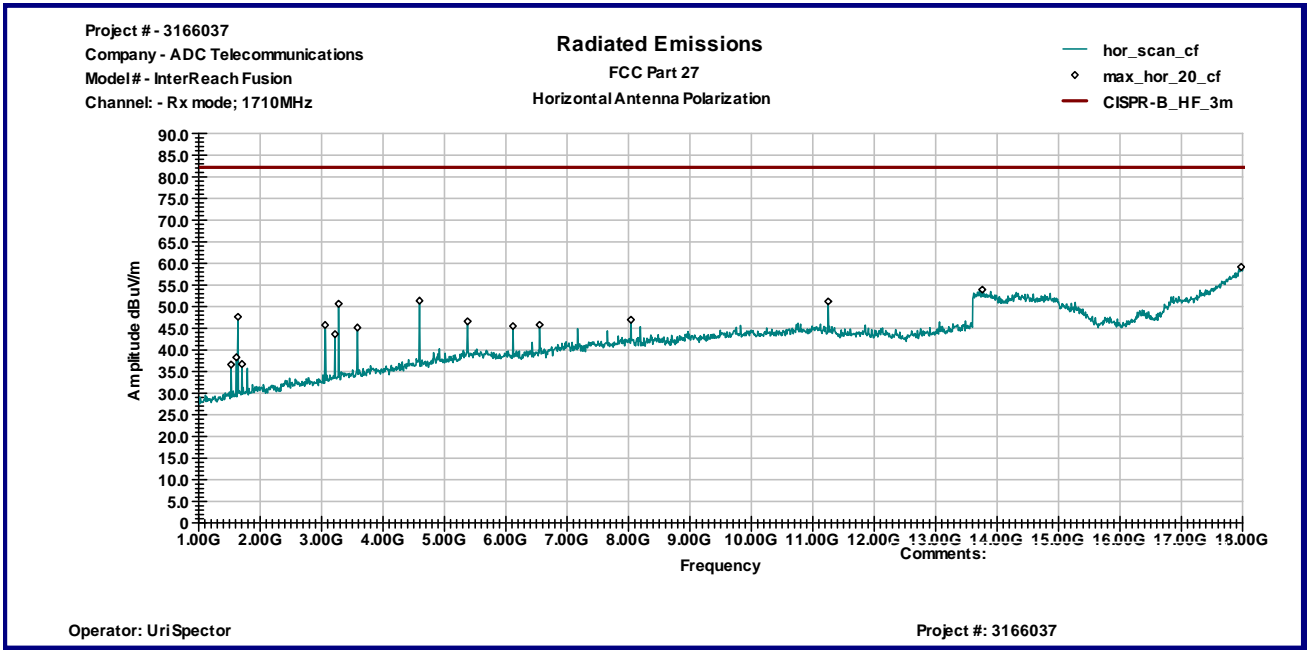
Graph 11



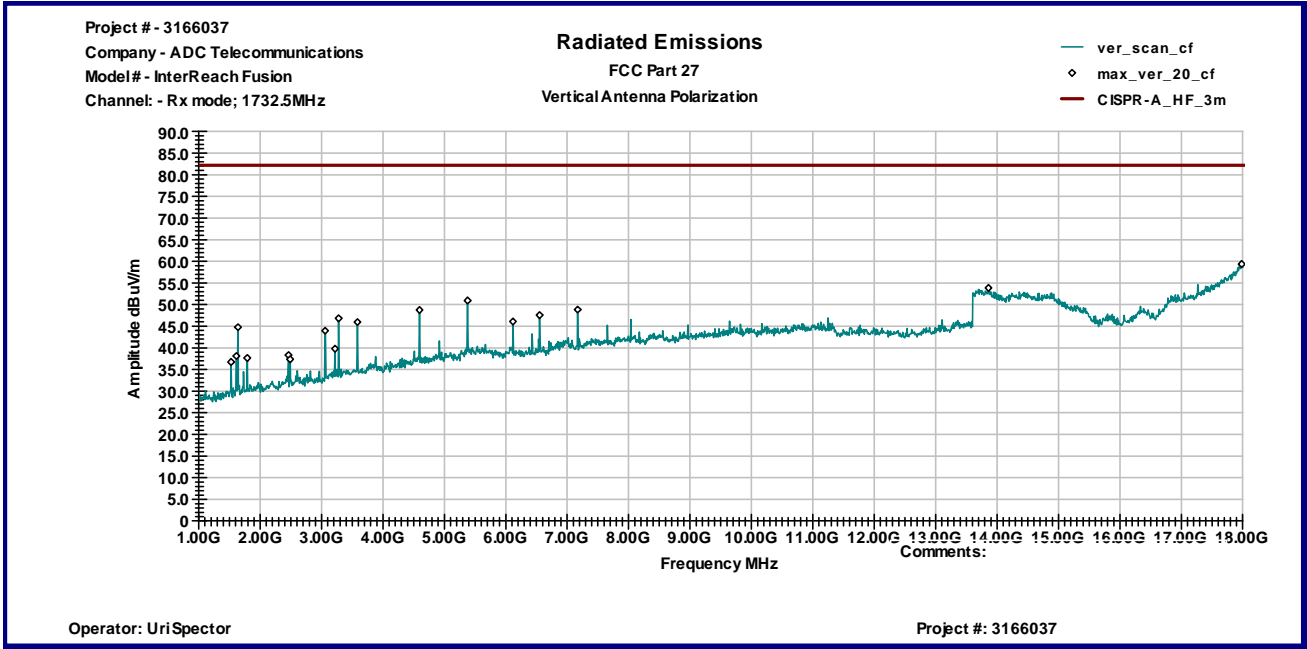
Graph 12



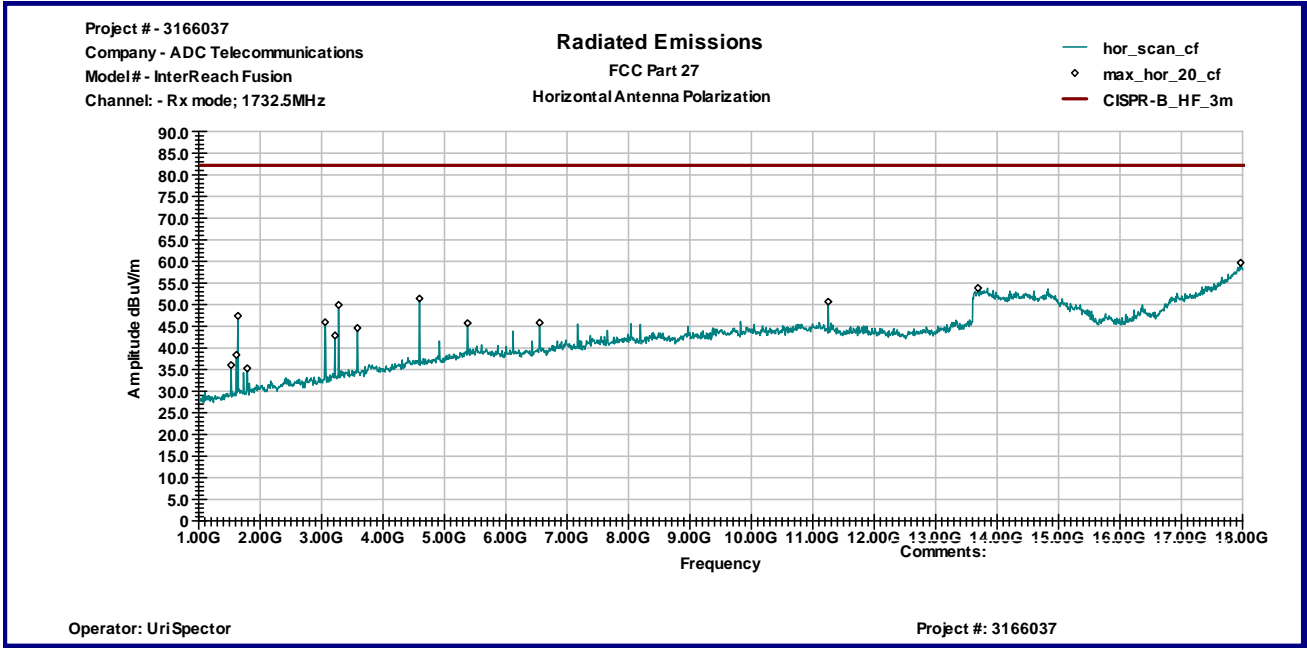
Graph 13



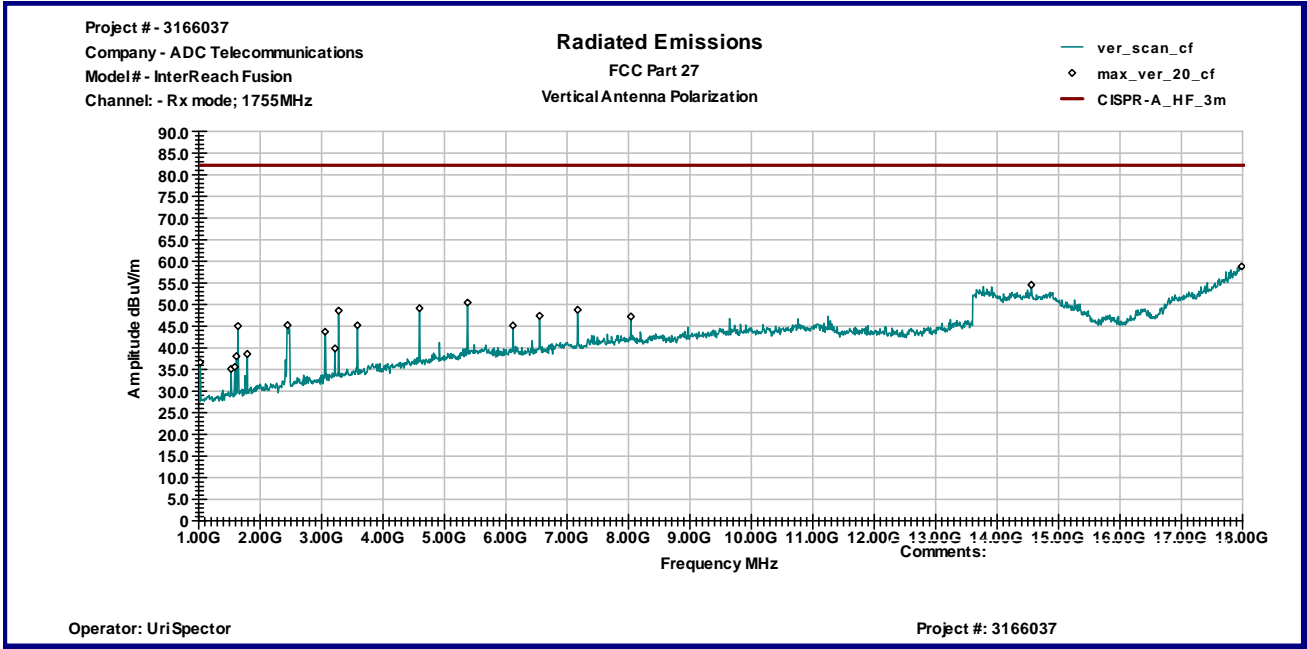
Graph 14



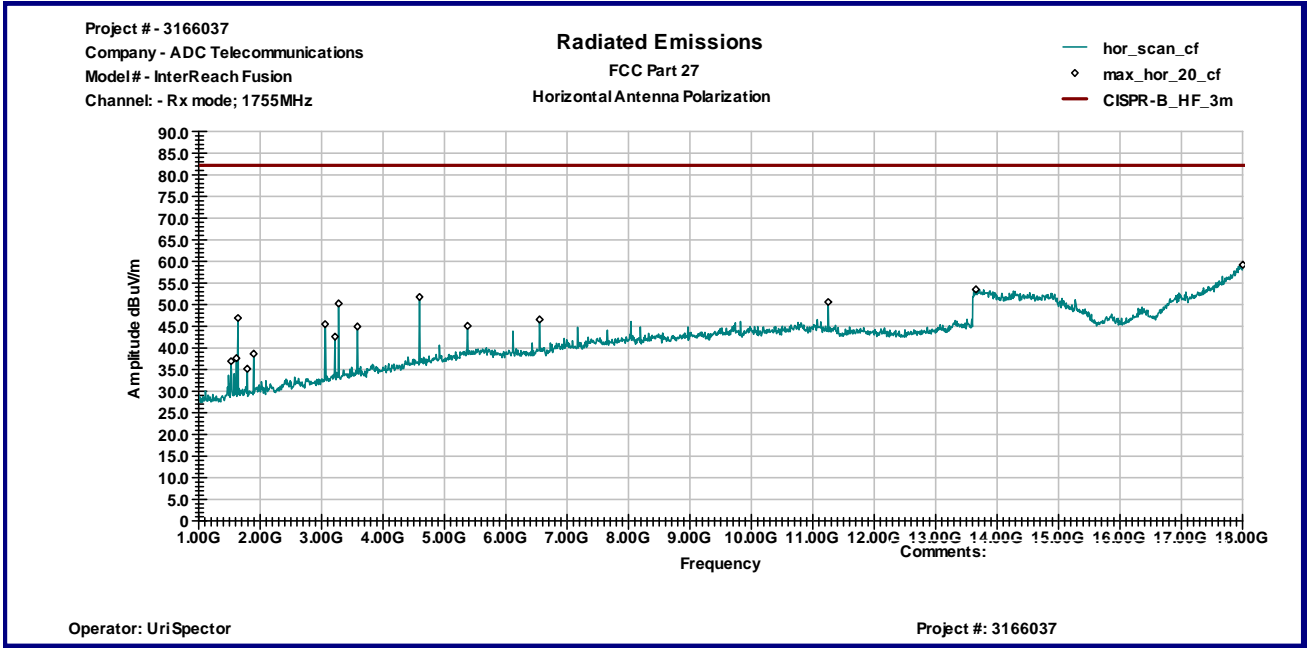
Graph 15



