ELECTROMAGNETIC COMPATIBILITY

EMC TEST REPORT

FCC 47 CFR §15.249

IC RSS-210 ISSUE 6

FOR

RFIND SYSTEMS, INC.

RFID ACTIVE TAG

MODEL NAME: TALON

MODEL NUMBER: T100

FCC ID: UL3T100A

IC: 6721A-T100A

Test Report Serial No.

091206UL3-T776-E15RAT

Test Report Revision No.

Revision 1.1 (Response to TCB)

Test Lab and Location

Celltech Compliance Testing & Engineering Lab
(Celltech Labs Inc.)
1955 Moss Court
Kelowna, BC
Canada
V1Y 9L3

DECLARATION OF COMPLIANCE

Test Lab and Location	**CELLTECH LABS INCORPORATED** Testing and Engineering Services 1955 Moss Court Kelowna, B.C. Canada V1Y 9L3	**Company Information**	**RFIND SYSTEMS, INC.** 102, 9-3151 Lakeshore Road Kelowna, British Columbia Canada V1W 3S9
Phone:	250-448-7047		
Fax:	250-448-7048		
e-mail:	info@celltechlabs.com		
web site:	www.celltechlabs.com		

Test Laboratory Registration No.(s):	FCC:	714830	IC:	3874	
Rule Part(s) Applied:	FCC:	47 CFR §15.249			
	IC:	RSS-GEN Issue 1; RSS-210 Issue 6			
Device Classification:	FCC:	Part 15 Low Power Transceiver, Rx Verified (DXT)			
	IC:	Low Power Licence-exempt Radiocommunication Devices			
Device Identification:	FCC ID:	UL3T100A	IC:	6721A-T100A	
Model(s):	Name:	Talon	No.	T100	
Device Description:	RFID Active Tag				
Transmit Frequency:	915.0 MHz and 915.8 MHz (2 channel frequencies)				
Max. RF Signal Measured:	Field Strength	915.0 MHz	+104.80 dBuV/m		
		915.8 MHz	+105.13 dBuV/m		
Modulation Type:	FSK (Frequency Shift Keying)				
Antenna Type:	Internal Monopole				
Antenna Gain:	0 dBi				
Power Source Tested:	3.6 V Internal Lithium Battery, 2400 mAh (Model: ER14505)				

This wireless transceiver 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 Part 15 Subpart C, Industry Canada RSS-GEN Issue 1, RSS 210 Issue 6 and ANSI C63.4:2003.

I attest to the accuracy of the data. All measurements reported herein were performed by me or were 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.

This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc.
The results and statements contained in this report pertain only to the device(s) evaluated.

Test Report Approved By:
Spencer Watson
EMC Lab Manager
Celltech Labs Inc.

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TEST SUMMARY

Appendix	Test Description	Procedure Reference	Limit Reference	Test Start Date	Test End Date	Result
Referenced Standard: FCC CFR Title 47 Part 15 Subpart C						
A	Radiated Fundamental	ANSI C63.4:2003	§15.249	13Sept06	13Sept06	Pass
B	Radiated TX Spurious Emissions and Harmonics	ANSI C63.4:2003	§15.249, §15.209	14Sept06	18Sept06	Pass
E	Compliance with Part 15.215(c)	ANSI C63.4:2003	§15.215(c)	24Oct06	24Oct06	Pass
Referenced Standard(s): IC RSS-210 Issue 6 & RSS-GEN Issue 1						
A	Radiated Fundamental	RSS-Gen §4.7	RSS-210 §2.7	13Sept06	13Sept06	Pass
B	Radiated TX Spurious Emissions and Harmonics	RSS-Gen §4.7	RSS-210 §2.7	14Sept06	18Sept06	Pass
C	Radiated RX Spurious Emissions	RSS-Gen §4.8	RSS-Gen §6(a)	14Sept06	18Sept06	Pass
D	Frequency Stability	RSS-Gen §4.5	RSS-210 §2.1	na	na	na

REVISION LOG

Revision No.	Description	Implemented By	Implementation Date
Revision 1.0	Initial Release	Jonathan Hughes	October 20, 2006
Revision 1.1	2nd Release (Response to TCB)	Jonathan Hughes	October 25, 2006

SIGNATORIES

Prepared By:	Spencer Watson	September 20, 2006 October 25, 2006
Name/Title	Spencer Watson / EMC Lab Manager	Date
Approved By:		October 20, 2006 October 25, 2006
Name/Title	Jonathan Hughes / General Manager	Date

1.0 SCOPE

This report outlines the measurements made and results collected during electromagnetic emissions testing of the RFind Systems, Inc. Talon T100 RFID Active Tag. The product was tested in continuous transmit mode on each of the two transmit channels. The two channels are less than 1 MHz apart in frequency. 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 Commission Code of Federal Regulations Title 47 Part 15 Subpart C, Industry Canada Radio Standards Specifications RSS-210 Issue 6 and RSS-GEN Issue 1.

