Electromagnetic Compatibility Test Report

Prepared in accordance with

FCC Part 15: October 2007, RSS-210: June 2007

On

Electronic Article Surveillance Detection System

Slimline (Top Fed and Bottom Fed)

Prepared for:

Checkpoint Systems Inc.

101 Wolf Drive

Thorofare, NJ 08086

Prepared by:

TUV Rheinland of North America, Inc.

***Auftraggeber**: Client:*	Checkpoint Systems Inc. 101 Wolf Drive Thorofare, NJ 08086	Gregory Sleet (856) 384-2339 / (856) 384-2366 GREG.SLEET@checkpt.com	
Bezeichnung: *Identification:*	Electronic Article Surveillance Detection System	**Serien-Nr.:** *Serial No.*	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004
***Gegenstand der Prüfung**: Test item:*	Slimline (Top Fed and Bottom Fed)	**Prüfdatum:** *Date tested:*	May 12th -22nd, 2008
Prüfort: *Testing location:*	TUV Rheinland of North America 12 Commerce Road Newtown, CT 06470-1607 U.S.A.		
Prüfgrundlage: *Test specification:*	Emissions: FCC Part 15 Subpart C: October 2007 / RSS-210: June 2007 FCC Part 15 Subpart 15.223/RSS-210 Annex A2.3 FCC Part 15 Subpart 15.205 and 15.209		
Prüfergebnis: *Test Result*	**Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage. The above product was found to be Compliant to the above test standard(s)**		

geprüft / *tested by:* Dieter Baldamus	**kontrolliert** / *reviewed by:* Bruce Fagley
 13 June 2008 **Datum** *Date* **Name** *Name* **Unterschrift** *Signature*	 13 June 2008 **Datum** *Date* **Name** *Name* **Unterschrift** *Signature*

Sonstiges : *Other Aspects:*	**None**

Abkürzungen: OK, Pass, Compliant, Complies = entspricht Prüfgrundlage Fail, Not Compliant, Does not Comply = entspricht nicht Prüfgrundlage N/A = nicht anwendbar	Abbreviations: OK, Pass, Compliant, Complies = passed Fail, Not Compliant, Does Not Comply = failed N/A = not applicable

FC	NVLAP	**Industry Canada**
US5112	**200111-0**	**3466D-1**

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1 General Information

1.1 Scope

This report is intended to document the status of conformance with the requirements of the FCC Part 15: October 2007, RSS-210: June 2007 based on the results of testing performed on May 12th -22nd, 2008 on the Electronic Article Surveillance Detection System, Model No. Slimline (Top Fed and Bottom Fed), manufactured by Checkpoint Systems Inc.. This report only applies to the specific samples tested under the stated test conditions. It is the responsibility of the manufacturer to assure that additional production units of this model are manufactured with identical or EMI equivalent electrical and mechanical components. This report is further intended to document changes and modifications to the EUT throughout its life cycle. All documentation will be included as a supplement.

Note that where mentioned in this report, Slimline refers to the Checkpoint product, **EVOLVE S10**.

1.2 Purpose

Testing was performed to evaluate the EMC performance of the EUT (Equipment Under Test) in accordance with the applicable requirements, procedures, and criteria defined in the application of regulations and application of standards listed in this report.

1.3 *Summary of Test Results*

Applicant	Checkpoint Systems Inc. 101 Wolf Drive Thorofare, NJ 08086	**Tel**	(856) 384-2339	**Contact**	Gregory Sleet
		Fax	(856) 384-2366	**e-mail**	GREG.SLEET@checkpt.com

Description	Electronic Article Surveillance Detection System	**Model Number**	Slimline (Top Fed and Bottom Fed)
Serial Number	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004	**Test Voltage/Freq.**	120V/60Hz
Test Date Completed:	May 12th -22nd, 2008	**Test Engineer**	Dieter Baldamus

Standards	Description	Severity Level or Limit	Criteria	Test Result
FCC Part 15 Subpart C: October 2007 / RSS-210: June 2007	Intentional Radiators / Low Power Licenced Exempt Radiocommunication Devices	See called out sections below	See Below	Complies
FCC Part 15 Subpart 15.223/RSS-210 Annex A2.3	Operation in the band 1.705-10 MHz	100µV/m @30m	Limit	Complies
FCC Part 15 Subpart 15.207	Conducted limits	Per table in section 207, 150kHz - 30MHz	Limit	Complies
FCC Part 15 Subpart 15.205 and 15.209	Radiated emission limits; general requirements	Class B and per table in section 205 From Fundamental - 1000MHz	Limit	Complies

2 Laboratory Information

2.1 Accreditations & Endorsements

2.1.1 US Federal Communications Commission

TUV Rheinland of North America located at 12 Commerce Road, Newtown CT is accredited by the commission for performing testing services for the general public on a fee basis. This laboratory test facilities have been fully described in reports submitted to and accepted by the FCC (Registration No US5112). The laboratory scope of accreditation includes: Title 47 CFR Part 15, and 18. The accreditation is updated every 3 years.

2.1.2 NIST / NVLAP

Program, which is administered under the auspices of the National Institute of Standards and Technology. The laboratory has been assessed and accredited in accordance with ISO Standard 17025:2005 (Lab code: 200111-0). The scope of laboratory accreditation includes emission and immunity testing. The accreditation is updated annually.

2.1.3 Industry Canada

Registration No.: 3466D-1. The OATS has been accepted by Industry Canada to perform testing to 3 and to 10m, based on the test procedures described in ANSI C63.4-2003.

2.2 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions measurements is ± 3.2 dB
The estimated combined standard uncertainty for conducted emissions measurements is ± 1.2dB

2.3 Calibration Traceability

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Measurement method complies with ANSI/NCSL Z540-1-1994 and ISO Standard 17025:2005. Equipment calibration records are kept on file at the test facility.

2.4 Measurement Equipment Used

Equipment	Manufacturer	Model #	Serial/Inst #	Last Cal dd/mm/yy	Next Cal dd/mm/yy	Test
Power Supply	California Instruments	5001iX	HK53766	12/04/2007	12/04/2008	All
Antenna, Log. Periodic	Emco	3146	9309-3691	06/26/2006	06/26/2008	RE, RI
Antenna, Bicon	Emco	3108	2234	06/26/2006	06/26/2008	RE, RI
Receiver	Hewlett Packard	HP 8546A, 85460A	3330A00125, 3325A00134	03/14/2008	03/14/2009	CE, DP, CE
Antenna, Bilog	Schaffner	CBL6112D	22238	04/04/2008	04/04/2010	RE
LISN	Schwarzbeck	NSLK 8126A (4 x 25A)	8126278	08/07/2007	08/07/2009	CE
Magnetic Field Loop Antenna	Schwarzbeck	FMZB 1516	151600/94	09/11/2007	09/11/2009	RE<30MHz

Note: CE = Conducted Emissions, CI= Conducted Immunity, DP=Disturbance Power, EFT=Electrical Fast Transients, ESD = Electrostatic Discharge, FLI=Flicker, HAR=Harmonics, MF=Magnetic Field Immunity, RE=Radiated Emissions, RI=Radiated Immunity, SI=Surge Immunity, VDSI=Voltage Dips and Short Interruptions

3 Product Information

3.1 Equipment Under Test (EUT) Description

The Evolve Antenna's with Emerald Electronic are Electronic Article Surveillance System (EAS). The system detects target tags attached to merchandise. The targets resonate in the region of 8.2 MHz or 9.5 MHz. When an article of merchandise is purchased, the target is deactivated which causes it to no longer resonate. The Evolve Antenna's with Emerald Electronic monitors an area 3-feet on either side of the antenna in the 7.4 to 10.0 MHz range and triggers an alarm when a non-deactivated target is detected.

3.2 Engineering Judgment on Selected Models

Evolve S10 is a member of the Evolve antenna family (which consists of P10, P20, G10, G20, and PX models), but is different than other models, given that it's mounting is on the doorframe in end installations unlike other models that are floor standing. It also has a remote electronics chassis, with each chassis containing two Emerald electronics that are powered from a single external power supply. There are two main configurations of the antennas tested for compliance, each configuration wired differently to each antenna – the Slimline Top-Fed, and Slimline Bottom-Fed.

3.3 General Product Information

Antenna: Transmitter-Receiver Type	Inductive Loop Antennas		
Antenna	Slimline Top Fed	Slimline Bottom Fed	
Width	12.95 cm [5.10 in]	12.95 cm [5.10 in]	
Height	10.00 cm [3.94 in]	10.00 cm [3.94 in]	
Length	174.75 cm [68.80 in]	174.75 cm [68.80 in]	
Power supply of the transmitter: Type:	GS 599ES(R)	**Nominal voltage:**	**24.0 V**
		Lowest voltage:	**18.0 V**
		Highest voltage:	**25.0 V**
		Current consumption	**0.5 A**

Configuration 1: Slimline Bottom Fed

FCC/IC System Setup				
Antenna Aisles, 200 cm hor. Center to hor. Center	**Serial Number**	**PSU**	**Max Tx Pwr Setting In DMS (Ant1, Ant2)**	**Frequency Band in DMS**
Controller Horizontal Mount (ver. 2.84 firmware installed)	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004	GS 599ES(R)	31	8.2
			31	9.0(dual band)
Controller Vertical Mount (ver. 2.84 firmware installed)	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004	GS 599ES(R)	31	8.2
			31	9.0(dual band)

Configuration 2: Slimline Top Fed

FCC/IC System Setup				
Antenna Aisles, 200 cm hor. Center to hor. Center	**Serial Number**	**PSU**	**Max Tx Pwr Setting In DMS (Ant1, Ant2)**	**Frequency Band in DMS**
Controller Horizontal Mount (ver. 2.84 firmware installed)	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004	GS 599ES(R)	31	8.2
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			31	9.0(dual band)

3.4 EUT Modes of Operation

The equipment under test was operated during the measurement under the following conditions:
- Continuous sweep mode at 8.2 MHz Band
- Continuous sweep mode at 9.0 MHz Dual Band

3.5 EUT Test Configurations

The equipment under test was tested in the following configurations:

Configuration 1:

This is the bottom-fed Slimline antenna configuration. Tests were performed on both horizontal and vertical mounting of the electronics chassis at this configuration.

Micrometals P/N BLN12461-263/BU, or Checkpoint P/N 7235629 inductive transformer cores were installed on the Slimline antenna match pcb during this test.

One CheckPro Manager Visplus module was remoted from the Slimline antenna during testing, and connected to port J72 on the master Emerald pcb.

The control electronics chassis was elevated to about 6 ft height from the ground plane during testing to simulate mounting of the chassis in the ceiling in end installations.

Configuration 2:

This is the top-fed Slimline antenna configuration. Tests were performed on both horizontal and vertical mounting of the electronics chassis at this configuration.

Two Checkpro Manager Visiplus modules were mounted to one Slimline antenna during testing, with connection to port J72 on the mater Emerald pcb inside the electronics chassis. Fair Rite P/N 2861-000-202, or Checkpoint P/N 919618 inductive transformer cores were installed on the Slimline antenna match pcb during testing.

The control electronics chassis was elevated to about 6 ft height from the ground plane during testing to simulate mounting of this chassis in the ceiling in end installations.

3.6 Electrical Support Equipment

1) Laptop: IBM A22m
2) Phone simulator: Viking model DLE-200B (SM) with Viking model PS-1 PSU
3) Modem: Smart One Model 56 SPX-2 / 56SX-2 modem with TL Part #A091ooUS PSU
4) RJ-11 cable from phone simulator to Smart One modem and then to Checkpoint modem module.

3.7 Non - Electrical Support Equipment

None

3.8 EUT Equipment/Cabling Information

EUT Port	Connected To	Location	Cable Type	
			Length	Shielded
J72	Checkpro Manager Visiplus (Configuration 1)	Controller	0.5 m	Yes
J72	Checkpro Manager Visiplus (Configuration 2)	Controller	30 m	Yes
J20/J22	Master-Submaster pcbs for Synch.	Controller	0.3m	Yes
J48	Badge	Controller	30 m	Yes
J18 or J31	Pedestal Main Power	Controller	0.3m	Yes
J41	External Counter External Alarm Lights	Controller	4.2 m	No
J9	Alarm Group External Alarm Group (to Voice Alarm)	Controller	4.2 m	Yes
J14	Inter pedestal Network Com.	Controller	0.3 m	Yes
J51	Internal Modem	Controller	0.5m	No
DC Power	DC Power	Controller	2.4m	No
J2/J3	A1084 Coax Filter pcb to which antenna antenna coax cables are connected	Controller	30 m	Yes

3.9 Modifications

- One clip-on ferrite - Fair Rite P/N 0443806406, Checkpoint P/N 284760 (4 turns) was installed on both ends of the SYNC cable between master and sub-master PCB's inside the electronics chassis.
- One clip-on ferrite - Fair Rite P/N 0443806406, Checkpoint P/N 284760 (4 turns) was installed at the end of this power supply's dc cable connection to the dc line filter pcb. This ferrite may be installed directly at the entry point of this dc cable into the chassis.
- One clip-on ferrite - Wurth 74271131 (1 turn) was installed on all Cat 5E cables at the entry point of these cables into the electronics chassis. There are two Cat 5E cables from each Slimline antenna to each of the two Emerald boards in the electronics chassis: Cat 5-1 connects to the Badge board (port J48), and Cat 5-2 connects to the LED (port J11), Sounder (port J42), and Visiplus (port J72).

  When a single, remoted CheckPro Manager Visiplus is connected to the electronics chassis (for Slimline bottom fed), one Wurth 7427113 ferrite is installed on this Visiplus cable at the entry point of the cable into the chassis.

3.10 Modification Pictures

Ferrite Modification and Location				
Figure	Component / Sub-Assembly	Part No. & Description	Config.1	Config.2
1	Ferrite	Checkpoint P/N 284760(Fair Rite P/N 0443806406) – Add one ferrite (4 turns) on each end of Cat 5E SYNC cable run between Master and Submaster PCB's inside the electronics chassis.	Yes	Yes
2	Ferrite	DC side of Power Supply. Checkpoint P/N 284760(Fair Rite P/N 0443806406) – Add one ferrite (4 turns) on end of this dc cable connection to the dc line filter. May be installed directly at entry point of this cable into the electronics chassis.	Yes	Yes
3	Ferrite	Ferrites on all Cat 5E cables -– Add one ferrite Wurth 74271131 (1 turn) at exit point of this cable from the chassis.	Yes	Yes

