	Test Report Serial No.:	071712OV9-T	1187-E15C	Report Issue Date:	and an and a start of the start	
Celltech	Measurement Date(s):	July 30-31, 20	)12	Report Revision No.:	Revision 1.0	
	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s): RSS-210 RSS-Gen			IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

DECLARATION OF CC	MPLIANC	CE	RF MEASUREMENT REPORT	FCC & IC				
Test Lab Information	Name	CELL	TECH LABS INCORPORATED					
Test Lab mornation	Address	21-36	4 Lougheed Road, Kelowna, British Columbia V1X 7	R8 Canada				
Test Lab Registration No.(s)	FCC	Accredited (ISO 17025 - A2LA Test Lab Certificate No. 2470.01)						
rest Lab Registration No.(3)	IC	3874A	N-1					
Applicant Information	Name	SPYDER CONTROLS CORPORATION						
Applicant mormation	Address	5210E	Wolf Creek DR. Lacombe, Alberta, Canada, T4L 20	36				
	FCC	47 CF	R Part 2, 15.249, 15.205, 15.209					
Standard(s) & Procedure(s)	IC	RSS-2	210 Issue 8; RSS-Gen Issue 3					
	ANSI	C63.4-2003						
Device Classification(s)	FCC	DXT - Part 15 Low Power Transceiver, Rx Verified						
Device Classification(s)	IC	Low-p	ower Licence-exempt Radiocommunication Device (	Category 1)				
Application Type	FCC/IC	New Certification						
Device Identifier(s)	FCC ID:	OV9-WIRE1						
Device identifier(5)	IC:	10245A-WIRE1						
Device Under Test (DUT)	900MHz Tra	ansmitt	er for Wireless IR Repeater System					
Device Model(s) Tested	WIRE1							
Measurement Date(s)	July 30-31,	2012						
Test Sample Receipt Date	July 30, 201	12						
Test Sample Serial No.(s)	None (Ident	tical Pro	ototype)					
Transmit Frequency Band	902 - 928 M	/Hz (IS	M)					
Transmitter Operating Freq.	903.4 - 923.	.8 MHz	:					
Modulation Type(s)	FSK							
Duty Cycle Measured	7.5 % (4.15ms on-time / 55ms off-time)							
Antenna Type(s) Tested	Surface-mount Ceramic Chip							
Antenna Gain Specification	-1.0 dBi							
Power Source(s) Tested	9.0 V Alkalir	ne Cell						

This wireless device has demonstrated compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in FCC 47 CFR Rule Part 2 and Rule Part 15.249; Industry Canada RSS-210 Issue 8 and RSS-Gen Issue 3; and ANSI C63.4-2003.

I attest to the accuracy of data. All measurements were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

The results and statements contained in this report pertain only to the device(s) evaluated.

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 Test Report Approved By
 Sum Dand
 Sean Johnston
 Lab Manager
 Celltech Labs Inc.

Applicant:	Spy	der Co	ontrols Corp.	FCC ID: OV9-WIRE1		IC:	10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	mitter Transmitter Freq. Ran		req. Range:	903.4 - 923.8 MHz	T Spyder Controls Corporation
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Celltech	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and and a start of the start of
	Measurement Date(s):	July 30-31, 2	012	Report Revision No.:	Revision 1.0	
	FCC Rule Part(s): 47 CFR §2; §15.249			FCC Test Firm Reg. No.: Accredited		ACCREDITED
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

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Appendix C Compliance with Part 15.215(c) & IC RSS-Gen §7.2.614	

# FIGURES

Applicant:	Spy	der Controls Corp.		FCC ID:	0\	9-WIRE1 IC:		10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	itter Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation	
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Celltech	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Jun Contraction			
	Measurement Date(s):	July 30-31, 2	012	Report Revision No.:	Revision 1.0			
	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED		
	IC Standard(s): RSS-210 RSS-Gen			IC Test Site No.: IC 3874A-1		Test Lab Certificate No. 2470.01		