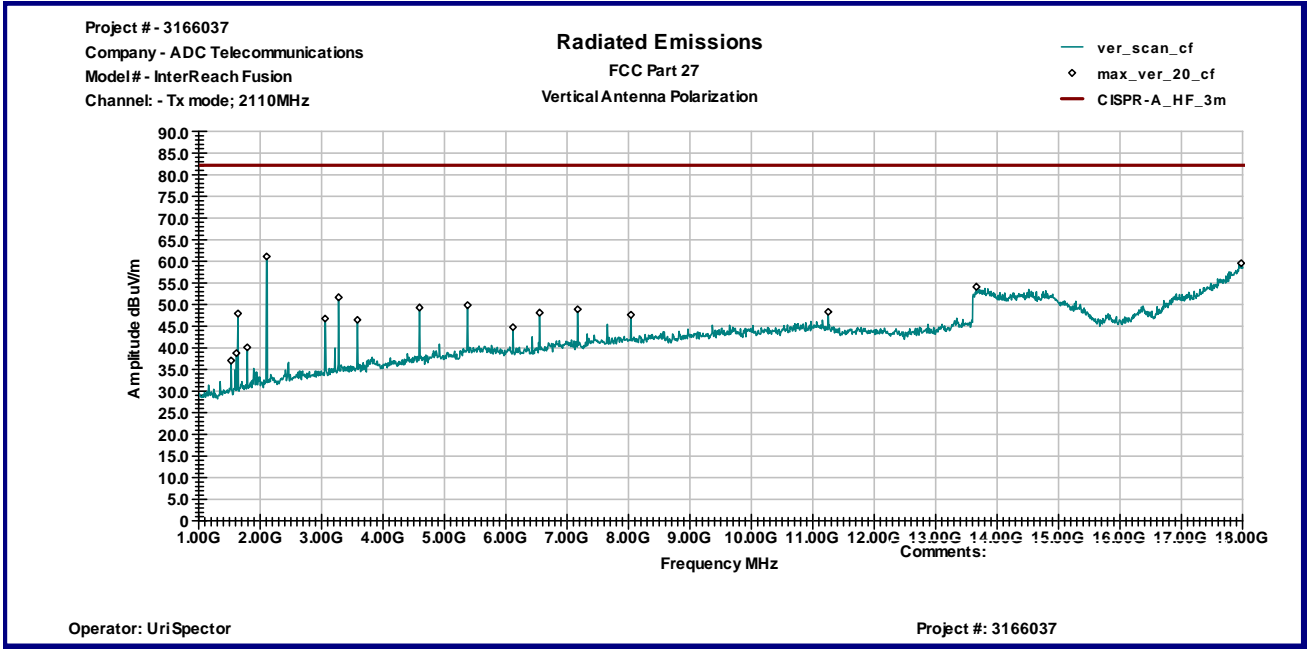
Graph 16



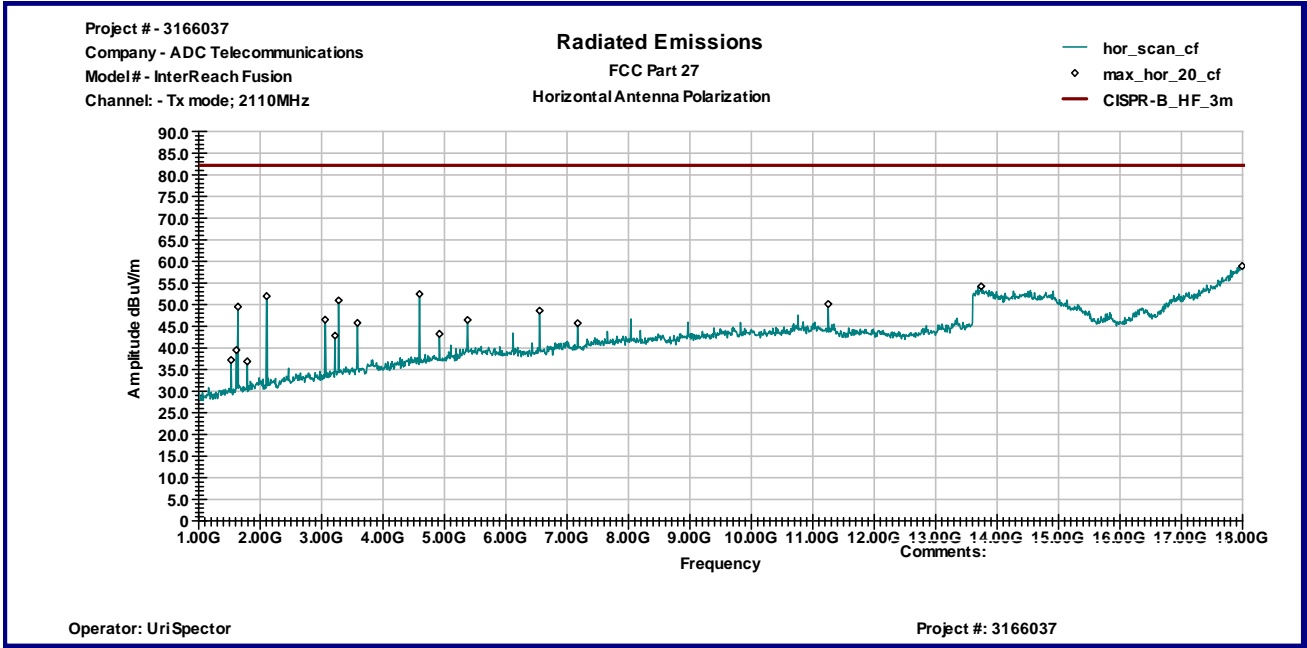
Graph 17



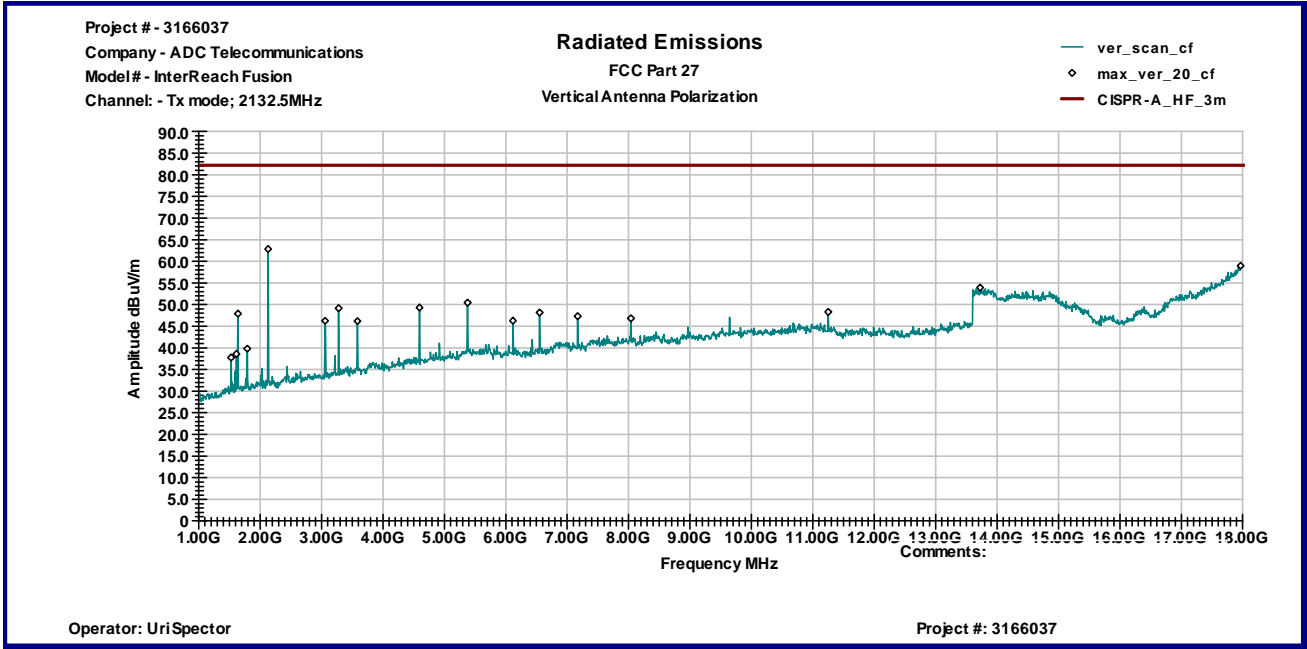
Graph 18



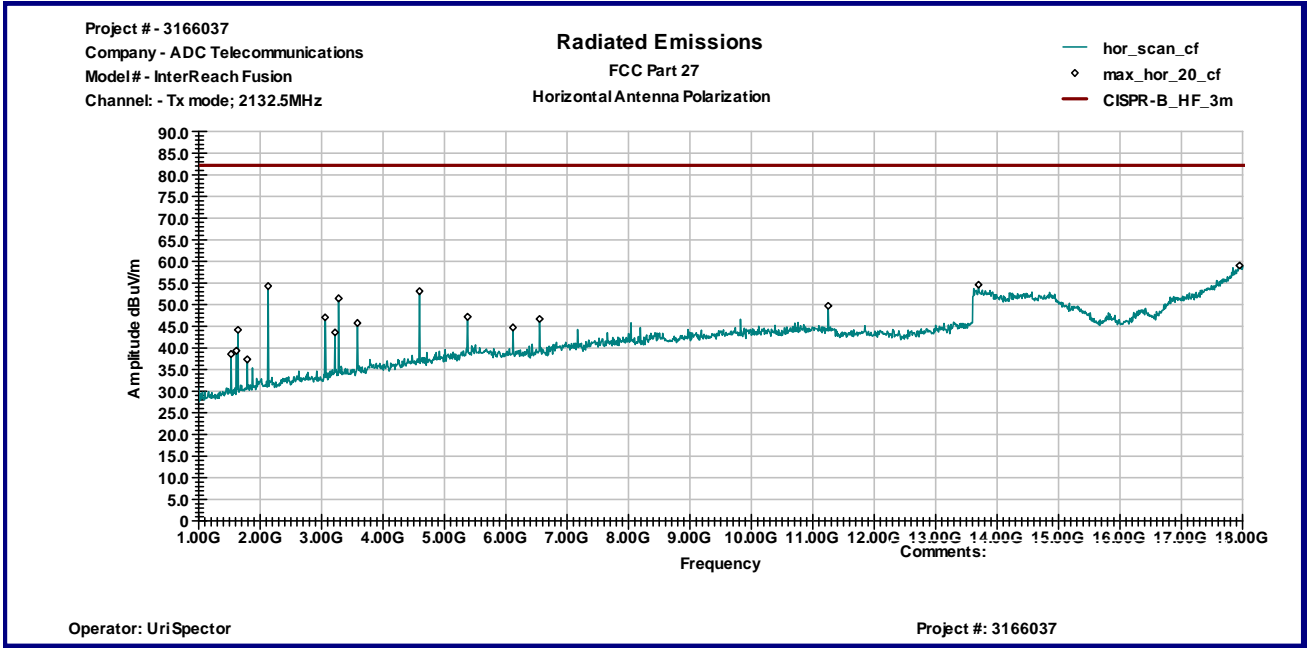
Graph 19



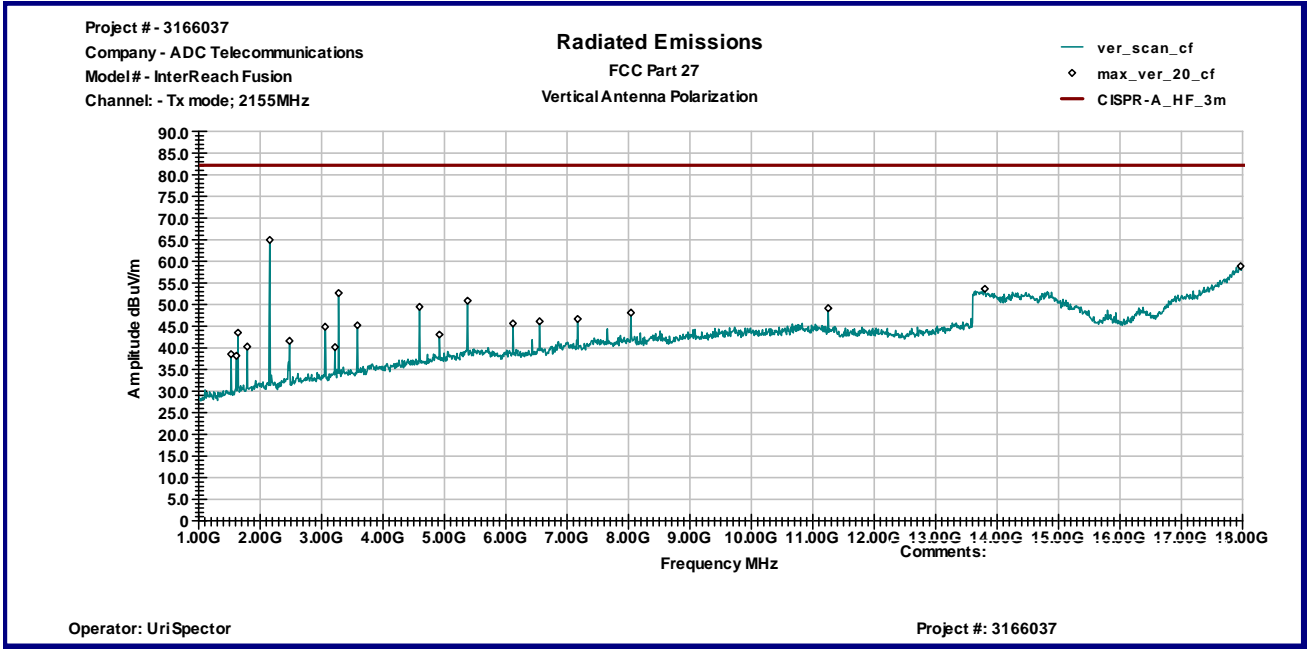
Graph 20