Figure 1 – Fair Rite P/N 0443806406 installed on Sync Cable; Configuration 1

Figure 2 – Ferrite on DC side of Power Supply

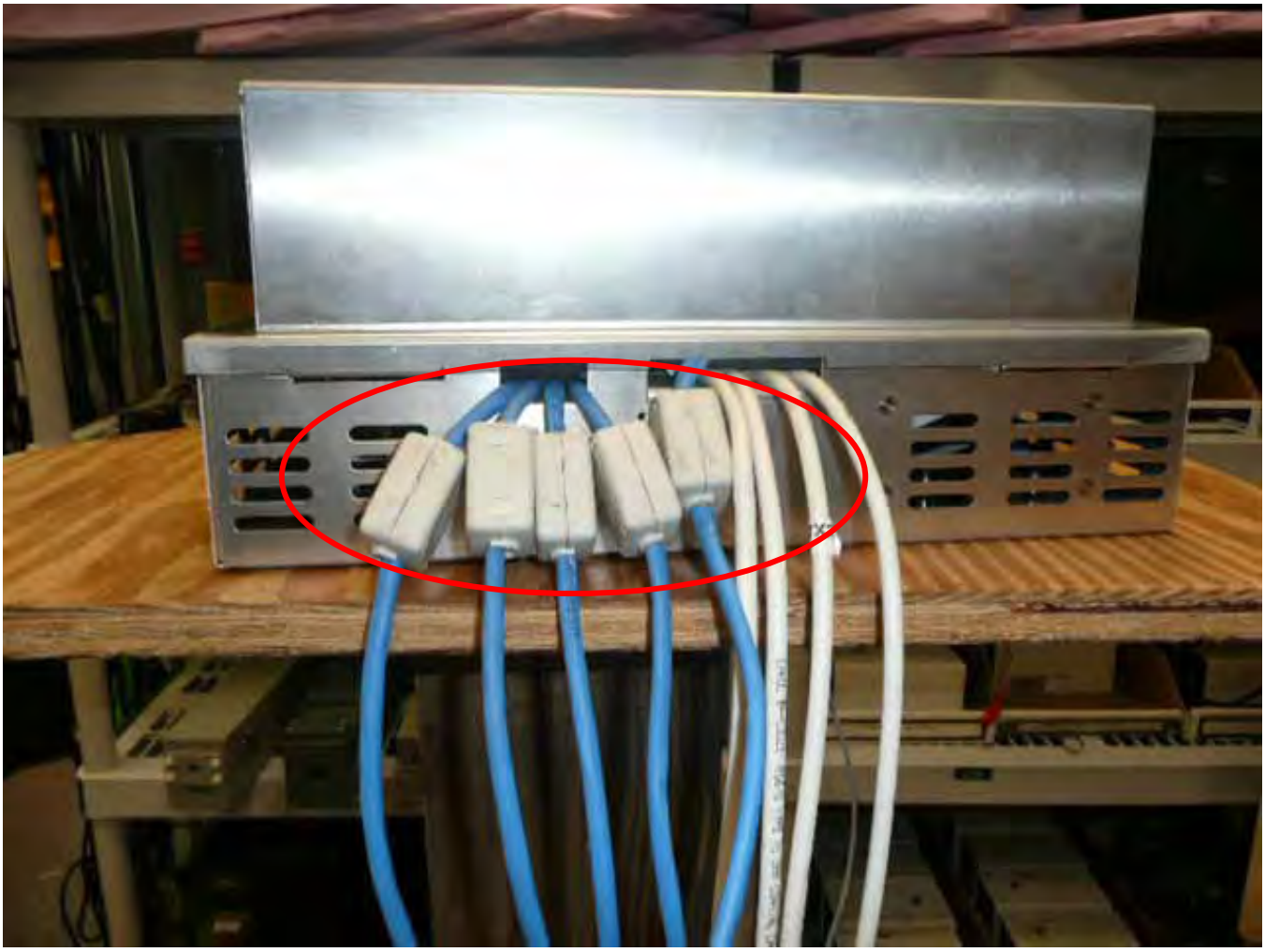

Figure 3 – Ferrite installed on each I/O lines

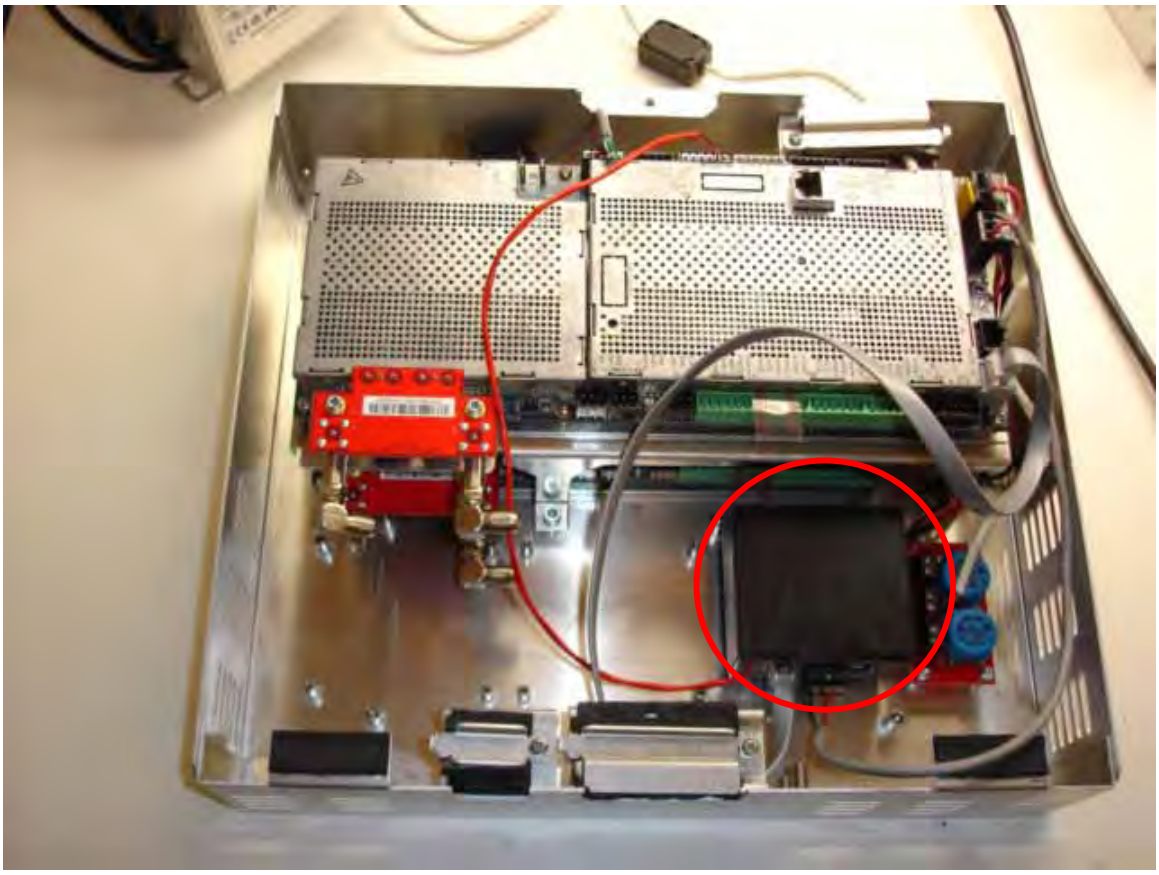

Figure 4 – Internal modem

Figure 5 – Internal modem (internal Picture)

Figure 6 – CheckPro Manager Visiplus (Configuration 1)

Figure 7 – Integrated CheckPro Manager Visiplus (configuration 2)

Figure 8 –EAS Voice alarm Configuration 1 and 2

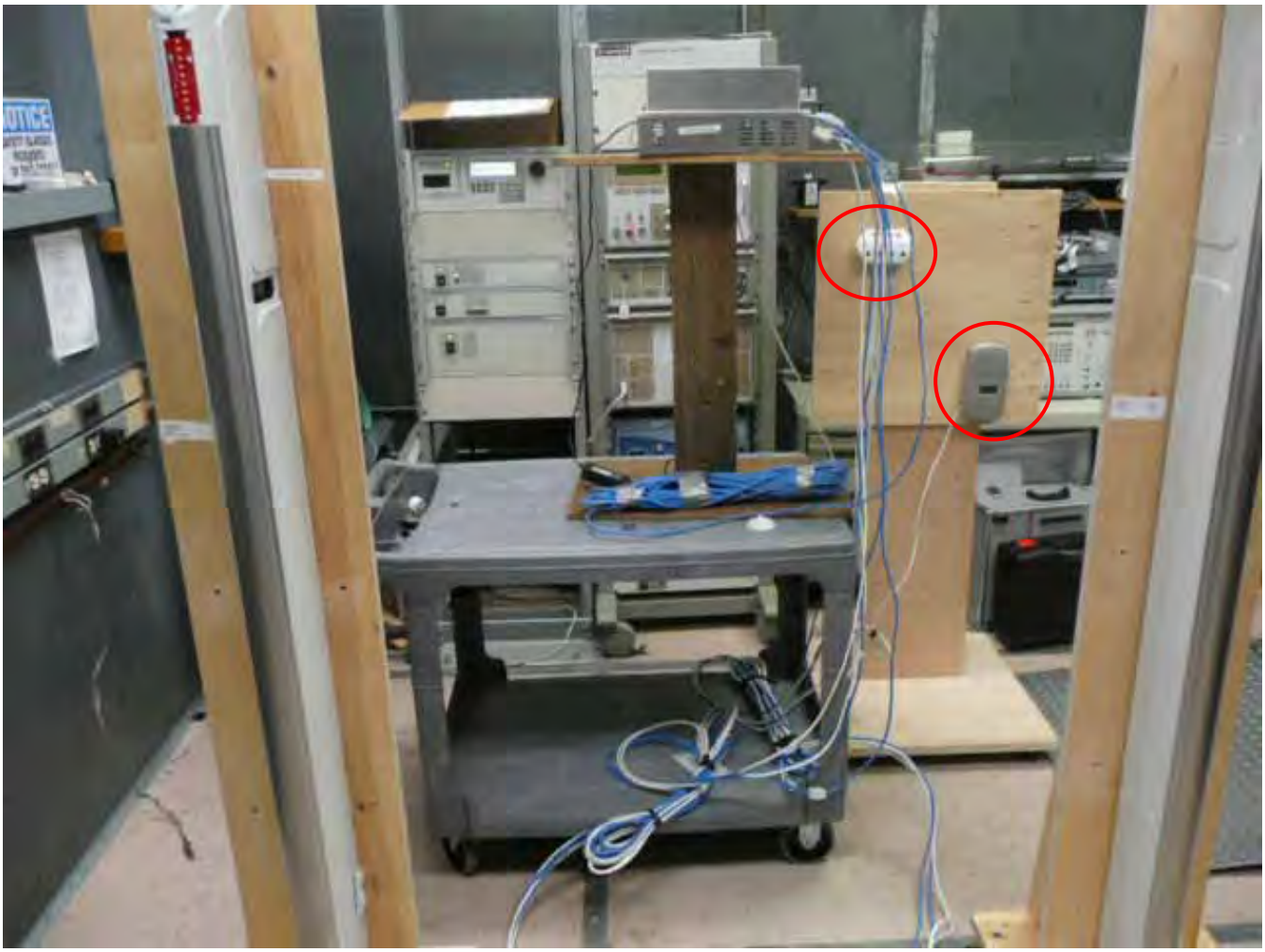

Figure 9 – Remote CheckPro Manager Visiplus and EAS Voice alarm. Configuration 1

Figure 10 – Integrated CheckPro Manager Visiplus and EAS Voice alarm. Configuration 2

4 Measurements

4.1 Operation in the band 1.705-10MHz

This test measures the electromagnetic levels of spurious signals generated by the EUT that radiated from the EUT and may affect the performance of other nearby electronic equipment.

4.1.1 Over View of Test

Results	**Complies** (as tested per this report)				**Date**	05/13/2008	
Standard	FCC Part 15 Subpart 15.223/RSS-210 Annex A2.3						
Product Model	Slimline (Top Fed and Bottom Fed)			**Serial#**	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004		
Configuration	See test plan for details						
Test Set-up	Tested on a 10m O.A.T.S. placed on turn-table, see test plans for details						
EUT Powered By	120V/60Hz	**Temp**	22ºC	**Humidity**	45%	**Pressure**	1001mbar
Frequency Range	100µV @ 30m (see Note)						
Perf. Criteria	Below Limit			**Perf. Verification**	Readings Under Limit		
Mod. to EUT	None			**Test Performed By**	Dieter Baldamus		

Note: The limits were adjusted in dBµV for a 10m testing resulting in a peak limit of 80dBµV/m. Measurements have been made in all three orthogonal axes of loop antenna and the EUT was rotated to locate the maximum emissions.

4.1.2 Test Procedure

The emissions tests on the fundamental signal were performed using the procedures of ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration.

The frequency range from 1.705 – 10MHz was investigated for this test using a magnetic field loop antenna.

4.1.3 Deviations

Measurement of the fundamental emissions – 1.705 to 10.0 MHz – was performed by setting a spectrum analyzer to "max-hold", peak detector, 300 kHz bandwidth and a span from 7.4 MHz to 10 MHz. A resolution bandwidth of 300 kHz was used in performing the "true peak" measurements, 15, because increasing the bandwidth above 300 kHz did not increase the detected peak of the fundamental. The pulse desensitization correction factor was taken into account by using the alternate measurement basin the up-note HP 150-2.

4.1.4 Final Test

All final radiated emissions measurements were below (in compliance) the limits.

4.1.5 Final Measurement Data

Configuration 1: Horizontal Mount

Radiated Emissions Measurements										
Standard:	47 CFR FCC Part 15.223				***PRESCAN or FINAL:***		Final			5/20/2008
Device Tested:	Checkpoint - Slimline Bottom Fed					***Distance:***	10m			08052001 Fundamental Report Top Fed(FCC).xls
Mode:	9.0 Tx and 8.2 Tx Band (31Tx)									
Mount:	Horizontal									
Modifications:	Power Supply elevated 1m from Groundplane									
		Measured Level								
Meas #	Freq (MHz)	Measured Peak (dBµV/m)	Antenna + Cable Correction Factor	Final Peak (dBµV/m)	Peak Limit	Peak □	Result	Orientation (X,Y,Z)	Angle (degrees)	Comment
RBW = 300kHz VBW=300kHz (FCC Settings)										
9.0 Tx Band										
1	9.0120	60.90	18.50	79.40	80.00	-0.60	**Complied**	X Orientation	345	
2	8.2780	60.32	18.50	78.82	80.00	-1.18	**Complied**	X Orientation	345	
3	9.0380	61.39	18.50	79.89	80.00	-0.11	**Complied**	Y Orientation	358	
4	8.3360	55.70	18.50	74.20	80.00	-5.80	**Complied**	Y Orientation	358	
5	9.3440	49.37	18.50	67.87	80.00	-12.13	**Complied**	Z Orientation	358	
6	8.4010	54.47	18.50	72.97	80.00	-7.03	**Complied**	Z Orientation	354	
RBW = 300kHz VBW=300kHz (FCC Settings)										
8.2.Tx Band										
7	8.0630	59.48	18.50	77.98	80.00	-2.02	**Complied**	X Orientation	345	
8	8.4600	61.09	18.50	79.59	80.00	-0.41	**Complied**	Y Orientaiton	345	
9	8.3230	59.38	18.50	77.88	80.00	-2.12	**Complied**	Z Orientation	345	
Tested by:	Dieter Baldamus									
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009										
	Example:									
	Freq:	Measured Level + (Anetnna + Cable Correction Factor) = Final Peak								
	8.317:	56.22 + 18.50 + 74.72								
		Average limit = 100µV/m @ 30m								
		Average Limit = 20*log(100µV) = 40dBµV/m @ 30m								
		For 10m measurement the average limit was adjusted = 40log(10/30) = 20dB								
		Average limit = 60dBµV/m@10m								
		Peak Limit = Average Limit + 20dB = 60dBµV/m + 20dB = 80dBµV/m								

Configuration 1: Vertical Mount

Radiated Emissions Measurements										
Standard:	47 CFR FCC Part 15.223				***PRESCAN or FINAL:***		Final			5/20/2008
Device Tested:	Checkpoint - Slimline Bottom Fed					***Distance:***	10m			08052001 Fundamental Report Top Fed(FCC).xls
Mode:	9.0 Tx and 8.2 Tx Band (31Tx)									
Mount:	Vertical									
Modifications:	Power Supply elevated 1m from Groundplane									
		Measured Level								
Meas #	Freq (MHz)	Measured Peak (dBµV/m)	Antenna + Cable Correction Factor	Final Peak (dBµV/m)	Peak Limit	Peak □	Result	Orientation (X,Y,Z)	Angle (degrees)	Comment
RBW = 300kHz VBW=300kHz (FCC Settings)										
9.0 Tx Band										
1	9.3440	58.56	18.50	77.06	80.00	-2.94	**Complied**	X Orientation	345	
2	8.3100	56.42	18.50	74.92	80.00	-5.08	**Complied**	X Orientation	345	
3	9.0240	61.42	18.50	79.92	80.00	-0.08	**Complied**	Y Orientation	358	
4	8.3820	58.11	18.50	76.61	80.00	-3.39	**Complied**	Y Orientation	358	
5	9.2820	51.31	18.50	69.81	80.00	-10.19	**Complied**	Z Orientation	358	
6	8.3560	58.32	18.50	76.82	80.00	-3.18	**Complied**	Z Orientation	354	
RBW = 300kHz VBW=300kHz (FCC Settings)										
8.2.Tx Band										
7	8.4730	58.69	18.50	77.19	80.00	-2.81	**Complied**	X Orientation	345	
8	8.4730	60.95	18.50	79.45	80.00	-0.55	**Complied**	Y Orientaiton	345	
9	8.4730	60.27	18.50	78.77	80.00	-1.23	**Complied**	Z Orientation	345	
Tested by:	Dieter Baldamus									
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009										
	Example:									
	Freq:	Measured Level + (Anetnna + Cable Correction Factor) = Final Peak								
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		For 10m measurement the average limit was adjusted = 40log(10/30) = 20dB								
		Average limit = 60dBµV/m@10m								
		Peak Limit = Average Limit + 20dB = 60dBµV/m + 20dB = 80dBµV/m								

Configuration 2: Horizontal Mount

Radiated Emissions Measurements										
Standard:	47 CFR FCC Part 15.223				***PRESCAN or FINAL:***		Final			5/20/2008
Device Tested:	Checkpoint - Slimline Bottom Fed					***Distance:***	10m			08052001 Fundamental Report Top Fed(FCC).xls
Mode:	9.0 Tx and 8.2 Tx Band (31Tx)									
Mount:	Horizontal									
Modifications:	Power Supply elevated 1m from Groundplane									
		Measured Level								
Meas #	Freq (MHz)	Measured Peak (dBµV/m)	Antenna + Cable Correction Factor	Final Peak (dBµV/m)	Peak Limit	Peak	Result	Orientation (X,Y,Z)	Angle (degrees)	Comment
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4	8.3360	55.70	18.50	74.20	80.00	-5.80	**Complied**	Y Orientation	358	
5	9.3440	49.37	18.50	67.87	80.00	-12.13	**Complied**	Z Orientation	358	
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8.2.Tx Band										
7	8.0630	59.48	18.50	77.98	80.00	-2.02	**Complied**	X Orientation	345	
8	8.4600	61.09	18.50	79.59	80.00	-0.41	**Complied**	Y Orientaiton	345	
9	8.3230	59.38	18.50	77.88	80.00	-2.12	**Complied**	Z Orientation	345	
Tested by:	Dieter Baldamus									
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009										
	Example:									
	Freq:	Measured Level + (Anetnna + Cable Correction Factor) = Final Peak								
	8.317:	56.22 + 18.50 + 74.72								
		Average limit = 100µV/m @ 30m								
		Average Limit = 20*log(100µV) = 40dBµV/m @ 30m								
		For 10m measurement the average limit was adjusted = 40log(10/30) = 20dB								
		Average limit = 60dBµV/m@10m								
		Peak Limit = Average Limit + 20dB = 60dBµV/m + 20dB = 80dBµV/m								

Configuration 2: Vertical Mount

Radiated Emissions Measurements										
Standard:	47 CFR FCC Part 15.223				***PRESCAN or FINAL:***		Final			5/20/2008
Device Tested:	Checkpoint - Slimline Bottom Fed					***Distance:***	10m			08052001 Fundamental Report Top Fed(FCC).xls
Mode:	9.0 Tx and 8.2 Tx Band (31Tx)									
Mount:	Vertical									
Modifications:	Power Supply elevated 1m from Groundplane									
		Measured Level								
Meas #	Freq (MHz)	Measured Peak (dBµV/m)	Antenna + Cable Correction Factor	Final Peak (dBµV/m)	Peak Limit	Peak	Result	Orientation (X,Y,Z)	Angle (degrees)	Comment
RBW = 300kHz VBW=300kHz (FCC Settings)										
9.0 Tx Band										
1	9.3440	58.56	18.50	77.06	80.00	-2.94	**Complied**	X Orientation	345	
2	8.3100	56.42	18.50	74.92	80.00	-5.08	**Complied**	X Orientation	345	
3	9.0240	61.42	18.50	79.92	80.00	-0.08	**Complied**	Y Orientation	358	
4	8.3820	58.11	18.50	76.61	80.00	-3.39	**Complied**	Y Orientation	358	
5	9.2820	51.31	18.50	69.81	80.00	-10.19	**Complied**	Z Orientation	358	
6	8.3560	58.32	18.50	76.82	80.00	-3.18	**Complied**	Z Orientation	354	
RBW = 300kHz VBW=300kHz (FCC Settings)										
8.2.Tx Band										
7	8.4730	58.69	18.50	77.19	80.00	-2.81	**Complied**	X Orientation	345	
8	8.4730	60.95	18.50	79.45	80.00	-0.55	**Complied**	Y Orientaiton	345	
9	8.4730	60.27	18.50	78.77	80.00	-1.23	**Complied**	Z Orientation	345	
Tested by:	Dieter Baldamus									
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009										
	Example:									
	Freq:	Measured Level + (Anetnna + Cable Correction Factor) = Final Peak								
	8.317:	56.22 + 18.50 + 74.72								
		Average limit = 100µV/m @ 30m								
		Average Limit = 20*log(100µV) = 40dBµV/m @ 30m								
		For 10m measurement the average limit was adjusted = 40log(10/30) = 20dB								
		Average limit = 60dBµV/m@10m								
		Peak Limit = Average Limit + 20dB = 60dBµV/m + 20dB = 80dBµV/m								

4.1.6 Photos

Figure 11 - Fundamental Emissions Test Setup - Configuration 1: Horizontal Mount

Figure 12 - Fundamental Emissions Test Setup - Configuration 1: Vertical Mount

Figure 13 – Fundamental Emissions Test Setup - Configuration 2: Horizontal Mount

Figure 14 – Fundamental Emissions Test Setup - Configuration 2: Vertical Mount

4.2 Conducted Limits

This test measures the electromagnet levels of spurious signals generated by the EUT on the AC power line that may affect the performance of other near by electronic equipment.

