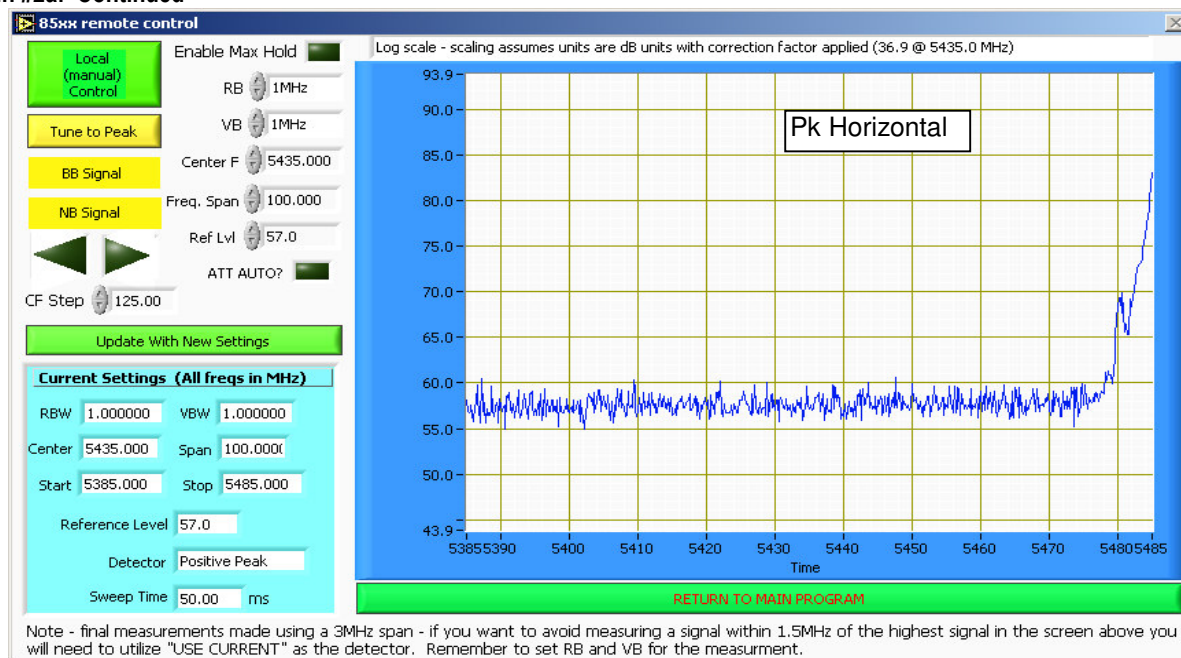


Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #2a: Continued

Band Edge Signal Radiated Field Strength at 5460 MHz

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.400	49.6	V	54.0	-4.4	AVG	294	1.1	
5459.400	61.2	V	74.0	-12.8	PK	294	1.1	
5458.500	49.5	H	54.0	-4.5	AVG	49	1.2	
5458.500	60.4	H	74.0	-13.6	PK	49	1.2	

Band Edge Signal Radiated Field Strength at 5470 MHz

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.110	49.7	V	68.3	-18.6	AVG	294	1.1	
5469.110	60.8	V	88.3	-27.5	PK	294	1.1	
5468.560	49.6	H	68.3	-18.7	AVG	49	1.2	
5468.560	61.2	H	88.3	-27.1	PK	49	1.2	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to -27dBm/MHz (~68dBuV/m).

Note 2: Band-edge measurement calculated from the fundamental field strength (peak or average) minus the band edge delta marker measurement.

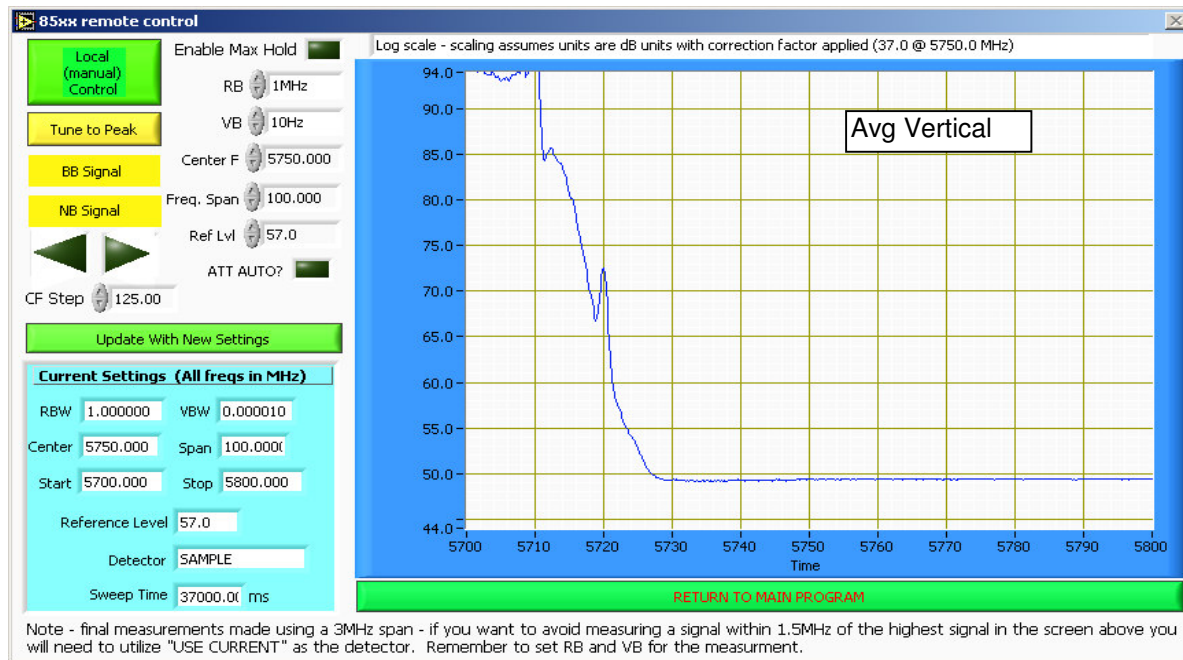
Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #2b: High Channel @ 5705 MHz with Sector Antenna (16.5dBi), Power Setting = CF