		TEST SUMMARY	•									
	FCC CFR 47 Part 15 Subpart C											
Appendix	Description of Test	Procedure Reference	Limit Reference	Test Start	Test End	Result						
А	Field Strength of Fundamental	ANSI C63.4-2003	§15.249	30Jul12	31Jul12	Pass						
А	Field Strength of Harmonics and Spurious Emissions	ANSI C63.4-2003	§15.249, §15.209 §15.205	30Jul12	31Jul12	Pass						
В	Occupied Bandwidth	ANSI C63.4-2003	§2.202(a)	30Jul12	31Jul12	Pass						
С	Compliance with Part 15.215(c)	ANSI C63.4:2003	§15.215(c)	31Jul12	31Jul12	Pass						
		IC RSS-210 Issue 8	3									
Appendix	Description of Test	Procedure Reference	Limit Reference	Test Start	Test End	<u>Result</u>						
А	Field Strength of Fundamental	ANSI C63.4-2003	RSS-Gen §7.2.5	30Jul12	31Jul12	Pass						
А	Field Strength of Harmonics and Spurious Emissions	ANSI C63.4-2003	RSS-Gen §7.2.2 RSS-Gen §7.2.5	30Jul12	31Jul12	Pass						
В	Occupied Bandwidth	ANSI C63.4-2003	RSS-Gen §4.6.1	30Jul12	31Jul12	Pass						
С	Compliance with RSS-Gen §7.2.6	RSS-Gen §7.2.6	RSS-Gen §4.7	31Jul12	31Jul12	Pass						

Applicant:	Spy	der Co	Controls Corp. FCC I		0\	/9-WIRE1	IC: 10245A-WIRE1			
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	mitter Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation	
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	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and the second s	
Celltech	Measurement Date(s):	July 30-31, 2	012	Report Revision No.:			
	FCC Rule Part(s):	47 CFR §2;	§15.249	FCC Test Firm Reg. No.:	Accredited	ACCREDITED	
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01	

REVISION LOG								
Revision	Release Date							
1.0	1st Release	Sean Johnston	Jon Hughes	August 13, 2012				

Applicant:	Spy	der Controls Corp.		FCC ID:	0\	/9-WIRE1 IC:		10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	er Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation	
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	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and the second s
Celltech	Measurement Date(s): July 30-31, 2012			Report Revision No.:	Revision 1.0	
Teeling and Engineering Services Lab	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

## 1.0 <u>SCOPE</u>

This report outlines the measurements made and results collected during electromagnetic emissions testing of the Spyder Controls Corp. Model: WIRE1 900MHz Transmitter for Wireless IR Repeater System. The measurement results were applied against the applicable EMC requirements and limits outlined in the technical rules and regulations set forth in the Federal Communication's Commission Code of Federal Regulations Title 47 Part 15 Subpart C and Industry Canada Radio Standards Specification RSS-210 Issue 8 and RSS-Gen Issue 3.

## 2.0 REFERENCES

2.1 Normative References	
ANSI/ISO 17025:2005	General Requirements for competence of testing and calibration laboratories
IEEE/ANSI C63.4-2003	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
CFR Title 47 Part 15C	Code of Federal Regulations Title 47: Telecommunication Part 15C: Intentional Radiators
IC Spectrum Management & Telecommunications Policy	Radio Standards Specification RSS-210 Issue 8 - Low-Power Licence-Exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment RSS-Gen Issue 3 - General Requirements and Information for the Certification of Radiocommunication Equipment

## 3.0 PASS/FAIL CRITERIA

Unless otherwise noted in the Appendices, the pass/fail criteria is the limit set forth in the reference standards. The DUT is considered to have passed the requirements if the data collected during the described measurement procedure is not above the specified limits as defined. The pass/fail statements made in this report only apply to the unit tested.