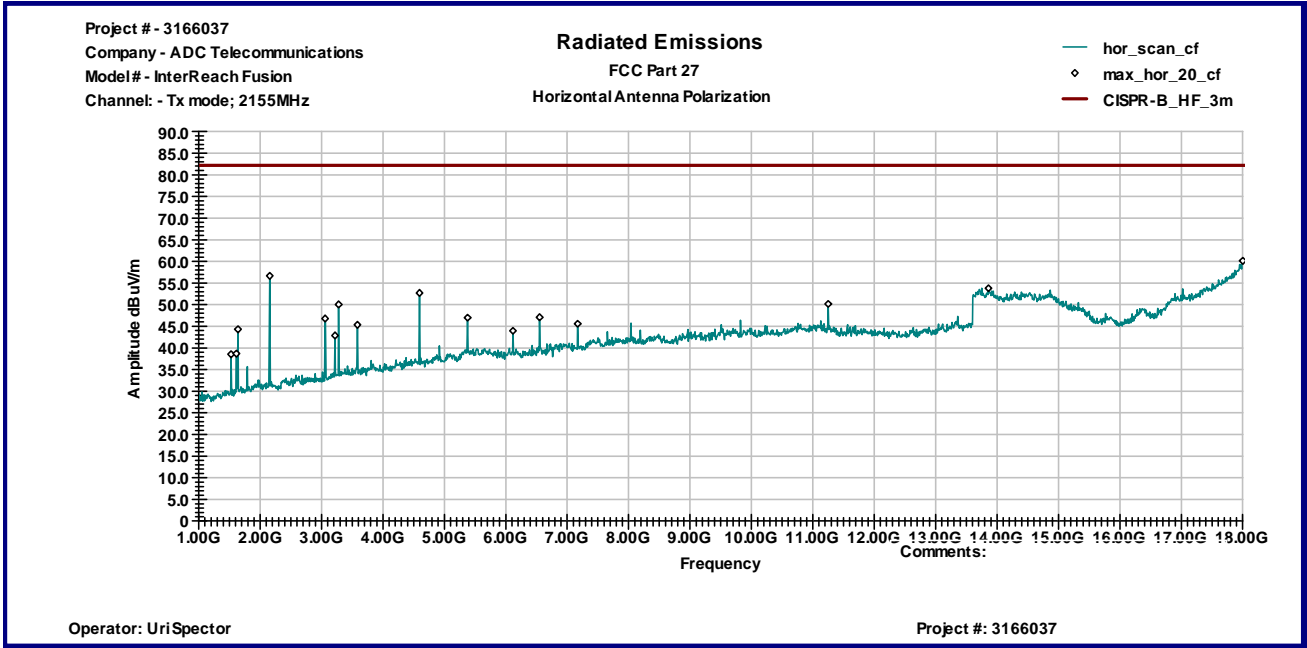
Graph 21



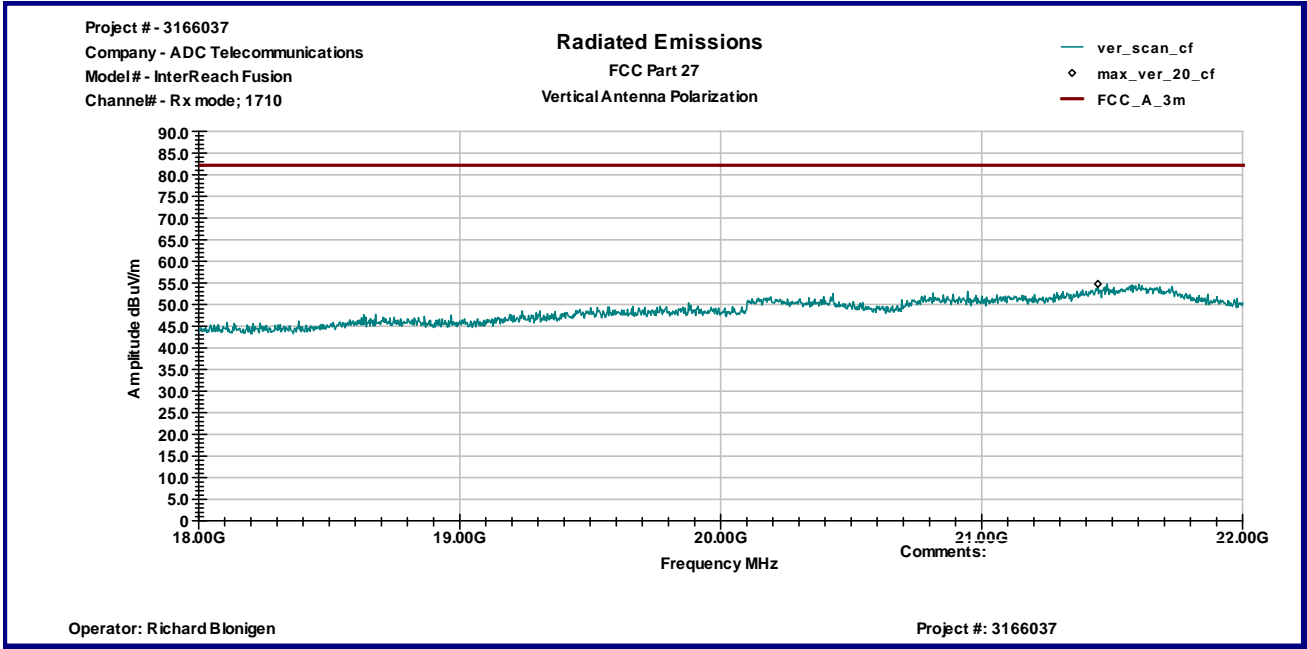
Graph 22



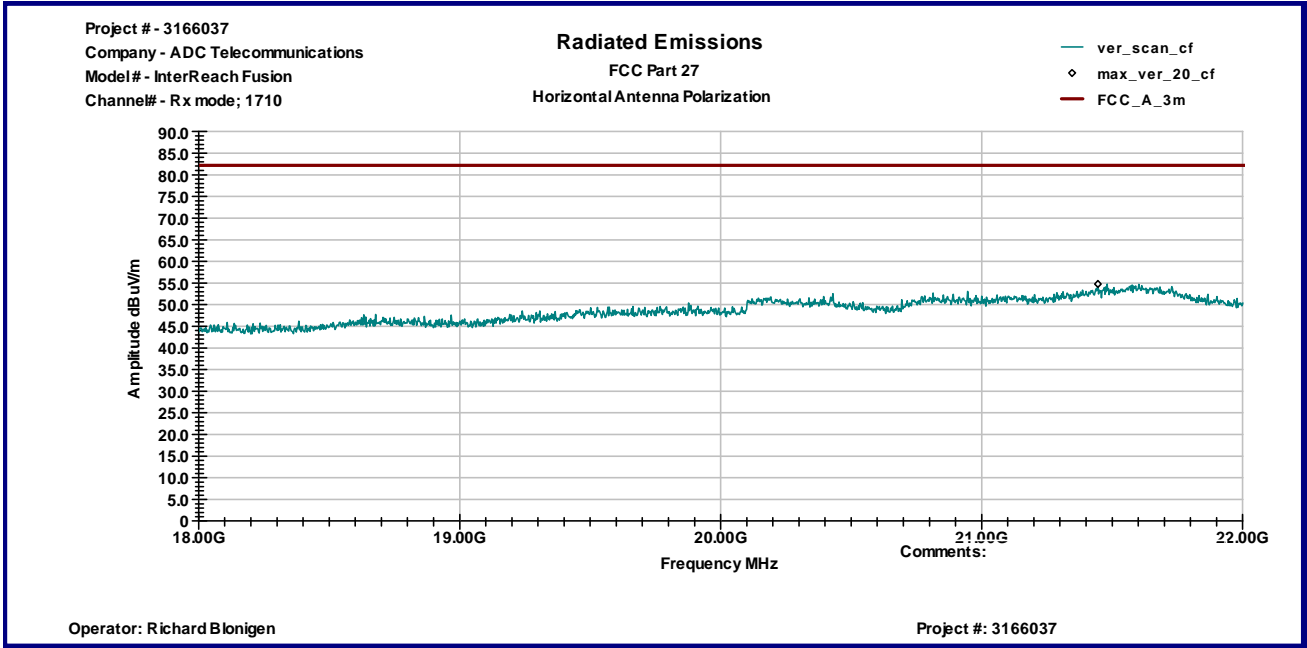
Graph 23



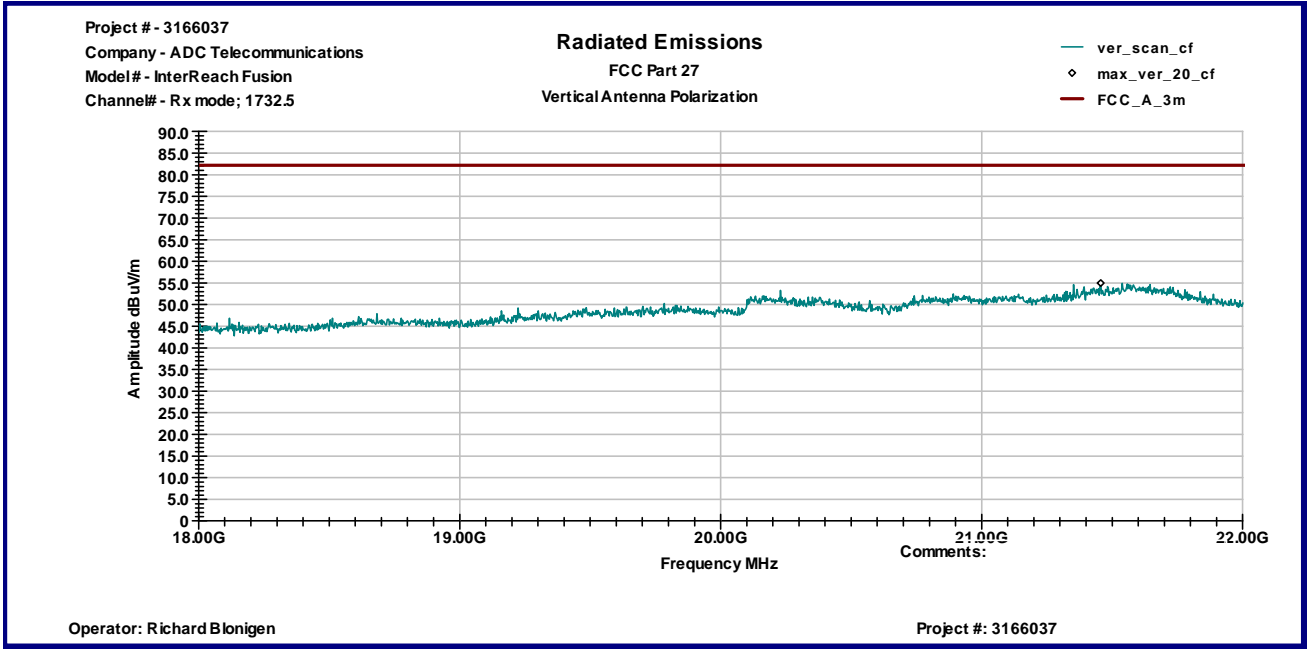
Graph 24



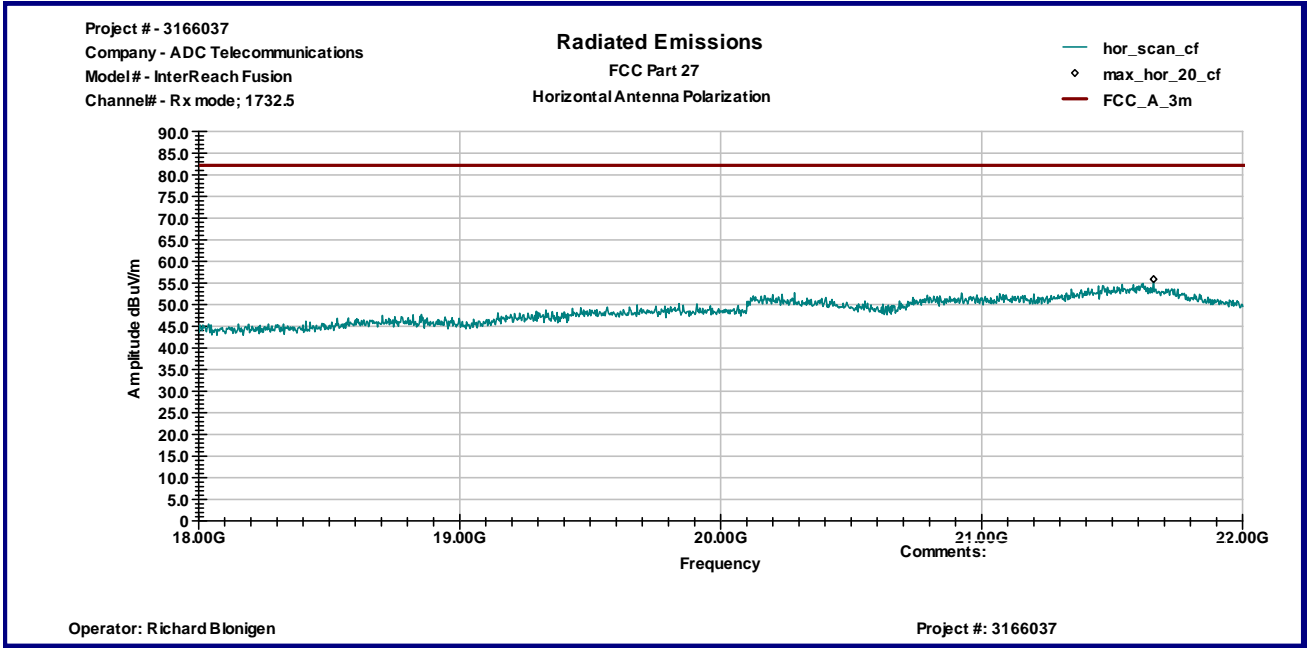
Graph 25