4.2.1 Over View of Test

Results	**Complies** (as tested per this report)					**Date**	05/20/2008
Standard	FCC Part 15 Subpart 15.223/RSS-210 Annex A2.3						
Product Model	Slimline (Top Fed and Bottom Fed)			**Serial#**	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004		
Configuration	See test plan for details						
Test Set-up	Tested in shielded room EUT placed on table see test plans for details						
EUT Powered By	120V/60Hz	**Temp**	22º C	**Humidity**	45%	**Pressure**	1004mbar
Frequency Range	150kHz - 30MHz						
Perf. Criteria	Per table in section 207 (Bellow Limit)			**Perf. Verification**	Readings Under Limit for L1 and L2		
Mod. to EUT	None			**Test Performed By**	Dieter Baldamus		

4.2.2 Test Procedure

Conducted and FCC emissions tests were performed using the procedures of ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration.

The frequency range from 150kHz - 30MHz was investigated for conducted emissions.

Conducted Emissions measurements were performed in the shielded room using procedures specified in the test plan and standard.

4.2.3 Deviations

There were no deviations from the test methodology listed in the test plan for the conducted emission test.

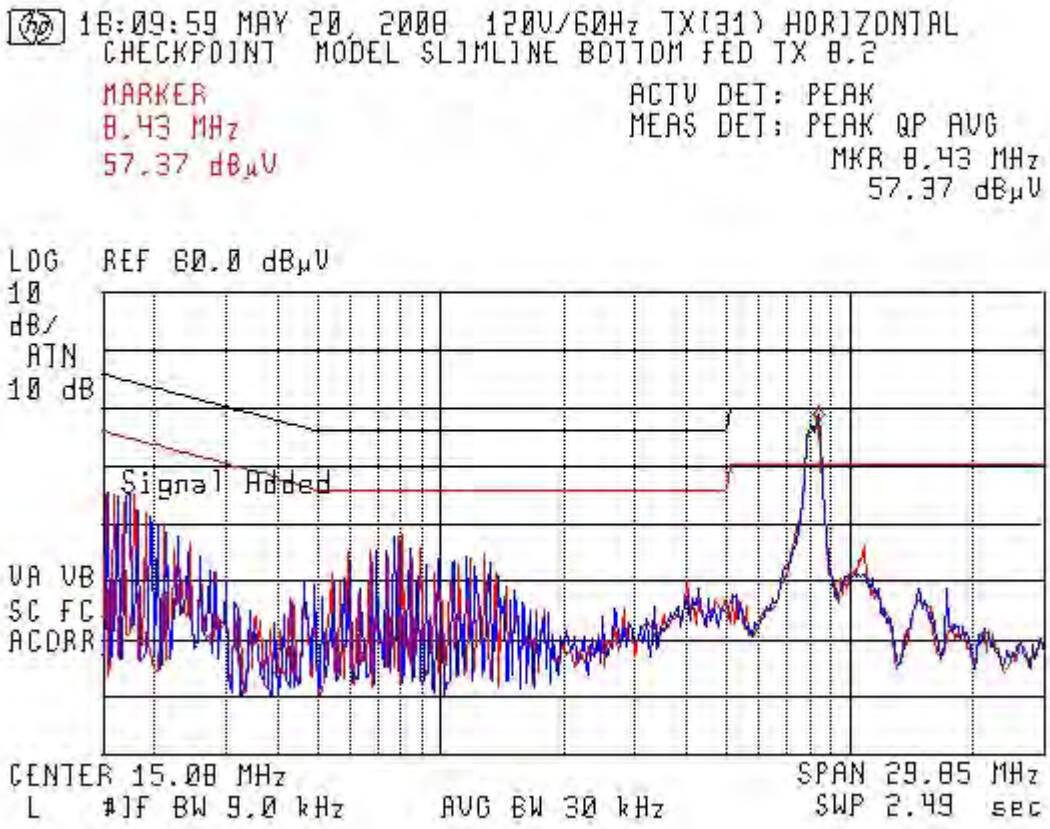
4.2.4 Final Test

All final conducted emissions measurements were below (in compliance) the limits.

4.2.5 Final Measurement Data

NOTES:

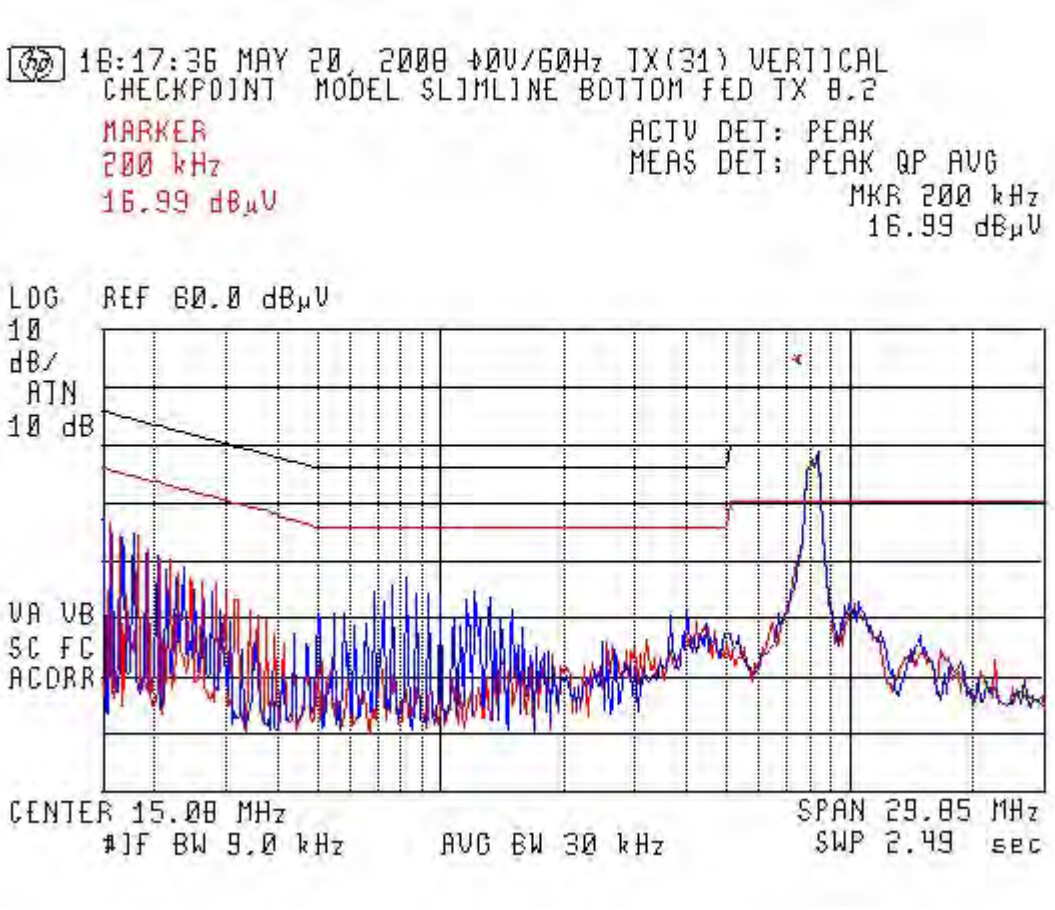
Conducted Emissions @ 120V/60Hz
8.2Tx Band Configuration 1
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	8.2 TX Band (31Tx)											
Mount:	Horizontal											
Voltage:	120V/50Hz											
PS Model:												
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ≅	QP Result	Avg ≅	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1806	46.99	40.06	27.57	64.46	54.46	Line	-24.40	Complied	-26.89	Complied	
2	0.7753	23.19	20.04	17.73	56.00	46.00	Line	-35.96	Complied	-28.27	Complied	
3	**8.4443**	**57.25**	**54.65**	**44.43**	**60.00**	**50.00**	**Line**	**-5.35**	**Complied**	**-5.57**	**Complied**	**Maximum Emissions**
4	10.3422	34.55	30.91	20.80	60.00	50.00	Line	-29.09	Complied	-29.20	Complied	
5	0.1915	43.10	36.77	12.14	63.97	53.97	Neutral	-27.20	Complied	-41.83	Complied	
6	0.8254	39.86	32.15	6.30	56.00	46.00	Neutral	-23.85	Complied	-39.70	Complied	
7	8.4430	57.03	54.05	44.54	60.00	50.00	Neutral	-5.95	Complied	-5.46	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

NOTES:

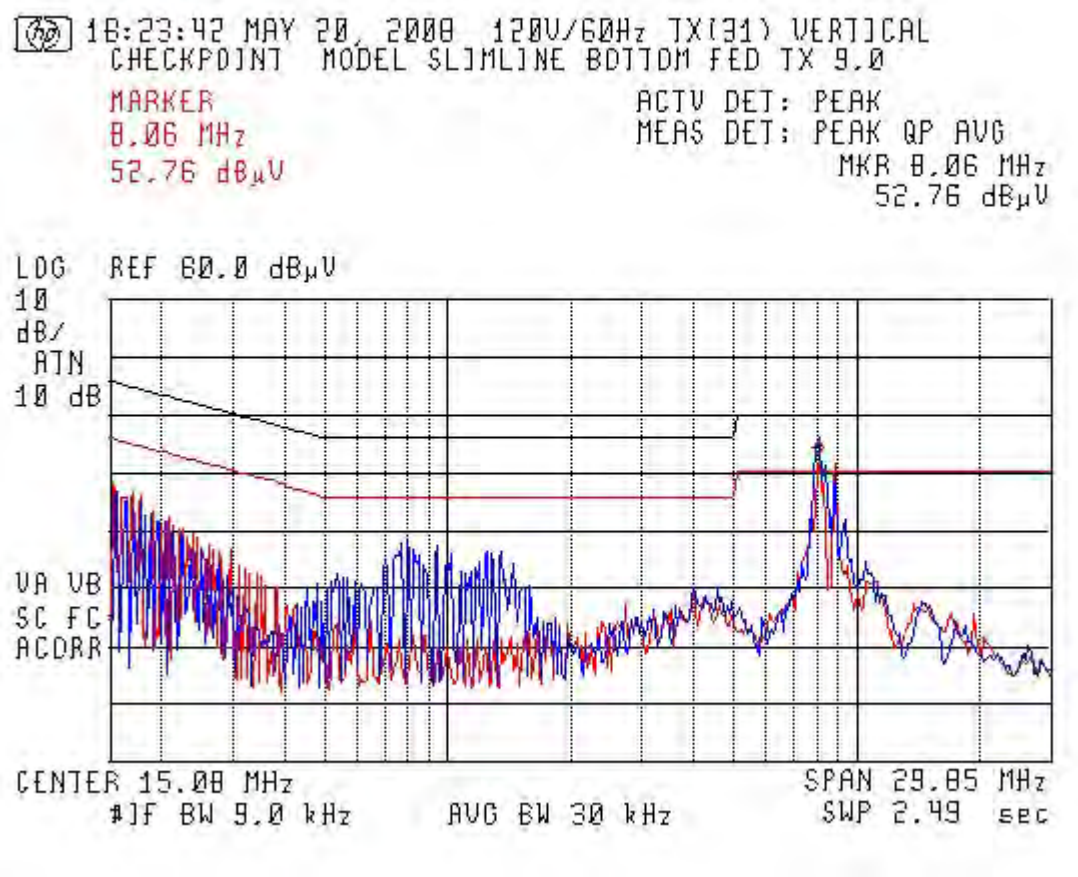
Conducted Emissions @ 120V/60Hz
8.2Tx Band Configuration 1
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	8.2 TX Band (31Tx)											
Mount:	Vertical											
Voltage:	120V/50Hz											
PS Model:	P/N 7116509											
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ∠	QP Result	Avg ∠	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1800	46.01	38.68	24.81	64.49	54.49	Line	-25.81	Complied	-29.68	Complied	
2	0.8384	40.44	31.49	18.99	56.00	46.00	Line	-24.51	Complied	-27.01	Complied	
3	8.4225	61.98	57.12	44.34	60.00	50.00	Line	-2.88	Complied	-5.66	Complied	
4	14.4955	27.58	23.99	14.23	60.00	50.00	Line	-36.01	Complied	-35.77	Complied	
5	0.1870	48.44	42.01	11.45	64.17	54.17	Neutral	-22.16	Complied	-42.72	Complied	
6	0.8778	25.45	21.45	17.45	56.00	46.00	Neutral	-34.55	Complied	-28.55	Complied	
7	8.3470	61.88	52.40	35.99	60.00	50.00	Neutral	-7.60	Complied	-14.01	Complied	
9	14.9700	26.84	24.02	17.86	60.00	50.00	Neutral	-35.98	Complied	-32.14	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

NOTES:

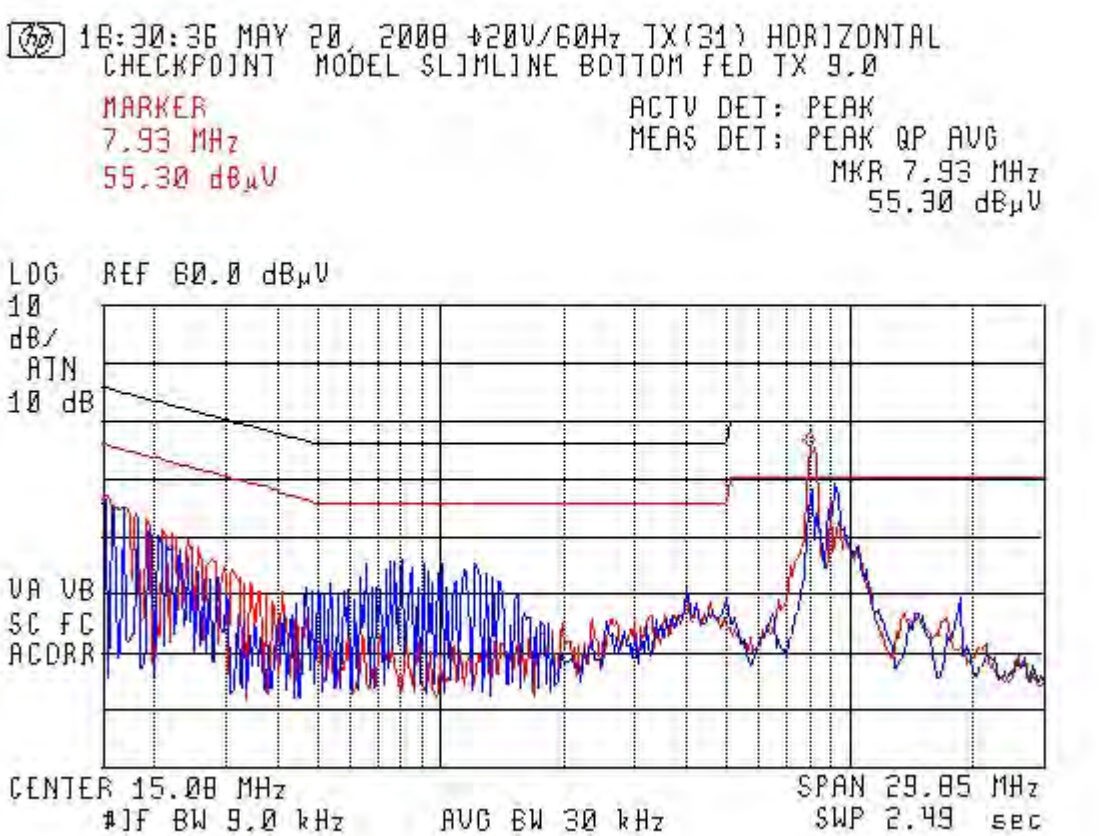
Conducted Emissions @ 120V/60Hz
9.0Tx Band Configuration 1
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	TX 9.0 TX Band (31Tx)											
Mount:	Vertical											
Voltage:	120V/50Hz											
PS Model:	P/N 7116509											
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ∠	QP Result	Avg ∠	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1511	48.03	41.89	12.77	65.94	55.94	Line	-24.05	Complied	-43.17	Complied	
2	0.8333	24.52	20.48	17.72	56.00	46.00	Line	-35.52	Complied	-28.28	Complied	
3	8.3873	63.54	51.45	35.95	60.00	50.00	Line	-8.55	Complied	-14.05	Complied	
5	9.0780	54.55	45.78	20.78	60.00	50.00	Line	-14.22	Complied	-29.22	Complied	
6	0.1811	45.51	37.77	23.28	64.43	54.43	Neutral	-26.66	Complied	-31.15	Complied	
7	0.8407	38.53	30.31	11.92	56.00	46.00	Neutral	-25.69	Complied	-34.08	Complied	
8	8.3115	62.47	45.82	34.19	60.00	50.00	Neutral	-14.18	Complied	-15.81	Complied	
9	9.0479	53.68	45.05	20.59	60.00	50.00	Neutral	-14.95	Complied	-29.41	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

NOTES:

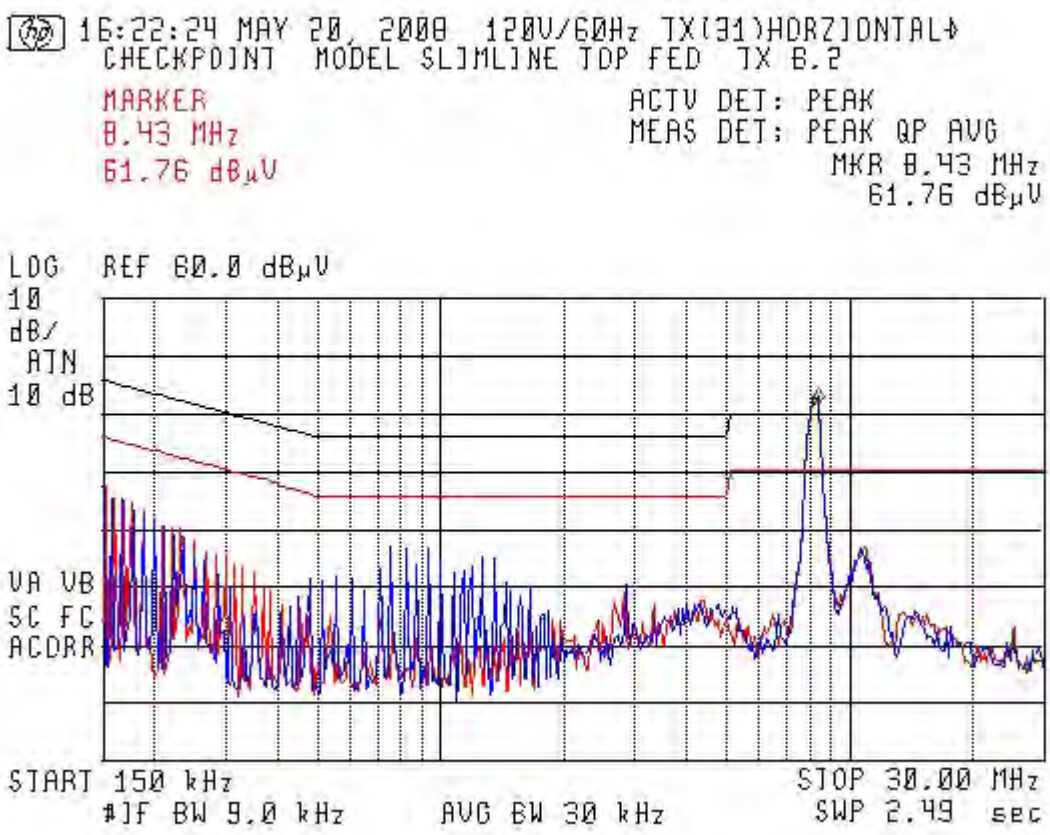
Conducted Emissions @ 120V/60Hz
9.0 Tx Band Configuration 1
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	TX 9.0 TX Band (31Tx)											
Mount:	Horizontal											
Voltage:	120V/50Hz											
PS Model:	P/N 7116509											
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ∠	QP Result	Avg ∠	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1824	46.54	38.71	22.83	64.38	54.38	Line	-25.67	Complied	-31.55	Complied	
2	0.9562	22.86	16.97	13.50	56.00	46.00	Line	-39.03	Complied	-32.50	Complied	
3	0.1402	50.18	43.82	14.12	60.00	50.00	Line	-16.18	Complied	-35.88	Complied	
4	8.3322	61.21	54.15	25.78	60.00	50.00	Line	-5.85	Complied	-24.22	Complied	
5	9.3605	54.10	44.15	27.45	60.00	50.00	Line	-15.85	Complied	-22.55	Complied	
6	0.8354	39.91	31.48	21.02	56.00	46.00	Neutral	-24.52	Complied	-24.98	Complied	
7	0.1806	46.40	38.41	22.76	64.46	54.46	Neutral	-26.05	Complied	-31.70	Complied	
8	1.0976	36.88	28.35	5.33	56.00	46.00	Neutral	-27.65	Complied	-40.67	Complied	
9	8.3322	60.06	54.05	25.39	60.00	50.00	Neutral	-5.95	Complied	-24.61	Complied	
10	9.3605	54.46	44.38	27.75	60.00	50.00	Neutral	-15.62	Complied	-22.25	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

NOTES:

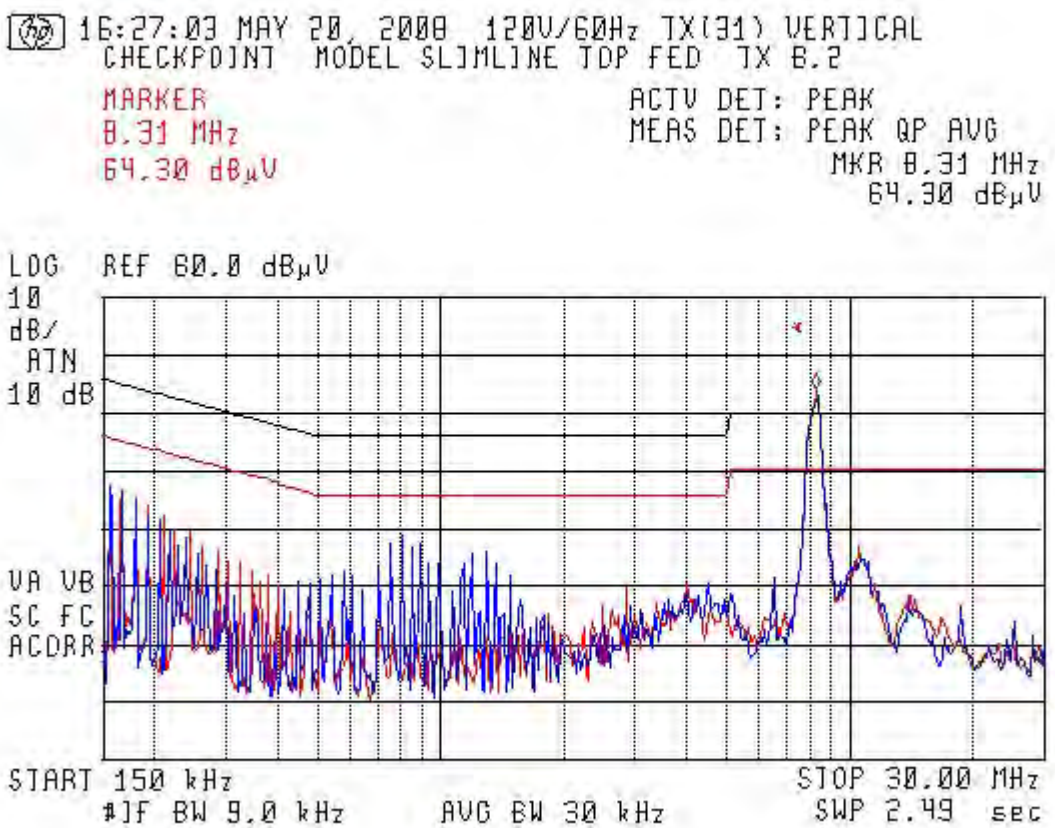
Conducted Emissions @ 120V/60Hz
8.2Tx Band Configuration 2
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	8.2 TX Band (31Tx)											
Mount:	Horizontal											
Voltage:	120V/50Hz											
PS Model:												
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ÷	QP Result	Avg ÷	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.2320	39.99	33.66	23.82	62.38	52.38	Line	-28.72	Complied	-28.56	Complied	
2	0.9616	39.33	31.83	13.19	56.00	46.00	Line	-24.17	Complied	-32.81	Complied	
3	8.4284	62.91	59.50	49.01	60.00	50.00	Line	-0.50	Complied	-0.99	Complied	
4	10.8433	38.58	34.17	24.11	60.00	50.00	Line	-25.83	Complied	-25.89	Complied	
5	0.1621	48.12	41.99	15.95	65.35	55.35	Neutral	-23.36	Complied	-39.40	Complied	
6	0.8945	25.63	21.85	18.50	56.00	46.00	Neutral	-34.15	Complied	-27.50	Complied	
7	**8.4213**	**64.35**	**59.69**	**48.77**	**60.00**	**50.00**	**Neutral**	**-0.31**	**Complied**	**-1.23**	**Complied**	**Maximum Emissions**
8	10.3440	36.57	32.31	23.07	60.00	50.00	Neutral	-27.69	Complied	-26.93	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

NOTES:

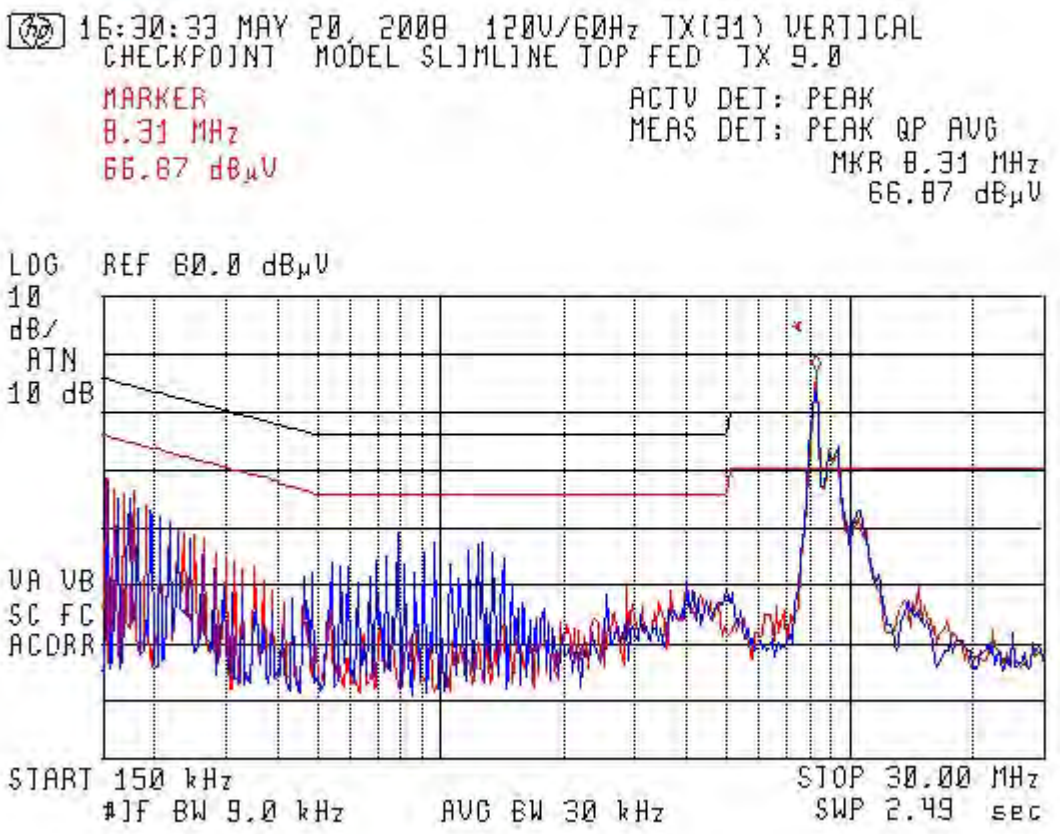
Conducted Emissions @ 120V/60Hz
8.2Tx Band Configuration 2
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	8.2 TX Band (31Tx)											
Mount:	Vertical											
Voltage:	120V/50Hz											
PS Model:	P/N 7116509											
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ÷	QP Result	Avg ÷	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1661	46.53	40.36	12.71	65.15	55.15	Line	-24.79	Complied	-42.44	Complied	
2	0.7784	40.77	32.75	22.27	56.00	46.00	Line	-23.25	Complied	-23.73	Complied	
3	8.0910	62.35	59.31	46.98	60.00	50.00	Line	-0.69	Complied	-3.02	Complied	
4	10.8609	39.59	34.24	25.78	60.00	50.00	Line	-25.76	Complied	-24.22	Complied	
5	0.1655	46.54	40.54	12.44	65.18	55.18	Neutral	-24.64	Complied	-42.74	Complied	
6	0.7480	40.14	32.47	22.45	56.00	46.00	Neutral	-23.53	Complied	-23.55	Complied	
7	8.0970	62.10	59.55	46.98	60.00	50.00	Neutral	-0.45	Complied	-3.02	Complied	
8	10.8875	40.25	35.12	25.77	60.00	50.00	Neutral	-24.88	Complied	-24.23	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

NOTES:

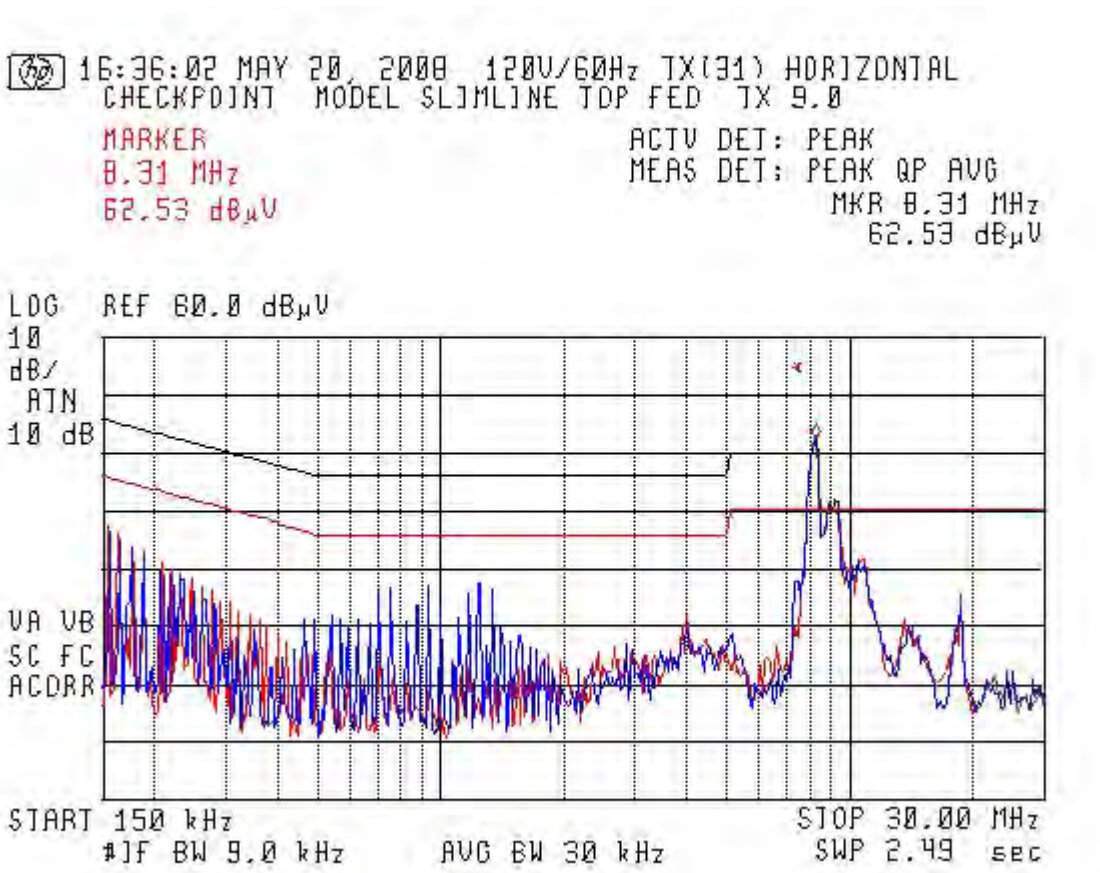
Conducted Emissions @ 120V/60Hz
9.0Tx Band Configuration 2
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	TX 9.0 TX Band (31Tx)											
Mount:	Vertical											
Voltage:	120V/50Hz											
PS Model:	P/N 7116509											
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ÷	QP Result	Avg ÷	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1808	46.76	39.44	22.85	64.45	54.45	Line	-25.01	Complied	-31.60	Complied	
2	1.2551	39.62	31.85	22.58	56.00	46.00	Line	-24.15	Complied	-23.42	Complied	
3	8.3334	65.09	59.78	45.51	60.00	50.00	Line	-0.22	Complied	-4.49	Complied	
4	9.3274	56.67	51.68	35.20	60.00	50.00	Line	-8.32	Complied	-14.80	Complied	
5	10.4692	44.51	40.26	30.57	60.00	50.00	Line	-19.74	Complied	-19.43	Complied	
6	0.1594	48.22	41.53	13.60	65.49	55.49	Neutral	-23.96	Complied	-41.89	Complied	
7	0.8375	22.23	17.63	12.33	56.00	46.00	Neutral	-38.37	Complied	-33.67	Complied	
8	8.2587	63.90	59.66	46.19	60.00	50.00	Neutral	-0.34	Complied	-3.81	Complied	
9	9.3274	54.24	50.73	34.14	60.00	50.00	Neutral	-9.27	Complied	-15.86	Complied	
10	10.7189	44.12	39.88	30.04	60.00	50.00	Neutral	-20.12	Complied	-19.96	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

NOTES:

Conducted Emissions @ 120V/60Hz
9.0Tx Band Configuration 2
Line / Neutral



Conducted Emissions Measurements												
Standard:	FCC Part 15									***Date:***	5/20/2008	
Device Tested:	Checkpoint - Slimline									***File: .xls***	08052003 CE Slimline 120V.xls	
Mode:	TX 9.0 TX Band (31Tx)											
Mount:	Horizontal											
Voltage:	120V/50Hz											
PS Model:	P/N 7116509											
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP ÷	QP Result	Avg ÷	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1629	47.05	40.38	14.10	65.31	55.31	Line	-24.93	Complied	-41.21	Complied	
2	0.7181	39.40	29.91	23.75	56.00	46.00	Line	-26.09	Complied	-22.25	Complied	
3	8.2649	61.96	59.29	45.78	60.00	50.00	Line	-0.71	Complied	-4.22	Complied	
4	9.3135	54.55	49.45	32.98	60.00	50.00	Line	-10.55	Complied	-17.02	Complied	
5	10.7188	43.12	39.09	29.27	60.00	50.00	Line	-20.91	Complied	-20.73	Complied	
6	0.1624	47.58	40.66	14.50	65.34	55.34	Neutral	-24.68	Complied	-40.84	Complied	
7	0.7150	38.54	30.48	23.44	56.00	46.00	Neutral	-25.52	Complied	-22.56	Complied	
8	8.2645	61.47	59.88	45.78	60.00	50.00	Neutral	-0.12	Complied	-4.22	Complied	
9	9.3140	54.88	49.65	33.90	60.00	50.00	Neutral	-10.35	Complied	-16.10	Complied	
10	10.8700	43.14	39.54	30.24	60.00	50.00	Neutral	-20.46	Complied	-19.76	Complied	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												CE22_B.xlt Revised 21OCT2005

4.2.6 Photos

Figure 15 –Conducted Emissions Test Setup Configuration 1

4.3 Radiated Emissions Limits

This test measures the electromagnetic levels of spurious signals generated by the EUT that radiated from the EUT and may affect the performance of other nearby electronic equipment.