Applicant:	Spy	pyder Controls Corp.		FCC ID:	0	/9-WIRE1 IC:		10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation	
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	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and and a start of the start of	
Celltech	Measurement Date(s):	ent Date(s): July 30-31, 2012		Report Revision No.: Revision 1.0			
Celifecn Teeling and Engineering Servers Lab	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED	
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01	

## 4.0 FACILITIES AND ACCREDITATIONS

The facilities used in collecting the test results outlined in this report are located at 21-364 Lougheed Road, Kelowna, British Columbia, Canada V1X 7R8. The radiated emissions site conforms to the requirements set forth in ANSI C63.4 and is filed and listed with the FCC as an Accredited Test Firm and with Industry Canada under Test Site File Number IC 3874A-1.

## 5.0 GENERAL INFORMATION

## 5.1 Applicant Information

Company Name	SPYDER CONTROLS CORP.			
Address	5210E Wolf Creek Drive			
	Lacombe, Alberta T4L 2G6			
	Canada			
FCC Grantee Code	OV9			
IC Company No.	10245A			

## 5.2 DUT Description

Device Type	900MHz Tr	ansmitter for Wireless IR Repeater System		
Device Model(s) Tested	WIRE1			
Device Identifier(s)	FCC ID:	OV9-WIRE1		
	IC:	10245A-WIRE1		
Power Source Tested	9.0V Alkaliı	ne Cell		
Antenna Type Tested	Surface-mount Ceramic Chip			
Antenna Gain Specification	-1.0 dBi			

## 5.3 Mode(s) of Operation Tested

Transmit Frequency Band	902 - 928 MHz (ISM)	
Transmitter Operating Freq.	903.4 - 923.8 MHz	
Transmitter Test Mode(s)	Set to continuously transmit the modulated signal	
Modulation Type(s)	FSK	

## 5.4 Modification(s)

None

Applicant:	Spy	der Controls Corp.		FCC ID:	0	OV9-WIRE1 IC:		10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	TS Spyder Controls Corporation	
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Celltech	Measurement Date(s):	July 30-31, 2	012	Report Revision No.:	Revision 1.0	
Teeling and Engineering Services Lab	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

	Appendix A	Field Strength of the Fundamental and Spurious Emissions	
EEDENCES			

A.1 REFERENCES					
Normative Reference Standard	FCC CFR 47 §15.249; §15.209; §15.205; IC RSS-210 Issue 8; RSS-Gen				
Procedure Reference	ANSI C63.4:2003				

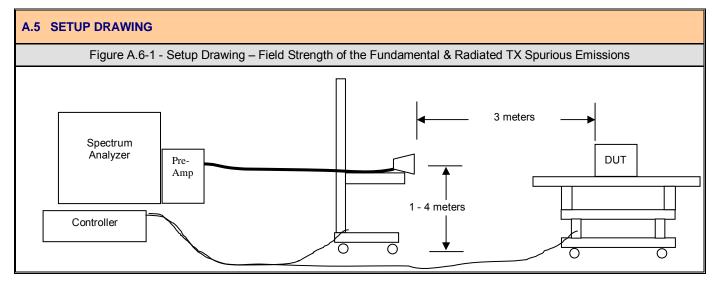
A.2 LIMITS						
FCC CFR 47 §15.35(b)	measurements below 1000 MHz, t	there also is a limi mit on peak radio	it on the peak leve frequency emiss	is part, including average emission el of the radio frequency emissions. ions is 20 dB above the maximum		
FCC CFR 47	Fundamental Frequency	Fundamental Frequency         Strength of Fundamental (mV/m)				
§15.249(a)	902-928 MHz		50 (93.98 dBuV/	m)		
FCC CFR 47 §15.249(a)	Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:					
	Fundamental Frequency     Strength of harmonics (uV/m)					
	902-928 MHz	//m)				
FCC CFR 47 §15.249(d)	Emissions radiated outside the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.					
FCC CFR 47 §15.209(a)	Except as provided elsewhere in th the field strength levels specified in			ntentional radiator shall not exceed		
	Frequency (MHz)	Field Strength (u	V/m)	Measurement Distance (m)		
	0.009-0.490	2400/F(kHz)		300		
	0.490-1.705	24000/F(kHz)		30		
	1.705-30	30		30		
	30-88	100	3			
	88-216	150		3		
	216-960	200		3		
	Above 960	500		3		