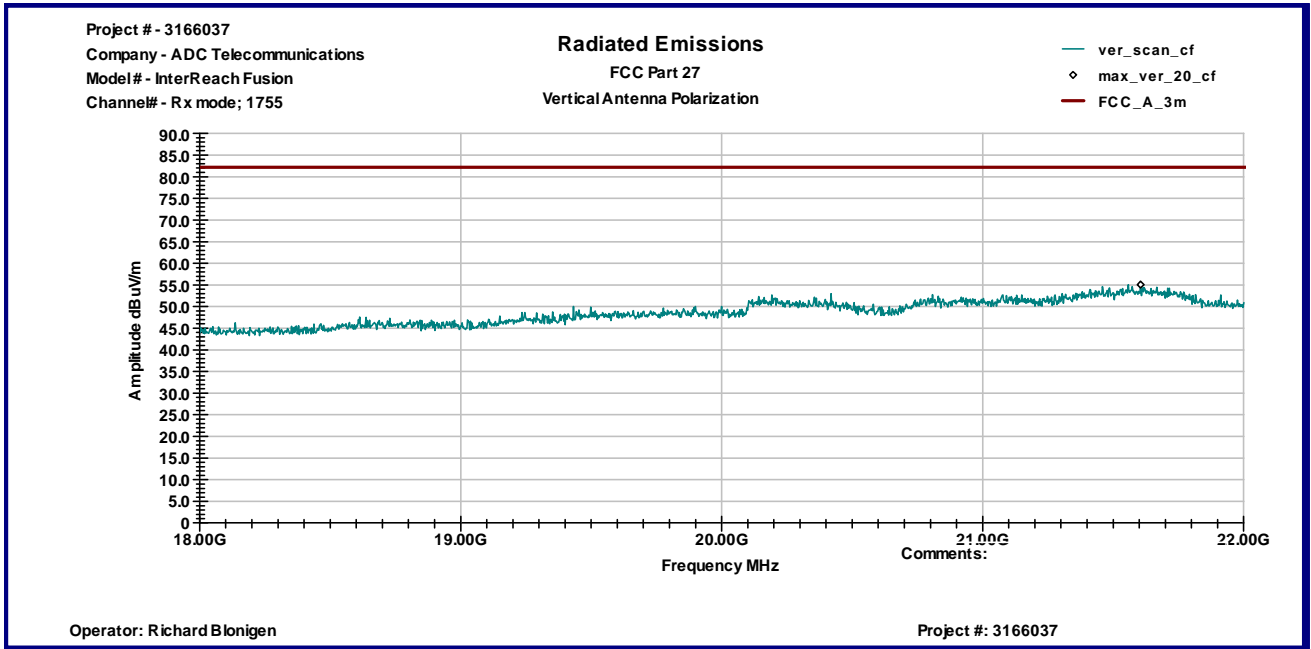
Graph 26



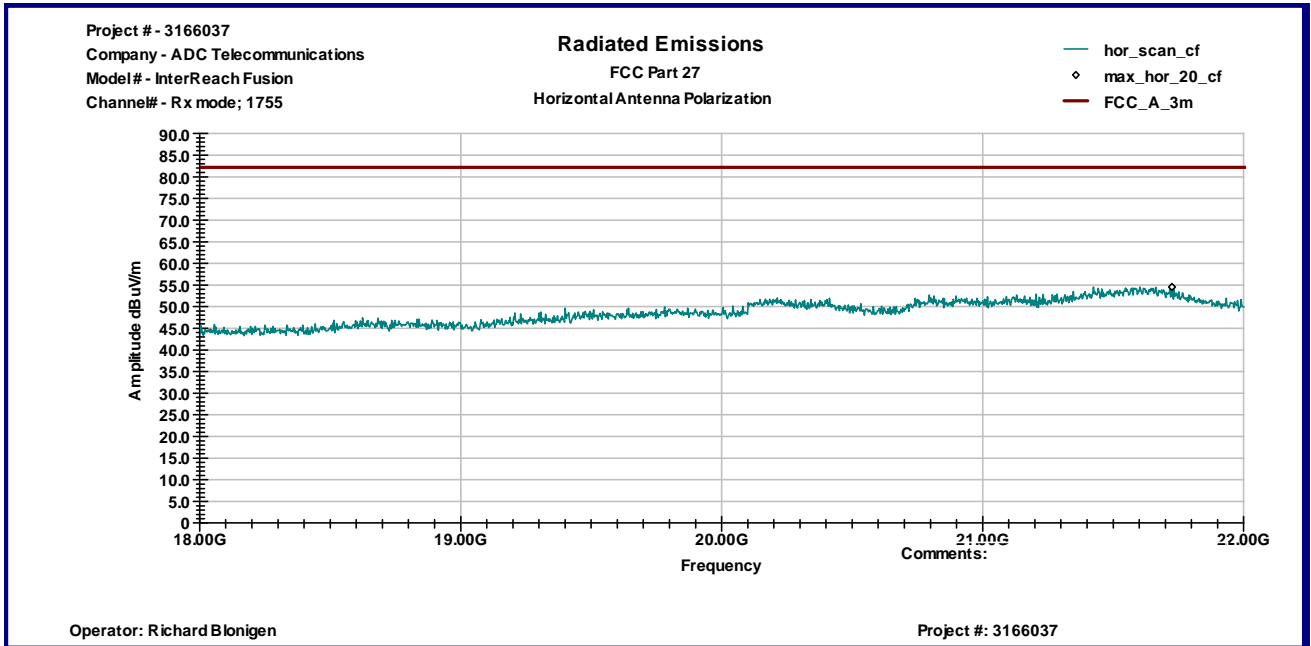
Graph 27



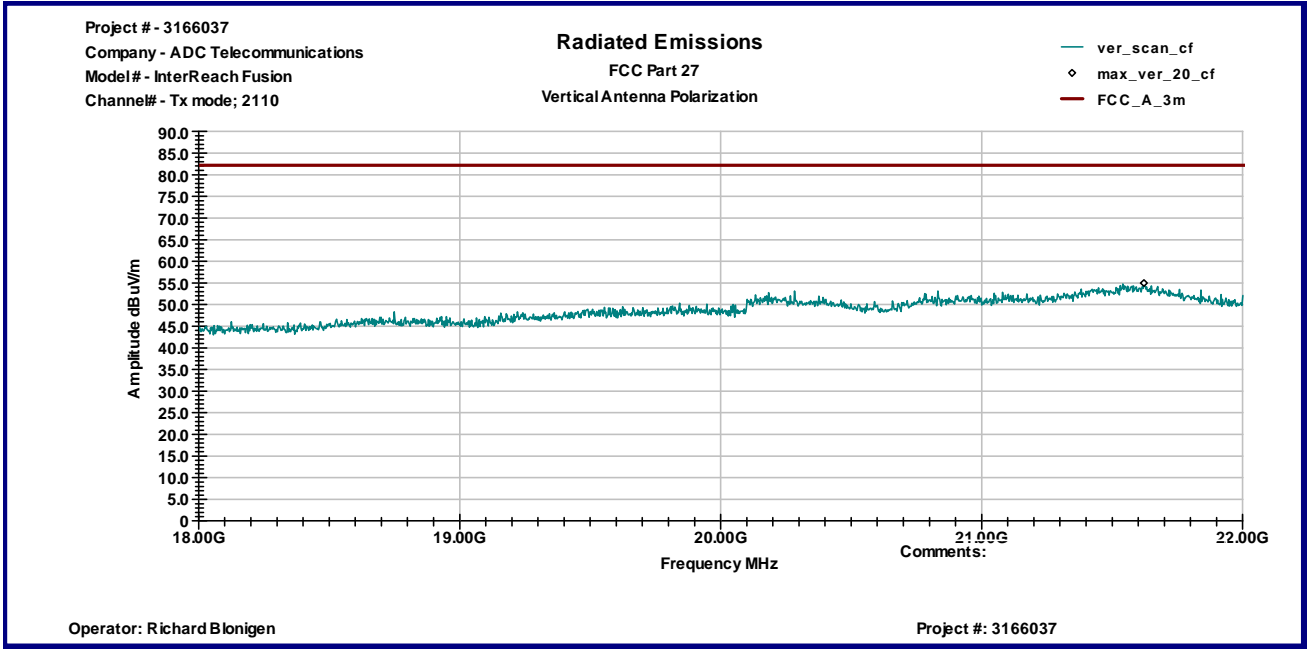
Graph 28



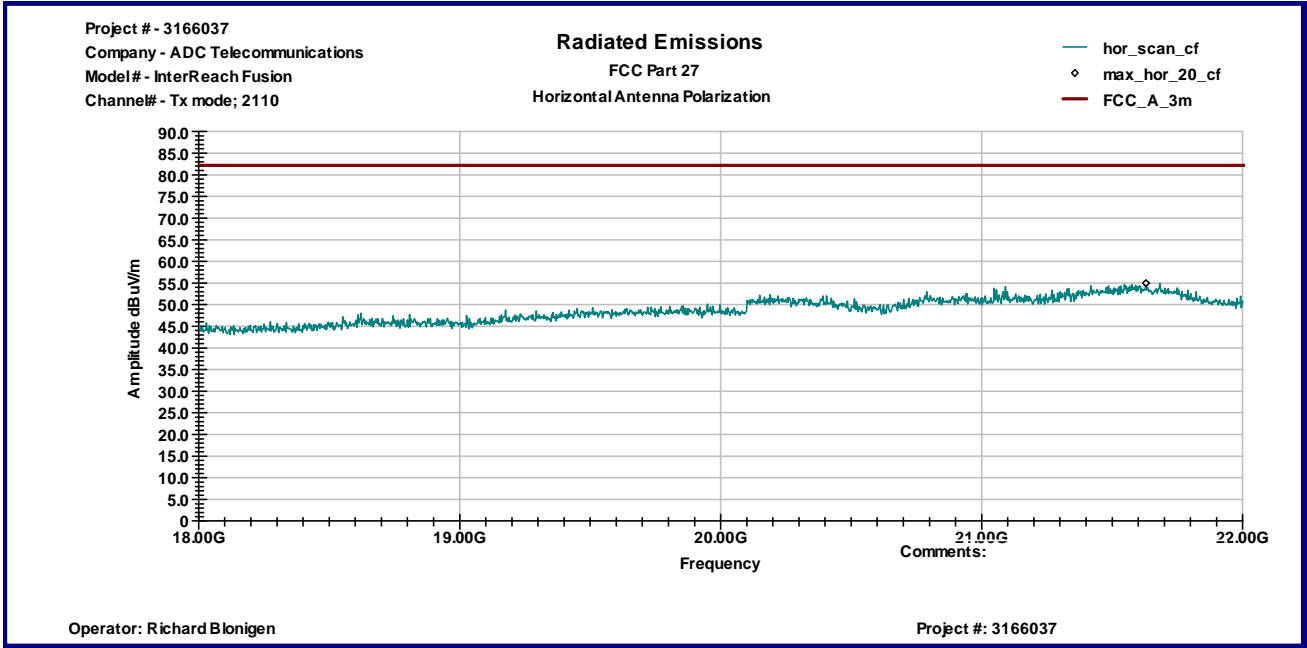
Graph 29



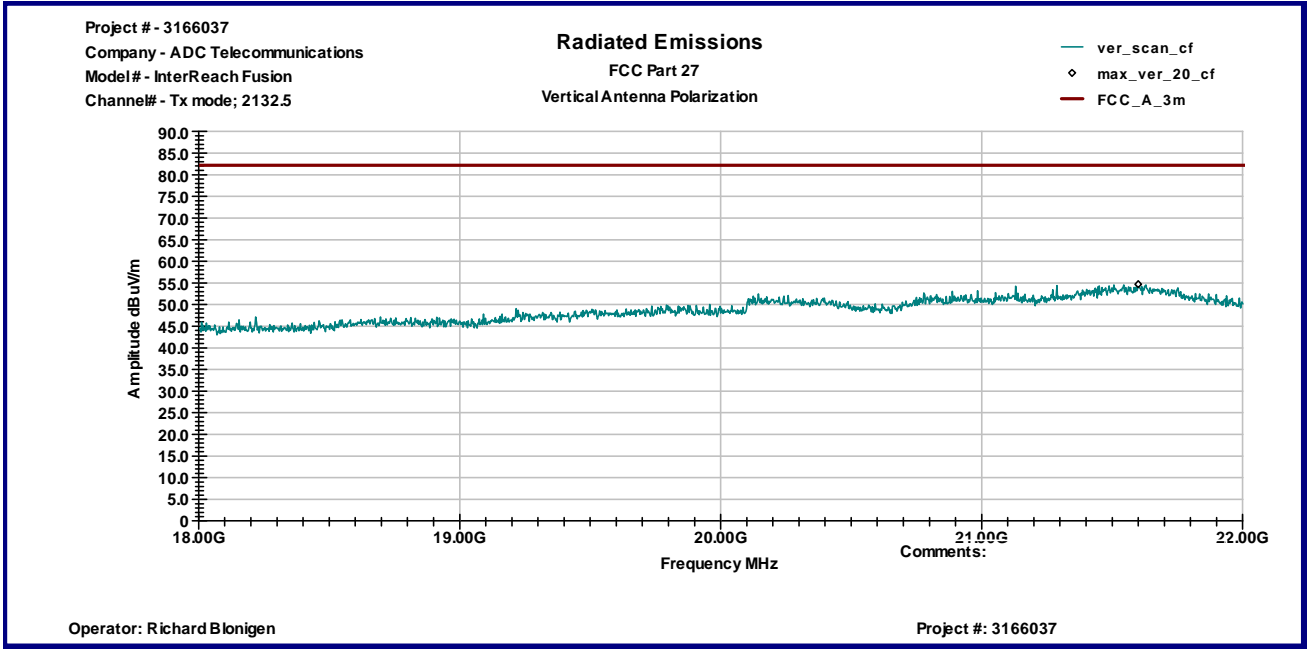
Graph 30