	H	V	
Fundamental emission level @ 3m in 1MHz RBW:	98.1	112.8	Peak Measurement (RB=VB=1MHz)
Fundamental emission level @ 3m in 1MHz RBW:	91.2	105.9	Average Measurement (RB=1MHz, VB=10Hz)

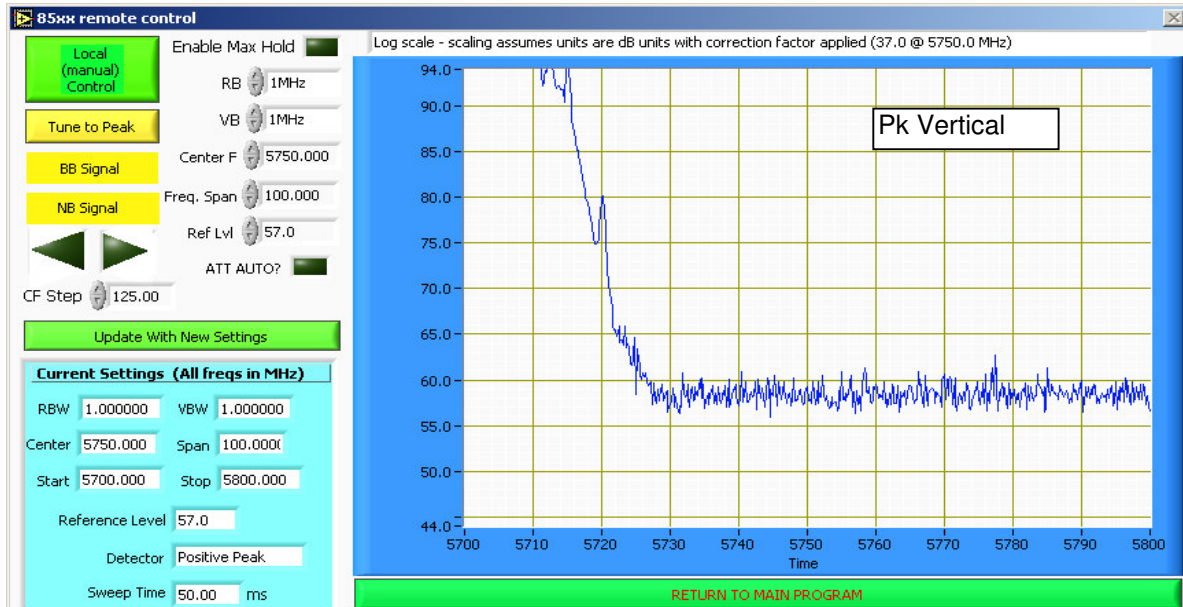
Fundamental Radiated Field Strength

Frequency	Level	Pol	15.209 / 15E	Detector	Azimuth	Height	Comments
MHz	dBμV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters
5700.130	105.9	V	-	-	AVG	294	1.2
5700.130	112.8	V	-	-	PK	294	1.2
5700.070	91.2	H	-	-	AVG	29	1.1
5700.070	98.1	H	-	-	PK	29	1.1