A.3 ENVIRONMENTAL CONDITIONS							
Temperature	25 +/- 5 °C						
Humidity	40 +/- 10 %						
Barometric Pressure	101 +/- 3 kPa						

Applicant:	Spyc	der Controls Corp.		FCC ID:	0	OV9-WIRE1 IC:		10245A-WIRE1			
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	900MHz Transmitter Transmitter Freq. Range: 903.4 - 923.8 MHz		903.4 - 923.8 MHz	Spyder Controls Corporation			
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Celltech	Measurement Date(s):	July 30-31, 2	012	Report Revision No.:	Revision 1.0	
Teeling and Engineering Services Lab	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

A.4 EQUIPMENT	LIST				
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE	
00051	HP	8566B	Spectrum Analyzer RF Section	09Apr14	
00049	HP	85650A	Quasi-peak Adapter	09Apr14	
00047	HP	85685A	RF Preselector	09Apr14	
00072	EMCO	2075	Mini-mast	n/a	
00073	EMCO	2080	Turn Table	n/a	
00071	EMCO	2090	Multi-Device Controller	n/a	
00030	HP	83017A	Microwave System Amplifier	n/a	
00015	Agilent	E4408B	Spectrum Analyzer	03May14	
00050	Chase	CBL-6111A	Bilog Antenna	15Mar14	
00055	EMCO	3121C	Dipole Antenna	04Apr14	
00034	ETS	3115	Double Ridged Guide Horn	03Apr14	



Applicant:	Spy	der Controls Corp.		FCC ID:	0\	9-WIRE1 IC:		10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	hitter Transmitter Freq. Range:		903.4 - 923.8 MHz	TS Spyder Controls Corporation	
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	Test Report Serial No.:	0717120V9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and and a start of the start of
Celltech	Measurement Date(s):	July 30-31, 2012		Report Revision No.:	Revision 1.0	
Teeling and Engineering Services Lab	FCC Rule Part(s):	: 47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

#### Procedure for determining the average value of pulsed emissions (ANSI C63.4:2003)

When the average value of the pulsed emissions from an DUT must be determined, the average can be found by measuring the peak pulse amplitude and determining the duty cycle correction factor of the pulse modulation. The duty cycle correction factor  $\delta$  may be expressed in terms of dB as

#### $\delta$ (dB) = 20log( $\delta$ )

This correction factor can then be applied to the peak pulse amplitude to find the average. This correction is applied for all emissions including the fundamental and harmonics. The duty cycle correction is determined as follows:

a) Couple the final radio frequency output signal to the input of a spectrum analyzer. This can be performed by a radiated, direct connect or a "near-field" coupling method. The signal received must be of sufficient level to adequately trigger the spectrum analyzer swept display.

b) Adjust the center frequency of the spectrum analyzer to the center of the RF signal

c) Set the spectrum analyzer for ZERO SPAN

d) Adjust the SWEEP TIME to obtain at least a 100 ms period of time on the horizontal display axis of the spectrum analyzer.

e) Set the TRIGGER on the spectrum analyzer to capture the greatest amount of "on time" for pulse train length less than 100 ms, or the greatest amount of "on time" in 100 ms for pulse train length greater than 100 ms.

f) Determine the total "on time" for one pulse train (or 100 ms).

g) The duty cycle correction factor is the total "on time" divided by the period of the pulse train (or 100 ms)

Test Results: Tp = 55ms Ton = 4.15 ms x 2 (in 100 ms) = 8.3  $\delta$  (dB) = 20 Log(8.3/100) = -21.6 dB

