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# Electromagnetic Compatibility Test Report

Prepared in accordance with

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

On

# **Electronic Article Surveillance Detection System**

# **Evolve P10, Evolve G10**

Prepared for:

Checkpoint Systems Inc.

101 Wolf Drive

Thorofare, NJ 08086

Prepared by:

## **TUV Rheinland of North America, Inc.**

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Aı	<b>ıftraggeber</b> : Client:	Checkpoint Systems Ind 101 Wolf Drive Thorofare, NJ 08086	. Gregory Sleet (856) 384-2339 / (856) 384-2366 GREG.SLEET@checkpt.com		
<b>Bezeichnung:</b> Identification:	Electronic Detection	c Article Surveillance	Serien-Nr.: Serial No.	741085900U03517018 741085900U03517019 741085900U03517019 7411639C2D13617020 7411639C2D10158033	
Gegenstand der Prüfung: Test item:	Evolve P	10, Evolve G10	<b>Prüfdatum:</b> Date tested:	March 24th - 26th, 2008	
<b>Prüfort:</b> Testing location:	12 Comm	einland of North America nerce Road n, CT 06470-1607			
<b>Prüfgrundlage:</b> <i>Test</i> <i>specification:</i>	Emission	s: FCC Part 15 Subpart C FCC Part 15 Subpart 1 FCC Part 15 Subpart 1	5.223/RSS-210 An		
<b>Prüfergebnis:</b> Test Result	oben gen			rurde geprüft und entspr ct was found to be Compl	
C	oben gen to the ab	annter Prüfgrundlage. ove test standard(s)	The above produ		
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Test Result geprüft / tested by: <u>8 April 2008</u> <u>Datum</u> Date Sonstiges : Other Aspects: Abkürzungen: OK, Pass, Co	oben gen to the ab Dieter Balda	annter Prüfgrundlage. ove test standard(s) mus 	The above produ kontrolliert / rev <u>8 April 2008</u> <u>Datum</u> <u>Date</u> None Abbreviations: OK, Pas Fail, No	tet was found to be Completion of the Completion	
Test Result geprüft / tested by: <u>8 April 2008</u> <u>Datum</u> <u>Date</u> <u>Sonstiges :</u> Other Aspects: Abkürzungen: OK, Pass, Cor Fail, Not Cor Prüfgrudlag	oben gen to the ab Dieter Balda	annter Prüfgrundlage. ove test standard(s) mus <u>Unterschrift</u> Signature	The above produ kontrolliert / rev <u>8 April 2008</u> Datum Date None Abbreviations: OK, Pas Fail, Nc N/A = 1	Name       Unterschrift         Name       Signature         ss, Compliant, Complies = passed       passed         ot Compliant, Does Not Comply = failed	

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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 March 24th - 26th, 2008 on the Electronic Article Surveillance Detection System, Model No. Evolve P10, Evolve G10, 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.

#### 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.



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	1.3 Summary of Test Results										
Applicant Checkpoin 101 Wolf		point Systems Inc.			(856) 384-23	39	Contact	Gregory Slee	t		
			NJ 08086	Fax	(856) 384-23	66	e-mail	GREG.SLEE	T@checkpt.com		
Description			ectronic Article Surveillance etection System	Model	Number	Evol	ve P10, Eve	olve G10			
Serial Number		74 74	1085900U03517018, 1085900U03517019, 11639C2D13617020, 11639C2D10158033	Test V	oltage/Freq.	120V/60Hz					
Test Date Com	pleted:	Μ	arch 24th - 26th, 2008	Test Engineer Dieter Baldar			er Baldam	nus			
Standar	ds		Description	5	Severity Level	or Lii	nit	Criteria	Test Result		
FCC Part 15 Sub October 2007 / H June 2007	1		Intentional Radiators / Low Power Licenced Exempt Radiocommunication Devices	See cal	led out sections	s below	N	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				
(Conducted limits		Per table in section 207, 150kHz - 30MHz			Limit	Complies					
FCC Part 15 Sub 15.205 and 15.20	1		Radiated emission limits; general requirements		3 and per table i Fundamental - 1			Limit	Complies		



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## 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  $\pm$  3.2 dB The estimated combined standard uncertainty for conducted emissions measurements is  $\pm$  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.



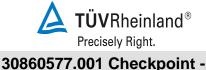
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Equipment	Manufacturer Model # Serial/Inst #		Last Cal dd/mm/yy	Next Cal dd/mm/yy	Test	
Power Supply	California Instruments	5001iX	HK53766	08/04/07	08/04/08	All
Antenna, Log. Periodic	Emco	3146	9309-3689	03/13/05	03/13/07	RE, RI
Antenna, Bicon	Emco	3108	2234	06/26/06	06/26/08	RE, RI
Receiver	Hewlett Packard	HP 8546A, 85460A	3330A00125, 3325A00134	03/16/06	03/16/07	CE, DP, CE
Antenna, Bilog	Schaffner	CBL6112D	22238	04/04/06	04/04/08	RE
LISN	Schwarzbeck		8126278	08/26/06	08/26/08	CE
Magnetic Field Loop Antenna	Schwarzbeck	FMZB 1516	151600/94	09/11/27	09/11/09	RE<30MHz

#### 2.4 Measurement Equipment Used

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



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## **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

#### 3.2.1 General

This is an Engineering Judgment on Electromagnetic Compatibility (EMC) compliance and radio equipment matters, pertaining to modifications made or additional models associated with the product tested in this report.

#### 3.2.2 Additional Models

The Evolve Family consists of different versions Evolve G10, Evolve G20, Evolve P10, Evolve P20 and Liberty PX. All versions are using the same type of power supply unit and are technically identical except they have different types of antenna frames G10, G20, P10, P20, Liberty PX.

#### 3.2.3 Engineering Judgment

The worst case conditions for the complete measurements were base on the size of the antennas. The G10 and the P10 are the largest inductive loop sizes, hence will produce highest EM field strength. Therefore only these two were tested as representative of the other models.

Reviewed by NV	LAP Signatory:	
Bruce Fagley		
0.4. 12000		
<u>8 April 2008</u>		
Date	Signature	



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#### 3.3 General Product Information

Antenna: Transmitter-Receiver Type	Inductive Loop Antennas		
Antenna	EVOLVE P10	EVOLVE G10	
Width	460 mm	500 mm	
Height	1430 mm	1390 mm	
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:**

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					
EVOLVE G10	741085900U03517018		29	8.2					
(ver 2.83 firmware installed)	741085900U03517019		27	9.0(dual band)					
EVOLVE P10	7411639C2D13617020	GS 599ES(R)	31	8.2					
(ver 2.83 firmware installed)	7411639C2D10158033		31	9.0(dual band)					

#### **Configuration 2:**

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						
EVOLVE G10			29	8.2						
(ver 2.83 firmware installed)	741085900U03517018 741085900U03517019	GS 599ES(R)	28	9.0(dual band)						
EVOLVE P10	7411639C2D13617020	CS = 500ES(D)	31	8.2						
(ver 2.83 firmware installed)	7411639C2D13617020 7411639C2D10158033	03 399E3(K)	31	9.0(dual band)						

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#### **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:**

- a) A CheckPro Manager Visiplus, Checkpoint P/N 7414480, mounted to the Evolve P10 crossover, and interfaced to Emerald electronics via signal cable integrated with Evolve P10 pedestal.
- b) Single Color LED pcb with a two layer pcb for G10 with ferrite beads on the DC power and LED INHIBTnhibit cables.
- c) Fair Rite P/N 2861-000-202, or Checkpoint P/N 919618 inductive transformer cores for components T2 and T5 on Emerald \*61 printed circuit board (pcb)
- d) EAS Voice Alarm in Horizontal orientation.
- e) Firmware version 2.81 Emrald \*61 electronics.

#### **Configuration 2:**

- a) An alternate configuration in which the Visiplus is remote from the Evolve P10 pedestal.
- b) Alternate dual color LED pcb for G10 with a four layer board and no ferrites.
- c) Alternate Micrometals P/N BLN12461-263/BU, or Checkpoint P/N 7235629 inductive transformer cores for components T2 and T5 on Emerald \*61 printed circuit board (pcb).
- d) EAS Voice Alarm in Vertical orientation.
- e) Firmware version 2.83 installed on Emrald \*61 electronics.



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#### 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**

		_	Cable Type		
EUT Port	Connected To	Location	Length	Shielded	
J72	Checkpro Manager Visiplus (Configuration 1)	Controller	2.4m	No	
J72	Checkpro Manager Visiplus (Configuration 2)	Controller	30m	No	
J13	Metal Point	Controller	2.4m	No	
J6/J7/J54	Deactivation Interlock 4/3/2 ext. Sounder	Controller	2.4m	No	
J20/J22	Pedestal Synchronization	Controller	2.4m	No	
J48	Badge	Controller	0.5m	No	
J18 or J31	Pedestal Main Power	Controller	0.3m	No	
J41	External Counter External Alarm Lights	Controller	4.2m	No	
J9	Alarm Group External Alarm Group	Controller	4.2m	No	
J44/J45	External Relay 0/1	Controller	4.2m	No	
J10/J14	Inter pedestal Network Com.	Controller	2.4m	No	
J7	Ethernet/LAN	Controller	5m	No	
J51	Internal Modem	Controller	0.5m	No	
DC Power	DC Power	Controller	2.4m	No	



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#### 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 submaster pedestals.
- Firmware updated to version 2.83 on Emerald \*61 electronics from version 2.81 in the most recent update of January 2008. 3) Digital accessories mounted to Evolve pedestals, they are:
  - One internal modem, Checkpoint P/N 7284468, assembly mounted adjacent to Emerald \*61 electronics on Evolve master pedestal, interfaced to Emerald electronics via RJ-45 cable and 24 Vdc power cable.
  - One CheckPro Manager Visiplus, Checkpoint P/N 7414480, mounted to the Evolve P10 crossover, and interfaced to Emerald electronics via signal cable integrated with Evolve P10 pedestal. An alternate configuration in which the Visiplus is remoted from the Evolve P10 pedestal is also qualified.
  - One EAS Voice alarm, Checkpoint P/N 7899324, in both vertical and horizontal mount positions is interfaced with Evolve P10 and G10 master pedestals' Emerald \*61 electronics and remoted via Belden 8723 cable.
- For Evolve G10 model only, the 4-layer, dual-color LED printed circuit board (pcb) is qualified as an option to the original 2-layer, single-color LED pcb. Mounting bracket for the dual color LED pcb is such that the pcb is grounded to the bracket whereas the single color LED pcb has no grounding to its mounting bracket. Also, the ferrite beads installed on the single color LED pcb signal and power leads is not installed on the dual color LED pcb.
- Micrometals P/N BLN12461-263/BU, or Checkpoint P/N 7235629 inductive transformer cores is qualified as alternate to Fair Rite P/N 2861-000-202, or Checkpoint P/N 919618 for components T2 and T5 on Emerald \*61 printed circuit board (pcb).