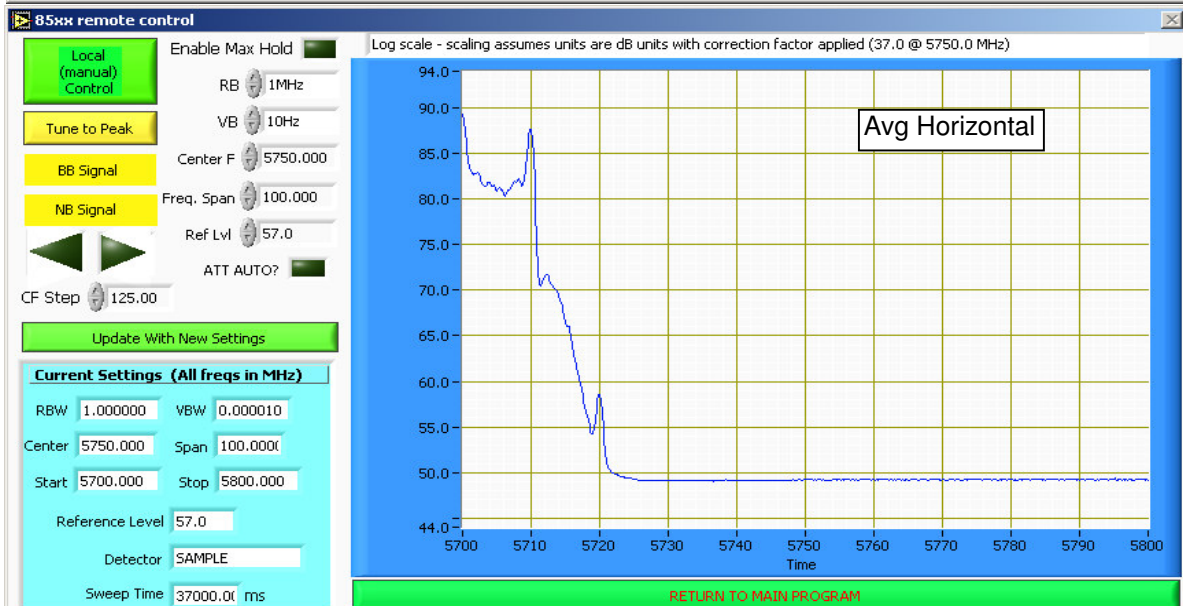


Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #2b: Continued

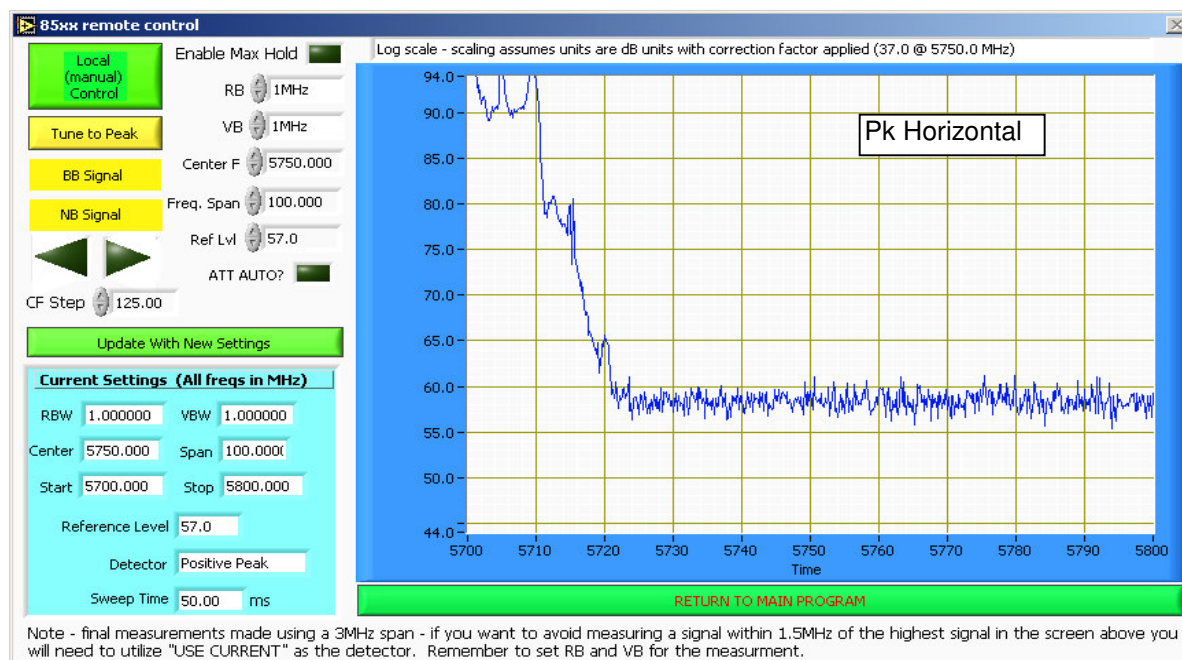


Note - final measurements made using a 3MHz span - if you want to avoid measuring a signal within 1.5MHz of the highest signal in the screen above you will need to utilize "USE CURRENT" as the detector. Remember to set RB and VB for the measurement.



Note - final measurements made using a 3MHz span - if you want to avoid measuring a signal within 1.5MHz of the highest signal in the screen above you will need to utilize "USE CURRENT" as the detector. Remember to set RB and VB for the measurement.

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #2b: Continued

Spurious Radiated Emissions: Bandedge at 5725 MHz

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5725.080	55.7	V	68.3	-12.6	AVG	294	1.2	
5725.080	65.8	V	88.3	-22.5	PK	294	1.2	
5726.100	50.4	H	68.3	-17.9	AVG	29	1.1	
5726.100	62.7	H	88.3	-25.6	PK	29	1.1	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to -27dBm/MHz (~68dBuV/m).



EMC Test Data

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

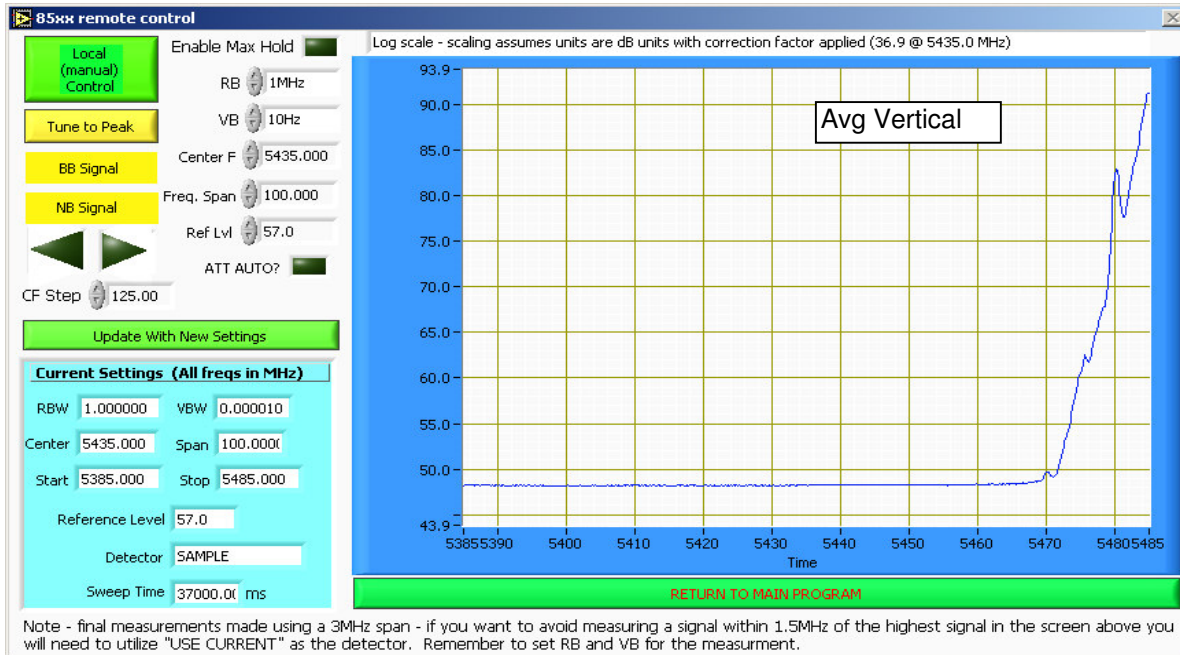
Run #3: Radiated Spurious Emissions for 5470 to 5725 MHz band, Transmit mode, 30 - 40000 MHz