Test Procedure: As described in ANSI C63.4:2003

柒 Agil	lent 45:85:8	9 45, 165			RT	, Display
Ref -30	dBm	#Atten 5	dB	Mkr2 ∆	55.65 ms 45.41 dB	
⊃eak L <b>og</b>						Full Screer
10 18/						Display Lin -25.00 dBm
	zk Northerese					<u>On (</u>
Ì	no Unitation	nonnon	mmanphrishmann	the state of the second s	nkan nin mini	
						Limit
	923.8 MHz				Span O Hz	Active Fctn
	V 100 kHz			Sweep 83.06 ms		Position
Marker	Trace	Туре	X Axis	A	mplitude	
Marker 1R	Trace (1)	Time	X Axis 1.661 ms	-87.	mplitude 26 dBm	
Marker 1R 1∆	Trace (1) (1)	Time Time	X Axis 1.661 ms 4.153 ms	-87. 4	mplitude 26 dBm 5.91 dB	Cent
Marker 1R	Trace (1)	Time	X Axis 1.661 ms	А -87. 4 -87.	mplitude 26 dBm	Cent
Marker 1R 1∆ 2R	Trace (1) (1) (1)	Time Time Time	X Axis 1.661 ms 4.153 ms 1.661 ms	А -87. 4 -87.	mplitude 26 dBm 5.91 dB 26 dBm	Positior Cent Title Preferences

Applicant:	Spy	der Controls Corp.		FCC ID:	0\	9-WIRE1 IC:				
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation	
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Celltech	Measurement Date(s):	July 30-31, 2	012	Report Revision No.:	Revision 1.0	
Teeling and Engineering Services Lab	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

## A.6 TEST RESULTS

Fundamenta	Fundamental												
Frequency	Antenna Pol.		E-Field (Peak)	Limit (Peak)	Margin (Peak)								
[MHz]	V/H	<b>DUT Orientation</b>	[dBuV/m]	[dBuV/m]	[dB]	Result							
903.4	V	х	92.7	93.98	1.28	Pass							
903.4	Н	Х	90.8	93.98	3.18	Pass							
913.0	V	Х	93.3	93.98	0.68	Pass							
913.0	Н	Х	91.1	93.98	2.88	Pass							
923.7	V	Х	93.2	93.98	0.78	Pass							
923.7	Н	Х	91.2	93.98	2.78	Pass							

## A.7 TEST RESULTS

## **Spurious Emissions**

Frequency	Antenna Pol.	DUT	E-Field	δ (dB)	Corrected E-Field	Limit	Limit (Peak)	Margin	Margin (Peak)	
[MHz]	V/H	Orientation	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	Result
3613.60	Н	Х	57.20	-21.60	45.60	53.98	73.98	8.38	6.78	Pass
3613.60	Н	Y	59.4	-21.60	47.80	53.98	73.98	6.18	4.58	Pass
3613.60	Н	Z	51.5	-21.60	39.90	53.98	73.98	14.08	12.48	Pass
3613.60	V	Х	52.30	-21.60	40.70	53.98	73.98	13.28	11.68	Pass
3613.60	V	Y	51.7	-21.60	40.10	53.98	73.98	13.88	12.28	Pass
3613.60	V	Z	58.8	-21.60	47.20	53.98	73.98	6.78	5.18	Pass
3651.92	Н	Х	56.30	-21.60	44.70	53.98	73.98	9.28	7.68	Pass
3651.92	Н	Y	58.50	-21.60	46.90	53.98	73.98	7.08	5.48	Pass
3651.92	Н	Z	50.70	-21.60	39.10	53.98	73.98	14.88	13.28	Pass
3651.92	V	Х	51.60	-21.60	40.00	53.98	73.98	13.98	12.38	Pass
3651.92	V	Y	51.00	-21.60	39.40	53.98	73.98	14.58	12.98	Pass
3651.92	V	Z	58.00	-21.60	46.40	53.98	73.98	7.58	5.98	Pass
3695.20	Н	Х	54.70	-21.60	43.10	53.98	73.98	10.88	9.28	Pass
3695.20	Н	Y	57.00	-21.60	45.40	53.98	73.98	8.58	6.98	Pass
3695.20	Н	Z	49.30	-21.60	37.70	53.98	73.98	16.28	14.68	Pass
3695.20	V	Х	50.30	-21.60	38.70	53.98	73.98	15.28	13.68	Pass
3695.20	V	Y	49.50	-21.60	37.90	53.98	73.98	16.08	14.48	Pass
3695.20	V	Z	56.60	-21.60	45.00	53.98	73.98	8.98	7.38	Pass

#### Notes:

Radiated spurious emissions were measured at the lowest radio frequency signal generated up to the 10<sup>th</sup> harmonic. 1.