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## 3.10 Modification Pictures

Ferrite Modification and Location										
Figure	Component / Sub- Assembly	Part No. & Description	Config.	Config. 2						
1	Ferrite	Checkpoint P/N 284760 (Fair Rite P/N 0443806406) – Add one ferrite in each people counter cable with three turns through the ferrite.	Yes	No						
2	Ferrite	(Optional) Checkpoint P/N 7235629 (Micrometals P/N BLN3961-263/BU) – Add as transformer assembly T2 and T5 on Emerald Transmitter RF circuit path.	No	Yes						
3, 4	Ferrite	Checkpoint P/N 284760(Fair Rite P/N 0443806406) – Add one ferrite in each end of Cat 5E SYNC/COMM cable (or Belden 82723 Cable for Sync only) run between Master and Submaster Evolve antennas	Yes	Yes						
5,6	Ferrite	(Optional) Würth Ferrite Pearl (74270020) Add one ferrite with 2 turns through the ferrite in LED INHIBIT Cable. Applicable to Evolve G10 antenna.	Yes	No						
5,6	Ferrite	(Optional) Checkpoint P/N 7118986 (Fair Rite P/N 2865-000-202) – Add one ferrite with 2 turns through the ferrite LED PSU Cable. Applicable to Evolve G10 antenna.	Yes	No						



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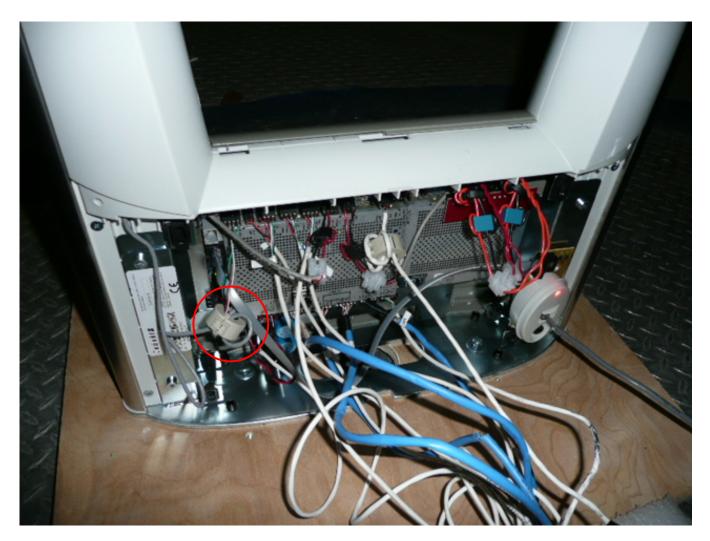


Figure 1 – Fair Rite P/N 0443806406 installed on people counter cable; Configuration 1



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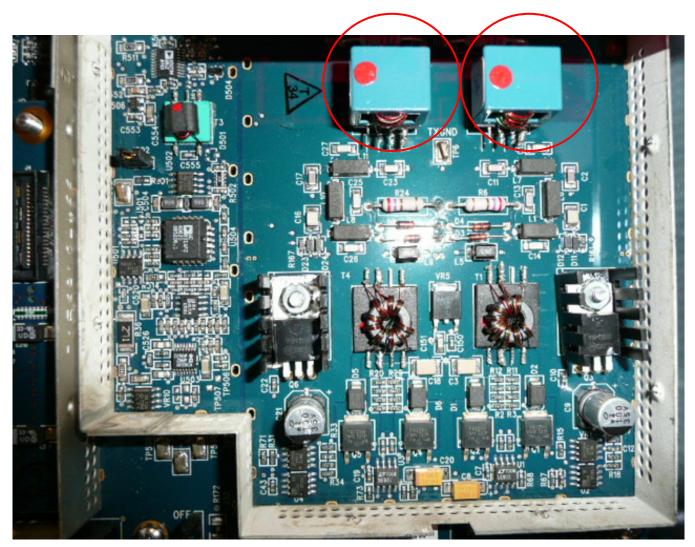


Figure 2 – Micormetals Cores added as transformer assembly T2 and T5 on Emerald Transmitter RF circuit path.

(Configuration 2)

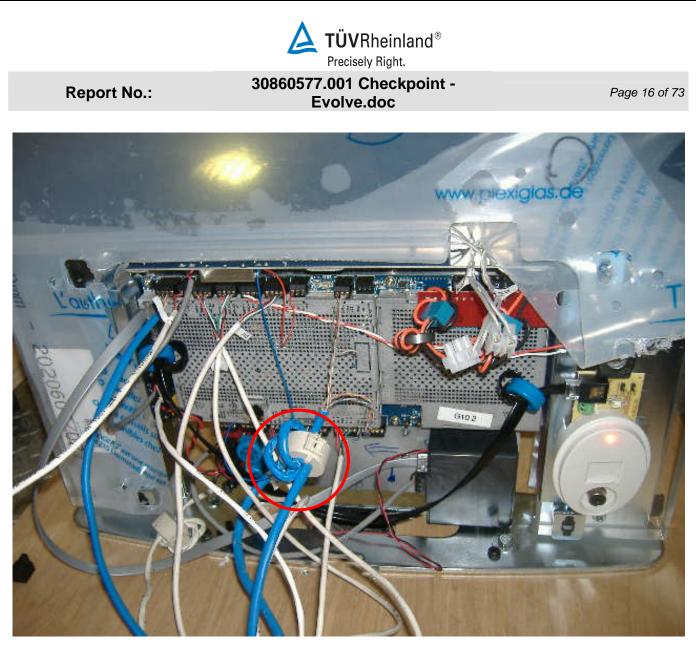


Figure 3 – Fair Rite 0443806406 (P/N 284760) installed on each end of Cat 5E SYNC/COMM. (Configuration 2)



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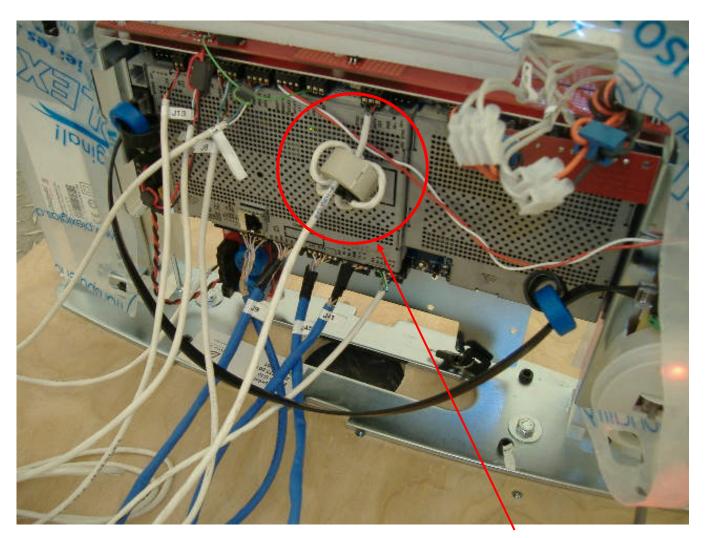


Figure 4 – Fair Rite 0443806406 (P/N 284760) installed on each end of SYNC cable (Belden 82723) (Configuration 1)

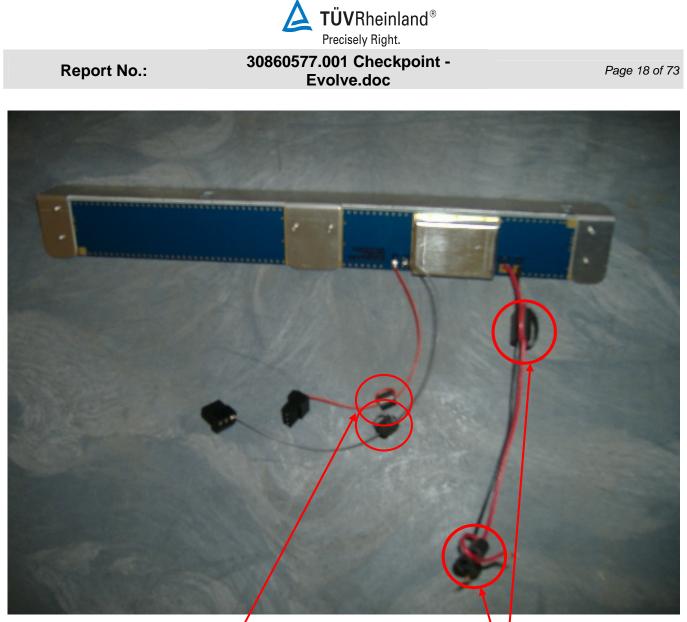


Figure 5 – Würth Ferrite Pearl (74270020) on LED INHIBIT and Ferrite with 2 turns through the ferrite LED PSU Cable. Applicable to Evolve G10 antenna. Configuration 1



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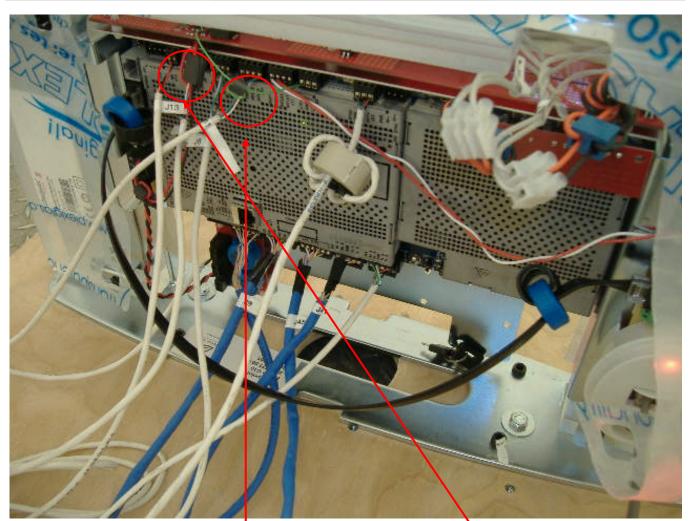


Figure 6 – Würth Ferrite Pearl (74270020) on LED INHIBIT and Ferrite with 2 turns through the ferrite LED PSU Cable. Applicable to Evolve G10 antenna. Configuration 1



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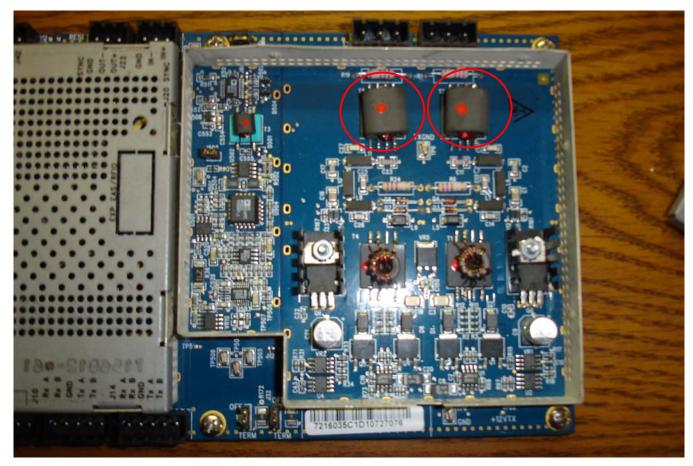


Figure 7 – Original transformer assembly T2 and T5 on Emerald Transmitter RF circuit path. (Configuration 1)

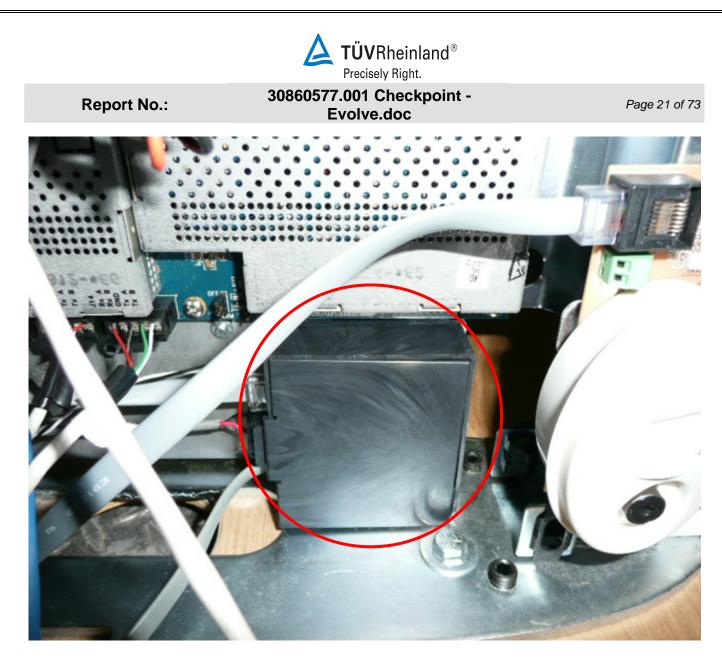


Figure 8 – Internal modem

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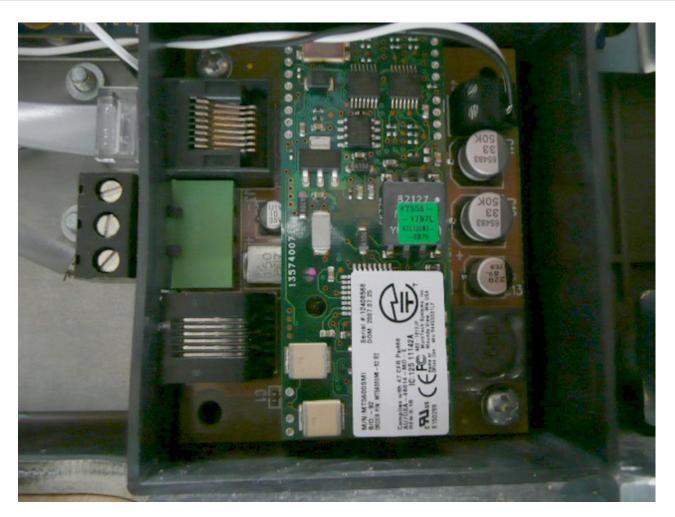


Figure 9 – Internal modem (internal Picture)



Figure 10 – CheckPro Manager Visiplus (configuration 1)