Run #3a: Low Channel @ 5495 MHz with Patch Antenna (23dBi), Power Setting = 98

	H	V	
Fundamental emission level @ 3m in 1MHz RBW:		122.5	Peak Measurement (RB=VB=1MHz)
Fundamental emission level @ 3m in 1MHz RBW:		109.7	Average Measurement (RB=1MHz, VB=10Hz)

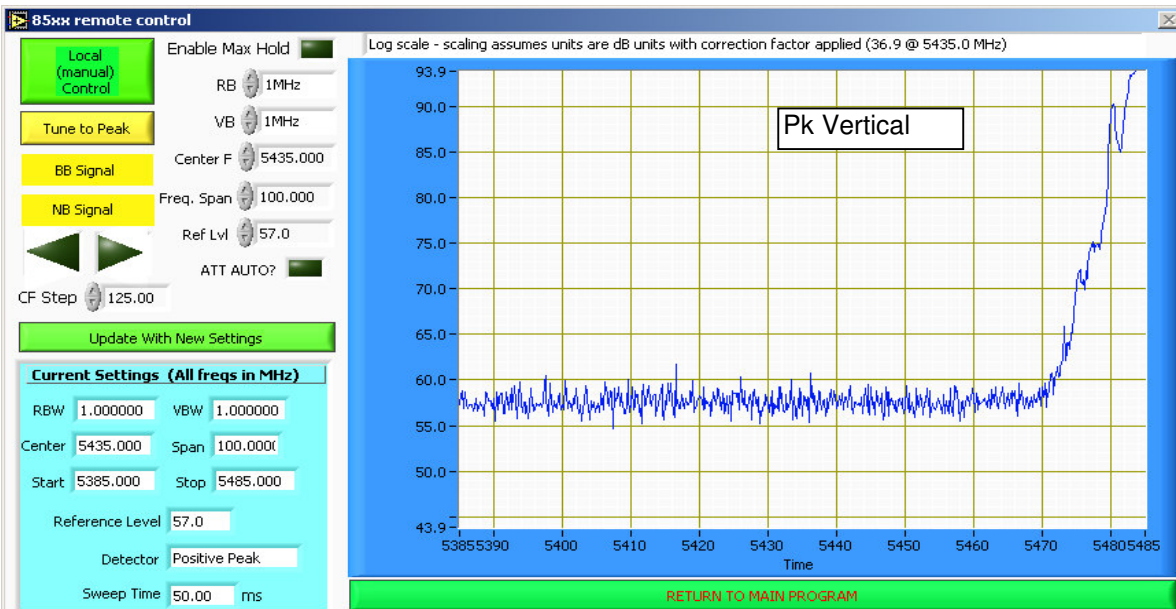
Fundamental Radiated Field Strength

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5494.710	109.7	V	-	-	AVG	2	1.0	
5494.710	122.5	V	-	-	PK	2	1.0	
5494.770	89.0	H	-	-	AVG	295	1.0	
5494.770	101.7	H	-	-	PK	295	1.0	