2.0 REFERENCES

2.1 Normative References

ANSI/ISO 17025:1999	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
IEEE/ANSI Std C95.1:1999	American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields
CFR Title 47: 2005	Code of Federal Regulations Title 47: Telecommunication Part 2: Frequency Allocations and Radio Treaty Matters; General Rules and Regulations Part 15: Radio Frequency Devices
IC Spectrum Management & Telecommunications Policy	Radio Standards Specification RSS-GEN Issue 1 - General Requirements and Information for the Certification of Radiocommunication Equipment (September 2005) RSS-210 Issue 6 - Low Power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment (September 2005)

3.0 TERMS AND DEFINITIONS

AV	Average
CDMA	Code Division Multiple Access
CFR	Code of Federal Regulations
dB	decibel
dBm	dB referenced to 1 mW
dBuV	dB referenced to 1 uV
DUT	Device under Test
dBc	dB down from carrier
EBW	Emission Bandwidth
EIRP	Effective Isotropic Radiated Power
EDGE	Enhanced Data Rates for CDMA Evolution
EMC	Electromagnetic Compatibility
ERP	Effective Radiated Power
FCC	Federal Communication Commission
FHSS	Frequency Hopping Spread Spectrum
CDMA	Global Systems for a Mobility Communication
GPRS	General Packet Radio Service
HP	Hewlett Packard
HPF	High Pass Filter
Hpol	Horizontal Polarization
Hz	Hertz
IC	Industry Canada
kHz	kilohertz
LNA	Low Noise Amplifier
m	meter
MHz	Megahertz
Mbps	megabits per second
na	not applicable
n/a	not available
PK	Peak
PPSD	Peak Power Spectral Density
QP	Quasi-peak
RBW	Resolution Bandwidth
RFID	Radio Frequency IDentification
R&S	Rohde & Schwarz
RSS	Radio Standard Specification
SA	Spectrum Analyzer
VBW	Video Bandwidth
Vpol	Vertical Polarization
WLAN	Wireless Local Area Network

4.0 FACILITIES AND ACCREDITATIONS

The facilities used in collecting the test results outlined in this report are located at 1955 Moss Court, Kelowna, British Columbia, Canada, V1Y 9L3. The radiated and conducted emissions sites conform with the requirements set forth in ANSI C63.4 and are filed and listed with the FCC under Registration Number 714830 and Industry Canada under File Number IC 3874.

5.0 GENERAL INFORMATION

5.1 DUT Description

The DUT consisted of the RFind RFID Active Tag in its intended casing and operating configuration.

Device:	RFind RFID Active Tag
Model:	Talon T100
Serial Number(s):	None
Antenna Type:	Internal Monopole
Antenna Gain:	0 dBi
Power Source:	3.6 V Internal Lithium Battery, 2400 mAh (Model: ER14505)

5.2 Co-Located Equipment

None

5.3 Cable Descriptions

None

5.4 Support Equipment

There was no support equipment for this device. It is self-contained with no input or output ports.

5.5 Clock Frequencies

5.5.1 DUT Clock Frequencies

Device:	RFID Active Tag
Clocks:	4 MHz, 27 MHz

5.6 Mode(s) of Operation Tested

The device was configured by the manufacturer to transmit continuously at full power whenever powered up.

Transmitter Frequency:	915.0 MHz and 915.8 MHz (2 channel frequencies)
Power Gain Settings:	Power was set to maximum output by manufacturer
Modulation Tested:	Modulated Carrier

5.7 Configuration Description

The radiated power of the DUT was measured in 3 orthogonal orientations. The orientation with the highest radiated result was then used for all subsequent measurements. More specific details may be included in each appendix. The DUT was tested in a configuration described by the client as being typical of normal use.

6.0 PASS/FAIL CRITERIA

Unless otherwise noted in the Appendices, the pass/fail criterion is the limit set forth in the reference standards. A DUT is considered to have passed the requirements, if the data collected during the described measurement procedure is within the specified limits as defined. The pass/fail statements made in this report only apply to the unit tested.