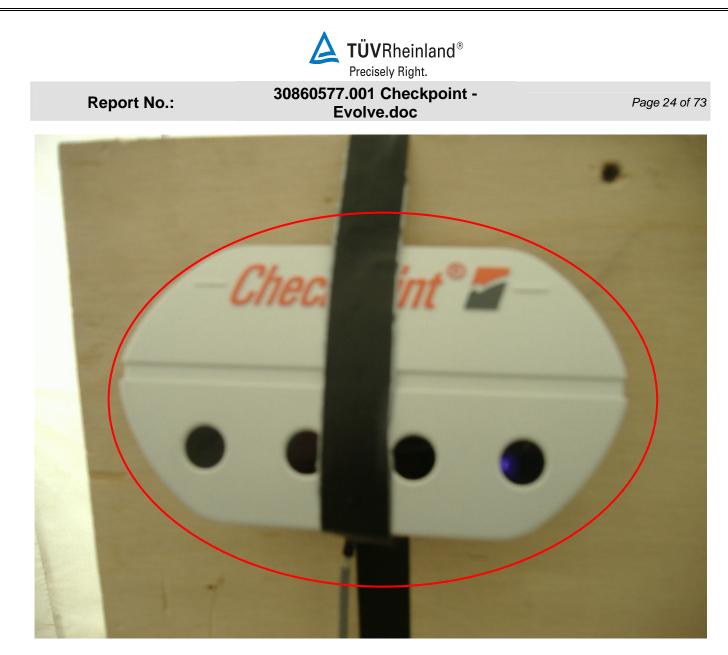


Figure 11 – Remote CheckPro Manager Visiplus (configuration 2)

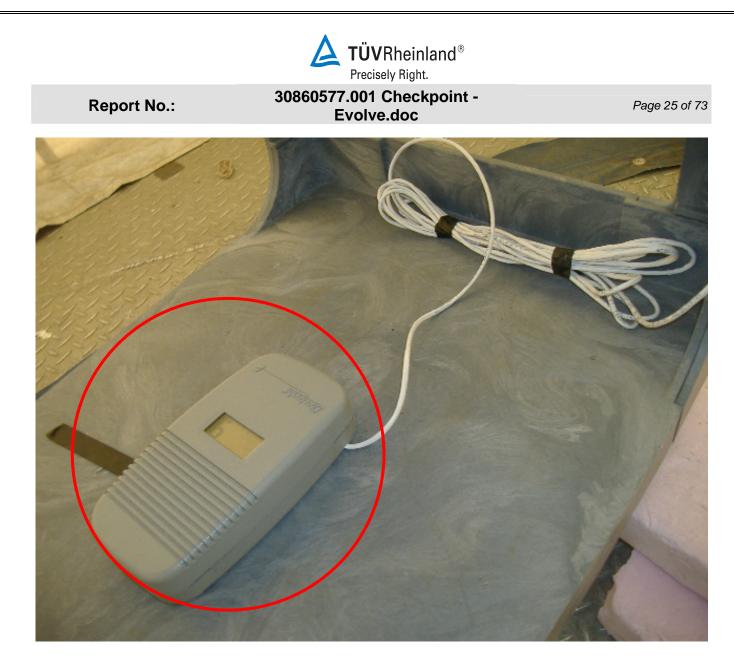


Figure 12 – EAS Voice alarm Configuration 1

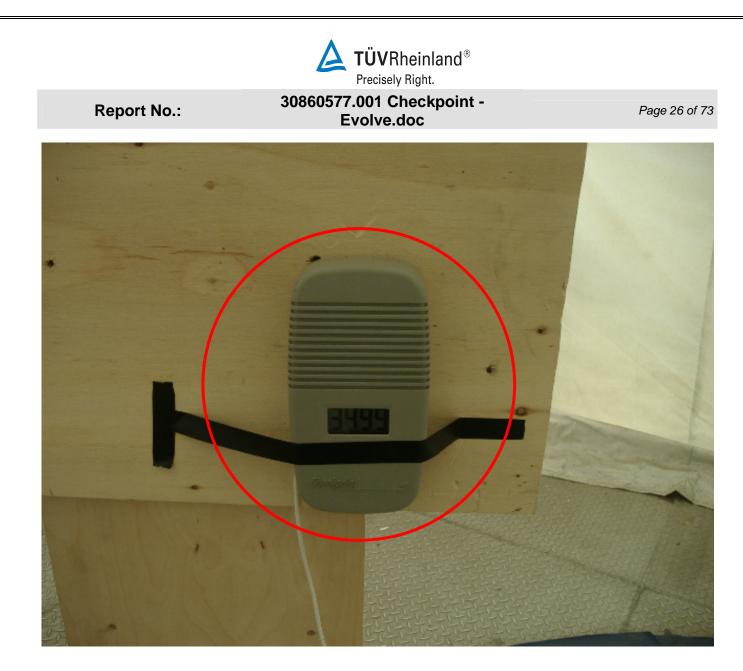


Figure 13 – EAS Voice alarm Configuration 2



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Figure 14 – Remote CheckPro Manager Visiplus and EAS Voice alarm. Configuration 2

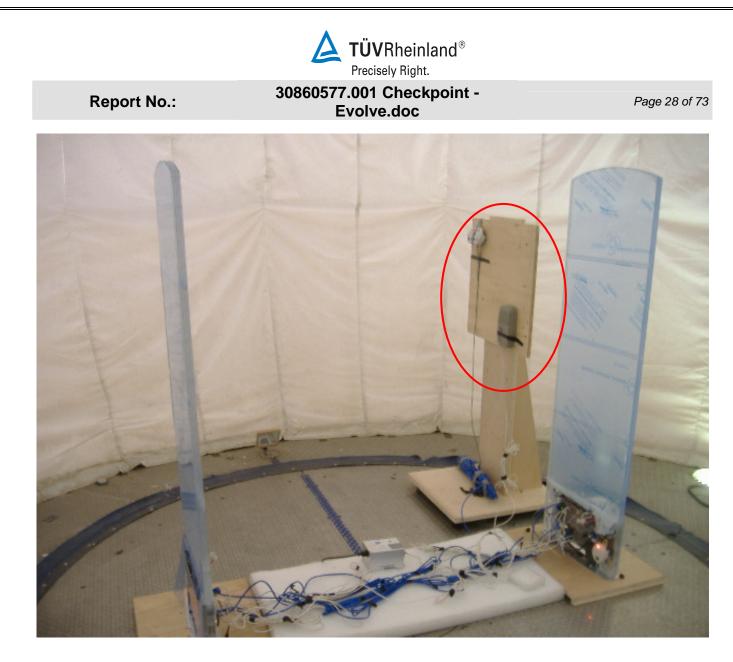


Figure 15 - Remote CheckPro Manager Visiplus and EAS Voice alarm. Configuration 2



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## 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.

Results	Complies (as tested	l per this	report)		Date	02/28-2	9/2008
Standard	FCC Part 15 Subpar	rt 15.223/	RSS-210 Ai	nnex A2.3			
Product Model	Evolve P10, Evolve G10 Serial#					5900U0351 5900U0351 89C2D1361 89C2D1015	7019, 7020,
Configuration	See test plan for det	ails					
Test Set-up	Tested on a 10m O.	A.T.S. pla	aced on turr	i-table, see te	st plans t	for details	
EUT Powered By	120V/60Hz	Temp	22°C	Humidity	45%	Pressure	1001mbar
<b>Frequency Range</b>	100µV @ 30m (see	Note)					
Perf. Criteria	Below Limit <b>Perf. Verification</b> Readings Under Limit						imit
Mod. to EUT	None		Test Perf	ormed By	Dieter	Baldamus	

#### 4.1.1 Over View of Test

Note: The limits were adjusted in  $dB\mu V$  for a 10m testing resulting in a peak limit of  $80dB\mu V/m$ . 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 - 10 MHz was investigated for this test using a magnetic field loop antenna.



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#### 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 upnote 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 Evolve G10:**

Radiated En Standard:		C Part 15.2			PRESCAN	or FINAL:	Final			Date:	2/29/2008
Device Tested:						Distance:	10m				08022901 Fundamental G10.xl
	Checkpoint					Distance.				1 //	
		M	easured Le	vel							
	Freq	Measured Peak	Correction	Final Peak	Peak			Orientation	Angle	Antenna Height	
Meas #	(MHz)	(dBµV/m)		(dBµV/m)	Limit	Peak 🗆	Result	(X,Y,Z)	(degrees)	(meters)	Comment
RBW = 300 kHz	VBW=300kl	Iz (FCC Se	ttings)								
9.0 Tx Band											
1	8.3170	56.22	18.50	74.72	80.00	-5.28	Complied	Y Orientation	345	1.00	
2	9.3580	60.65	18.50	79.15	80.00	-0.85	Complied	Y Orientation	345	1.00	
3	8.3170	60.83	18.50	79.33	80.00	-0.67	Complied	Z Orientation	358	1.00	
4	9.3570	61.43	18.50	79.93	80.00	-0.07	Complied	Z Orientation	358	1.00	
5	8.3360	55.47	18.50	73.97	80.00	-6.03	Complied	X Orientation	358	1.00	
6	9.2340	58.64	18.50	77.14	80.00	-2.86	Complied	X Orientation	354	1.00	
Tested by:	Dieter Balo	lamus									
TUV Rheinland o	of North Am	erica, Inc.	12 Comme	rce Road	Newtown	, CT 06470	Tel:(203) 426-0	888 Fax: (203) 4	26-4009		
	Example:										
	Freq:			etnna + Ca	ble Correcti	on Factor) =	Final Peak				
	8.317: 56	6.22 + 18.50	+ 74.72								
		Average lir	nit = 100µ\	//m @ 30m							
		Average Li	imit = 20*lo	g(100µV) =	40dBµV/m	@ 30m					
						adjusted = 4	$10\log(10/30) = 20$	dB			
		Average lir	mit = 60dB	vV/m@10m							
		<b>B</b>	L								
		Peak Limit	= Average	Limit $+ 200$	18 = 00gBh.	v/m + 20dB :	= 80dBµV/m	1			

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TÜV Rheinland Inc., North American Headquarters, 12 Commerce Road, Newtown, CT 06470 - Tel (203)426-0888 - Fax (203)426-4009



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#### **Configuration 1 Evolve P10:**

Radiated En	issions I	Neasureme	nts								
Standard:	47 CFR FCC Part 15.223						PRES	CAN or FINAL:	Final	Date:	2/28/2008
Device Tested:	Checkpoint	- Evolve P10						Distance:	10m	File:	08022802 Fundamental.xls
		M	easured Lev	vel							
Meas #	Freq (MHz)	Measured Peak (dBuV/m)	Antenna + Cable Correction Factor	Final Peak (dBuV/m)	Peak Limit	Peak 🗆	Result	Orientation (X,Y,Z)	Angle (degrees)	Antenna Height (meters)	Comment
RBW = 300 kHz				(ubµ v/m)	Linni		Result	(/,1,2)	Aligie (degrees)	(IIIeters)	Comment
9.0 Tx Band	VDVV-300KI		iys)								
1	8.3300	44.97	18.50	63.47	80.00	-16.53	Complied	X Orientation	353	1.00	
2	9.8050	56.60	18.50	75.10	80.00	-4.90	Complied	X Orientation	356	1.00	
3	8.3040	51.01	18.50	69.51	80.00	-10.49	Complied	Y Orientation	298	1.00	
4	9.8050	52.69	18.50	71.19	80.00	-8.81	Complied	Y Orientation	295	1.00	
5	8.0700	48.57	18.50	67.07	80.00	-12.93	Complied	Z Orientation	358	1.00	
6	9.3370	51.99	18.50	70.49	80.00	-9.51	Complied	Z Orientation	354	1.00	
8.2TX Band											
7	8.4790	57.44	18.50	75.94	80.00	-4.06	Complied	Y Orientation	347	1.00	
8	7.9460	52.43	18.50	70.93	80.00	-9.07	Complied	X Orientation	345	1.00	
9	8.4550	57.05	18.50	75.55	80.00	-4.45	Complied	Z Orientation	345	1.00	
Tested by:	Dieter Bald										
TUV Rheinland o	erica, Inc. 12	Commerce	Road N	Vewtown, C	T 06470	Tel:(203) 42	6-0888 Fax: (2	03) 426-4009			
		Example:									
				d Level + (Anetnna + Cable Correction Factor) =				Final Peak			
				$\frac{1}{m} + 18.5 dB = 63.47 dB \mu V/m$				i mar i ban			
		, ,				F					
				mit = 100µV							
			Average Limit = 20*log(100µV) = 40dBµV/m @ 30m								
			For 10m measurement the aver			ge limit was	adjusted = 4	Olog(10/30) = 20	dB		
		Average limit = 60dB			V/m@10m						
			Peak Limit	= Average	Limit + 20d	B = 60dBu	V/m + 20dB =	= 80dBuV/m			
				_ / siuge		2 - 000Dp		0000000/111			



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## **Configuration 2 Evolve G10:**