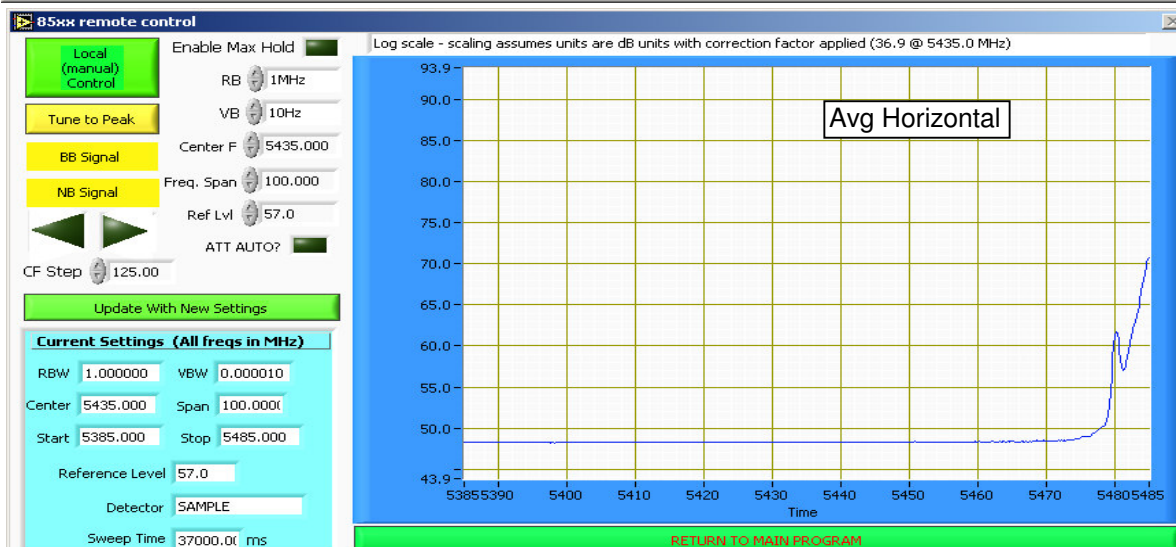


Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #3a: Continued

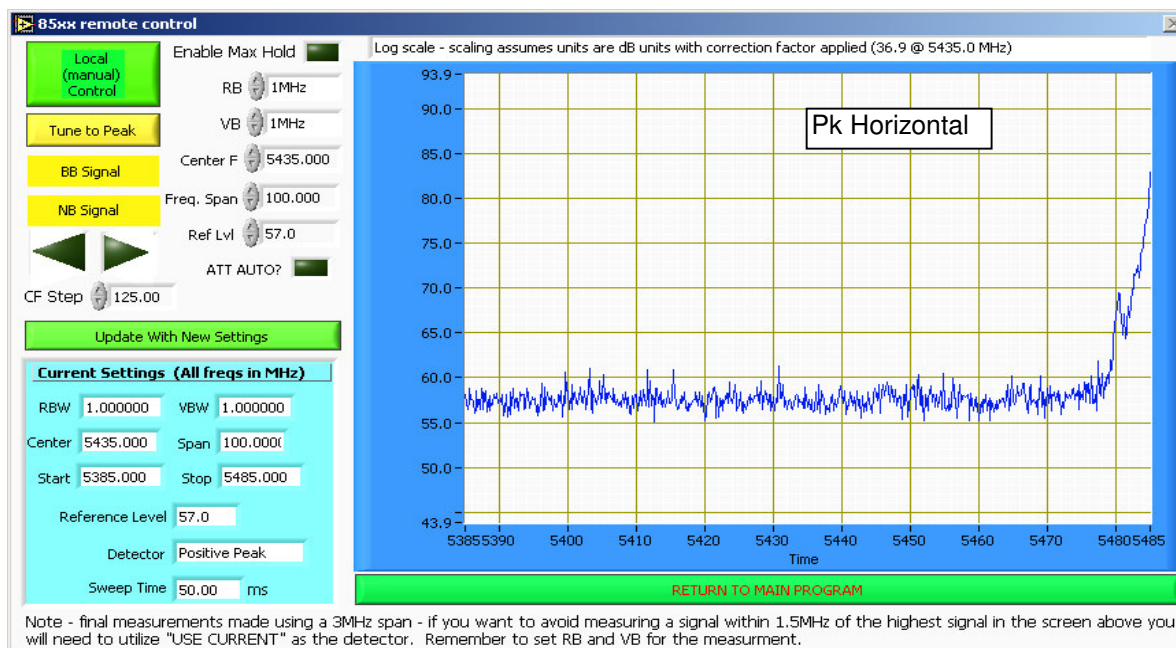


Note - final measurements made using a 3MHz span - if you want to avoid measuring a signal within 1.5MHz of the highest signal in the screen above you will need to utilize "USE CURRENT" as the detector. Remember to set RB and VB for the measurement.



Note - final measurements made using a 3MHz span - if you want to avoid measuring a signal within 1.5MHz of the highest signal in the screen above you will need to utilize "USE CURRENT" as the detector. Remember to set RB and VB for the measurement.

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #3a: Continued

Band Edge Signal Radiated Field Strength at 5460 MHz

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5459.860	49.6	V	54.0	-4.4	AVG	0	1.0	
5459.860	61.1	V	74.0	-12.9	PK	0	1.0	
5458.960	49.6	H	54.0	-4.4	AVG	295	1.0	
5458.960	61.5	H	74.0	-12.5	PK	295	1.0	

Band Edge Signal Radiated Field Strength at 5470 MHz

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5469.540	51.0	V	68.3	-17.3	AVG	0	1.0	
5469.540	61.6	V	88.3	-26.7	PK	0	1.0	
5467.650	49.6	H	68.3	-18.7	AVG	295	1.0	
5467.650	61.5	H	88.3	-26.8	PK	295	1.0	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to -27dBm/MHz (~68dBuV/m).

Note 2: Band-edge measurement calculated from the fundamental field strength (peak or average) minus the band edge delta marker measurement.



EMC Test Data

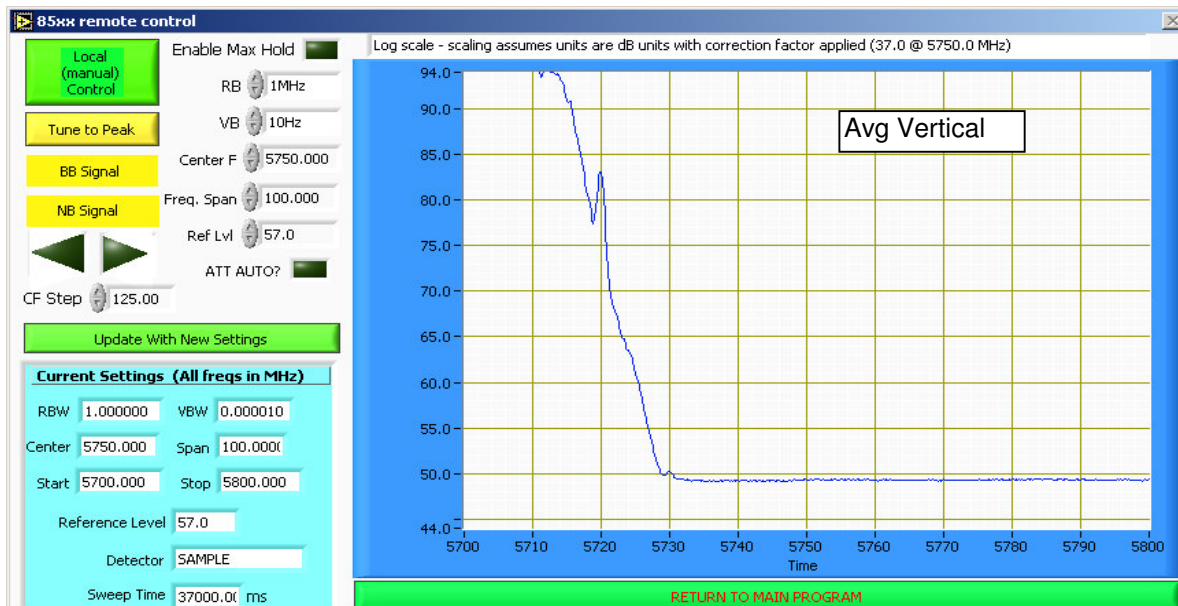
Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #3b: High Channel @ 5705 MHz with Patch Antenna (23dBi), Power Setting = 6F