4.3.1 Test Over View

Results	**Complies** (as tested per this report)				**Date**	02/29/2008	
Standard	FCC Part 15 Subpart 15.205 and 15.209						
Product Model	Slimline (Top Fed and Bottom Fed)			**Serial#**	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004		
Configuration	See test plan for details						
Test Set-up	Tested on a 10m O.A.T.S. placed on turn-table, see test plans for details						
EUT Powered By	120V/60Hz	**Temp**	22º C	**Humidity**	45%	**Pressure**	1004mbar
Frequency Range	From Fundamental - 1000MHz						
Perf. Criteria	Below Limit		**Perf. Verification**		Readings under Limit		
Mod to EUT	None		**Test Performed By**		Dieter Baldamus		

4.3.2 Test Procedure

Radiated emissions tests were performed using the procedures of ANSI C63.4 including methods for signal maximizations and EUT configuration. The photos included with the report show the EUT in its maximized configuration.

The frequency range from 80MHz to 1000MHz was investigated for radiated emissions.

Radiated emission testing was first performed at a distance of 3 meters in the semi-anechoic chamber in order to identify the specific frequencies for which these measurements will be made. Harmonics and spurious emissions testing <30MHz were performed at 10m distance on the OATS using a magnetic field loop antenna. Harmonics and spurious emissions test >30MHz were performed on the 3 m OATS using a Bilog antenna

4.3.3 Deviations

There were no deviations from the test methodology listed in the test plan for the harmonic current emissions test.

4.3.4 Final Test

All final radiated emissions measurements were below (in compliance) the limits.

4.3.5 Final Measurement Data

Configuration 1: (8.2 and 9.0Tx Band) Final <30MHz (Harmonics);

Radiated Emissions Measurements										
Standard:	47 CFR FCC Part 15.223				***PRESCAN or FINAL:***		Final		**Date:**	5/13/2008
Device Tested:	Checkpoint - Slimline Bottom Fed					***Distance:***	10m		**File:**	08051301 Fundamental Report Bottom fed (FCC).xls
Mode:	9.0Tx and 8.2 Tx Band (31Tx)									
Mount:	Vertical									
Modifications:										
Harmonics										
9.0 Tx Band	**Freq (MHz)**	**Measured Peak (dBµV/m)**	**Quasi-Peak**	**Average**	**Antenna + Cable Correction Factor**	**QuaiPeak Limit**	**Quasi Peak °**	**Result**	**Orientation**	**Comments**
7	18.6200	52.65	45.54	44.10	19.00	49.54	-4.00	**Complied**	X Orientation	
8	16.6340	52.40	46.57	41.21	19.00	49.54	-2.97	**Complied**	X Orientation	
9	18.6220	52.70	47.49	42.07	19.00	49.54	-2.05	**Complied**	Y Orientation	
10	16.6600	52.45	47.54	42.45	19.30	49.54	-2.00	**Complied**	Y Orientation	
11	18.2220	52.12	47.47	42.14	19.30	49.54	-2.07	**Complied**	Z Orientation	
12	16.6100	51.45	47.54	42.11	19.30	49.54	-2.00	**Complied**	Z Orientation	
13	27.9300	52.78	47.78	42.15	19.30	49.54	-1.76	**Complied**	X Orientation	
14	24.9510	51.47	47.54	42.10	19.30	49.54	-2.00	**Complied**	X Orientation	
15	27.9330	52.78	47.12	42.82	19.30	49.54	-2.42	**Complied**	Y Orientation	
16	24.9900	52.47	47.45	42.54	19.30	49.54	-2.09	**Complied**	Y Orientation	
17	27.3330	51.05	47.52	41.54	19.30	49.54	-2.02	**Complied**	Z Orientation	
18	24.9150	50.40	47.50	42.15	19.30	49.54	-2.04	**Complied**	Z Orientation	
8.2 Tx Band										
19	16.9060	47.69	40.79	35.61	19.30	49.54	-8.75	**Complied**	X Orientation	
20	16.9320	47.38	40.24	36.54	19.30	49.54	-9.30	**Complied**	Y Orientation	
21	16.6340	47.88	40.11	36.47	19.30	49.54	-9.43	**Complied**	Z Orientation	
22	25.3590	47.66	40.23	35.94	19.30	49.54	-9.31	**Complied**	X Orientation	
23	25.3980	47.79	40.60	35.66	19.30	49.54	-8.94	**Complied**	Y Orientation	
24	24.9510	47.54	40.89	35.65	19.30	49.54	-8.65	**Complied**	Z Orientation	
Tested by:	Dieter Baldamus									
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009										

Configuration 1: RE Final >30MHz

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***		Final		***Date:***	5/12/2008	
Device Tested:	Checkpoint - Slimline Botom Fed					***Distance:***		3.0m		***File:***	08051202 Re Prescan FCC.xls	
Frimaware:	2.84											
Tx	8.2											
Chassis Mount:	Horizontal											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak ◦	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	32.2696	35.45	30.45	23.38	40.00	-9.55	17.46	**Complied**	Vertical	144	1.00	
2	36.2888	36.45	32.55	32.72	40.00	-7.45	14.93	**Complied**	Vertical	154	1.00	
3	87.4767	43.54	38.55	30.58	40.00	-1.45	9.57	**Complied**	Vertical	68	1.00	
4	88.8453	44.24	35.44	23.38	43.50	-8.06	9.76	**Complied**	Vertical	67	1.00	
5	101.4079	43.10	35.45	32.72	43.50	-8.05	11.57	**Complied**	Vertical	66	1.10	
6	119.2777	35.40	32.44	23.38	43.50	-11.06	13.71	**Complied**	Vertical	78	1.10	
7	240.0051	37.54	35.47	32.72	46.00	-10.53	13.57	**Complied**	Vertical	34	1.20	
8	238.4800	36.78	33.24	30.58	46.00	-12.76	13.46	**Complied**	Vertical	354	1.16	
9	405.4631	44.57	42.40	34.28	46.00	-3.60	18.64	**Complied**	Horizontal	124	1.54	
10	421.3522	39.47	36.55	11.06	46.00	-9.45	18.87	**Complied**	Horizontal	124	1.54	
11	424.6142	48.78	43.45	12.31	46.00	-2.55	18.92	**Complied**	Horizontal	187	1.20	
12	428.0766	44.57	39.44	8.02	46.00	-6.56	18.99	**Complied**	Horizontal	197	1.65	
13	436.0975	50.78	44.45	7.94	46.00	-1.55	19.14	**Complied**	Horizontal	205	1.54	
14	444.1604	49.56	45.10	14.77	46.00	-0.90	19.30	**Complied**	Horizontal	122	1.55	
15	473.2487	47.50	40.12	10.62	46.00	-5.88	19.93	**Complied**	Horizontal	24	1.23	
16	500.9041	38.78	28.07	25.22	46.00	-17.93	19.75	**Complied**	Horizontal	214	1.24	
17	560.0023	39.57	37.25	35.36	46.00	-8.75	21.51	**Complied**	Horizontal	69	2.50	
18	897.9924	35.45	31.15	11.45	46.00	-14.85	24.72	**Complied**	Horizontal	124	1.10	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***		Final		***Date:***	5/12/2008	
Device Tested:	Checkpoint - Slimline Botom Fed					***Distance:***		3.0m		***File:***	08051202 Re Prescan FCC.xls	
Frimaware:	2.84											
Tx	9.0											
Chassis Mount:	Horizontal											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak ◦	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	32.2720	35.29	29.27	23.38	40.00	-10.73	17.47	**Complied**	Vertical	356	1.00	
2	36.2768	36.42	33.95	32.72	40.00	-6.05	14.93	**Complied**	Vertical	2	1.00	
3	88.6960	39.72	35.27	30.58	43.50	-8.23	9.77	**Complied**	Vertical	350	1.00	
4	103.9450	46.75	41.38	34.28	43.50	-2.12	11.38	**Complied**	Vertical	220	1.00	
5	121.0664	39.58	32.65	11.06	43.50	-10.85	12.39	**Complied**	Vertical	21	1.15	
6	421.3517	48.42	42.53	12.31	46.00	-3.47	13.70	**Complied**	Vertical	187	1.47	
7	427.9649	36.18	39.83	8.02	46.00	-6.17	18.85	**Complied**	Horizontal	234	1.67	
8	444.1731	55.80	42.66	7.94	46.00	-3.34	19.14	**Complied**	Horizontal	356	1.64	
9	457.9203	48.50	43.00	14.77	46.00	-3.00	19.30	**Complied**	Horizontal	347	1.55	
10	515.5500	46.86	40.52	10.62	46.00	-5.48	19.87	**Complied**	Horizontal	224	1.45	
11	559.9995	32.60	28.07	25.22	46.00	-17.93	19.84	**Complied**	Vertical	214	1.78	
12	753.2535	39.57	37.25	35.36	46.00	-8.75	21.41	**Complied**	Vertical	108	1.49	
13	727.3489	35.45	31.15	11.45	46.00	-14.85	22.61	**Complied**	Horizontal	214	1.54	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***		Final			***Date:***	5/12/2008
Device Tested:	Checkpoint - Slimline Botom Fed						***Distance:***	3.0m			***File:***	08051202 Re Prescan FCC.xls
Frimaware:	2.84											
Tx	9.0											
Chassis Mount:	Vertical											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak °	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	32.2432	37.70	32.28	26.53	40.00	-7.72	17.47	**Complied**	Vertical	356	1.00	
2	36.2912	38.32	34.94	33.68	40.00	-5.06	14.93	**Complied**	Vertical	5	1.00	
3	88.8379	46.04	41.47	36.70	43.50	-2.03	9.76	**Complied**	Vertical	28	1.00	
4	108.2380	44.25	37.79	11.78	43.50	-5.71	12.39	**Complied**	Vertical	32	1.00	
5	121.0000	43.78	35.90	13.94	43.50	-7.60	13.70	**Complied**	Vertical	29	1.20	
6	419.6260	49.27	43.63	13.47	46.00	-2.37	18.85	**Complied**	Horizontal	150	1.63	
7	428.0399	49.68	44.51	15.64	46.00	-1.49	18.98	**Complied**	Horizontal	154	1.70	
8	444.1399	50.43	45.18	14.81	46.00	-0.82	19.29	**Complied**	Horizontal	20	1.78	
9	460.3141	44.65	38.21	11.39	46.00	-7.79	19.64	**Complied**	Horizontal	14	1.30	
10	522.2247	48.68	43.86	14.21	46.00	-2.14	20.41	**Complied**	Vertical	279	1.21	
11	540.8832	50.64	44.56	15.10	46.00	-1.44	21.24	**Complied**	Vertical	253	1.88	
12	744.1238	43.17	29.69	11.66	46.00	-16.31	23.06	**Complied**	Horizontal	240	1.09	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***		Final			***Date:***	5/12/2008
Device Tested:	Checkpoint - Slimline Botom Fed						***Distance:***	3.0m			***File:***	08051202 Re Prescan FCC.xls
Frimaware:	2.84											
Tx	8.2											
Chassis Mount:	Vertical											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak °	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	32.2590	36.54	31.11	26.40	40.00	-8.89	17.47	**Complied**	Vertical	356	1.00	
2	36.2923	37.87	35.90	32.54	40.00	-4.10	14.93	**Complied**	Vertical	4	1.00	
3	88.8510	45.44	40.15	36.64	43.50	-3.35	9.77	**Complied**	Vertical	354	1.00	
4	101.4452	43.21	36.55	12.70	43.50	-6.95	11.58	**Complied**	Vertical	207	1.10	
5	108.2224	42.15	37.45	14.40	43.50	-6.05	12.39	**Complied**	Vertical	187	1.00	
6	121.1337	45.45	40.10	13.40	43.50	-3.40	13.70	**Complied**	Vertical	215	1.15	
7	421.3760	47.45	43.21	14.67	46.00	-2.79	18.87	**Complied**	Vertical	154	1.50	
8	428.0419	47.55	44.77	14.80	46.00	-1.23	18.98	**Complied**	Vertical	115	1.50	
9	444.1181	47.44	45.21	11.42	46.00	-0.79	19.29	**Complied**	Horizontal	215	1.54	
10	460.3304	48.02	42.98	13.21	46.00	-3.02	19.64	**Complied**	Horizontal	284	1.67	
11	515.4955	46.55	43.97	14.78	46.00	-2.03	20.21	**Complied**	Vertical	290	1.30	
12	560.0082	43.45	35.44	11.45	46.00	-10.56	21.51	**Complied**	Horizontal	201	1.24	
13	754.84028	35.12	30.45	11.55	46.00	-15.55	23.23	**Complied**	Horizontal	222	1.55	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

Configuration 2: (9.0 and 8.2Tx) Final <30MHz (Harmonics)

Radiated Emissions Measurements										
Standard:	47 CFR FCC Part 15.223				***PRESCAN or FINAL:***		Final		**Date:**	5/20/2008
Device Tested:	Checkpoint - Slimline Top Fed					***Distance:***	10m		**File Name:**	08052001 Fundamental Report Top Fed(FCC).xls
Mode:	9.0 Tx and 8.2 Tx Band (31Tx)									
Mount:	Horizontal									
Modifications:	Power Supply elevated 1m from Groundplane									
Harmonics										
9.0 Tx Band	**Freq (MHz)**	**Measured Peak (dBµV/m)**	**Quasi-Peak**	**Average**	**Antenna + Cable Correction Factor**	**QuaiPeak Limit**	**Quasi Peak °**	**Result**	**Orientation**	**Comments**
7	18.0240	48.15	47.50	42.22	19.00	49.54	-2.04	**Complied**	X Orientation	
8	16.5560	48.15	47.40	42.74	19.00	49.54	-2.14	**Complied**	X Orientation	
9	18.0760	49.20	47.54	42.10	19.00	49.54	-2.00	**Complied**	Y Orientation	
10	16.6720	48.71	47.11	42.97	19.30	49.54	-2.43	**Complied**	Y Orientation	
11	18.6880	49.80	47.76	42.95	19.30	49.54	-1.78	**Complied**	Z Orientation	
12	16.8020	48.14	47.45	42.57	19.30	49.54	-2.09	**Complied**	Z Orientation	
13	27.0360	49.50	47.78	42.57	19.30	49.54	-1.76	**Complied**	X Orientation	
14	24.8340	49.45	47.45	42.77	19.30	49.54	-2.09	**Complied**	X Orientation	
15	27.1140	49.57	47.68	42.78	19.30	49.54	-1.86	**Complied**	Y Orientation	
16	25.0080	49.55	47.47	42.55	19.30	49.54	-2.07	**Complied**	Y Orientation	
17	28.0320	49.44	47.88	42.57	19.30	49.54	-1.66	**Complied**	Z Orientation	
18	25.2030	48.15	46.98	42.57	19.30	49.54	-2.56	**Complied**	Z Orientation	
8.2 Tx Band										
19	16.1260	48.66	46.13	42.41	19.30	49.54	-3.41	**Complied**	X Orientation	
20	16.9200	48.77	46.78	42.55	19.30	49.54	-2.76	**Complied**	Y Orientation	
21	16.6460	48.57	46.22	42.78	19.30	49.54	-3.32	**Complied**	Z Orientation	
22	24.1890	48.57	46.78	42.57	19.30	49.54	-2.76	**Complied**	X Orientation	
23	25.3800	49.05	46.78	42.97	19.30	49.54	-2.76	**Complied**	Y Orientation	
24	24.9690	49.44	46.78	42.11	19.30	49.54	-2.76	**Complied**	Z Orientation	
Tested by:	Dieter Baldamus									
TUV Rheinland of North America, Inc.			12 Commerce Road		Newtown, CT 06470		Tel:(203) 426-0888 Fax: (203) 426-4009			

Radiated Emissions Measurements										
Standard:	47 CFR FCC Part 15.223				***PRESCAN or FINAL:***		Final		**Date:**	5/20/2008
Device Tested:	Checkpoint - Slimline Top Fed					***Distance:***	10m		**File Name:**	08052001 Fundamental Report Top Fed(FCC).xls
Mode:	9.0 Tx and 8.2 Tx Band (31Tx)									
Mount:	Vertical									
Modifications:	Power Supply elevated 1m from Groundplane									
Harmonics										
9.0 Tx Band	**Freq (MHz)**	**Measured Peak (dBµV/m)**	**Quasi-Peak**	**Average**	**Antenna + Cable Correction Factor**	**QuaiPeak Limit**	**Quasi Peak °**	**Result**	**Orientation**	**Comments**
7	18.6880	48.50	47.87	42.50	19.00	49.54	-1.67	**Complied**	X Orientation	
8	16.6200	48.45	46.54	42.50	19.00	49.54	-3.00	**Complied**	X Orientation	
9	18.0480	49.05	47.55	42.20	19.00	49.54	-1.99	**Complied**	Y Orientation	
10	16.7640	49.00	47.54	42.15	19.30	49.54	-2.00	**Complied**	Y Orientation	
11	18.5640	49.02	47.64	42.56	19.30	49.54	-1.90	**Complied**	Z Orientation	
12	16.7120	48.77	47.45	42.78	19.30	49.54	-2.09	**Complied**	Z Orientation	
13	28.0320	48.15	47.44	42.77	19.30	49.54	-2.10	**Complied**	X Orientation	
14	24.9300	48.15	47.44	42.78	19.30	49.54	-2.10	**Complied**	X Orientation	
15	27.0720	48.59	47.47	42.97	19.30	49.54	-2.07	**Complied**	Y Orientation	
16	25.1460	49.78	47.40	42.88	19.30	49.54	-2.14	**Complied**	Y Orientation	
17	27.8460	49.77	47.45	42.78	19.30	49.54	-2.09	**Complied**	Z Orientation	
18	25.0680	49.98	46.98	42.97	19.30	49.54	-2.56	**Complied**	Z Orientation	
8.2 Tx Band										
19	16.9460	49.45			19.30	49.54	-49.54	**Complied**	X Orientation	
20	16.9460	49.54	47.87	42.15	19.30	49.54	-1.67	**Complied**	Y Orientation	
21	16.9460	49.88	47.22	42.54	19.30	49.54	-2.32	**Complied**	Z Orientation	
22	25.4190	49.56	47.21	42.58	19.30	49.54	-2.33	**Complied**	X Orientation	
23	25.4190	49.78	47.64	42.45	19.30	49.54	-1.90	**Complied**	Y Orientation	
24	25.4190	49.87	46.66	42.11	19.30	49.54	-2.88	**Complied**	Z Orientation	
Tested by:	Dieter Baldamus									
TUV Rheinland of North America, Inc.			12 Commerce Road		Newtown, CT 06470		Tel:(203) 426-0888 Fax: (203) 426-4009			