Fundamenta	Radiated	Emission	s Measu	rements						
Standard:					PRESCAI	or FINAL:	Final			3/25/2008
Device Tested:	Checkpoint - Evolve G10				Distance:	10m			08032503 Fundamental G10 Report (FCC)	
Mode:		Band and 8.2 Tx Band								
Modification:	Tx 28 Passin	Tx 28 Passing level,								
	LED Board with NO ferrites									
	Ferrite P/N 2	84760 on ea	ach end of S	Sync Cable	with 4 turns	6				
	Measured Level									
	Antenna +					1 _				
		Measured Peak	Oubic	Final Peak	Peak			Orientation	Angle	
Meas #	Freq (MHz)			(dBµV/m)	Limit	Peak	Result	(X,Y,Z)	(degrees)	Comment
$RBW = 300 kHz^{1}$				(ubµv/m)	LIIIII	Feak	Result	(^, 1, 2)	(degrees)	Comment
9.0 Tx Band										
1	8.0310	58.06	18.50	76.56	80.00	-3.44	Complied	X Orientation	345	<u> </u>
2	9.2980	60.18	18.50	78.68	80.00	-1.32	Complied	X Orientation	345	
3	8.3230	60.42	18.50	78.92	80.00	-1.08	Complied	Y Orientation	358	
								Y Orientation		
4	9.3570	59.76	18.50	78.26	80.00	-1.74	Complied		358	
5	8.3300	61.34	18.50	79.84	80.00	-0.16	Complied	Z Orientation	358	
6	9.0797	58.12	18.50	76.62	80.00	-3.38	Complied	Z Orientation	354	
RBW = 300kHz V	VBW=300kHz	(FCC Setti	ngs)							
8.2.Tx Band										
7	7.9460	60.84	18.50	79.34	80.00	-0.66	Complied	X Orientation	345	
8	7.9200	60.87	18.50	79.37	80.00	-0.63	Complied	Y Orientaiton	345	
9	8.3230	61.04	18.50	79.54	80.00	-0.46	Complied	Z Orientation	345	
Tested by:	Dieter Baldar	nus								
TUV Rheinland o	of North Ameri	ca, Inc. 12	2 Commerc	e Road	Newtown, (	CT 06470	Tel:(203) 426-0888	Fax: (203) 426-4	009	
-	Example:									
	Freq:			etnna + Ca	ble Correct	ion Factor) =	Final Peak			
	8.317: 56.2	2 + 18.50 +	74.72							
			mit = 100µ\							
					40dBµV/m					
						s adjusted = 4	10log(10/30) = 20dB			
		Average lin	mit = 60dBµ	uv/m@10m						
		Deels Liss it	Aug 10							
		Peak Limit	= Average	Limit + 200	ιο = ουαΒμ	V/m + 20dB :	= oudBµv/m			



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#### **Evolve P10:**

Fundamental	Radiate	d Emiss	ions Mea	surement	ts					
	47 CFR FCC Part 15.223					N or FINAL:	Final		Date:	3/24/2008
Device Tested:	Checkpoir	eckpoint - Evolve P10				Distance:	10m		File .xls	08032403 Fundamental P10.xls
Mode:	8.2 Tx & 9	0.0 Tx Band								
Modifications:	Ferrite P/N	N 284760 or	n each end	of Sync Cat	ble with 4 tu	rns				
		Measured Le								
		Manager	Antenna +							
	From	Measured Peak	Cable Correction	Elect Deele				Orientation	Anglo	
Meas #	Freq (MHz)	(dBµV/m)	Factor	Final Peak (dBµV/m)	Peak Limit	Peak π	Result	(X,Y,Z)	Angle (degrees)	Comment
RBW = 300kHz \				(ubµv/iii)	FEAK LIITIIL	reak 1	Result	(^,1,2)	(degrees)	Continent
9.0 Tx Band (31										
1	8.1020	51.54	18.50	70.04	80.00	-9.96	Complied	X Orientation	345	1
2	9.3310	57.79	18.50	76.29	80.00	-3.71	Complied	X Orientation	345	
3	8.0500	53.62	18.50	72.12	80.00	-7.88	Complied	Y Orientation	358	
4	9.3310	56.74	18.50	75.24	80.00	-4.76	Complied	Y Orientation	358	
5	8.0630	58.18	18.50	76.68	80.00	-3.32	Complied	Z Orientation	358	
6	9.3500	52.32	18.50	70.82	80.00	-9.18	Complied	Z Orientation	354	
0 RBW = 300kHz \				70.62	00.00	-9.10	Complied	2 Onentation	304	
8.2.Tx Band (311			ettings)							
7	x) 8.1090	51.94	18.50	70.44	80.00	-9.56	Complied	X Orientation	345	
		43.52		62.02		-9.56		X Orientation	345	
8	9.6000		18.50		80.00		Complied			
9	8.0900	57.62	18.50	76.12	80.00	-3.88	Complied	Y Orientaiton	345	
10	9.5900	49.15	18.50	67.65	80.00	-12.35	Complied	Y Orientaiton	345	
11	8.1610	60.47	18.50	78.97	80.00	-1.03	Complied	Z Orientation	345	
<b>T</b> ( ))										
Tested by:	Dieter Bal		10.0	nee Deed	Nautaura	, CT 06470	Tak(202) 420 0	888 Fax: (203) 4	100,4000	
TUV Rheinland o	i north Aff	ienca, inc.	12 Comme	rce Road	Newtown	, CT 06470	Tel:(203) 426-0	888 Fax: (203) 4	126-4009	
	Example:									
			l Level + (An	l etnna + Cał	l de Correctio	on Factor) =	Final Peak			
		6.22 + 18.5								
	0.0111 0									
		Average lir	nit = 100µV	/m @ 30m						
		Average Li	mit = 20*log	g(100μV) = 4	40dBµV/m @	@ 30m				
							Olog(10/30) = 20d	В		
			nit = 60dBµ							
		Peak Limit	= Average	Limit + 20d	3 = 60dBµV	/m + 20dB =	80dBµV/m			



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#### 4.1.6 Photos

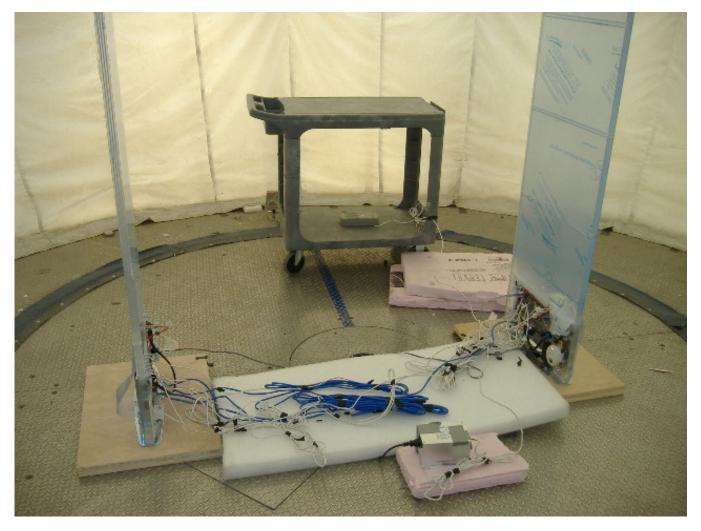


Figure 16 - Fundamental Emissions Test Setup (10m OATS) G10 Configuration 1



Figure 17 - Fundamental Emissions Test Setup (10m OATS) G10 Configuration 2



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Figure 18 - Fundamental Emissions Test Setup (10m OATS) P10 Configuration 1



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Figure 19 - Fundamental Emissions Test Setup (10m OATS) P10 Configuration 2

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### 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.

Results	<b>Complies</b> (as tes	ted per th	is report)			Date	02/29/20	)08	
Standard	FCC Part 15 Subp	oart 15.223	3/RSS-210	Aı	nnex A2.3				
Product Model	Evolve P10, Evolv	ve G10		Serial#			741085900U03517018, 741085900U03517019, 7411639C2D13617020, 7411639C2D10158033		
Configuration	See test plan for d	etails							
Test Set-up	Tested in shielded	room	EU	placed on t	able s	see test plans	s for details		
EUT Powered By	120V/60Hz	Temp	22° C	H	Iumidity	45%	Pressure	1004mbar	
<b>Frequency Range</b>	150kHz - 30MHz								
Perf. Criteria	Per table in section (Bellow Limit )	Perf. Verification			Readings Under Limit for L1 and L2				
Mod. to EUT	None		Test Pe	rfo	rmed By	Dieter Baldamus			

#### 4.2.1 Over View of Test

### 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.

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#### 4.2.5 Final Measurement Data

Configuration 1, G10 9.0TX Band:

NOTES: Conducted Emissions @ 120V/60Hz G10 9.0TX Band Configuration 1 Line / Neutral 16:41:26 FEB 29, 2006 9.0 TX BAND MFR: CHECKPOINT MODEL G10 [X]L [X]N 120V/60Hz
 MARKER ACTV DET: PEAK MEAS DET: PEAK OP AVG 6.94 MHz MKR 6.94 MHz 53.50 dBuV 53.50 dBµV REF 60.0 dBuV LDG 10 dB/ ÷ AIN 10 dB VA VB SC FC ACORR STOP 30.00 MHz SWP 2.49 sec START 150 kHz #JF BW 9.0 kHz AVG BW 30 kHz L

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Device Tested:	Freq		with produc	tion LED b	oard & 0.0					Date:		
Signal Num		Deak Ame			Uaru & 5.0	Tx Band				File: .xls	08022909 CE 120	V.xls
Signal Num		Deels Ame										
1		Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	QP °	QP Result	Avg °	Average Result	Mode
1	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
	0.1523	48.19	41.34	12.38	65.87	55.87	Line	-24.53	Complied	-43.49	Complied	
2	0.2306	41.74	34.51	27.82	62.43	52.43	Line	-27.92	Complied	-24.61	Complied	
3	2.8638	31.74	28.59	22.95	56.00	46.00	Line	-27.41	Complied	-23.05	Complied	
4	8.3645	50.10	46.08	31.19	60.00	50.00	Line	-13.92	Complied	-18.81	Complied	
5	9.0494	53.25	48.93	34.71	60.00	50.00	Line	-11.07	Complied	-15.29	Complied	
6	14.3079	34.25	32.06	25.00	60.00	50.00	Line	-27.94	Complied	-25.00	Complied	
7	0.1754	48.89	43.38	21.19	64.70	54.70	Neutral	-21.32	Complied	-33.51	Complied	
8	0.2341	44.90	37.21	28.15	62.30	52.30	Neutral	-25.09	Complied	-24.15	Complied	
9	0.7753	35.52	27.31	20.17	56.00	46.00	Neutral	-28.69	Complied	-25.83	Complied	
10	1.1936	35.02	26.64	22.88	56.00	46.00	Neutral	-29.36	Complied	-23.12	Complied	
11	8.3942	50.33	46.07	32.03	60.00	50.00	Neutral	-13.93	Complied	-17.97	Complied	
12	9.3188	59.59	55.59	39.37	60.00	50.00	Neutral	-4.41	Complied	-10.63	Complied	Maximum Emission
13	14.9040	32.73	30.50	24.59	60.00	50.00	Neutral	-29.50	Complied	-25.41	Complied	
ested by:	Dieter Bald	lamus										

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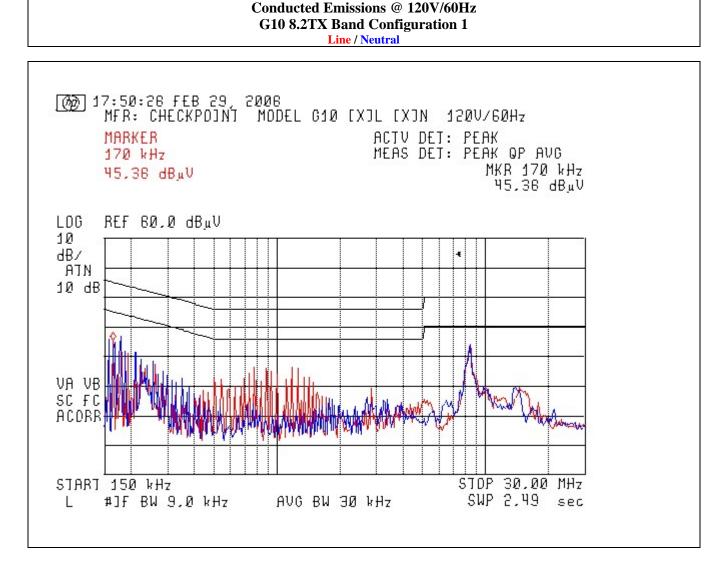


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Configuration 1, G10 8.2TX Band:

NOTES:





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Standard:	47 CFR 15	.209 Spurious	Emissions							Date:	2/29/2008	
Device Tested:	Checkpoint	- Evolve G10	with produc	tion LED b	bard					File: .xls	08022908 CE 120	V.xls
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	0.1549	47.82	40.79	11.88	65.73	55.73	Line	-24.94	Complied	-43.85	Complied	
2	0.2312	41.57	33.10	28.77	62.41	52.41	Line	-29.31	Complied	-23.64	Complied	
3	0.7183	38.65	30.41	21.33	56.00	46.00	Line	-25.59	Complied	-24.67	Complied	
4	1.8505	27.78	24.64	22.59	56.00	46.00	Line	-31.36	Complied	-23.41	Complied	
5	0.1556	48.05	41.32	12.27	65.70	55.70	Line	-24.38	Complied	-43.43	Complied	
6	8.5181	46.42	43.18	29.94	60.00	50.00	Line	-16.82	Complied	-20.06	Complied	
7	0.1649	46.73	39.47	11.32	65.22	55.22	Neutral	-25.75	Complied	-43.90	Complied	
8	0.2298	41.22	33.45	27.40	62.46	52.46	Neutral	-29.01	Complied	-25.06	Complied	
9	0.5164	34.48	26.30	6.17	56.00	46.00	Neutral	-29.70	Complied	-39.83	Complied	
10	0.7721	40.34	31.27	19.43	56.00	46.00	Neutral	-24.73	Complied	-26.57	Complied	
11	1.2223	32.80	24.93	6.80	56.00	46.00	Neutral	-31.07	Complied	-39.20	Complied	
12	1.3737	34.72	26.05	21.81	56.00	46.00	Neutral	-29.95	Complied	-24.19	Complied	
13	8.4557	47.70	44.64	33.50	60.00	50.00	Neutral	-15.36	Complied	-16.50	Complied	Maximum Emission
14	14.2463	30.11	27.04	17.90	60.00	50.00	Neutral	-32.96	Complied	-32.10	Complied	
Fested by:	Dieter Bald	amus										

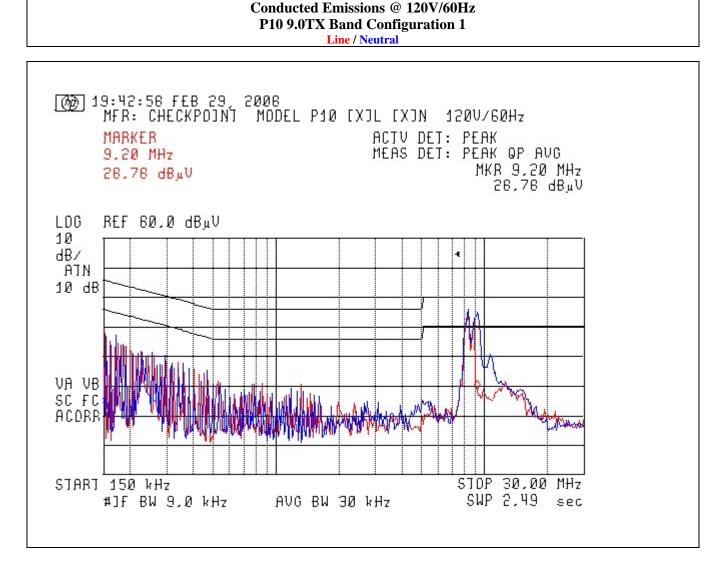


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**Configuration 1, P10 9.0TX Band:** 

NOTES:





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Standard:	47 CFR 15	.207 Conducte	d Emission	S						Date:	2/29/2008	
Device Tested:	Checkpoint	t - Evolve P10	9.0 Tx Ban	d						File: .xls	08022910 CE 120	V.xls
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QP Limit	Avg Limit	Conductor	$QP \cup$	QP Result	Avg ∪	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1794	48.39	40.48	26.89	64.52	54.52	Line	-24.04	Complied	-27.63	Complied	
2	0.2390	43.42	35.64	24.20	62.13	52.13	Line	-26.49	Complied	-27.93	Complied	
3	1.2302	31.37	23.02	6.10	56.00	46.00	Line	-32.98	Complied	-39.90	Complied	
4	8.3491	55.09	51.06	35.67	60.00	50.00	Line	-8.94	Complied	-14.33	Complied	Maximum Emission
5	11.6895	36.23	32.70	28.09	60.00	50.00	Neutral	-27.30	Complied	-21.91	Complied	
6	0.1776	46.34	38.18	24.83	64.60	54.60	Neutral	-26.42	Complied	-29.77	Complied	
7	0.2145	40.56	33.56	14.75	63.03	53.03	Neutral	-29.47	Complied	-38.28	Complied	
8	0.3581	35.11	28.38	24.36	58.77	48.77	Neutral	-30.39	Complied	-24.41	Complied	
9	8.3484	54.17	50.19	34.66	60.00	50.00	Neutral	-9.81	Complied	-15.34	Complied	
ested by:	Dieter Bald	lamus										
TUV Rheinland			Commerce	Road N	Newtown. C	T 06470	Tel:(203) 4	26-0888 Fa	x: (203) 426-40	19		CE22 B.xlt Revised 210CT2

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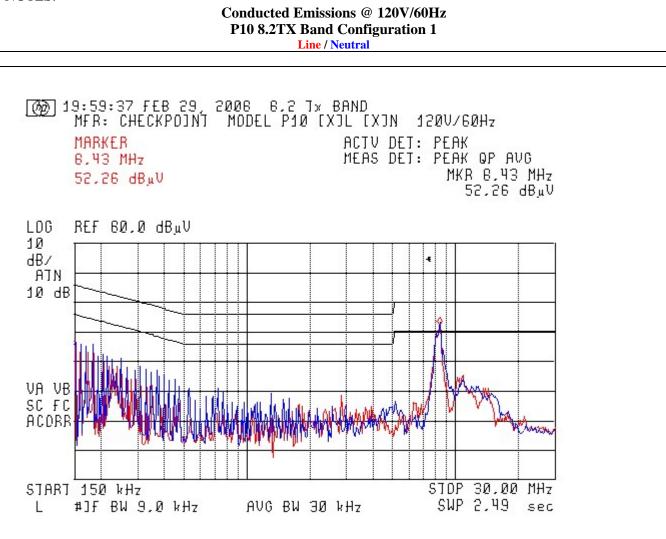


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Configuration 1, P10 8.2TX Band:







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Standard:	47 CFR 15	.209 Spurious	Emissions							Date:	2/29/2008	
Device Tested:	Checkpoint	- Evolve P10	8.2 Tx Ban	d						File: .xls	08022911 CE 120	V.xls
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	0.1805	46.18	37.78	24.36	64.52	54.52	Line	-26.74	Complied	-30.16	Complied	
2	0.2956	36.21	28.94	20.91	62.13	52.13	Line	-33.19	Complied	-31.22	Complied	
3	0.7140	25.66	22.42	19.58	56.00	46.00	Line	-33.58	Complied	-26.42	Complied	1
4	8.4691	54.78	50.95	38.79	60.00	50.00	Line	-9.05	Complied	-11.21	Complied	
5	13.9525	33.61	31.63	25.22	60.00	50.00	Neutral	-28.37	Complied	-24.78	Complied	
6	0.1775	45.48	37.42	22.21	64.60	54.60	Neutral	-27.18	Complied	-32.39	Complied	1
7	0.2313	41.00	32.71	28.85	63.03	53.03	Neutral	-30.32	Complied	-24.18	Complied	
8	8.4689	56.22	52.26	40.24	58.77	48.77	Neutral	-6.51	Complied	-8.53	Complied	Maximum Emission
9	10.3119	37.99	32.03	24.84	60.00	50.00	Neutral	-27.97	Complied	-25.16	Complied	
ested by:	Dieter Bald	amus										
UV Rheinland			Commerce	Road N	Vewtown. C	T 06470	Tel:(203) 4	26-0888 Fa	x: (203) 426-40	19		CE22_B.xlt Revised 21OCT2

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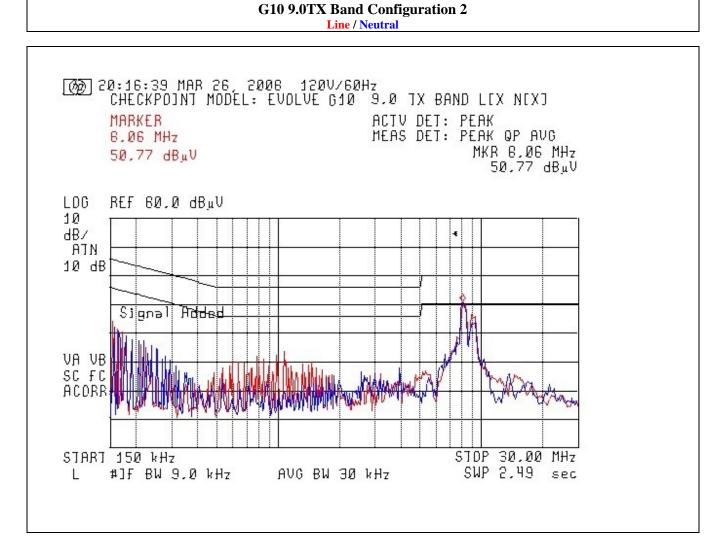
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Conducted Emissions @ 120V/60Hz

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#### **Configuration 2 Evolve G10 at 9.0Tx Band:**

NOTES:



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Conducted E	missions	s Measurem	ents									
Standard:	FCC Part 1	5.207 (Class E	3)							Date:	3/27/2008	
Device Tested:	Checkpoint	t - Evolve G10								File: .xls	08032701 CE G1	0 8.2Tx 120V.xls
Mode:	8.2 TX Bar	nd (31Tx)										
	Ferrite P/N	284760 on ea	ch end of S	ync Cable v	with 4 turns							
PS Model:	GS599 ES	-R @ 120V/50	-lz									
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	QPLimit	Avg Limit	Conductor	QP÷	QP Result	Avg÷	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1821	46.03	37.65	23.60	64.39	54.39	Line	-26.74	Complied	-30.79	Complied	
2	0.4202	36.60	26.75	14.41	57.44	47.44	Line	-30.69	Complied	-33.03	Complied	
3	2.9223	26.33	22.81	13.94	56.00	46.00	Line	-33.19	Complied	-32.06	Complied	
4	7.9212	36.73	36.50	25.61	60.00	50.00	Line	-23.50	Complied	-24.39	Complied	
5	0.1513	48.06	40.19	10.69	65.93	55.93	Neutral	-25.74	Complied	-45.24	Complied	
6	0.2614	40.55	33.16	5.97	61.39	51.39	Neutral	-28.23	Complied	-45.42	Complied	
7	1.3955	29.25	21.77	4.81	56.00	46.00	Neutral	-34.23	Complied	-41.19	Complied	
8	8.3908	61.37	56.72	46.98	60.00	50.00	Neutral	-3.28	Complied	-3.02	Complied	Maximum Emissions
Tested by:	Dieter Balc	lamus										
TUV Rheinland	of North Am	erica, Inc. 12	Commerce	Road N	Vewtown, C	T 06470	Tel:(203) 4	26-0888 Fa	ax: (203) 426-4009			CE22_B.xlt Revised 21OCT200

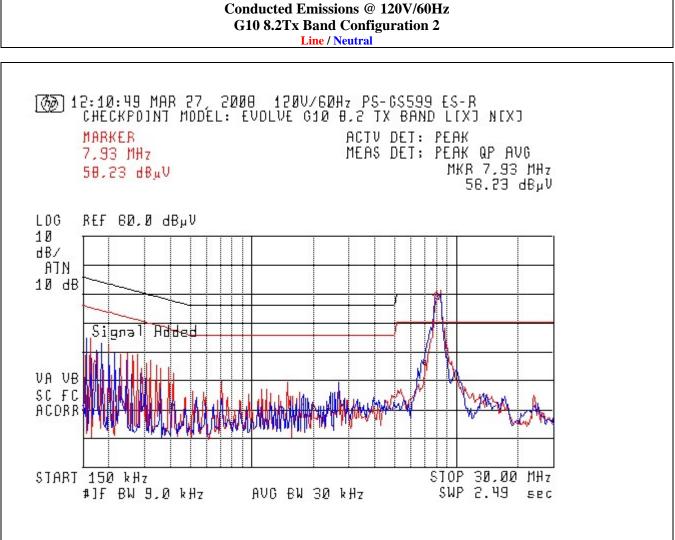


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#### Configuration 2 Evolve G10 @ 8.2 TX Band:

NOTES:



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Conducted E	missions	s Measurem	ents									
Standard:	EN55022:1	998, Class B/F	CC Part 15	i.107 (a)						Date:	3/26/2008	
Device Tested:	Checkpoin	t - Evolve G10								File: .xls	08032609 CE G1	0 9.0TX Band 120V.xls
Mode:	9.0 Tx Ban	id (31TX)										
Modifications:	LED with n	o Ferrites										
	Ferrite P/N	284760 on ea	ch end of S	ync Cable v	vith 4 turns							
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	0.1798	59.65	35.99	22.59	64.49	54.49	Line	-28.50	Complied	-31.90	Complied	
2	0.2378	38.09	30.91	18.66	62.17	52.17	Line	-31.26	Complied	-33.51	Complied	
3	8.2564	49.98	45.63	33.56	60.00	50.00	Line	-14.37	Complied	-16.44	Complied	
4	9.2970	45.38	41.51	25.69	60.00	50.00	Line	-18.49	Complied	-24.31	Complied	
5	0.1805	47.84	42.33	28.14	64.46	54.46	Neutral	-22.13	Complied	-26.32	Complied	
6	0.9551	36.16	28.90	22.85	56.00	46.00	Neutral	-27.10	Complied	-23.15	Complied	
7	8.3039	53.60	49.39	36.55	60.00	50.00	Neutral	-10.61	Complied	-13.45	Complied	Maximum Emissions
8	9.2813	48.99	45.17	29.99	60.00	50.00	Neutral	-14.83	Complied	-20.01	Complied	
Tested by:	Dieter Balo	lamus										
TUV Rheinland	of North Am	erica, Inc. 12	Commerce	Road N	Vewtown, C	T 06470	Tel:(203) 4	26-0888 Fa	x: (203) 426-4009			CE22_B.xlt Revised 21OCT2008

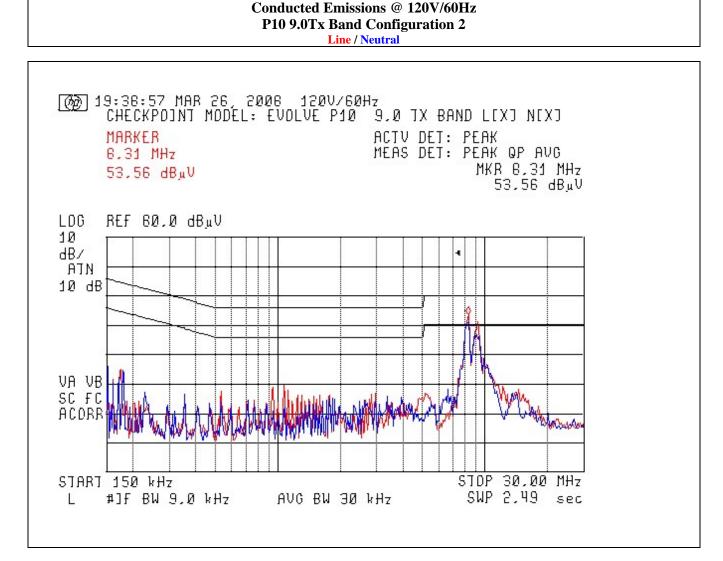


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#### Configuration 2 Evolve P10 @ 9.0 TX Band:

NOTES:



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Conducted E	missions	Measurem	ents									
Standard:	EN55022:1	998, Class B/F	CC Part 15	i.107 (a)						Date:	3/26/2008	
Device Tested:	Checkpoint	t - Evolve P10								File: .xls	08032608 P10 9.0	)TX Band 120V.xls
Mode:	9.0 Tx Ban	d (31 Tx)										
Modification:	Ferrite P/N	284760 on ea	ch end of S	ync Cable v	vith 4 turns							
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	38.68	34.33	21.89	64.46	54.46	Line	-30.13	Complied	-32.57	Complied	
2	1.1322	32.93	29.70	26.63	56.00	46.00	Line	-26.30	Complied	-19.37	Complied	
3	8.3783	54.68	50.37	35.51	60.00	50.00	Line	-9.63	Complied	-14.49	Complied	Maximum Emissions
4	9.3591	53.42	48.75	31.61	60.00	50.00	Line	-11.25	Complied	-18.39	Complied	
5	0.1765	37.02	34.11	21.91	64.65	54.65	Neutral	-30.54	Complied	-32.74	Complied	
6	1.7294	26.69	24.25	22.61	56.00	46.00	Neutral	-31.75	Complied	-23.39	Complied	
7	8.3635	54.03	49.13	33.47	60.00	50.00	Neutral	-10.87	Complied	-16.53	Complied	
8	9.2810	51.10	46.19	30.35	60.00	50.00	Neutral	-13.81	Complied	-19.65	Complied	
Tested by:	Dieter Bald	lamus										
TUV Rheinland o	of North Am	erica, Inc. 12	Commerce	Road N	Vewtown, C	T 06470	Tel:(203) 4	26-0888 Fa	x: (203) 426-4009			CE22_B.xlt Revised 21OCT200

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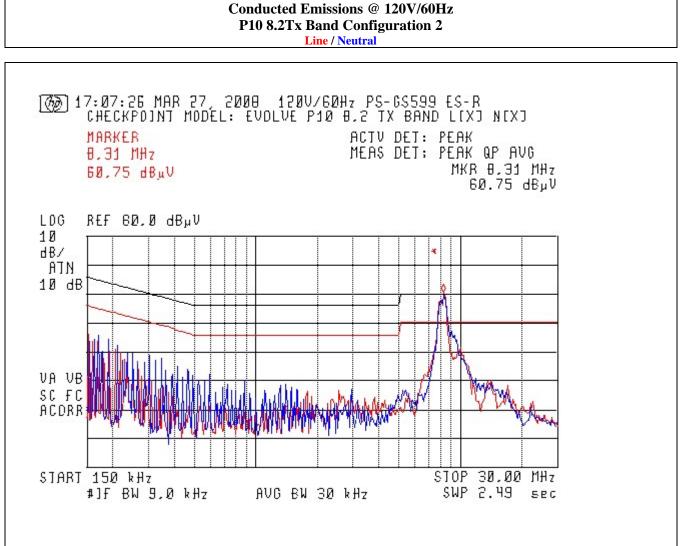


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#### Configuration 2 Evolve P10 @ 8.2 TX Band:

NOTES:





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Standard:	FCC Part 1	15.207 (Class E	3)							Date:	3/27/2008	
Device Tested:	Checkpoin	t - Evolve P10	,							File; .xls	08032707 CE P10	08.2Tx 120V.xls
Mode:	8.2 TX Bar	nd (31Tx)										
	Ferrite P/N	1284760 on ea	ch end of S	ync Cable v	with 4 turns							
		-R @ 120V/50										
Signal Num	Freq	Peak Amp	QP Amp	Avg Amp	<b>QP</b> Limit	Avg Limit	Conductor	QP/	QP Result	Avg	Average Result	Mode
	MHz	dBuV	dBuV	dBuV	dBuV	dBuV		dB		dB		
1	0.1786	48.10	40.17	25.34	64.55	54.55	Line	-24.38	Complied	-29.21	Complied	
2	0.2304	43.51	35.93	18.87	62.44	52.44	Line	-26.51	Complied	-33.57	Complied	
3	1.4316	35.28	26.24	20.01	56.00	46.00	Line	-29.76	Complied	-25.99	Complied	
4	8.4528	63.03	59.08	46.71	60.00	50.00	Line	-0.92	Complied	-3.29	Complied	Maximum Emission
5	0.1501	49.93	42.14	12.99	65.99	55.99	Neutral	-23.85	Complied	-43.00	Complied	
6	0.2441	48.40	34.91	15.80	61.95	51.95	Neutral	-27.04	Complied	-36.15	Complied	
7	1.3118	30.01	23.06	16.50	56.00	46.00	Neutral	-32.94	Complied	-29.50	Complied	
8	8.4689	62.07	57.87	45.74	60.00	50.00	Neutral	-2.13	Complied	-4.26	Complied	
Tested by:	Dieter Balo	lamus										



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Report No.:

### 4.2.6 Photos



Figure 20 –Conducted Emissions Test Setup G10 Configuration 1



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# **Report No.:**

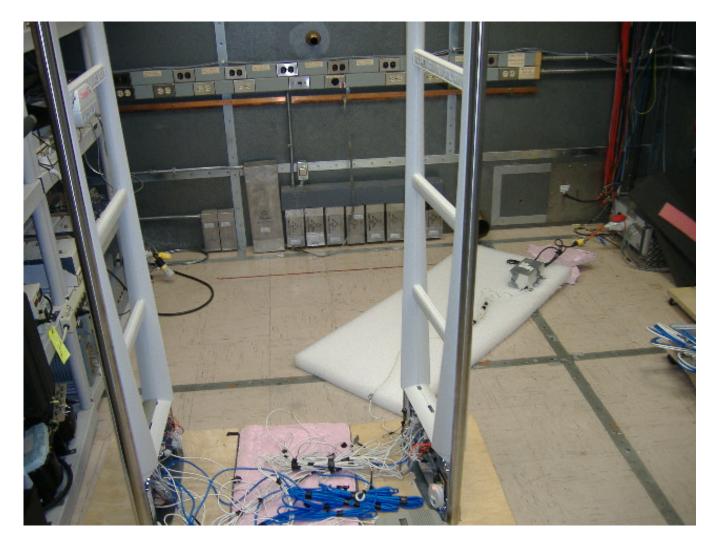


Figure 21 – Conducted Emissions Test Setup P10. Configuration 1



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Figure 22 – Conducted Emissions Test Setup P10. Configuration 2



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### 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.

Results	Complies (as tested	l per this	report)		Date	02/29/2	2008			
Standard	FCC Part 15 Subpar	t 15.205	and 15.209							
Product Model	Evolve P10, Evolve	G10		Serial#	741085 741163	900U0351 900U0351 9C2D1361 9C2D1015	7019, 7020,			
Configuration	See test plan for deta	ails								
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									
<b>Frequency Range</b>	From Fundamental - 1000MHz									
Perf. Criteria	Below Limit <b>Perf. Verification</b> Readings under Limit									
Mod to EUT	None     Test Performed By     Dieter Baldamus									

### 4.3.1 Test Over View

### 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 8MHz 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.

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#### 4.3.5 Final Measurement Data

#### Configuration 1; G10 (8.2Tx) Final <30MHz (Harmonics)

Radiated En	nissions N	leasuren	nents									
Standard:	47 CFR FC	C Part 15.2	223	F	RESCAN	or FINAL:	Final				Date:	2/29/2008
Device Tested:	Checkpoint	- Evolve G	i10		1	Distance:	10m				File:	08022901 Fundamental G10.xls
		М	easured Le	vel								
Meas # RWB = 9kHz, VE	Freq (MHz) 3W=30kHz	Peak	Quasi- Peak	Average	Antenna + Cable Correction Factor (included in measured levels)	Quai Peak Limit	Quasi Peak ξ	Result	Orientation	Angle (degrees)	Antenna Height (meters)	Comments
9.0 Tx Band (Wo	orst Case)											
1	16.6340	30.40	25.32	19.10	19.00	49.54	-24.22	Complied	Z Orientation	245	1.00	second harmonic
2	18.7140	30.50	26.30	20.30	19.30	49.54	-23.24	Complied	Z Orientation	216	1.00	second harmonic
3	24.9510	30.60	24.70	18.60	19.30	49.54	-24.84	Complied	Z Orientation	254	1.00	third harmonic
4	28.0710	32.10	25.80	19.50	19.30	49.54	-23.74	Complied	Z Orientation	254	1.00	third harmonic
Tested by: TUV Rheinland o	Dieter Bald		12 Comme	rce Road	Newtown	, CT 0647	0 Tel:(20	3) 426-0888	Fax: (203) 426	-4009		



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#### Configuration 1; G10 (8.2Tx) Final >30MHz (Harmonics)