	H	V	
Fundamental emission level @ 3m in 1MHz RBW:	104	123	Peak Measurement (RB=VB=1MHz)
Fundamental emission level @ 3m in 1MHz RBW:	96.4	116.1	Average Measurement (RB=1MHz, VB=10Hz)

Fundamental Radiated Field Strength

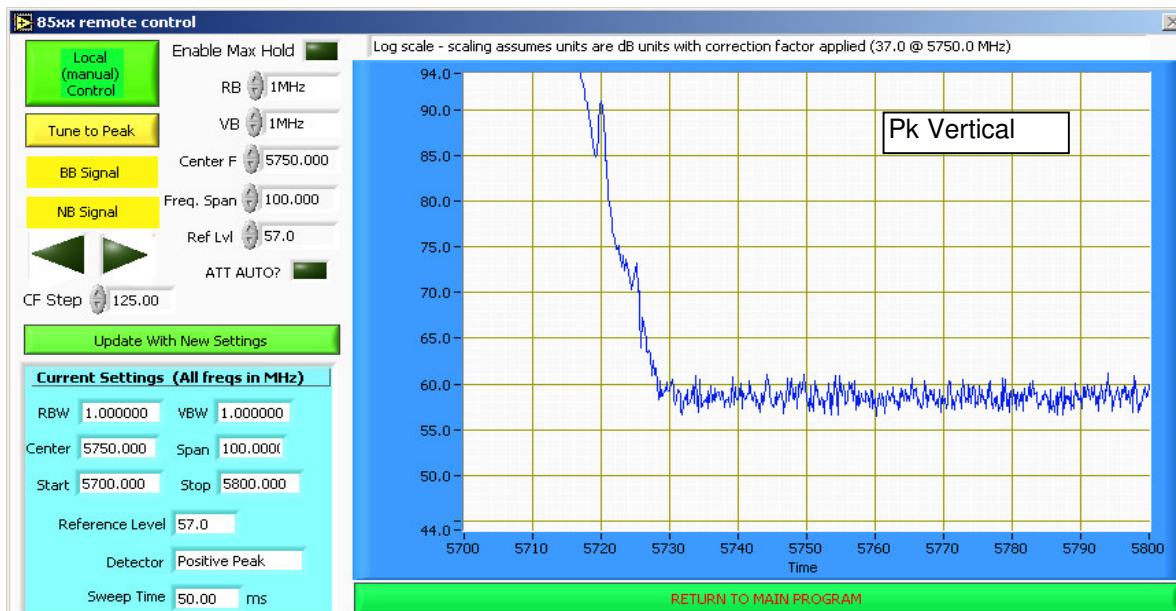
Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5699.980	116.1	V	-	-	AVG	0	1.0	
5699.980	123.0	V	-	-	PK	0	1.0	
5700.070	96.9	H	-	-	AVG	299	1.0	
5700.070	104.0	H	-	-	PK	299	1.0	



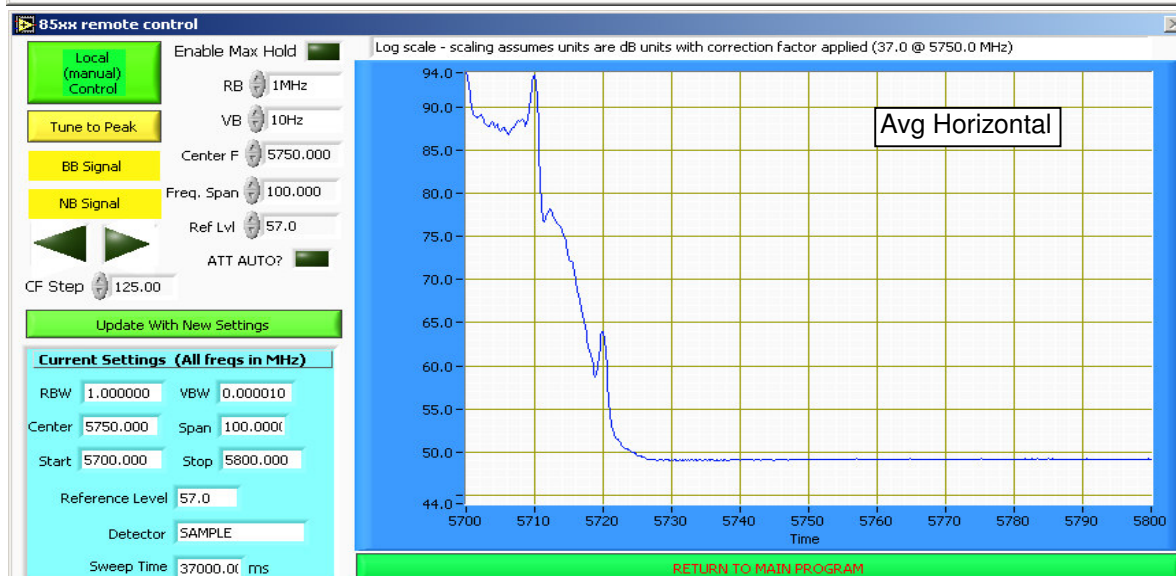
Note - final measurements made using a 3MHz span - if you want to avoid measuring a signal within 1.5MHz of the highest signal in the screen above you will need to utilize "USE CURRENT" as the detector. Remember to set RB and VB for the measurement.