APPENDICES

Appendix A - Radiated Field Strength of the Fundamental

A.1. REFERENCES

Normative Reference Standard	§15.35, §15.249
Procedure Reference	ANSI C63.4:2003

A.2. LIMITS

FCC CFR 47 §15.35(b)	When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average limit applicable to the equipment under test.	
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 fundamental (mV/m)
	902-928 MHz	50 (93.98 dBuV/m)

A.3. ENVIRONMENTAL CONDITIONS

Temperature	25 ± 5 ºC
Humidity	35 ± 5 %RH
Barometric Pressure	uncontrolled

A.4. EQUIPMENT LIST

RECEIVING EQUIPMENT

ID	ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE
1	00072	EMCO	2075	Mini-mast	na	na
2	00073	EMCO	2080	Turn Table	na	na
3	00071	EMCO	2090	Multi-Device Controller	na	na
4	00050	Chase	CBL-6111A	Bilog Antenna	04Apr06	04Apr07
5	00051	HP	8566B	Spectrum Analyzer	04Apr06	04Apr07
6	00047	HP	85685A	Preselector	05Apr06	05Apr07
7	00049	HP	85650A	Quasi-Peak Adapter	04Apr06	04Apr07
8	00048	Gore	65474	Microwave Cable	16Aug05	16Aug07
9	00120	Celltech	n/a	Microwave Cable (RX)	na*	na*

*Attenuator offset in power meter

A.5. MEASUREMENT EQUIPMENT SETUP

MEASUREMENT EQUIPMENT CONNECTIONS

The measurement equipment was connected as shown in A.6.

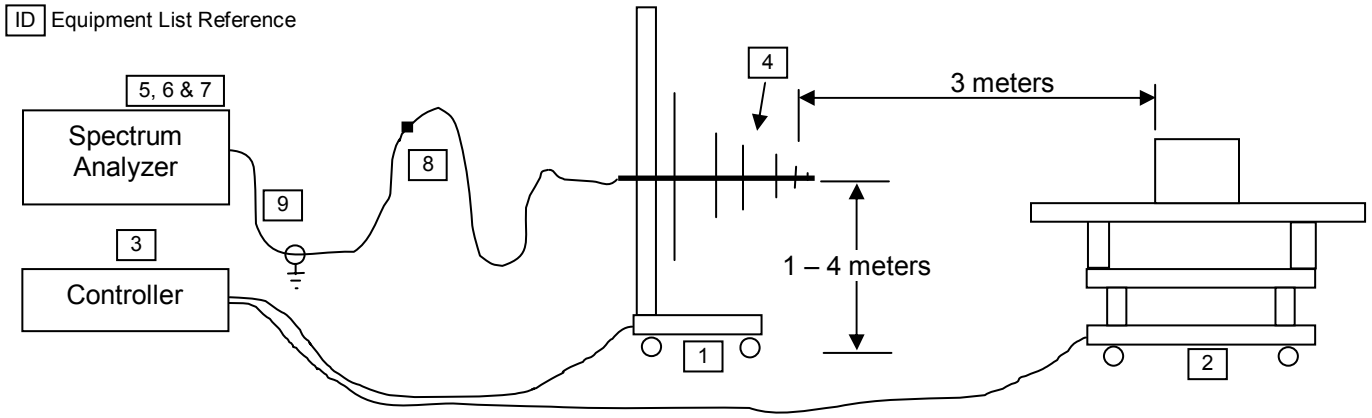
MEASUREMENT EQUIPMENT SETTINGS

The spectrum analyzer was set to the following settings:

Frequencies Measured	RBW	VBW	Detector
MHz	kHz	kHz	
915.0 and 915.8 MHz	1000	1000	Peak
915.0 and 915.8 MHz	120	1000	Quasi-Peak

A.6. SETUP DRAWING

Figure A.6-1 - Setup Drawing



A.7. DUT OPERATING DESCRIPTION

Power measurements were made for each of the two channels used by the DUT, 915.0 and 915.8 MHz, in three mutually orthogonal orientations. The orientation that yielded the highest field strength is reported here. The DUT was set for modulated carrier operation at maximum power by the manufacturer.