Configuration 1: Final >30MHz (Harmonics)

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***	final			***Date:***	5/12/2008	
Device Tested:	Checkpoint - Slimline Top Fed					***Distance:***	3.0m			***File:***	08051202 Re Prescan FCC.xls	
Frimaware:	2.84											
Tx	8.2											
Chassis Mount:	Horizontal											
Modification:	Sync cable with ferrites on each side with 3 turns											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak ≯	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	33.7153	39.94	26.92	20.00	40.00	-13.08	16.52	**Complied**	Vertical	356	1.00	
2	36.2759	39.51	37.41	36.40	40.00	-2.59	14.94	**Complied**	Vertical	282	1.00	
3	88.8000	40.91	37.21	31.30	43.50	-6.29	9.76	**Complied**	Vertical	180	1.20	
4	109.9450	36.02	28.94	20.65	43.50	-14.56	12.59	**Complied**	Vertical	251	1.10	
5	128.0813	39.48	19.11	26.04	43.50	-24.39	13.12	**Complied**	Vertical	14	1.16	
6	389.0000	23.77	17.26	9.53	46.00	-28.74	18.01	**Complied**	Vertical	265	1.09	
7	437.0000	25.42	16.69	9.90	46.00	-29.31	19.16	**Complied**	Vertical	164	1.24	
8	461.0000	30.05	25.07	16.72	46.00	-20.93	19.66	**Complied**	Vertical	145	1.24	
9	515.0001	42.65	35.81	13.00	46.00	-10.19	20.19	**Complied**	Horizontal	263	1.64	
10	560.0025	47.47	45.78	42.86	46.00	-0.22	21.51	**Complied**	Horizontal	274	1.22	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***	Final			***Date:***	5/12/2008	
Device Tested:	Checkpoint - Slimline Top Fed					***Distance:***	3.0m			***File:***	08051202 Re Prescan FCC.xls	
Frimaware:	2.84											
Tx	9.0											
Chassis Mount:	Horizontal											
Modification:	Sync cable with ferrites on each side with 3 turns											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak ≯	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	36.2880	34.64	31.43	28.76	40.00	-8.57	14.93	**Complied**	Vertical	354	1.00	
2	389.5352	32.32	28.81	11.58	46.00	-17.19	18.04	**Complied**	Horizontal	345	1.00	
3	428.0330	42.65	36.88	11.54	46.00	-9.12	19.16	**Complied**	Horizontal	89	1.20	
4	437.2535	42.12	39.93	11.80	46.00	-6.07	20.85	**Complied**	Horizontal	124	1.20	
5	471.9353	41.86	38.50	12.03	46.00	-7.50	21.51	**Complied**	Horizontal	45	1.25	
6	526.4244	51.80	42.30	13.25	46.00	-3.70	22.51	**Complied**	Vertical	55	1.24	
7	532.3832	44.28	43.43	13.43	46.00	-2.57	18.98	**Complied**	Vertical	157	1.16	
8	540.8624	52.32	44.79	16.89	46.00	-1.21	19.90	**Complied**	Vertical	124	1.60	
9	559.5007	35.94	27.54	11.03	46.00	-18.46	20.56	**Complied**	Horizontal	67	1.45	
10	560.0071	34.23	31.19	28.91	46.00	-14.81	21.24	**Complied**	Horizontal	59	1.33	
11	720.0115	27.15	20.36	13.63	46.00	-25.64	21.52	**Complied**	Horizontal	109	1.10	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***		Final			***Date:***	5/12/2008
Device Tested:	Checkpoint - Slimline Top Fed						***Distance:***	3.0m			***File:***	08051202 Re Prescan FCC.xls
Frimaware:	2.84											
Tx	9.0											
Chassis Mount:	Vertical											
Modification:	Sync cable with ferrites on each side with 3 turns											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak ∖	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	32.2850	36.53	33.26	31.36	40.00	-6.74	17.45	**Complied**	Vertical	354	1.00	
2	36.2843	39.79	33.95	27.32	40.00	-6.05	14.93	**Complied**	Vertical	344	1.00	
3	88.8728	42.87	37.63	35.51	43.50	-5.87	9.77	**Complied**	Vertical	254	1.00	
4	96.9204	45.38	37.34	26.66	43.50	-6.16	10.94	**Complied**	Vertical	68	1.00	
5	121.0810	45.51	38.99	13.39	43.50	-4.51	13.70	**Complied**	Vertical	77	1.12	
6	411.8376	46.53	40.40	10.58	46.00	-5.60	18.73	**Complied**	Horizontal	69	1.20	
7	457.9466	43.96	37.23	11.04	46.00	-8.77	19.59	**Complied**	Horizontal	154	1.64	
8	503.6153	50.83	44.70	14.72	46.00	-1.30	19.84	**Complied**	Horizontal	122	1.44	
9	503.6355	50.79	44.78	14.65	46.00	-1.22	19.84	**Complied**	Horizontal	124	1.78	
10	540.8666	51.54	45.16	14.38	46.00	-0.84	21.24	**Complied**	Horizontal	109	1.20	
11	720.0196	35.23	32.34	27.80	46.00	-13.66	22.51	**Complied**	Horizontal	114	1.44	
12	783.3275	29.46	20.43	13.20	46.00	-25.57	23.35	**Complied**	Horizontal	147	1.78	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

Radiated Emissions Measurements												
Standard:	47 CFR 15.209					***PRESCAN or FINAL:***		Final			***Date:***	5/12/2008
Device Tested:	Checkpoint - Slimline Top Fed						***Distance:***	3.0m			***File:***	08051202 Re Prescan FCC.xls
Frimaware:	2.84											
Tx	8.2											
Chassis Mount:	Vertical											
Modification:	Sync cable with ferrites on each side with 3 turns											
		Measured Level										
Meas #	Freq (MHz)	Peak	Quasi-Peak	Average	Quasi-Peak Limit	Quasi-Peak ∖	Antenna + Cable Correction Factor (included in measured levels)	Result	Polarization	Angle (degrees)	Antenna Height (meters)	Comment
1	33.7153	30.95	24.71	17.53	40.00	-15.29	16.52	**Complied**	Vertical	354	1.00	
2	36.2759	37.08	34.30	32.92	40.00	-5.70	14.94	**Complied**	Vertical	36	1.00	
3	88.8000	48.33	40.50	33.15	43.50	-3.00	9.76	**Complied**	Vertical	354	1.00	
4	121.1373	40.68	29.91	13.62	43.50	-13.59	13.70	**Complied**	Vertical	55	1.24	
5	152.9268	27.77	21.83	14.25	43.50	-21.67	11.86	**Complied**	Vertical	154	1.16	
6	411.2364	30.02	23.05	9.00	46.00	-22.95	18.72	**Complied**	Horizontal	69	1.67	
7	444.1847	28.10	21.56	8.72	46.00	-24.44	19.30	**Complied**	Horizontal	55	1.20	
8	498.5191	48.97	42.40	13.05	46.00	-3.60	19.74	**Complied**	Horizontal	57	1.54	
9	500.6845	46.02	39.34	12.92	46.00	-6.66	19.75	**Complied**	Horizontal	157	1.55	
10	541.1278	49.42	45.84	18.45	46.00	-0.16	21.26	**Complied**	Horizontal	154	1.87	
11	560.0080	42.77	41.73	36.97	46.00	-4.27	21.51	**Complied**	Horizontal	111	1.62	
Tested by:	Dieter Baldamus											
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009												REFCC15B.xlt Revised 10MAR03

4.3.6 Operation in Restricted Bands

The EUT is a digital swept frequency hopping transmitter. The EUT hops on discrete frequencies. The discrete frequencies that can be transmitted by the EUT are as follows:

Original Emerald frequency tables
/* Center frequency 8.2MHz +/- 410KHz */
Value CT_8200_300[] = {8610, 8555, 8500, 8446, 8391, 8337, 8282, 8227, 8173, 8118, 8063, 8009, 7954, 7899, 7845, 7790};

/* Center frequency 8.6MHz +/- 430KHz */
Value CT_8600_300[] = {9030, 8973, 8915, 8858, 8801, 8743, 8686, 8629, 8571, 8514, 8457, 8399, 8342, 8285, 8227, 8170};

/* Center frequency 9.0MHz +/- 450KHz */
Value CT_9000_300[] = {9450, 9390, 9330, 9270, 9210, 9150, 9090, 9030, 8970, 8910, 8850, 8790, 8730, 8670, 8610, 8550};

/* Center frequency 9.2MHz +/- 460KHz */
Value CT_9200_300[] = {9660, 9599, 9537, 9476, 9415, 9353, 9292, 9231, 9169, 9108, 9047, 8985, 8924, 8863, 8801, 8740}; /* Center frequency 9.5MHz +/- 480KHz */ Value CT_9500_300[] = {9980, 9916, 9852, 9788, 9724, 9660, 9596, 9532, 9468, 9404, 9340, 9276, 9212, 9148, 9084, 9020};

/* Mult tag with bins 0-7 center frequency 9.2MHz and bins 8-16 center frequency 8.2MHz each range +/- 300KHz */
Value CTMult_9200_8200_300[] = {9500, 9404, 9329, 9243, 9157, 9071, 8986, 8900, 8500, 8414, 8329, 8243, 8157, 8071, 7986, 7900}; Skinny Pulse frequency tables…..

/* This table is used for mult band (8.2/9.2) skinny pulse, using PW of 4us JRG_SP */
Value CTMult_sp[] = {9325, 9325, 9325, 9325, 9075, 9075, 9075, 9075, 8325, 8325, 8325, 8325, 8075, 8075, 8075, 8075};

/* This table is used for 8.2 band skinny pulse, using PW of 4us JRG_SP */ Value CT_8200_sp[] = {8450, 8450, 8450, 8450, 8325, 8325, 8325, 8325, 8075, 8075, 8075, 8075, 7950, 7950, 7950, 7950};
The restricted frequency bands (per FCC Part 15 Clause 15.205) in the operating frequency band of the EUT are as follows:

8.291 – 8.294 MHz
8.362 – 8.366 MHz
8.37625 – 8.38675 MHz
8.41425 – 8.41475 MHz

The transmitter is not capable of hopping into, or operating, in the restricted frequency bands and therefore complies with the restriction.

4.3.7 Photos

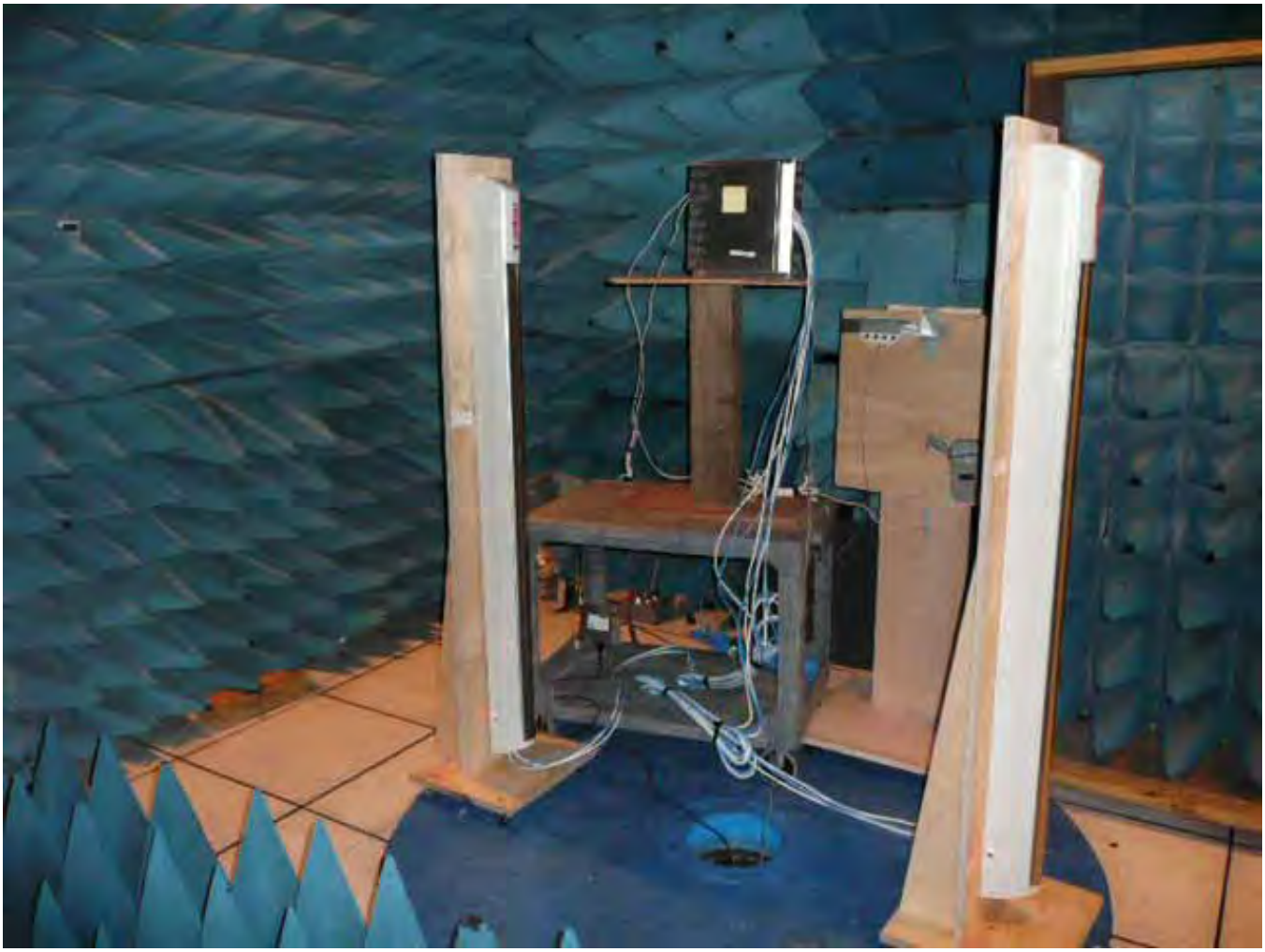


Figure 16 – Radiated Emissions Pre-scan Test Set-Up. Configuration 1

Figure 17 - Radiated Emissions (3m OATS) Test Setup. Configuration 1

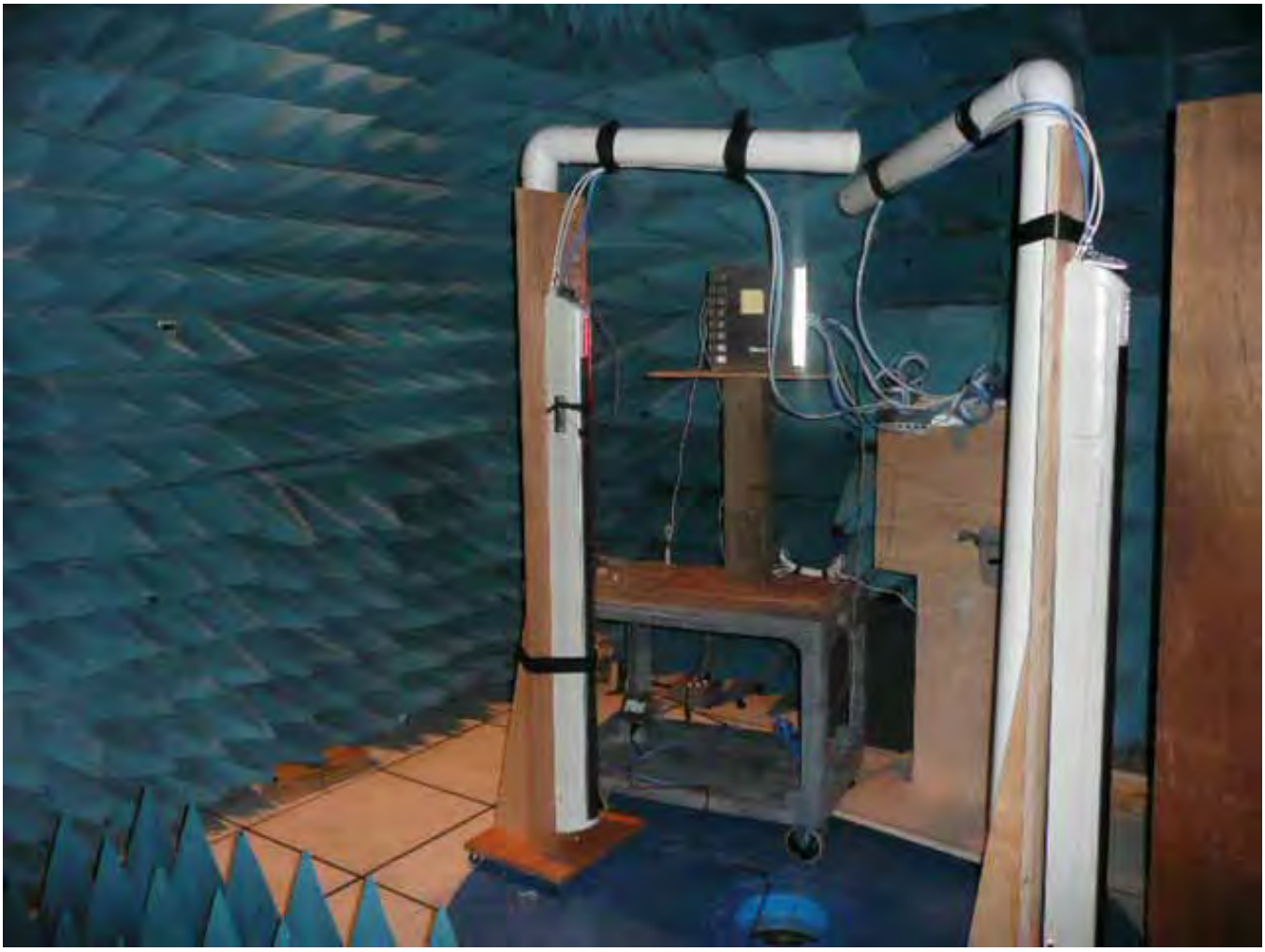


Figure 18 – Radiated Emissions Pre-scan Test Set-Up. Configuration 2

Figure 19 - Radiated Emissions (3m OATS) Test Setup. Configuration 2

4.4 Emissions Bandwidth

This test measures the emission bandwidth of the fundamental frequency generated by the EUT that may be outside the allowed transmission frequency

4.4.1 Test Over View

Results	**Complies** (as tested per this report)				**Date**	02/29/2008	
Standard	FCC Part 15 Subpart 15.215 and RSS-210						
Product Model	Slimline (Top Fed and Bottom Fed)			**Serial#**	7365919CiU01148002, 7365919CiU01228006, 7365919CiU01228010, 7365919CiU01148004		
Configuration	See test plan for details						
Test Set-up	Tested on a 10m O.A.T.S. placed on turn-table, see test plans for details						
EUT Powered By	120V/60Hz	**Temp**	22º C	**Humidity**	45%	**Pressure**	1004mbar
Frequency Range	8.2MHz and 9.0MHz Band						
Perf. Criteria	Within Frequency Range		**Perf. Verification**		Readings under Limit		
Mod to EUT	None		**Test Performed By**		Dieter Baldamus		

4.4.2 Test Procedure

The emissions of the fundamental was measured with a loop antenna in 3 orthogonal orientation. The measurement of the bandwidth was done at -6db and -20dB on each side of the fundamental frequency. The test method includes signal maximizations of EUT configuration, by turning the turntable 360degres and recording the highest emissions. The photos included with the report show the EUT in its maximized configuration.