Standard:	47 CFR 15.	209 Spurio	us Emissio	าร		PRESCAN	or FINAL:	Final	Date:	2/29/2008
	Checkpoint			-			Distance:	3.0m		08022906 Final.xls
		Μ	easured Le	vel						
							Antenna +			
							Cable			
							Correction			
					Quart		Factor			
	<b>F</b>		Quart		Quasi- Peak	Quasi-	(included in			
	Freq	<b>D</b>	Quasi-				measured levels)		Data da de la	
Meas #	(MHz)	Peak	Peak	Average	Limit	Peak 0		Result	Polarization	Comment
1	440.0036	31.45	28.85	25.01	46.02	-17.17	7.56	Complied	Vertical	
2	480.0080	36.10	34.35	29.86	46.02	-11.67	16.11	Complied	Vertical	
3	520.0021	37.08	35.45	31.41	46.02	-10.57	16.4	Complied	Vertical	
4	560.0031	30.25	37.38	32.61	46.02	-8.64	17.17	Complied	Vertical	
5	599.9995	45.43	43.19	38.02	46.02	-2.83	17.29	Complied	Vertical	
6	440.0036	35.18	32.53	27.96	46.02	-13.49	18.29	Complied	Vertical	increased to 31 power lev
7	480.0250	35.05	33.11	29.36	46.02	-12.91	19.29	Complied	Vertical	increased to 31 power lev
8	520.0000	40.52	39.32	35.11	46.02	-6.70	20.29	Complied	Vertical	increased to 31 power lev
9	560.0089	42.31	39.39	33.56	46.02	-6.63	21.29	Complied	Vertical	increased to 31 power lev
10	600.0167	43.99	42.38	38.21	46.02	-3.64	22.29	Complied	Vertical	increased to 31 power lev
11	400.0000	31.43	28.99	23.68	46.02	-17.03	23.29	Complied	Vertical	Original LED Board
12	440.0000	35.60	33.13	28.69	46.02	-12.89	24.29	Complied	Vertical	Original LED Board
13	480.0000	38.58	37.24	35.03	46.02	-8.78	25.29	Complied	Vertical	Original LED Board
14	520.0000	37.58	36.23	32.45	46.02	-9.79	26.29	Complied	Vertical	Original LED Board
15	560.0000	41.14	39.84	36.15	46.02	-6.18	27.29	Complied	Vertical	Original LED Board
16	600.0000	46.18	42.60	37.67	46.02	-3.42	28.29	Complied	Vertical	Original LED Board
17	33.4972	38.18	24.79	14.83	40.00	-15.21	29.29	Complied	Vertical	Original LED Board
18	92.5265	42.11	40.91	37.99	43.52	-2.61	30.29	Complied	Vertical	Original LED Board
19	200.0000	30.84	27.52	20.92	43.52	-16.00	31.29	Complied	Vertical	Original LED Board
20	720.0000	35.29	33.08	29.34	46.02	-12.94	32.29	Complied	Vertical	Original LED Board
		-								
ested by:	Dieter Balda	amus							1	



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#### Configuration 1; P10 (9.0 and 8.2Tx) Final <30MHz (Harmonics)

Standard:	47 CFR FC	C Part 15.223					PRESC	CAN or FINAL:	Final		Date
Device Tested:								Distance:	10m		File
		Me	easured Le	vel							
9.0 Tx Band	Freq (MHz)	Peak	Quasi- Peak	Average	Antenna + Cable Correction	Quasi Peak Limit	Quasi Peak ≅	Result	Orientation (X,Y,Z)	Angle (degrees)	Antenna Height (meters)
14	16.6600	36.00	29.60	23.30	19.00	49.54	-19.94	Complied	X Orientation	254	1.00
15	19.6000	35.90	30.01	23.70	19.00	49.54	-19.53	Complied	Z Orientation	250	1.00
16	16.6080	36.60	30.30	24.00	19.00	49.54	-19.24	Complied	Y Orientation	245	1.00
17	19.6100	35.80	30.05	23.50	19.30	49.54	-19.49	Complied	Y Orientation	216	1.00
18	16.1400	36.40	29.00	23.80	19.30	49.54	-20.54	Complied	Z Orientation	245	1.00
19	18.6740	35.00	30.10	24.01	19.30	49.54	-19.44	Complied	X Orientation	255	1.00
20	24.9900	37.30	34.30	23.70	19.30	49.54	-15.24	Complied	Y Orientation	250	1.00
21	29.4150	38.40	32.10	25.40	19.30	49.54	-17.44	Complied	X Orientation	251	1.00
22	24.9120	37.60	34.10	23.40	19.30	49.54	-15.44	Complied	Z Orientation	254	1.00
23	29.4150	38.47	32.05	23.54	19.30	49.54	-17.49	Complied	Y Orientation	254	1.00
24	24.2100	37.40	30.50	23.80	19.30	49.54	-19.04	Complied	X Orientation	256	1.00
25	28.0110	39.90	34.70	24.90	19.30	49.54	-14.84	Complied	Z Orientation	247	1.00
8.2TX Band											
26	16.9580	37.90	31.20	24.80	19.30	49.54	-18.34	Complied	X Orientation	247	1.00
27	15.8920	37.90	31.10	24.90	19.30	49.54	-18.44	Complied	Y Orientation	356	1.00
28	16.9100	39.90	34.60	30.40	19.30	49.54	-14.94	Complied	Z Orientation	355	1.00
29	25.4370	37.70	31.70	25.50	19.30	49.54	-17.84	Complied	X Orientation	354	1.00
30	23.8380	38.80	31.50	25.60	19.30	49.54	-18.04	Complied	Y Orientation	356	1.00
31	25.3650	38.431.5	25.16	38.40	19.30	49.54	-24.38	Complied	Z Orientation	355	1.00
ested by:	Dieter Bald	amus									



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### Configuration 1; G10 (9.0Tx) Final >30MHz (Harmonics)

Radiated En	nissions N	leasurer	nents							
Standard:	47 CFR 15.	209 Spuric	us Emissio	าร		PRESCAN	or FINAL:	Final	Date:	2/29/2008
Device Tested:	Checkpoint	- Evolve P	·10				Distance:	Distance: 3.0m		08022901 Final P10 - 9.0TX Band.xls
		Μ	easured Le	vel						
							Antenna +			
							Cable			
							Correction			
					Quasi-		Factor			
	Freq		Quasi-		Peak	Quasi-	(included in measured			
Meas #	(MHz)	Peak	Peak	Average	Limit	Peak °	levels)	Result	Polarization	Comment
1	30.6009	41.59	27.46	19.72	40.00	-12.54	17.41	Complied	Vertical	Comment
2	40.4014	43.04	37.85	12.26	40.00	-2.15	11.93	Complied	Vertical	
3	41.6480	43.59	38.38	15.29	40.00	-1.62	11.33	Complied	Vertical	
4	54.4092	44.43	38.82	23.97	40.00	-1.18	6.44	Complied	Vertical	
5	83.2869	39.90	33.48	20.41	40.00	-6.52	7.3	Complied	Vertical	
6	90.8323	51.67	37.41	23.27	43.52	-6.11	8.9	Complied	Vertical	
7	91.6663	45.70	38.24	29.56	43.52	-5.28	9.05	Complied	Vertical	
8	112.9306	37.47	28.50	16.40	43.52	-15.02	11.33	Complied	Vertical	
9	233.1368	38.19	32.85	13.61	46.02	-13.17	10.18	Complied	Vertical	
10	447.5999	40.50	35.28	12.27	46.02	-10.74	16.40	Complied	Horizontal	
11	480.9500	34.38	24.21	8.57	46.02	-21.81	17.17	Complied	Horizontal	
12	690.0773	28.59	21.18	9.35	46.02	-24.84	19.18	Complied	Horizontal	
13	899.1202	34.72	28.10	13.16	46.02	-17.92	20.39	Complied	Horizontal	
-										
Tested by:	Dieter Balda	amus								
TUV Rheinland			12 Comme	rce Road	Newtown	, CT 06470	Tel:(203	3) 426-0888 Fax: (	203) 426-4009	REFCC15B.xlt Revised 10MAR0
									/	



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### Configuration 2; G10 (9.0Tx & 8.2Tx) Final <30MHz (Harmonics)

Fundamenta	Radiated	Emission	s Measu	rements						
Standard:	47 CFR FCC	Part 15.223			PRESCAN	or FINAL:	Final		Date:	3/25/2008
Device Tested:	Checkpoint -	Evolve G10	1			Distance:	10m		File .xls:	08032503 Fundamental G10 Report (FCC)
Mode:	9.0TX Band a	and 8.2 Tx B	land							
Modification:	Tx 28 Passin									
	LED Board w									
	Ferrite P/N 28	34760 on ea	ich end of \$	Sync Cable	with 4 turns	3				
Harmonics										
					Antenna + Cable					
		Measured	0		Caple	QueiDeelu				
9.0 Tx Band	Freq (MHz)	Peak	Quasi- Peak	Average	Factor	QuaiPeak Limit	Quasi Peak	Result	Orientation	Comments
9.0 1X Dallu 7	16.0620	(ubμv/m) NT	NT	NT	19.00	49.54	NT	NT	X Orientation	comments
		NT	NT	NT		49.54	NT	NT	X Orientation	
8	18.5960				19.00					Went Core
9	16.6460	37.20	29.90	24.10	19.00	49.54	-19.64	Complied	Y Orientation	
10	18.7140	37.30	30.00	24.00	19.30	49.54	-19.54	Complied		Worst Case
11	16.6600	NT	NT	NT	19.30	49.54	NT	NT	Z Orientation	
12	18.1594	NT	NT	NT	19.30	49.54	NT	NT	Z Orientation	
13	24.0930	37.90	30.30	24.40	19.30	49.54	-19.24	Complied	X Orientation	
14	27.8940	37.10	31.10	25.20	19.30	49.54	-18.44	Complied	X Orientation	Worst Case
15	24.9690	NT	NT	NT	19.30	49.54	NT	NT	Y Orientation	
16	28.0710	NT	NT	NT	19.30	49.54	NT	NT	Y Orientation	
17	24.9900	NT	NT	NT	19.30	49.54	NT	NT	Z Orientation	
18	27.2391	NT	NT	NT	19.30	49.54	NT	NT	Z Orientation	
8.2 Tx Band										
19	15.8920	36.30	29.70	23.40	19.30	49.54	-19.84	Complied	X Orientation	
20	15.8400	36.10	30.10	24.10	19.30	49.54	-19.44	Complied	Y Orientation	
21	16.6460	36.20	29.80	23.30	19.30	49.54	-19.74	Complied	Z Orientation	
22	23.8380	36.30	32.20	23.30	19.30	49.54	-17.34	Complied	X Orientation	
23	23.7600	38.10	3.30	24.50	19.30	49.54	-46.24	Complied	Y Orientation	
24	24.9690	36.60	30.20	24.30	19.30	49.54	-19.34	Complied	Z Orientation	
Tested by:	Dieter Baldar	nus								
TUV Rheinland o	of North Ameri	ca, Inc. 12	Commerc	e Road	Newtown, C	CT 06470	Tel:(203) 426-0888	Fax: (203) 426-4	009	



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### Configuration 2; G10 (9.0Tx) Final >30MHz

Standard:	47 CFR 15.	209 Spurio	us Emissio	าร		PRESCAN	or FINAL:	Final	Date:	3/26/2008
	Checkpoint					Distance: 3.0m				08032604 RE Final G10 9.0 TX.xl
Mode:	9.0TX Band									
	LED Board		rrites							
	Ferrite P/N	284760 on	each end c	f Sync Cab	e with 4 tur	ns				
				Ĺ						
		Me	easured Le	vel						
							Antenna +			
							Cable			
							Correction			
					0		Factor			
	<b>F</b>		0		Quasi-	0	(included in			
	Freq	D. I	Quasi-		Peak	Quasi-	measured	D. It	D.I. S. Marker	
Meas #	(MHz)	Peak	Peak	Average	Limit	Peak	levels)	Result	Polarization	Comment
1	31.0692	48.13	32.69	24.11	40.00	-7.31	17.11	Complied	Vertical	
2	53.9408	34.78	27.97	20.44	40.00	-12.03	6.53	Complied	Vertical	
3	69.9666	33.97	31.99	21.84	40.00	-8.01	5.3	Complied	Vertical	
4	96.9050	43.10	35.45	27.20	43.52	-8.07	9.97	Complied	Vertical	
5	118.0130	26.88	20.91	14.26	43.52	-22.61	11.63	Complied	Vertical	
6	160.7605	21.17	14.42	7.66	43.52	-29.10	9.55	Complied	Vertical	
7	235.8549	36.54	30.32	9.07	46.02	-15.70	10.5	Complied	Horizontal	
8	423.3116	23.95	18.71	12.01	46.02	-27.31	16.46	Complied	Horizontal	
9	475.5878	36.72	29.97	7.75	46.02	-16.05	17.13	Complied	Horizontal	
10	481.0631	39.09	32.29	16.46	46.02	-13.73	17.17	Complied	Horizontal	
11	482.8960	34.30	27.78	7.21	46.02	-18.24	17.18	Complied	Horizontal	
12	484.9159	37.86	31.28	1.14	46.02	-14.74	17.19	Complied	Horizontal	
13	491.3192	32.22	26.04	8.63	46.02	-19.98	17.24	Complied	Horizontal	
14	517.2917	41.20	34.26	6.52	46.02	-11.76	17.50	Complied	Horizontal	
15	516.1966	32.66	25.10	9.69	46.02	-20.92	17.49	Complied	Horizontal	
16	522.1900	36.07	28.93	7.70	46.02	-17.09	17.56	Complied	Horizontal	
17	560.0051	38.14	36.29	32.17	46.02	-9.73	18.57	Complied	Horizontal	
18	720.0166	39.64	38.04	35.40	46.02	-7.98	19.53	Complied	Horizontal	
19	789.2544	34.94	34.50	30.24	46.02	-11.52	19.82	Complied	Horizontal	
	Dieter Balda									
Tested by: TUV Rheinland o			10.0			. CT 06470	L	) 426-0888 Fax: (2		REFCC15B.xlt Revised 10MAF