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #3b: Continued



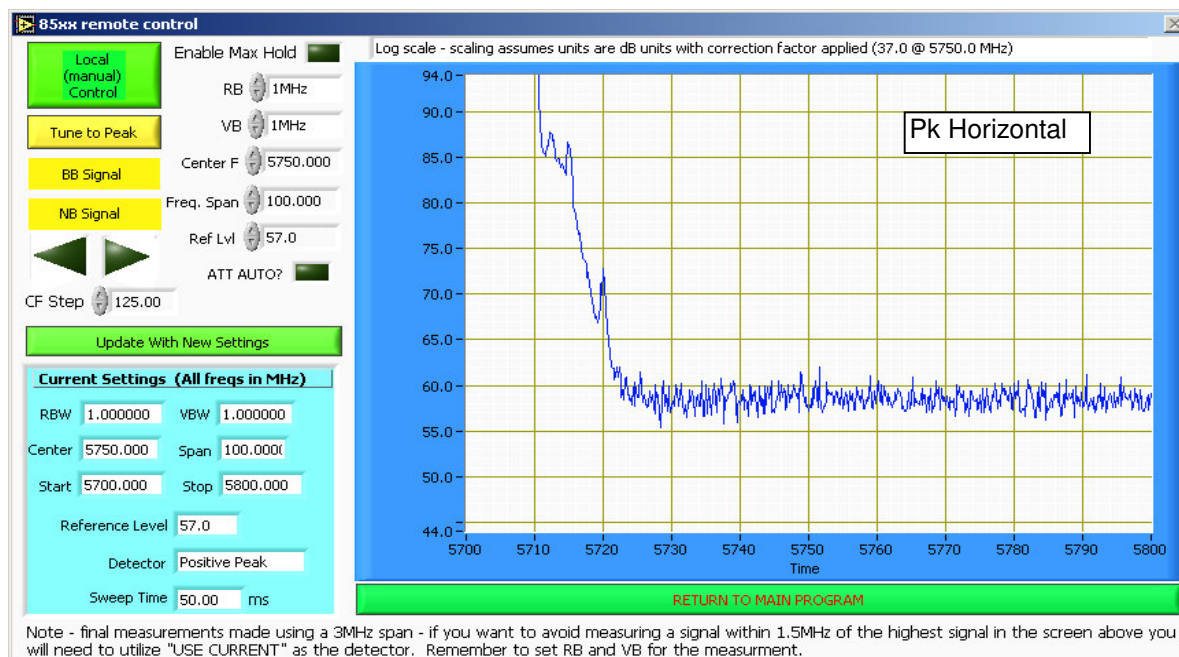
Note - final measurements made using a 3MHz span - if you want to avoid measuring a signal within 1.5MHz of the highest signal in the screen above you will need to utilize "USE CURRENT" as the detector. Remember to set RB and VB for the measurement.



Note - final measurements made using a 3MHz span - if you want to avoid measuring a signal within 1.5MHz of the highest signal in the screen above you will need to utilize "USE CURRENT" as the detector. Remember to set RB and VB for the measurement.

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #3b: Continued



Spurious Radiated Emissions: Bandedge at 5725 MHz

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBuV/m	V/H	Limit	Margin	Pk/QP/Avg	degrees	meters	
5725.000	60.6	V	68.3	-7.7	AVG	0	1.0	
5725.010	74.8	V	88.3	-13.5	PK	0	1.0	
5725.300	51.2	H	68.3	-17.1	AVG	299	1.0	
5725.300	62.3	H	88.3	-26.0	PK	299	1.0	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to -27dBm/MHz (~68dBuV/m).



EMC Test Data

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

RSS 210 and FCC 15.247 Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 11/8/2007
Test Engineer: Rafael Varelas
Test Location: SVOATS #1

Config. Used: 1
Config Change: None
EUT Voltage: POE

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing. All remote support equipment was located approximately 30 meters from the EUT with all I/O connections routed in overhead.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

Ambient Conditions: Temperature: 11 °C
Rel. Humidity: 80 %

Summary of Results

Run #	Freq MHz	Mode	Antenna	Power Setting	Limit	Margin/Result
1	5600	-	Omni (10dBi)	~20dBm	15.407, 15.209, RSS-210	47.2dBμV/m (229.1μV/m) @ 39901.1MHz (-6.8dB)
2	5600	-	Flat Panel (23dBi)	7dBm		41.0dBμV/m (112.2μV/m) @ 16799.9MHz (-13.0dB)
3	5705	-	Sector Panel (16.5dBi)	13.5dBm		42.8dBμV/m (138.0μV/m) @ 17098.6MHz (-11.2dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.



EMC Test Data

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #1: TX Radiated Spurious Emissions for 5470 to 5725 MHz band, 30 - 40000 MHz, Omni Antenna (10dBi)

Run #1a: TX Radiated Spurious Emissions, 30 - 40000 MHz. Low Channel @ 5495 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
16499.590	40.0	V	54.0	-14.0	AVG	0	1.0	
16500.210	39.9	H	54.0	-14.1	AVG	0	1.0	
10999.370	37.6	H	54.0	-16.4	AVG	360	1.0	
11000.700	37.6	V	54.0	-16.4	AVG	360	1.5	
16499.590	51.7	V	74.0	-22.3	PK	0	1.0	
16500.210	51.1	H	74.0	-22.9	PK	0	1.0	
11000.700	49.5	V	74.0	-24.5	PK	360	1.5	
10999.370	48.9	H	74.0	-25.1	PK	360	1.0	

Run #1b: Center Channel @ 5600 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
16799.320	41.2	V	54.0	-12.8	AVG	0	1.0	
16799.910	40.9	H	54.0	-13.1	AVG	0	1.0	
11200.690	38.2	V	54.0	-15.8	AVG	0	1.0	
11199.170	38.0	H	54.0	-16.0	AVG	360	1.4	
16799.320	52.4	V	74.0	-21.6	PK	0	1.0	
16799.910	52.2	H	74.0	-21.8	PK	0	1.0	
11199.170	50.0	H	74.0	-24.0	PK	360	1.4	
11200.690	49.7	V	74.0	-24.3	PK	0	1.0	