A.8. SETUP PHOTOGRAPHS

Photograph A.8-1 - DUT Face-Up Configuration - Bilog Receive Antenna Horizontal

Photograph A.8-2 - DUT Face-Up Configuration - Bilog Receive Antenna Vertical

A.9. TEST RESULTS

Project Number: 776 **Standard:** FCC15.249
Company: RFind **Test Start Date:** 13-Sep-06
Product: RFID Active Tag **Test End Date:** 13-Sep-06

Channel	Polarity	Measurement Distance	Antenna	Frequency	SA Level	AF	CL	Other	Total CF	Field Strength	Detector	Limit	Margin	RBW
		m		MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m		dBuV/m	dB	kHz
Low	H	3	Bilog SN1607	915.00	78.10	23.65	3.05	0.00	26.70	104.80	PK	113.98	9.18	1000
Low	H	3	Bilog SN1607	915.00	65.50	23.65	3.05	0.00	26.70	92.20	QP	93.98	1.78	120
Low	V	3	Bilog SN1607	915.00	66.70	23.65	3.05	0.00	26.70	93.40	PK	113.98	20.58	1000
Low	V	3	Bilog SN1607	915.00	53.50	23.65	3.05	0.00	26.70	80.20	QP	93.98	13.78	120
High	H	3	Bilog SN1607	915.80	78.40	23.67	3.05	0.00	26.73	105.13	PK	113.98	8.85	1000
High	H	3	Bilog SN1607	915.80	65.60	23.67	3.05	0.00	26.73	92.33	QP	93.98	1.65	120
High	V	3	Bilog SN1607	915.80	67.80	23.67	3.05	0.00	26.73	94.53	PK	113.98	19.45	1000
High	V	3	Bilog SN1607	915.80	54.50	23.67	3.05	0.00	26.73	81.23	QP	93.98	12.75	120

The limit of 93.98 dBuV/m is an Average limit. The DUT passes because the QP level is lower than the average limit.

A.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

Spencer Watson
EMC Lab Manager
Celltech Labs Inc.

20Sept06
Date

Appendix B - Radiated TX Spurious Emissions & Harmonics Measurement

B.1. REFERENCES

Normative Reference Standard	FCC CFR 47 §15.35, §15.209, §15.249
Procedure Reference	ANSI C63.4:2003

B.2. LIMITS

FCC CFR 47 §15.35 (b)	When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average limit applicable to the equipment under test.		
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	500 (53.98 dBuV/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 this subpart, the emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:		
	Frequency (MHz)	Field Strength (uV/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

B.3. ENVIRONMENTAL CONDITIONS

Temperature	25 ± 5 ºC
Humidity	35 ± 5 %RH
Barometric Pressure	uncontrolled

B.4. EQUIPMENT LIST

RECEIVING EQUIPMENT

ID	ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE
1	00072	EMCO	2075	Mini-mast	na	na
2	00073	EMCO	2080	Turn Table	na	na
3	00071	EMCO	2090	Multi-Device Controller	na	na
4	00085	EMCO	6502	Loop Antenna	30Aug06	30Aug07
5	00050	Chase	CBL-6111A	Bilog Antenna	04Apr06	04Apr07
6	00034	ETS	3115	Double Ridged Guide Horn	11Aug05	11Aug07
7	00051	HP	8566B	Spectrum Analyzer	04Apr06	04Apr07
8	00047	HP	85685A	Preselector	05Apr06	05Apr07
9	00049	HP	85650A	Quasi-Peak Adapter	04Apr06	04Apr07
10	00048	Gore	65474	Microwave Cable	16Aug05	16Aug07
11	00115	Miteq	J54-00102600-35-5A	LNA	18Apr06	18Apr07
12	00204	Microwave Circuits	H02G18G3	High Pass Filter	na*	na*
13	00093	Microtronics	HPM50111	High Pass Filter	na*	na*
14	00120	Celltech	n/a	Microwave Cable (RX)	na*	na*

*Verified with VNA

B.5. MEASUREMENT EQUIPMENT SETUP

MEASUREMENT EQUIPMENT CONNECTIONS

The measurement equipment was connected as shown in B.6. A number of measurement equipment configurations were used to cover the applicable frequency ranges. The configurations for each range are as follows:

Frequency Range	LNA Asset #	Filter/Attenuator Asset #	Rx Antenna Asset #
30 MHz – 1 GHz	none	none	00050
1 GHz – 2 GHz	none	none	00034
2 GHz – 3 GHz	00115	00204	00034
3 GHz – 10 GHz	00115	00093	00034