4.4.3 Deviations

There were no deviations from the test methodology listed in the test plan for the Bandwidth Emissions test.

4.4.4 Final Test

All final radiated emissions measurements were below (in compliance) the limits.

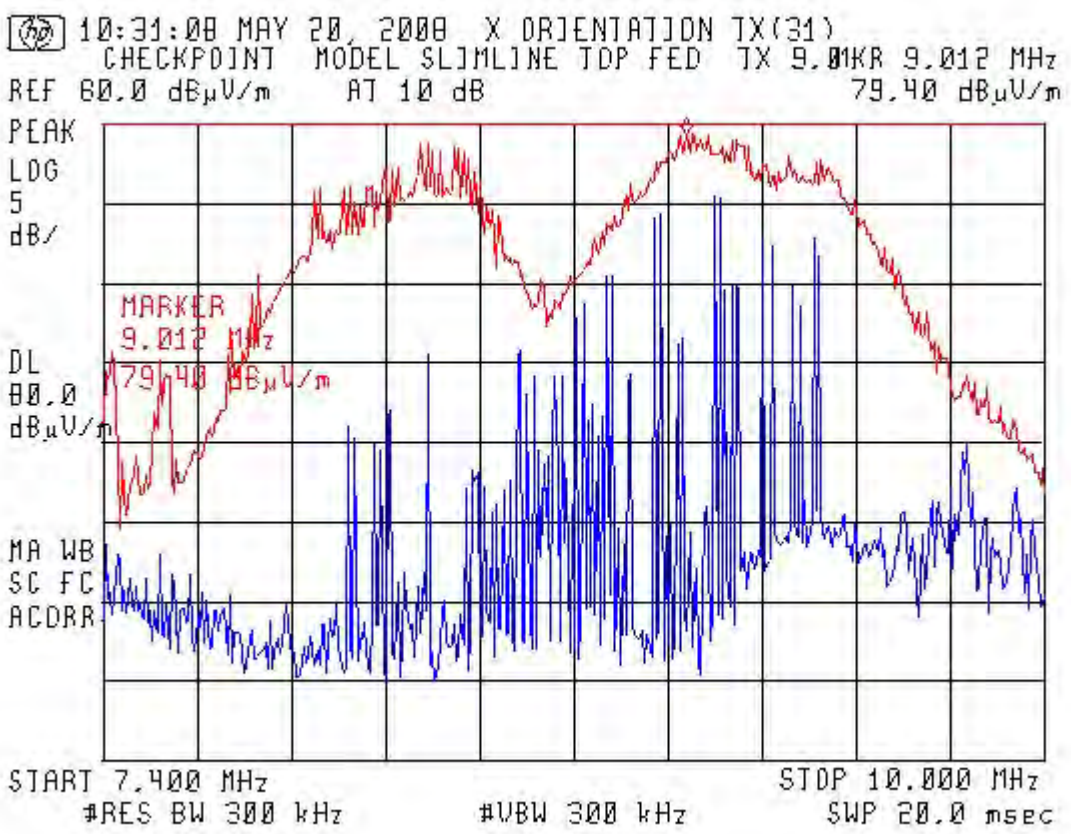
4.4.5 Final Measurement Data

NOTES:

Emission Bandwidth
9.0Tx Band Configuration 2
Z Orientation /Horizontal Mount

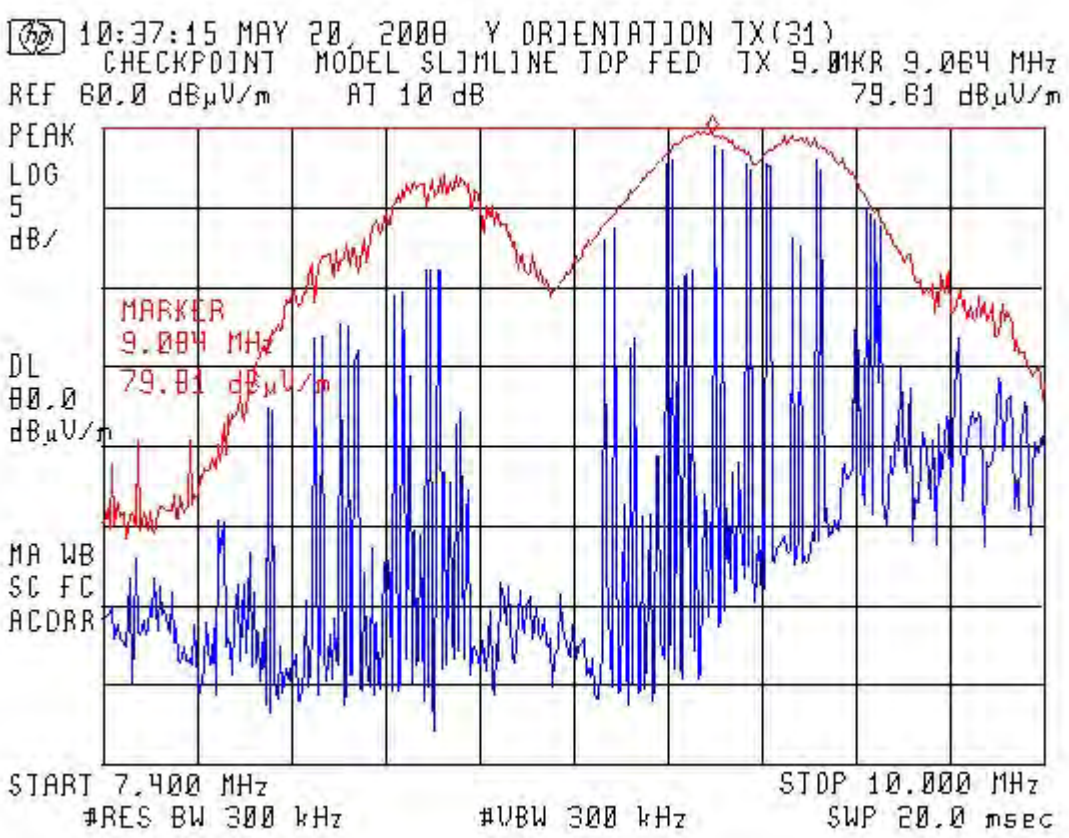
NOTES:

Emission Bandwidth
9.0Tx Band Configuration 2
X-Orientation/Horizontal Mount



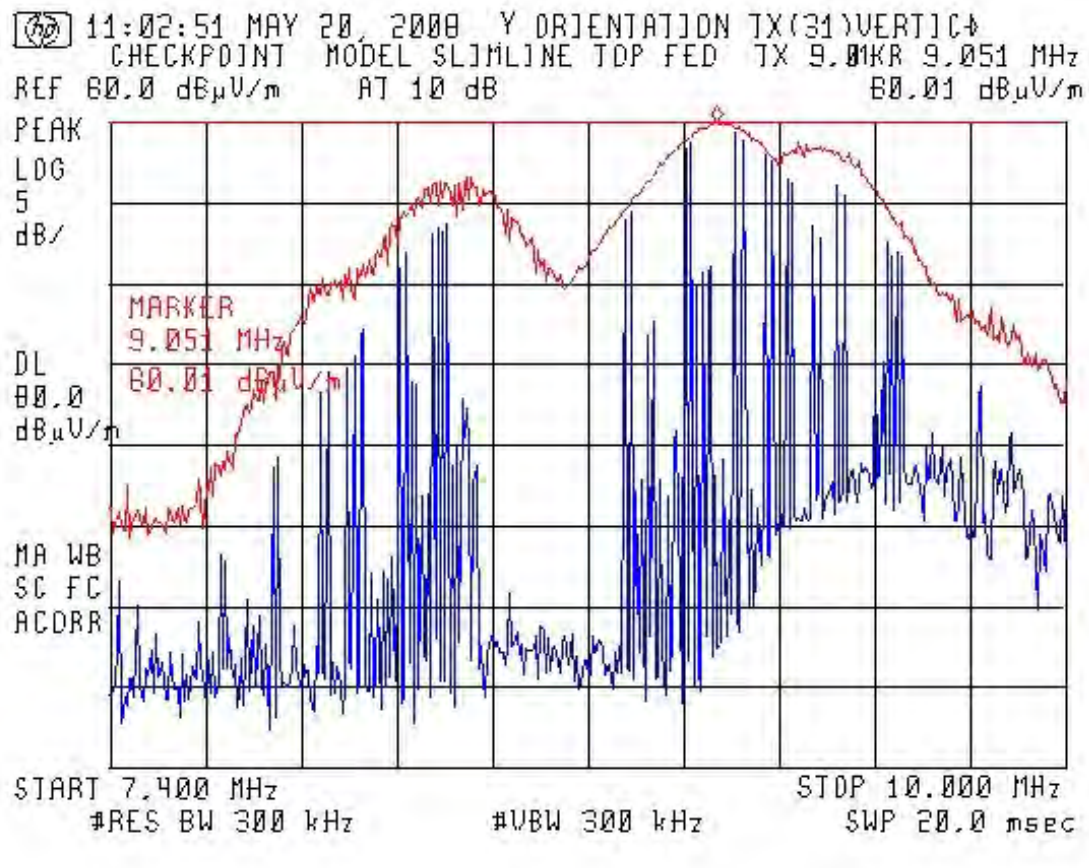
NOTES:

Emission Bandwidth
9.0Tx Band Configuration 2
Y-Orientation/Horizontal Mount



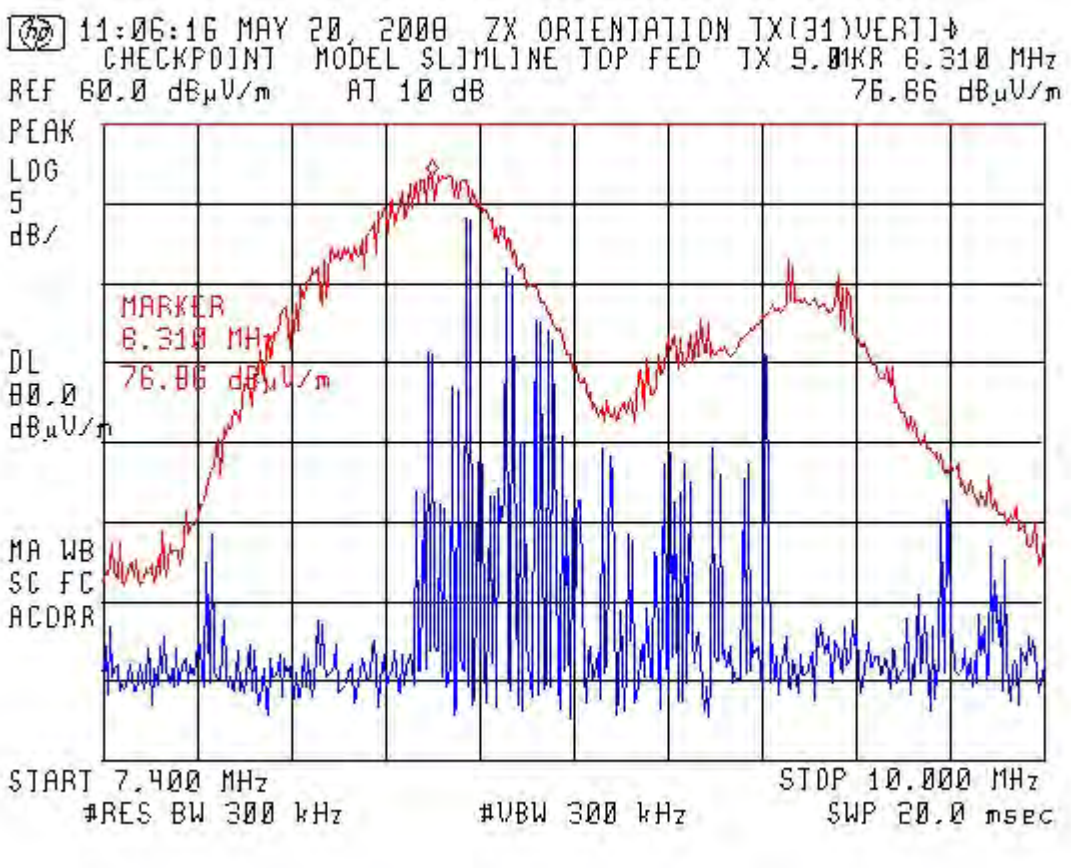
NOTES:

Emission Bandwidth
9.0Tx Band Configuration 2
Y-Orientation/Vertical Mount



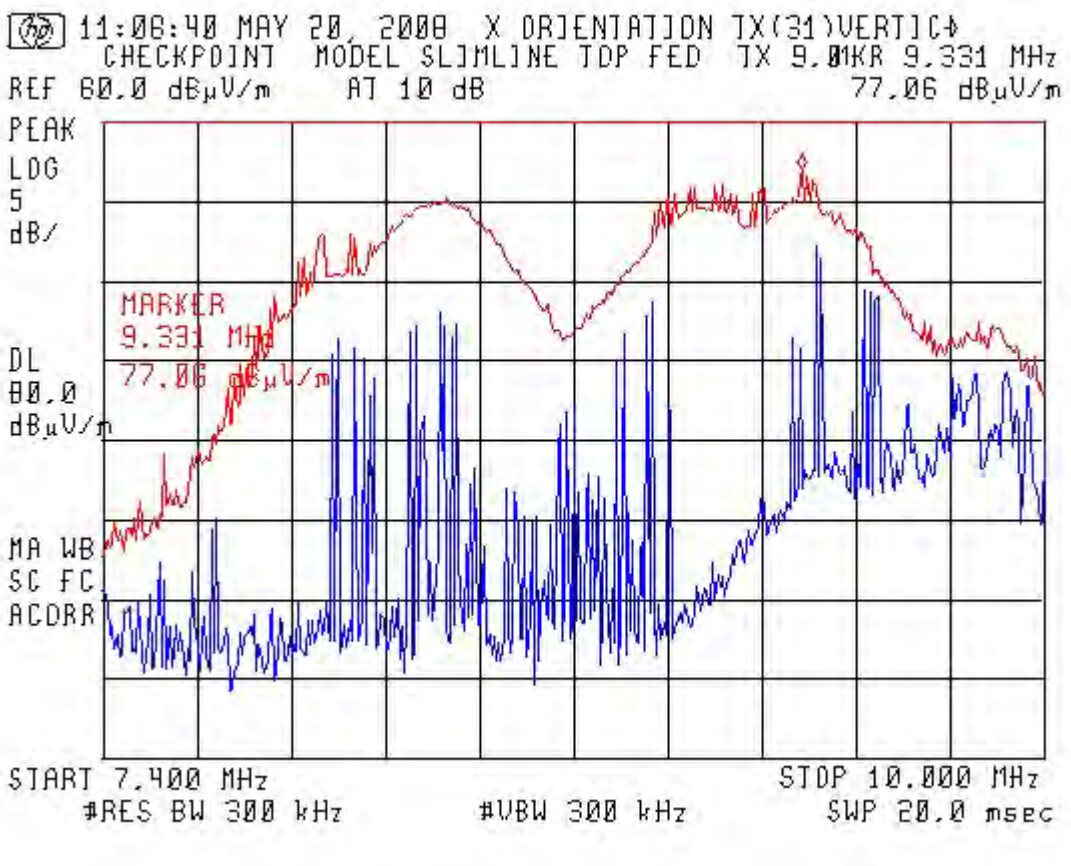
NOTES:

Emission Bandwidth
9.0Tx Band Configuration 2
Z-Orientation/Vertical Mount



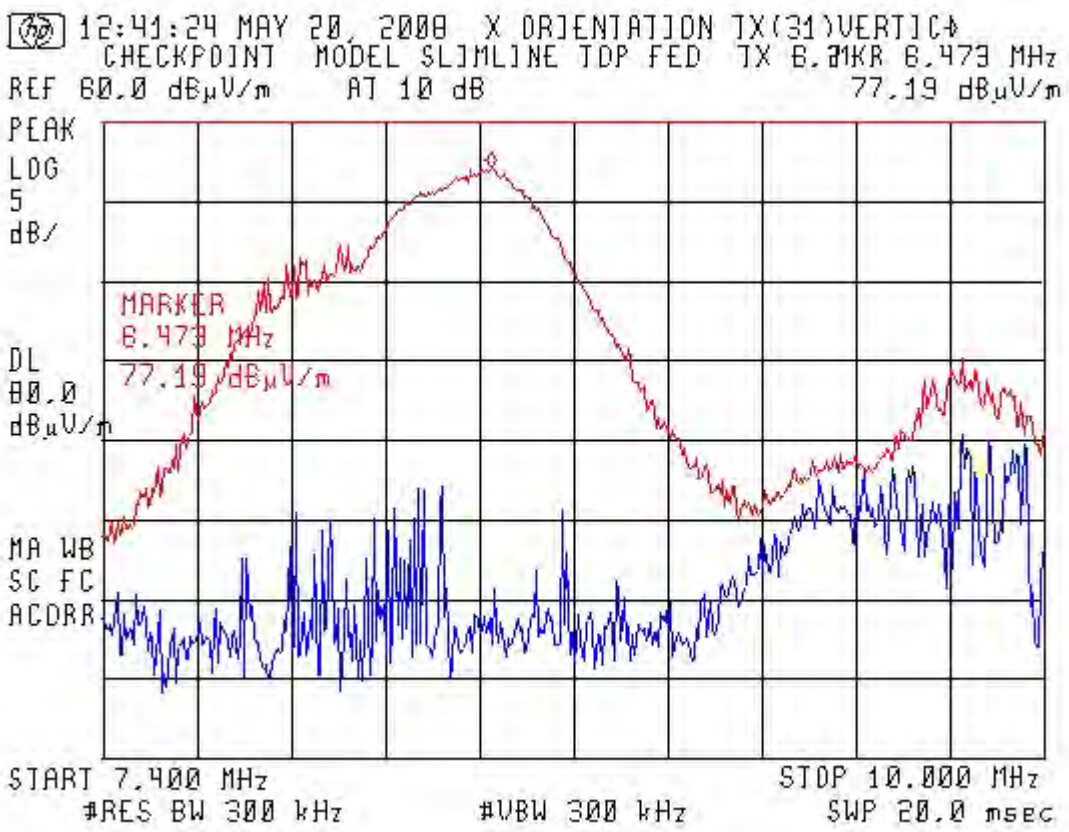
NOTES:

Emission Bandwidth
9.07Tx Band Configuration 2
X-Orientation/Vertical Mount



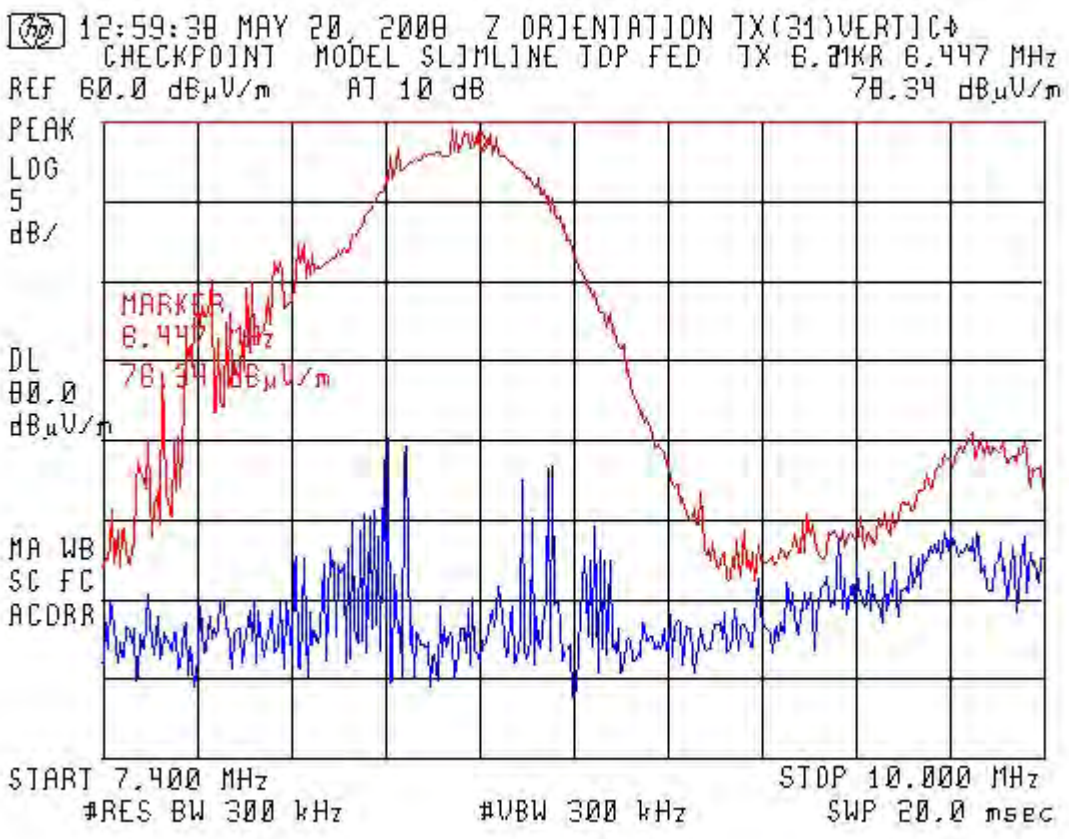
NOTES:

Emission Bandwidth
8.2Tx Band Configuration 2
X-Orientation/Vertical Mount



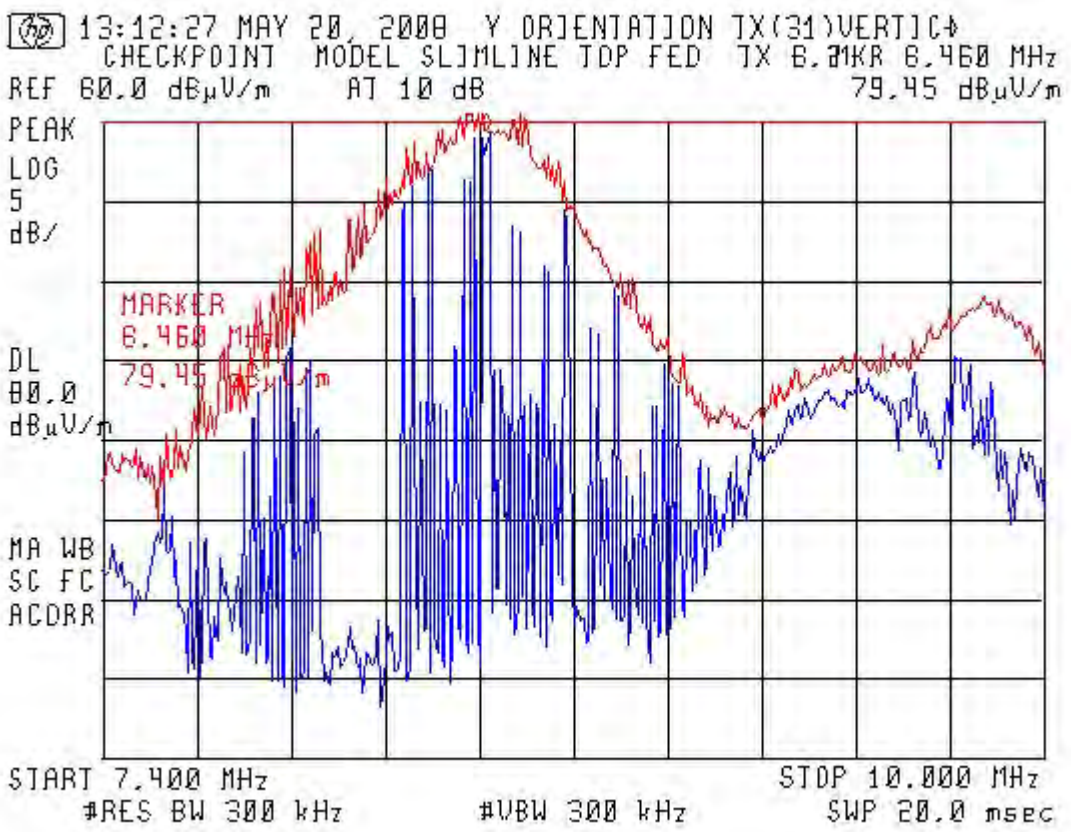
NOTES:

Emission Bandwidth
8.2Tx Band Configuration 2
Z-Orientation/Vertical Mount



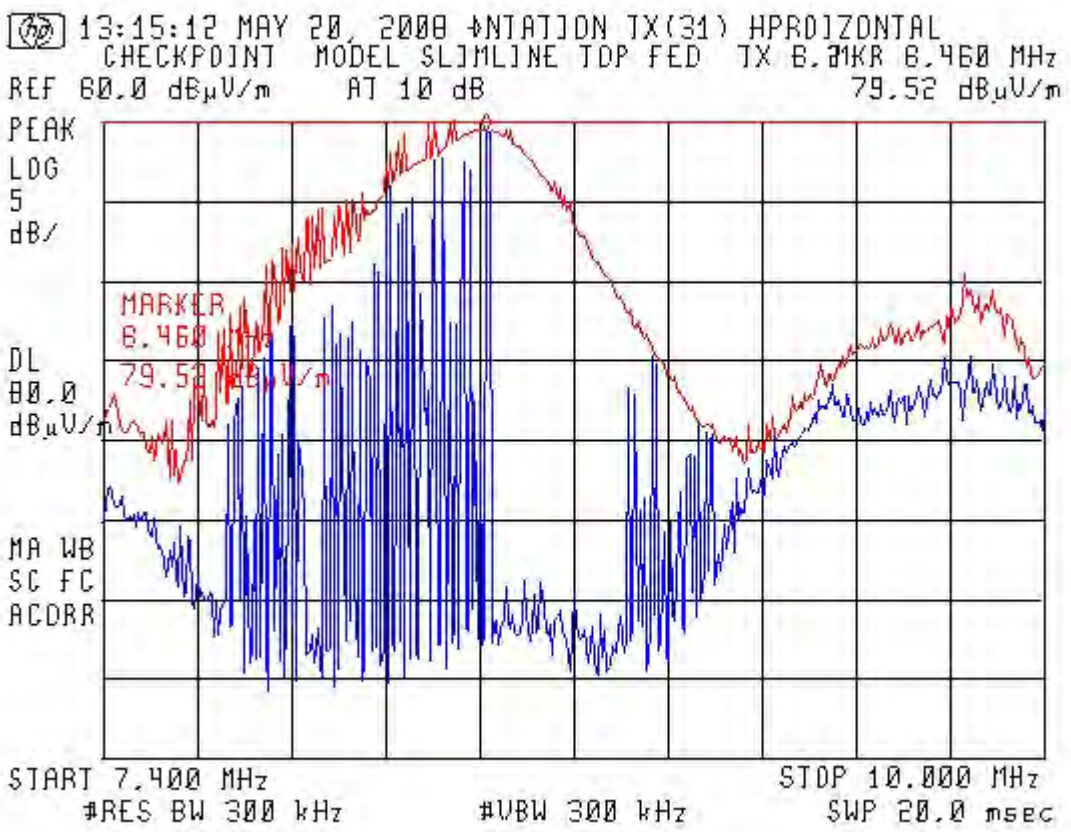
NOTES:

Emission Bandwidth
8.2Tx Band Configuration 2
Y-Orientation/Vertical Mount



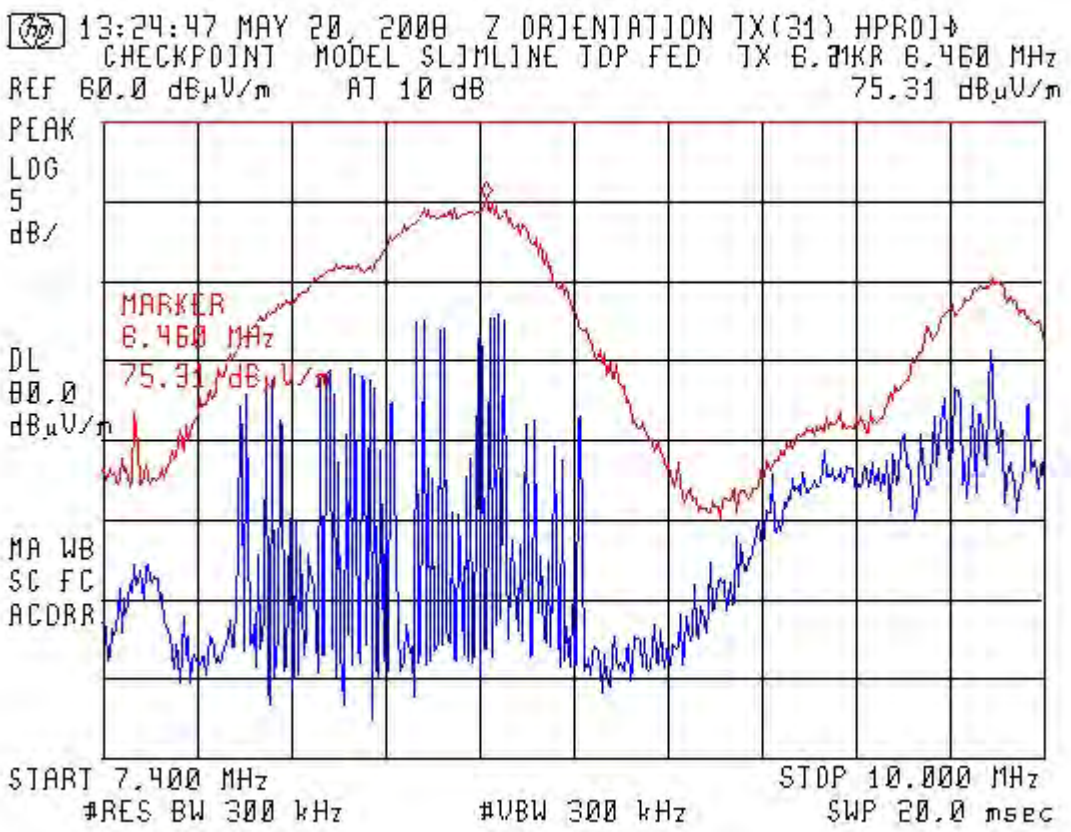
NOTES:

Emission Bandwidth
8.2Tx Band Configuration 2
Y-Orientation/Horizontal Mount



NOTES:

Emission Bandwidth
8.2Tx Band Configuration 2
Z-Orientation/Horizontal Mount



Band Edge Measurement									
Standard:	47 CFR FCC Part 15.215 /RSS-210				***PRESCAN or FINAL:***		Final	***Date:***	6/5/2008
Device Tested:	Checkpoint - Slimline					***Distance:***	10m	***File:***	08060504 Bandedge.xls
	Measured Level								
Meas #	TX Band	-6dB Low End (MHz)	-6dB High End (MHz)	Measured Bandwith (MHz)	-20dB Low End (MHz)	-20dB High End (MHz)	Measured Bandwith (MHz)	Orientation (X,Y,Z)	Comment
RBW = 300kHz VBW=300kHz (FCC Settings)									
Slimline Bottom Fed/Horizontal Mount									
1	8.2&9.0	8.17	9.65	1.48	7.69	9.89	2.20	X Orientation	
2	8.2&9.0	8.24	9.64	1.40	7.64	9.87	2.23	X Orientation	
3	8.2&9.0	8.22	9.56	1.34	7.65	9.88	2.23	Y Orientation	
Slimline Bottom Fed/Vertical Mount									
4	8.2&9.0	8.26	9.49	1.23	7.54	9.90	2.36	Y Orientation	
5	8.2&9.0	8.45	9.60	1.15	7.64	9.85	2.21	Z Orientation	
6	8.2&9.0	8.19	9.61	1.42	7.69	9.88	2.19	Z Orientation	
Slimline Bottom Fed/Horizontal Mount									
7	8.20	8.11	8.67	0.56	7.54	8.98	1.44	X Orientation	
8	8.20	8.11	8.65	0.54	7.67	8.80	1.13	X Orientation	
9	8.20	8.14	8.65	0.51	7.69	8.76	1.07	Y Orientation	
Slimline Bottom Fed/Vertical Mount									
10	8.20	8.05	8.67	0.62	7.61	8.90	1.29	Y Orientation	
11	8.20	8.17	8.77	0.60	7.64	8.87	1.23	Z Orientation	
12	8.20	8.11	8.65	0.55	7.67	8.84	1.17	Z Orientation	
Slimline Top Fed/Horizontal Mount									
13	8.2&9.0	8.22	9.67	1.45	7.69	9.90	2.21	X Orientation	
14	8.2&9.0	8.21	9.63	1.42	7.64	9.81	2.17	X Orientation	
15	8.2&9.0	8.26	9.58	1.32	7.65	9.91	2.26	Y Orientation	
Slimline Top Fed/Vertical Mount									
16	8.2&9.0	8.22	9.57	1.35	7.68	9.96	2.28	Y Orientation	
17	8.2&9.0	8.36	9.64	1.28	7.74	9.89	2.15	Z Orientation	
18	8.2&9.0	8.32	9.48	1.16	7.65	9.95	2.30	Z Orientation	
Slimline Top Fed/Horizontal Mount									
19	8.20	8.24	8.71	0.47	7.61	8.99	1.38	X Orientation	
20	8.20	8.16	8.61	0.45	7.65	8.95	1.30	X Orientation	
21	8.20	8.23	8.65	0.42	7.71	8.96	1.25	Y Orientation	
Slimline Top Fed/Vertical Mount									
22	8.20	8.15	8.65	0.50	7.65	8.78	1.13	Y Orientation	
23	8.20	8.05	8.62	0.57	7.62	8.89	1.27	Z Orientation	
24	8.20	8.04	8.71	0.67	7.68	8.85	1.17	Z Orientation	
Tested by:	Dieter Baldamus								
TUV Rheinland of North America, Inc. 12 Commerce Road Newtown, CT 06470 Tel:(203) 426-0888 Fax: (203) 426-4009									