Run #1c: High Channel @ 5705 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
39901.070	47.2	V	54.0	-6.8	AVG	360	1.0	
28500.210	45.1	V	54.0	-8.9	AVG	0	1.0	
34199.220	45.0	V	54.0	-9.0	AVG	360	1.3	
17099.870	43.2	V	54.0	-10.8	AVG	225	1.0	
17101.490	42.8	H	54.0	-11.2	AVG	360	1.3	
39901.070	58.2	V	74.0	-15.8	PK	360	1.0	
11400.220	38.1	V	54.0	-15.9	AVG	360	1.2	
11400.490	38.1	H	54.0	-15.9	AVG	0	1.6	
28500.210	57.0	V	74.0	-17.0	PK	0	1.0	
34199.220	57.0	V	74.0	-17.0	PK	360	1.3	
17099.870	54.6	V	74.0	-19.4	PK	225	1.0	
17101.490	53.6	H	74.0	-20.4	PK	360	1.3	
11400.490	50.0	H	74.0	-24.0	PK	0	1.6	
11400.220	49.2	V	74.0	-24.8	PK	360	1.2	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to -27dBm/MHz (~68dBuV/m).



EMC Test Data

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #2: TX Radiated Spurious Emissions for 5470 to 5725 MHz band, 30 - 40000 MHz Flat Panel Antenna (23dBi)

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
16498.970	40.1	H	54.0	-13.9	AVG	175	1.0	
16499.550	39.9	V	54.0	-14.1	AVG	251	1.0	
11001.040	37.6	H	54.0	-16.4	AVG	156	1.3	
10999.710	37.5	V	54.0	-16.5	AVG	100	1.0	
16499.550	52.4	V	74.0	-21.6	PK	251	1.0	
16498.970	51.2	H	74.0	-22.8	PK	175	1.0	
10999.710	49.4	V	74.0	-24.6	PK	100	1.0	
11001.040	48.8	H	74.0	-25.2	PK	156	1.3	

Run #2b: Center Channel @ 5600 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
16799.850	41.0	H	54.0	-13.0	AVG	296	1.0	
16800.670	40.8	V	54.0	-13.2	AVG	0	1.0	
11201.140	38.0	V	54.0	-16.0	AVG	52	1.5	
11201.330	37.9	H	54.0	-16.1	AVG	223	1.0	
16800.670	52.8	V	74.0	-21.2	PK	0	1.0	
16799.850	52.2	H	74.0	-21.8	PK	296	1.0	
11201.330	49.5	H	74.0	-24.5	PK	223	1.0	
11201.140	48.9	V	74.0	-25.1	PK	52	1.5	

Run #2c: High Channel @ 5705 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
16499.500	40.0	H	54.0	-14.0	AVG	62	1.9	
16499.680	39.9	V	54.0	-14.1	AVG	352	1.4	
10999.950	37.7	V	54.0	-16.3	AVG	120	1.0	
10998.920	37.7	H	54.0	-16.3	AVG	360	1.0	
16499.500	51.5	H	74.0	-22.5	PK	62	1.9	
16499.680	51.1	V	74.0	-22.9	PK	352	1.4	
10998.920	49.6	H	74.0	-24.4	PK	360	1.0	
10999.950	49.2	V	74.0	-24.8	PK	120	1.0	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to -27dBm/MHz (~68dBuV/m).



EMC Test Data

Client:	Cascade Networks	Job Number:	J69809
Model:	Cyclone 5400	T-Log Number:	T69846
Contact:	Brian Magnuson	Account Manager:	Dean Eriksen
Standard:	FCC Part 15.247/RSS-210	Class:	N/A

Run #3: TX Radiated Spurious Emissions for 5470 to 5725 MHz band, 30 - 40000 MHz

Sector Panel Antenna (16.5dBi)

Run #3a: TX Radiated Spurious Emissions, 30 - 40000 MHz. Low Channel @ 5495 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
16498.800	40.2	V	54.0	-13.8	AVG	25	1.0	
16498.830	40.1	H	54.0	-13.9	AVG	324	1.0	
11000.120	37.7	V	54.0	-16.3	AVG	20	1.2	
10999.370	37.7	H	54.0	-16.3	AVG	169	1.0	
16498.800	51.9	V	74.0	-22.1	PK	25	1.0	
16498.830	51.5	H	74.0	-22.5	PK	324	1.0	
11000.120	49.5	V	74.0	-24.5	PK	20	1.2	
10999.370	49.5	H	74.0	-24.5	PK	169	1.0	

Run #3b: Center Channel @ 5600 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
16798.810	40.9	H	54.0	-13.1	AVG	87	1.5	
16800.160	40.9	V	54.0	-13.1	AVG	303	1.0	
11201.470	38.0	H	54.0	-16.0	AVG	157	1.1	
11200.120	37.8	V	54.0	-16.2	AVG	76	1.0	
16800.160	52.6	V	74.0	-21.4	PK	303	1.0	
16798.810	51.8	H	74.0	-22.2	PK	87	1.5	
11200.120	49.5	V	74.0	-24.5	PK	76	1.0	
11201.470	49.4	H	74.0	-24.6	PK	157	1.1	

Run #3c: High Channel @ 5705 MHz

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
17098.560	42.8	V	54.0	-11.2	AVG	334	1.0	
17098.880	42.8	H	54.0	-11.2	AVG	343	1.0	
11400.170	38.0	V	54.0	-16.0	AVG	13	1.4	
11401.110	38.0	H	54.0	-16.0	AVG	7	1.9	
17098.560	54.1	V	74.0	-19.9	PK	334	1.0	
17098.880	53.6	H	74.0	-20.4	PK	343	1.0	
11401.110	50.0	H	74.0	-24.0	PK	7	1.9	
11400.170	49.7	V	74.0	-24.3	PK	13	1.4	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set to -27dBm/MHz (~68dBuV/m).