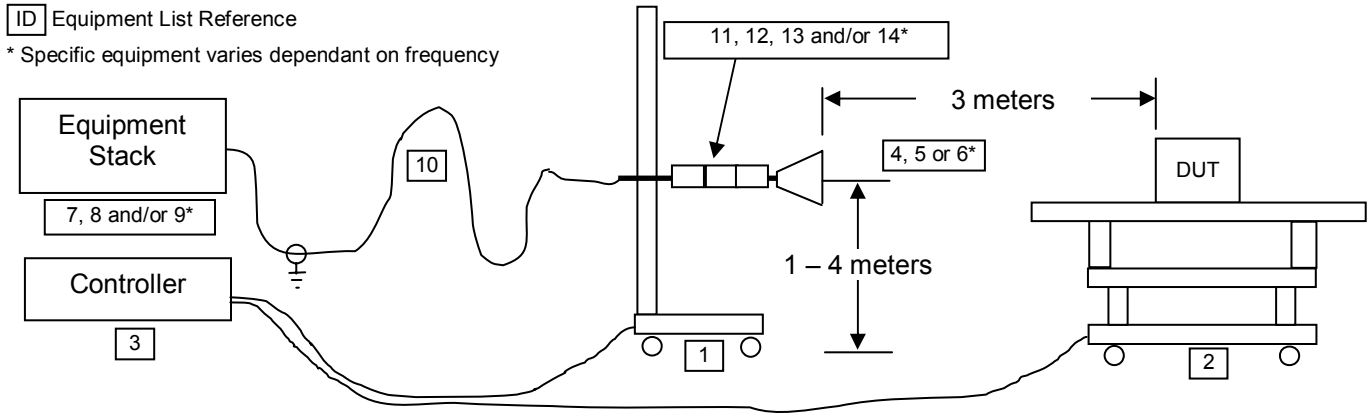
MEASUREMENT EQUIPMENT SETTINGS

The spectrum analyzer was set to the following settings:

Frequency Range	RBW (kHz)	VBW (kHz)	Detector
10 kHz – 1 GHz	100	100	Peak
1 GHz – 10 GHz	1000	1000	Peak

B.6. SETUP DRAWING

Figure B.6-1 - Setup Drawing



B.7. DUT OPERATING DESCRIPTION

Radiated emissions and harmonics measurements were made with the DUT in the orientation and channel frequency that yielded the highest radiated fundamental field strength in Appendix A, face-up at 915.8 MHz. The DUT was set for modulated carrier operation at maximum power by the manufacturer.

B.8. SETUP PHOTOGRAPHS

Photograph B.8-1 - DUT Face-Up Configuration - Horn Receive Antenna Horizontal

Photograph B.8-2 - DUT Face-Up Configuration - Horn Receive Antenna Vertical

B.9. TEST RESULTS

Harmonics of Channel Frequency 915.8 MHz

Project Number:	776	**Standard:**	FCC15.209
Company:	RFind	**Test Start Date:**	14-Sep-06
Product:	RFID Active Tag	**Test End Date:**	18-Sep-06

Channel	Polarity	Distance	Rx Antenna	Frequency	SA Level	Rx AF	Rx CL	Other Corrections	Total Rx Correction Factors	Corrected Field Strength	Detector	Limit	Margin	Pass/Fail
		m		MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	(PK/QP/AV)	dBuV/m	dB	
915.8	H	3	Horn SN6267	1831.67	18.40	26.86	4.32	0.00	31.18	49.58	PK*	53.98	4.40	PASS
915.8	H	3	Horn SN6267	2747.42	40.80	29.19	5.50	-23.13	11.56	52.36	PK	73.98	21.62	PASS
915.8	H	3	Horn SN6267	2747.42	39.50	29.19	5.50	-23.13	11.56	51.06	AV	53.98	2.92	PASS
915.8	H	3	Horn SN6267	3663.22	37.10	31.59	6.69	-32.16	6.12	43.22	PK*	53.98	10.76	PASS
915.8	H	3	Horn SN6267	4579.20	38.50	32.47	7.73	-32.33	7.86	46.36	PK*	53.98	7.62	PASS
915.8	H	3	Horn SN6267	5494.83	30.90	34.18	8.76	-32.16	10.77	41.67	PK*	53.98	12.30	PASS
915.8	H	3	Horn SN6267	6410.83	37.20	34.34	9.20	-32.20	11.34	48.54	PK*	53.98	5.44	PASS
915.8	H	3	Horn SN6267	7326.79	40.20	36.02	9.84	-32.14	13.73	53.93	PK	73.98	20.05	PASS
915.8	H	3	Horn SN6267	7326.79	39.10	36.02	9.84	-32.14	13.73	52.83	AV	53.98	1.15	PASS
915.8	H	3	Horn SN6267	8242.62	34.20	37.21	10.70	-32.06	15.85	50.05	PK*	53.98	3.93	PASS
915.8	H	3	Horn SN6267	9158.18	31.20	37.94	11.16	-32.05	17.05	48.25	PK*	53.98	5.73	PASS
915.8	V	3	Horn SN6267	1831.57	15.20	26.86	4.32	0.00	31.17	46.37	PK*	53.98	7.60	PASS
915.8	V	3	Horn SN6267	2747.45	38.90	29.19	5.50	-23.13	11.56	50.46	PK*	53.98	3.52	PASS
915.8	V	3	Horn SN6267	3663.32	34.80	31.59	6.69	-32.16	6.11	40.91	PK*	53.98	13.06	PASS
915.8	V	3	Horn SN6267	4579.02	42.60	32.47	7.73	-32.34	7.86	50.46	PK*	53.98	3.52	PASS
915.8	V	3	Horn SN6267	5494.59	39.50	34.18	8.76	-32.16	10.78	50.28	PK*	53.98	3.70	PASS
915.8	V	3	Horn SN6267	6410.75	36.20	34.34	9.20	-32.20	11.34	47.54	PK*	53.98	6.44	PASS
915.8	V	3	Horn SN6267	7326.58	40.10	36.02	9.85	-32.14	13.73	53.83	PK	73.98	20.15	PASS
915.8	V	3	Horn SN6267	7326.58	38.90	36.02	9.85	-32.14	13.73	52.63	AV	53.98	1.35	PASS
915.8	V	3	Horn SN6267	8242.42	29.40	37.21	10.69	-32.06	15.84	45.24	PK*	53.98	8.74	PASS
915.8	V	3	Horn SN6267	9158.20	31.90	37.94	11.16	-32.05	17.05	48.95	PK*	53.98	5.03	PASS