PRF > 50ms, peak detector used. 2.

Remarks:

1) E-Field = Antenna Factor + Cable Loss + Meter Reading – Amp Gain

2)́ Peak Limit = Average Limit + 20dB

3) All DUT Orientations investigate, only highest reported for fundamental field strength.

4) nf indicates emission not detectable above noise floor.

na indicates not applicable Remark "\*" means restricted band 5)́

6) 7)

DUT orientations: X = Flat, Y = Side, Z=Side rotated 90°

Example Calculations: Margin Calculation: Margin = Limit – (Corrected E-Field)

Applicant:	Spy	der Co	ontrols Corp.	trols Corp. FCC ID:		OV9-WIRE1 IC:		IC: 10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation	
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	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and the second s
Celltech	Measurement Date(s):	July 30-31, 2	012	Report Revision No.: Revision 1.0		
Tering and Engineering Services Lab	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s): RSS-210 RSS-Gen		IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01	



Applicant:	Spy	der Controls Corp.		FCC ID: OV		OV9-WIRE1 IC:		10245A-WIRE1	
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	ter Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation
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Clinet	Measurement Date(s):	July 30-31, 2	012	Report Revision No.: Revision 1.0		
Celltech	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s): RSS-210 RSS-Gen		IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01	

	Appendix B	Occupied Bandwidth	
B.1 REFERENCES			
Normative Reference Standard	FCC CFR 47 §2.202(a);	; IC RSS-Gen Issue 8	
Procedure Reference	ANSI C63.4:2003		

B.2 DESCRIPTI	B.2 DESCRIPTION							
FCC CFR 47 §2.202(a)	<i>Occupied bandwidth.</i> The frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. In some cases, for example multichannel frequency-division systems, the percentage of 0.5 percent may lead to certain difficulties in the practical application of the definitions of occupied and necessary bandwidth; in such cases a different percentage may prove useful.							
IC RSS-Gen Section 4.6.1	When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.							

B.3 ENVIRONMENTAL CONDITIONS					
Temperature	25 +/- 5 °C				
Humidity	40 +/- 10 %				
Barometric Pressure	101 +/- 3 kPa				

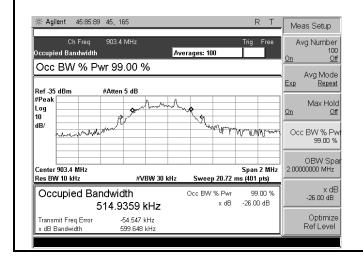
ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00015	Agilent	E4408B	Spectrum Analyzer	03May14

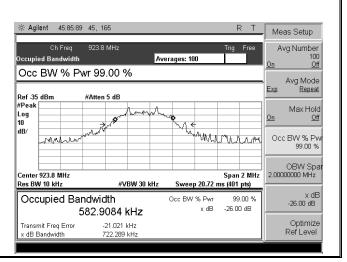
B.4 SETUP DRAWING									
Figure B.4-1 - Setup Drawing – Occupied Bandwidth									
	DUT	Spectrum Analyzer							

Applicant:	Spyc	der Controls Corp.		FCC ID:	ID: OV9-WIRE1		OV9-WIRE1 IC: 10245A-WIRE1			
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	C Spyder Controls Corporation	
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Celltech	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and an and a start of the start
	Measurement Date(s):	July 30-31, 2	012	Report Revision No.:	Revision 1.0	
Teeling and Engineering Services Lab	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s): RSS-210 RSS-Gen		IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01	

## **B.5 TEST RESULTS**





B.6 EMISSION DESIGNATOR						
Normative Reference Standard	FCC CFR 47 §2.201, §2.202; IC RSS-Gen Issue 3					
Type of Modulation	Frequency Shift Keying (FSK)					
Emission Designator	583KF1D					
K = kHz						
F = Frequency Modulation						
1 = A single channel containing quantized or	digital information without the use of a modulating sub-carrier					
D = Data Transmission						