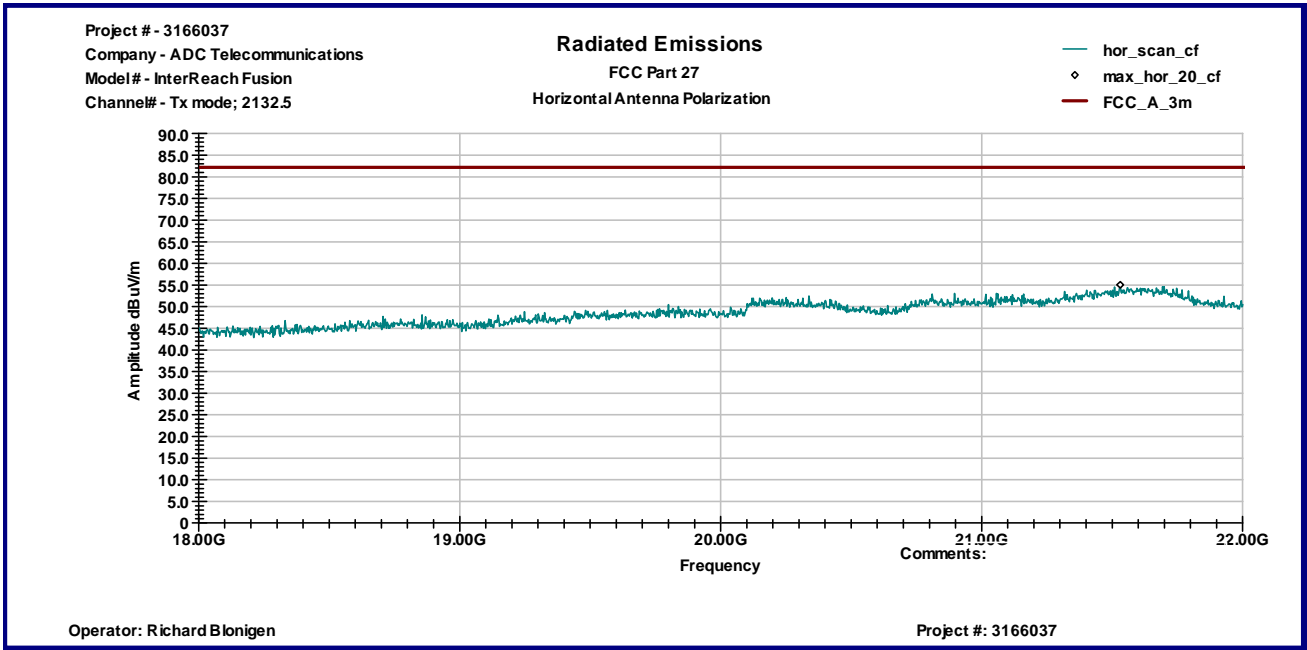
Graph 31



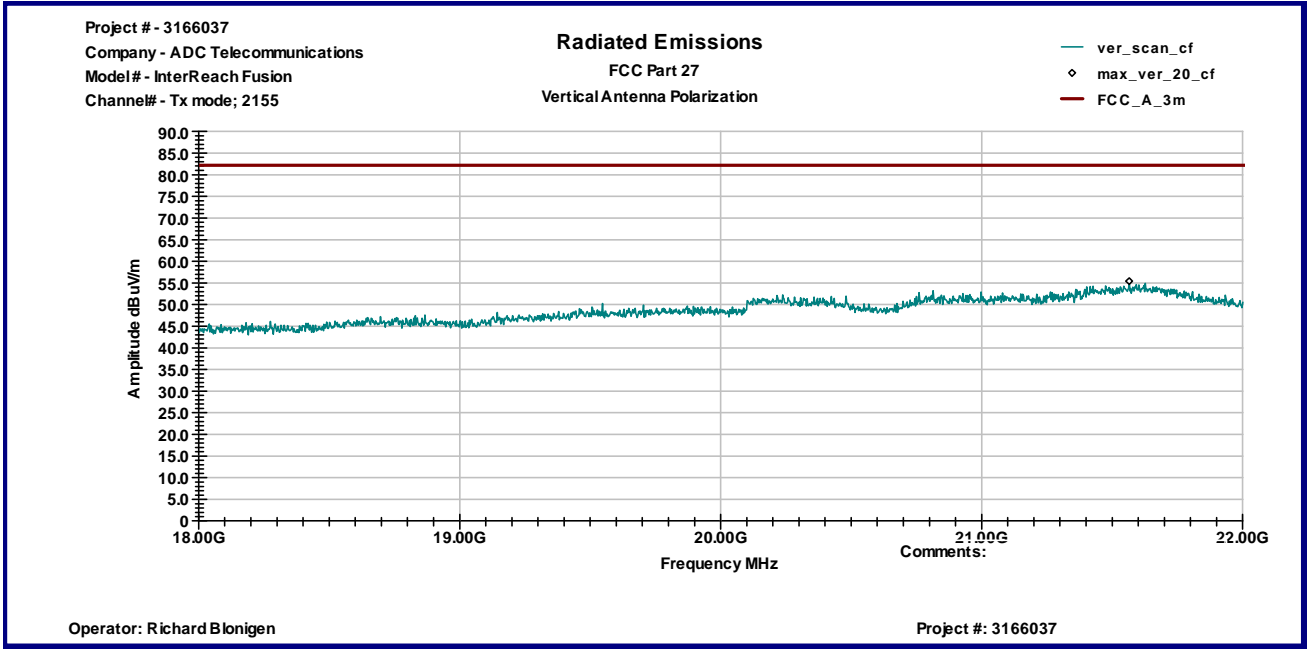
Graph 32



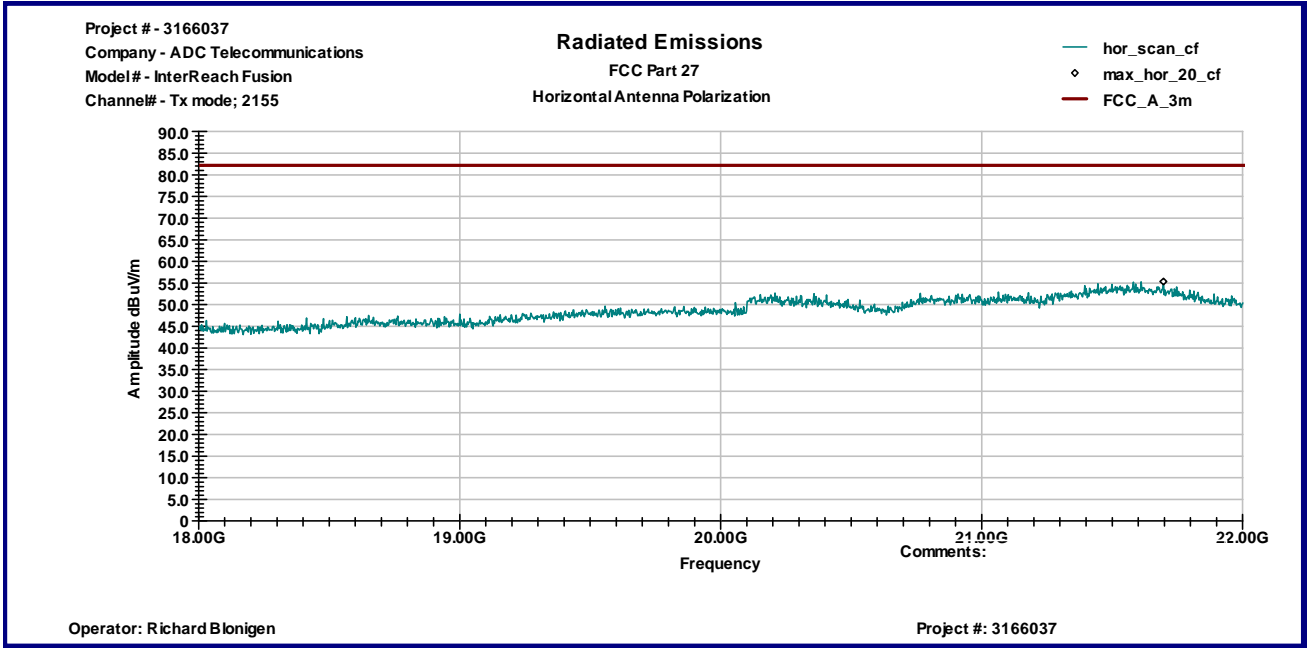
Graph 33



Graph 34



Graph 35



Graph 36

3.2 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 PHOTOS



Test Setup Photos



5.0 TEST EQUIPMENT

DESCRIPTION	MANUFACTURER	MODEL	SERIAL NO.	CAL DUE	USED
Spectrum Analyzer	R & S	FSP 40	100024	08/22/2009	<input checked="" type="checkbox"/>
Spectrum Analyzer	R & S	ESCI	100358	05/07/2009	<input checked="" type="checkbox"/>
Bicono-Log Antenna	Schaffner-Chase	CBL 6112 B	2630	09/26/2009	<input checked="" type="checkbox"/>
Horn Antenna	EMCO	3115	9507-4513	02/13/2009	<input checked="" type="checkbox"/>
Waveguide Horn Antenna	EMCO	3116	9904-2423	07/20/2009	<input checked="" type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-5D-00501800-28-13P	1122951	04/28/2009	<input checked="" type="checkbox"/>
Pre-Amplifier	MITEQ	AMF-6F-16002600-25-10P	1222383	01/17/2009	<input checked="" type="checkbox"/>
System	TILE! Instrument Control		Ver. 3.4.K.29	VBU	<input checked="" type="checkbox"/>