PK* - measurement made with a peak detector and applied to an average limit.
Pass* - Margin and Pass/Fail based on measured field strengths applied against the field strength limit expressed in dBuV/m.
BOLD - carrier harmonic frequencies

Note:
The emissions reported above represent all the harmonics of the fundamental frequency as well as the highest emissions measured below the 10th harmonic of the carrier. All other emissions attributed to the DUT had field strengths greater than 20 dB below the limit.

Formulae:
Corrected Field Strength (dBuV/m) = SA Level (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB)
Margin (dB) = Limit (dBuV/m) – Corrected Field Strength (dBuV/m)
Harmonic Limit (dBuV/m) = 20*log(500uV) where 500uV is the limit of the Field Strength of the harmonics as listed in §15.249(a).

B.10. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

Spencer Watson
EMC Lab Manager
Celltech Labs Inc.

20Sept06
Date

Appendix C - Radiated RX Spurious Emissions Measurement

C.1. REFERENCES

Normative Reference Standard	IC RSS-GEN §6(a)
Procedure Reference	IC RSS-GEN §4.8

C.2. LIMITS

IC RSS-GEN §6(a)	*If a radiated measurement is made, all spurious emissions shall comply with the limits of Table 1.*	
Table 1 - Spurious Emission Limits for Receivers	Spurious Frequency (MHz)	Field Strength (uV/m at 3 m)
	30-88	100
	88-216	150
	216-960	200
	Above 960	500

C.3. ENVIRONMENTAL CONDITIONS

Temperature	25 ± 5 ºC
Humidity	35 ± 5 %RH
Barometric Pressure	uncontrolled

C.4. EQUIPMENT LIST

RECEIVING EQUIPMENT

ID	ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE
1	00072	EMCO	2075	Mini-mast	na	na
2	00073	EMCO	2080	Turn Table	na	na
3	00071	EMCO	2090	Multi-Device Controller	na	na
4	00050	Chase	CBL-6111A	Bilog Antenna	04Apr06	04Apr07
5	00034	ETS	3115	Double Ridged Guide Horn	11Aug05	11Aug07
6	00051	HP	8566B	Spectrum Analyzer	04Apr06	04Apr07
7	00047	HP	85685A	Preselector	05Apr06	05Apr07
8	00049	HP	85650A	Quasi-Peak Adapter	04Apr06	04Apr07
9	00048	Gore	65474	Microwave Cable	16Aug05	16Aug07
10	00115	Miteq	J54-00102600-35-5A	LNA	18Apr06	18Apr07
11	00120	Celltech	n/a	Microwave Cable (RX)	na*	na*

*Verified with VNA

C.5. MEASUREMENT EQUIPMENT SETUP

MEASUREMENT EQUIPMENT CONNECTIONS

Prior to testing on the OATS, prescan evaluations were performed in a G-TEM cell to avoid ambient interference. These results were used to compare against those measured on the OATS as a failsafe check. The measurement equipment was connected as shown in C.6. A number of measurement equipment configurations were used to cover the applicable frequency ranges. The configurations for each range are as follows:

Frequency Range	LNA Asset #	Filter/Attenuator Asset #	Rx Antenna Asset #
30 MHz – 1 GHz	none	none	00050
1 GHz – 2 GHz	none	none	00034
2 GHz – 3 GHz	00115	00204	00034

MEASUREMENT EQUIPMENT SETTINGS

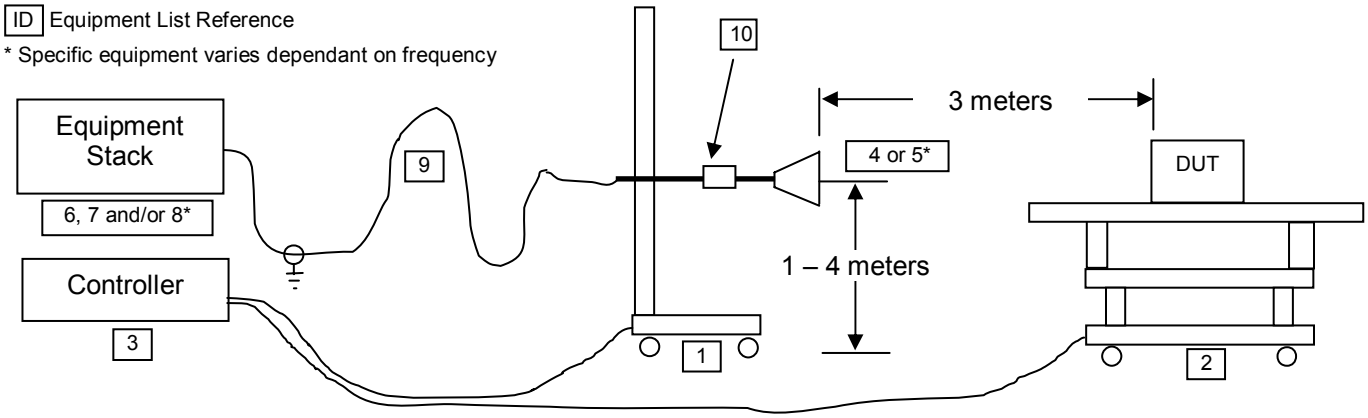
The spectrum analyzer was set to the following settings:

Frequency Range	RBW	VBW	Detector
MHz	kHz	kHz	
30 – 1000	100	100	Peak*
1000 – 3000	1000	1000	Peak*

*Peak measurements were used as the worst-case results.

C.6. SETUP DRAWING

Figure C.6-1 - Setup Drawing



C.7. DUT OPERATING DESCRIPTION

Measurements were made with the DUT in receive mode as set by the manufacturer.

C.8. TEST RESULTS

There were no emissions from the DUT in receive mode that were higher than the limit specified.

C.9. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

Spencer Watson
EMC Lab Manager
Celltech Labs Inc.

20Sept06
Date

Appendix D - Frequency Stability

D.1. REFERENCES

Normative Reference Standard	IC RSS-210 §2.1
Procedure Reference	IC RSS-GEN §4.5

D.2. LIMITS

IC RSS-210 §2.1 Frequency Stability	*When the carrier frequency stability is not specified, it need not be tested, provided that the carrier frequency is chosen such that the fundamental modulation products (meaning the nominal bandwidth) lie totally within the bands listed in Tables 2, 3, 4 and 5 and do not fall into any restricted band listed in Table 1. Due account shall be taken of carrier frequency drift as a result of aging, temperature, humidity, and supply voltage variations when using frequencies near the band edges.*

D.3. SIGN-OFF

The device complies with the requirement set forth in RSS-210 §2.1 as stated above.

Spencer Watson
EMC Lab Manager
Celltech Labs Inc.

20Sept06
Date

Appendix E - Compliance with Part 15.215(c)

E.1. REFERENCES

Normative Reference Standard	FCC CFR 47 §15.215(c)
Procedure Reference	ANSI C63.4:2003

E.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.