Applicant:	Spyc	der Controls Corp.		FCC ID:	OV9-WIRE1 IC:		/9-WIRE1 IC: 10245A-WIRE1			
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation	
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Celltech	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and the second s
	Measurement Date(s): July 30-31, 2012			Report Revision No.:	Revision 1.0	
	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED
	IC Standard(s):	RSS-210	RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01

Appendix C Compliance with Part 15.215(c) & IC RSS-Gen	7.2.6
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C.1. REFERENCES	
Normative Reference Standard	FCC CFR 47 §15.215(c); IC RSS-Gen §7.2.6
Procedure Reference	ANSI C63.4:2003

C.2. LIMITS	
FCC CFR 47 §15.215(c)	Intentional radiators operating under the alternative provisions to the general emission limits, as contained in 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency and includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.
IC RSS-Gen §7.2.6	If the frequency stability of the licence-exempt radio apparatus is not specified in the applicable standards, measurement of the frequency stability is not required provided that the occupied bandwidth of the licence-exempt radio apparatus lies entirely outside the restricted bands of Table 1 and the prohibited TV bands of 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-806 MHz.

C.3. ENVIRONMENTAL CONDITIONS				
Temperature	25 <u>+</u> 5 °C			
Humidity	35 <u>+</u> 5 %RH			
Barometric Pressure	uncontrolled			

ID	ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
1	00015	HP	E4408B	Spectrum Analyzer	03May14
2	0003	HP	53181A	Frequency Counter	09May14
3	00207	VWR	61161-378	Temperature Sensor	09May14

Low channel outside of the central 80% of the band, stability over temperature and input voltage evaluated.

Applicant:	Spy	oyder Controls Corp.		FCC ID:	0\	/9-WIRE1 IC:		10245A-WIRE1		
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	The Spyder Controls Corporation	
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	Test Report Serial No.:	071712OV9-	T1187-E15C	Report Issue Date:	Aug. 13, 2012	and the second s	
Celltech	Measurement Date(s):	July 30-31, 2012		Report Revision No.:	Revision 1.0		
	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.:	Accredited	ACCREDITED	
	IC Standard(s): RSS-210		RSS-Gen	IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01	

C.4. TEST RESULTS									
Low Channel									
Temperature (degrees C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (%)						
-30	903.3547	903.3549	0.0000%						
-20	903.3547	903.3557	-0.0001%						
-10	903.3547	903.3560	0.0005%						
0	903.3547	903.3547	0.0000%						
10	903.3547	903.3547	0.0000%						
20	903.3547	903.3547	0.0000%						
30	903.3547	903.3557	-0.0001%						
40	903.3547	903.3587	-0.0004%						
50	903.3547	903.3577	-0.0003%						

	Voltage (V)		
	Nominal 9.0	(85%) 7.65	(115% )10.35
Low CH	903.3547	903.3549	903.3550

The requirement to contain the designated bandwidth of the emission within the specified frequency is met.

Applicant:	Spyc	der Co	ontrols Corp.	FCC ID:	OV9-WIRE1		IC:	10245A-WIRE1	
DUT Model:	WIR	E1	DUT Type:	900MHz Trans	smitter	Transmitter Freq. Range:		903.4 - 923.8 MHz	Spyder Controls Corporation
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	Measurement Date(s): July 30-31, 2012			Report Revision No.:	Revision 1.0		
	FCC Rule Part(s):	47 CFR §2; §15.249		FCC Test Firm Reg. No.: Accredited		ACCREDITED	
	IC Standard(s):	IC Standard(s): RSS-210 RSS-Gen		IC Test Site No.:	IC 3874A-1	Test Lab Certificate No. 2470.01	

# **END OF DOCUMENT**

Applicant:	Spyder Controls Corp.			FCC ID:	D: OV9-WIRI		IC:	10245A-WIRE1	
DUT Model:	WIRE1		DUT Type:	900MHz Transmitter Transm		Transmitter F	req. Range:	903.4 - 923.8 MHz	Spyder Controls Corporation
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