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### Configuration 2; G10 (8.2Tx) Final >30MHz

Radiated En	nissions N	leasuren	nents							
Standard:	47 CFR 15.	209 Spurio	us Emissio	ns/ETSI EN	300 330	PRESCAN	or FINAL:	Final	Date:	3/26/2008
Device Tested:	Checkpoint	- Evolve G	610				Distance:	3.0m	File:	08032605 RE Final G10 8.2 TX Band.xls
Mode:	8.2 TX Band	d (31Tx)								
Modifications:	LED Board	with NO Fe	errites							
	Ferrite P/N	284760 on	each end c	f Sync Cabl	e with 4 tu	rns				
		Μ	leasured Le	vel						
							Antenna +			
							Cable			
							Correction			
					Quasi-		Factor			
	Freq		Quasi-		Peak	Quasi-	(included in measured			
Meas #	(MHz)	Peak	Peak	Average	Limit	Peak ≅	levels)	Result	Polarization	Comment
1	31.0692	40.71	33.20	24.50	40.00	-6.80	17.11	Complied	Vertical	Comment
2	53.9408	48.01	24.15	16.88	40.00	-15.85	6.53	Complied	Vertical	
3	69.9666	34.04	28.22	21.17	40.00	-11.78	5.3	Complied	Vertical	
4	96.9050	40.03	34.06	27.13	43.52	-9.46	9.97	Complied	Vertical	
5	118.0130	25.49	20.75	12.97	43.52	-22.77	11.63	Complied	Vertical	
6	422.5688	26.80	20.50	7.96	46.02	-25.52	16.45	Complied	Vertical	
7	475.5878	36.72	29.97	7.75	46.02	-16.05	17.13	Complied	Horizontal	
8	481.0160	29.52	23.48	7.94	46.02	-22.54	17.17	Complied	Horizontal	
9	482.8960	30.37	23.78	7.13	46.02	-22.24	17.18	Complied	Horizontal	
10	484.9159	37.86	31.28	1.14	46.02	-14.74	17.19	Complied	Horizontal	
11	491.1027	29.19	23.07	8.60	46.02	-22.95	17.24	Complied	Horizontal	
12	517.2917	36.30	31.25	8.75	46.02	-14.77	17.50	Complied	Horizontal	
13	522.1900	33.48	27.62	7.81	46.02	-18.40	17.56	Complied	Horizontal	
14	560.0051	39.33	38.00	35.69	46.02	-8.02	18.57	Complied	Horizontal	
15	720.0166	39.78	38.55	36.27	46.02	-7.47	19.53	Complied	Horizontal	
16	789.2544	32.93	28.21	22.97	46.02	-17.81	19.82	Complied	Horizontal	
Tested by:	Dieter Balda	amus								
TUV Rheinland o	of North Ame	erica, Inc.	12 Comme	rce Road	Newtown	, CT 06470	) Tel:(203	3) 426-0888 Fax: (2	203) 426-4009	REFCC15B.xlt Revised 10MAR0



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#### Configuration 2; P10 (9.0Tx & 8.2 Tx) Final <30MHz

Fundamental				surement					l	
Standard:	-	CC Part 15.	-		PRESCAN	-	Final		Date:	3/24/2008
						Distance:	10m		File .xls:	08032403 Fundamental P10.xls
Mode:		9.0 Tx Band								
Modifications:	Ferrite P/I	N 284760 or	n each end	of Sync Cal	ole with 4 tu	ns				
Harmonics										
9.0 Tx Band	Freq	Measured Peak	Quasi-		Antenna + Cable Correction	QuaiPeak				
(31Tx)	(MHz)	(dBµV/m)	Peak	Average	Factor	Limit	Quasi Peak $\pi$	Result	Orientation	Comments
7	16.2040	36.80	30.20	23.10	19.00	49.54	-19.34	Complied	X Orientation	
8	18.6620	38.80	30.20	23.90	19.00	49.54	-19.34	Complied	X Orientation	
9	16.1000	36.20	30.10	24.00	19.00	49.54	-19.44	Complied	Y Orientation	
10	18.6620	37.10	30.40	24.30	19.30	49.54	-19.14	Complied	Y Orientation	
11	16.1260	37.80	30.10	23.10	19.30	49.54	-19.44	Complied	Z Orientation	
12	18.7000	36.50	30.30	23.90	19.30	49.54	-19.24	Complied	Z Orientation	
13	24.3060	36.10	30.40	24.10	19.30	49.54	-19.14	Complied	X Orientation	
14	27.9930	40.20	33.90	28.70	19.30	49.54	-15.64	Complied	X Orientation	
15	24.1500	36.40	30.90	24.30	19.30	49.54	-18.64	Complied	Y Orientation	
16	27.9930	39.00	32.60	25.60	19.30	49.54	-16.94	Complied	Y Orientation	
17	24.1890	37.10	30.50	24.40	19.30	49.54	-19.04	Complied	Z Orientation	
18	28.0500	37.40	31.00	25.50	19.30	49.54	-18.54	Complied	Z Orientation	
.2 Tx Band (31T)	<)									
19	19.2000	36.70	30.20	23.30	19.30	49.54	-19.34	Complied	X Orientation	
20	16.1800	37.10	30.40	24.10	19.30	49.54	-19.14	Complied	Y Orientation	
21	19.1800	37.00	30.50	24.30	19.30	49.54	-19.04	Complied	Z Orientation	
22	28.8000	36.90	30.30	24.20	19.30	49.54	-19.24	Complied	X Orientation	
23	24.2700	37.20	30.70	24.50	19.30	49.54	-18.84	Complied	Y Orientation	
24	28.7700	37.30	31.10	25.00	19.30	49.54	-18.44	Complied	Z Orientation	
Tested by:	Dieter Bal	damus								
TUV Rheinland c			12 Comme	rce Road	Newtown	CT 06470	Tel (203) 426-0	888 Fax: (203) 4	126-4009	



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### Configuration 2; P10 (9.0 Tx) Final >30MHz

Radiated En	nissions N	/leasuren	nents						
Standard:	47 CFR 15.	209 Spurio	us Emissio	ns	PRESCAN	or FINAL:	Final	Date:	3/26/2008
Device Tested:	Checkpoint					Distance:	3.0m	File:	08032607 P10 RE Final 9.0TX Band.xls
Mode:	9.0 Tx Band	d (Tx 31)							
Modification:	Ferrite P/N	284760 on	each end c	of Sync Cab	le with 4 tur	ns			
		М	easured Le	vel					
	Freq		Quasi-		Quasi- Peak	Quasi-	Antenna + Cable Correction Factor (included in measured		
Meas #	(MHz)	Peak	Peak	Average	Limit	Peak /	levels)	Result	Comment
1	56.5440	43.63	36.09	22.26	40.00	-3.91	6.05	Complied	
2	83.2828	43.92	38.15	18.73	40.00	-1.85	7.3	Complied	
3	99.6408	43.27	37.14	30.93	43.52	-6.38	10.44	Complied	
4	130.1455	26.21	20.86	13.70	43.52	-22.66	11.27	Complied	
5	406.2793	28.16	25.30	22.48	46.02	-20.72	16.12	Complied	
6	433.3308	40.73	38.51	36.90	46.02	-7.51	16.46	Complied	
7	456.9606	42.73	36.95	8.57	46.02	-9.07	16.6	Complied	
8	457.8609	39.88	33.86	8.89	46.02	-12.16	16.63	Complied	
9	471.8666	44.76	39.40	10.12	46.02	-6.62	17.04	Complied	
10	522.2187	37.29	32.23	8.11	46.02	-13.79	17.56	Complied	
11	540.9007	35.09	30.15	9.29	46.02	-15.87	18.24	Complied	
12	599.9962	43.88	41.80	38.35	46.02	-4.22	18.54	Complied	
13	671.3968	29.28	23.05	8.28	46.02	-22.97	18.97	Complied	
14	633.3223	34.57	32.45	30.19	46.02	-13.57	18.94	Complied	
15	792.1800	32.26	26.56	9.92	46.02	-19.46	19.82	Complied	
16	839.2458	32.76	23.32	9.27	46.02	-22.70	20.23	Complied	
Tested by:	Dieter Bald	amus							
TUV Rheinland o	of North Ame	erica, Inc.	12 Comme	rce Road	Newtown	, CT 06470	) Tel:(203	3) 426-0888 Fax: (2	03) 426-4009

The test results contained in this report refer exclusively to the product(s) presented for testing. No liability may be assumed for models or products not referred to herein. This test report may not be published or duplicated in part without permission of the testing body. This test report by itself does not constitute authorization for the use of any TUV Rheinland test mark. This report must not be used by the applicant to claim product endorsement by TUV Rheinland, NVLAP or any agency of the United States Government.

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### Configuration 2; P10 (8.2 Tx) Final >30MHz

Radiated En	nissions N	leasurer	nents						
Standard:	47 CFR 15.			ns	PRESCAN	or FINAL:	Final	Date:	3/26/2008
Device Tested:	Checkpoint	- Evolve P	<b>'</b> 10			Distance:	3.0m	File:	08032402 P10 RE Final 8.2TX Band.xl:
Mode:	8.2 Tx Band	1							
Modifications:	Ferrite P/N	284760 on	each end c	of Sync Cal	ble with 4 tu	rns			
		Μ	l leasured Le	vel					
Meas#	Freq (MHz)	Peak	Quasi- Peak	Average	Quasi- Peak Limit	Quasi- Peak /	Antenna + Cable Correction Factor (included in measured levels)	Result	Comment
1	56.5440	36.54	30.37	17.28	40.00	-9.63	6.05	Complied	
2	83.2862	35.35	30.07	13.00	40.00	-9.93	7.3	Complied	
3	99.7519	26.70	20.85	17.88	43.52	-22.67	10.48	Complied	
4	129.2270	17.77	11.73	3.54	43.52	-31.79	11.31	Complied	
5	433.3430	18.41	16.65	12.16	46.02	-29.37	16.46	Complied	
6	471.7360	7.74	3.49	-0.54	46.02	-42.53	17.04	Complied	
7	470.0022	6.74	3.02	-2.47	46.02	-43.00	17.19	Complied	
8	598.3953	12.84	8.02	1.30	46.02	-38.00	18.55	Complied	
9	638.0205	19.28	12.91	6.67	46.02	-33.11	18.96	Complied	
Tested by:	Dieter Balda	amus							



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#### 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, 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, 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.

The test results contained in this report refer exclusively to the product(s) presented for testing. No liability may be assumed for models or products not referred to herein. This test report may not be published or duplicated in part without permission of the testing body. This test report by itself does not constitute authorization for the use of any TUV Rheinland test mark. This report must not be used by the applicant to claim product endorsement by TUV Rheinland, NVLAP or any agency of the United States Government.



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### 4.3.7 Photos

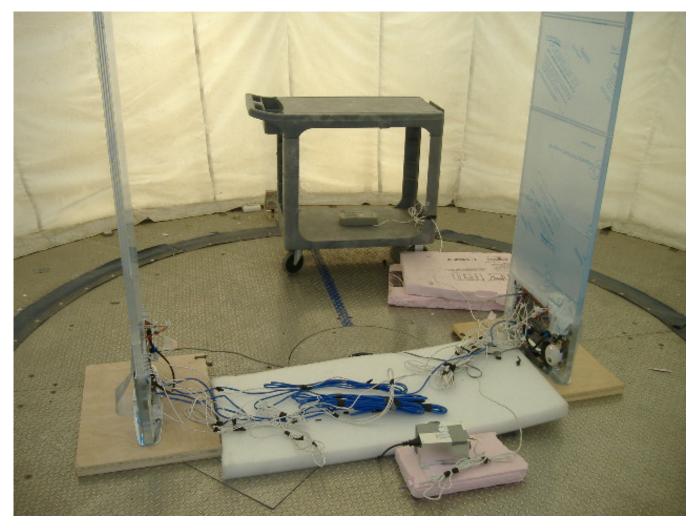


Figure 23 – Radiated Emissions (3m OATS) and Harmonics of Fundamental Emissions Test Setup (10m OATS) G10 Configuration 1



Figure 24 - Radiated Emissions (3m OATS) and Harmonics of Fundamental Emissions Test Setup (10m OATS) G10 Configuration 2



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Figure 25 – Radiated Emissions (3m OATS) and Harmonics of Fundamental Emissions Test Setup (10m OATS) P10 Configuration 1



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Figure 26 – Radiated Emissions (3m OATS) and Harmonics of Fundamental Emissions Test Setup (10m OATS) P10 Configuration 2