E.3. ENVIRONMENTAL CONDITIONS

Temperature	25 ± 5 ºC
Humidity	35 ± 5 %RH
Barometric Pressure	uncontrolled

E.4. EQUIPMENT LIST

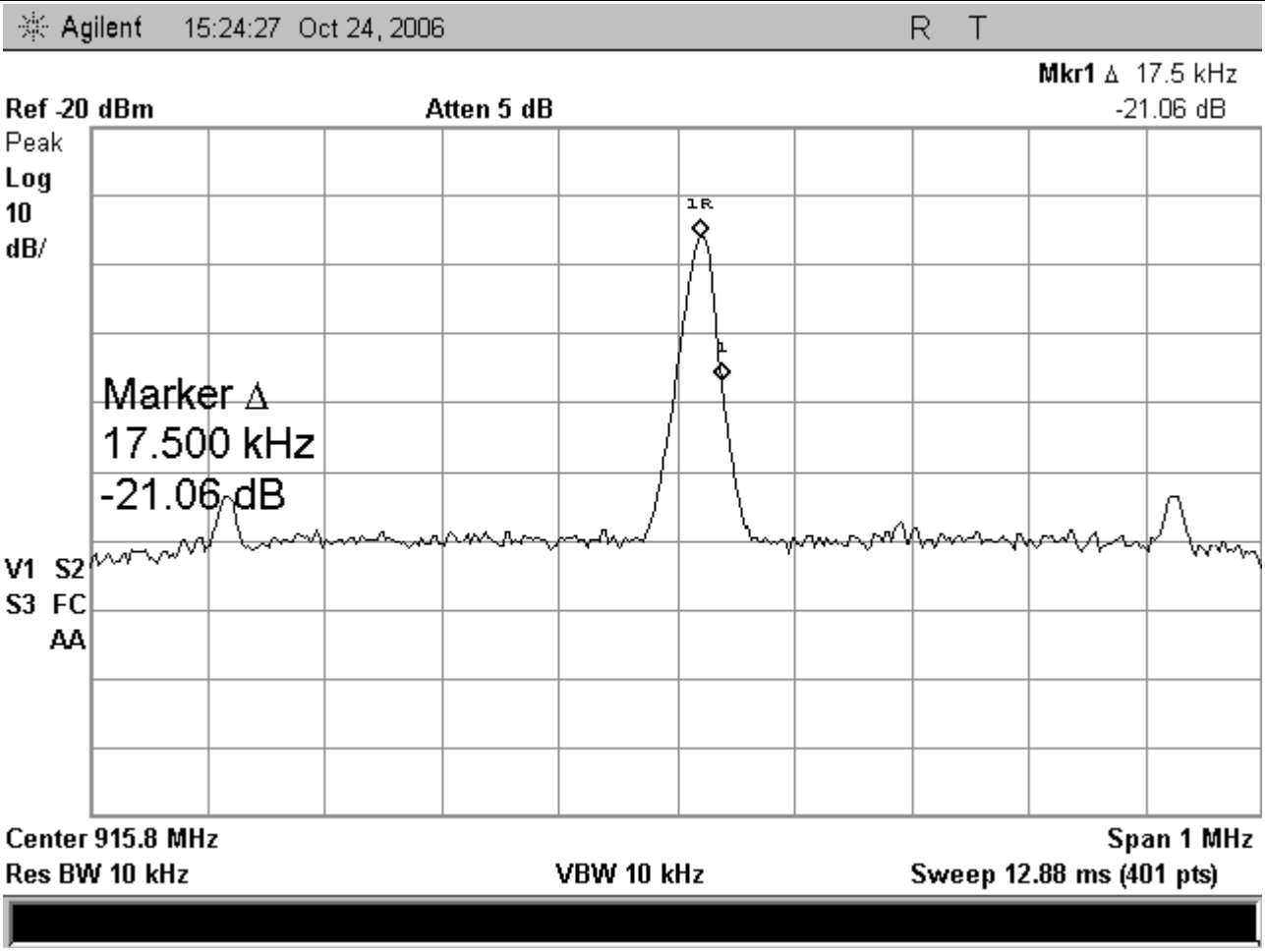
RECEIVING EQUIPMENT

ID	ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL	CAL DUE
1	00072	ETS	3115	Double Ridged Guide Horn	11Aug05	11Aug07
2	00048	Gore	65474	Microwave Cable	16Aug05	16Aug07
3	00015	HP	E4408B	Spectrum Analyzer	02Feb06	02Feb07

E.5. MEASUREMENT EQUIPMENT SETUP

MEASUREMENT EQUIPMENT SETTINGS	The spectrum analyzer was set to the following settings:			
	Frequency Range	RBW (kHz)	VBW (kHz)	Detector
	915.3 MHz – 916.3 MHz	10	10	Peak

E.6. RESULTS



The levels represented in this plot are relative levels only and are intended to represent the difference between the peak and the edge of the fundamental at a point >= 20dB from the peak level and are intended to demonstrate compliance with the requirement that the fundamental emission stay within the central 80% of the band.

E.7. SIGN-OFF

I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.

Spencer Watson
EMC Lab Manager
Celltech Labs Inc.

24Oct06
Date

END OF DOCUMENT