

TEST RESULT SUMMARY

FCC Part 15 Subpart C Section 15.249

FCC Part 15 Subpart C Section 15.207

Industry Canada RSS-210 Issue 7 Section A2.9

Industry Canada RSS-Gen Issue 1 Section 4.4.1 and 7.2.2

MANUFACTURER Select Comfort Corporation

NAME OF EQUIPMENT RFCS - Wireless Base Unit

MODEL NUMBER XX-YR

MANUFACTURER'S ADDRESS 6105 Trenton Ln N
Minneapolis MN 55442

TEST REPORT NUMBER WC705782.4 Rev A

TEST DATES 28 & 29 August, 29 September 2007

According to testing performed at TÜV America Inc, the above-mentioned unit is in compliance with the electromagnetic compatibility (EMC) portions of the requirements defined in FCC Part 15 Subpart C Sections 15.249 and 15.207 and IC RSS-210 Issue 7 Section A2.9 and IC RSS-210 Issue 6 and RSS-Gen Sections 4.4 and 7.2.2

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production units for compliance to be maintained.

TÜV America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the EMC requirements of FCC Part 15 Subpart C Sections 15.207 "Conducted Limits" and 15.249 "Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz." and 15.207 "Conducted limits" and IC RSS-210 Issue 7 "Low-power License-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" Section A2.9 "902-928, 2400-2483.5 and 5725-5875 MHz" and RSS-Gen Issue 1 "General Requirements and Information for the Certification of Radiocommunication Equipment" Sections 4.4.1 "Occupied Bandwidth" and 7.2.2 "Transmitter and Receiver AC Power Lines Conducted Emission Limits".

Date: 01 November 2007

Location: Taylors Falls MN
USA



Tom K Swanson
Senior EMC Technician



Susan L Rupp
EMC Technical Writer

Not Transferable

EMC Emission - TEST REPORT

Test Report File No. : **WC705782.4 Rev A** Date of issue: 01 November 2007

Model / Serial No. : **XX-YR / 002**

Product Name : **RFCS - Wireless Base Unit**

Applicant : **Select Comfort Corporation**

Manufacturer : **Select Comfort Corporation**

Address : **6105 Trenton Ln N
Minneapolis MN 55442**

Test Result : ☒ **Positive** ☐ **Negative**

Test Project Number :
Reference(s) : **WC705782.4 Rev A**

Total pages including
Appendices : **49**

TÜV America Inc reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. TÜV America Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV America Inc issued reports.

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TÜV America Inc and its professional staff hold government and professional organization certifications and are members of AAMI, ACIL, AEA, ANSI, IEEE, NVLAP, and VCCI

REVISION RECORD

REVISION	TOTAL NUMBER OF PAGES	DATE	DESCRIPTION
	48	24 October 2007	Initial Release
A	49	01 November 2007	Revisions include: ▪ Added setup photo showing antenna.

DIRECTORY

Documentation

Test regulations

Page(s)

3

Test Results

FCC

IC

Field strength of fundamental

15.249(a)

RSS-210 A2.9

4 - 10

Field strength of harmonics

15.249(a)

RSS-210 A2.9

11 - 15

Emissions outside of the specified frequency bands
other than harmonics

15.249(d)

RSS-210 A2.9

16

Band edge compliance

15.249(d)

RSS-210 A2.9

17 - 19

Emission Bandwidth

n/a

RSS-Gen 4.4.1

20 - 23

AC line conducted emissions

15.207

RSS-Gen 7.2.2

24 - 31

Test operation Mode

32

Configuration of the device under test

Appendix A

General remarks / Summary

33

Test set-ups, drawings and photos

34 - 38

Appendix A

Constructional data form

39 - 46

Appendix B

Measurement protocol

47 - 49

Sign Explanations:

□ - not applicable

■ - applicable

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

FCC Part 15 Subpart C

IC RSS-210 Issue 7

IC RSS-Gen Issue 1



Field strength of fundamental FCC 15.249(a), IC RSS-210 A2.9

Test summary

The requirements are: ■ - MET □ - NOT MET

Maximum field strength (peak) measured at a 3 meter distance = 0.359 mV/m (51.1 dB μ V/m) at 2425.0 MHz

Minimum margin of compliance is 42 dB

The duty cycle correction factor is calculated by $20 \log (.660/100)$ or -43.6 dB. This correction factor has been added to the final measurement levels. See pages 10-11 (duty cycle plot).

Measurements were made on the lowest, middle and highest channels, per Section 15.31, cw mode.

Test location

■ - Wild River Lab Large Test Site (Open Area Test Site)

□ - Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
2075	3115	EMCO	Ridge Guide Ant. 1-18 GHz	9001-3275	12-Jan-08
3294	8566B	Hewlett-Packard	Spectrum Analyzer	2349A03098	16-May-08
3295	85662A	Hewlett-Packard	Analyzer Display	2349A06144	16-May-08
2681	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00562	23-Mar-08
10527	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0001	Code B

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test limits at 3 meters

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

The average limit at 2480 MHz = 50 mV/m (94 dB μ V/m)

The peak limit at 2425 MHz = 5.01 mV/m (74 dB μ V/m)

Test data

See run 5 data pages 5 - 8

RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSXX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat

Page: 1 of 4

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 Fundamental Average	DELTA2 FCC 15.249 Harmonic Peak
High Channel						
2.48 GHz	81.5 Pk	5.05 / 29.11 / 28.99 / -43.6	43.07	H / 1.00 / 0	-50.93*	n/a
2.48 GHz	67.3 Pk	5.05 / 29.11 / 28.99 / -43.6	28.87	V / 1.20 / 0	-65.13*	n/a
7.442 GHz	52.3 Pk	9.89 / 36.33 / 41.16 / -43.6	13.76	H / 1.00 / 0	n/a	-60.24*
7.442 GHz	52.45 Pk	9.89 / 36.33 / 41.16 / -43.6	13.91	V / 2.00 / 0	n/a	-60.09*
4.961 GHz	54.5 Pk	7.65 / 33.12 / 39.74 / -43.6	11.94	H / 1.00 / 0	n/a	-62.06*
Low Channel						
2.405 GHz	89.8 Pk	5.01 / 28.95 / 29.13 / -43.6	51.03	H / 1.00 / 0	-42.97*	n/a
4.81 GHz	58.45 Pk	7.61 / 32.82 / 40.12 / -43.6	15.16	H / 1.00 / 0	n/a	-58.84*
4.81 GHz	54.9 Pk	7.61 / 32.82 / 40.12 / -43.6	11.61	V / 1.00 / 0	n/a	-62.39*
7.215 GHz	48.15 Pk	9.67 / 36.04 / 41.29 / -43.6	8.96	V / 1.00 / 0	n/a	-65.04*
7.215 GHz	51.1 Pk	9.67 / 36.04 / 41.29 / -43.6	11.91	H / 1.00 / 0	n/a	-62.09*
2.405 GHz	68.9 Pk	5.01 / 28.95 / 29.13 / -43.6	30.13	V / 1.00 / 0	-63.87*	n/a

Tested by: T. K. Swanson

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Thomas K. Swanson

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Reviewed by: S. L. Rupp

by:

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Susan L Rupp

Signature

RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSXX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat

Page: 2 of 4

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 Fundamental Average	DELTA2 FCC 15.249 Harmonic Peak
Mid Channel						
2.425 GHz	62.65 Pk	5.02 / 28.99 / 29.09 / -43.6	23.97	V / 1.00 / 0	-70.03*	n/a
2.425 GHz	89.85 Pk	5.02 / 28.99 / 29.09 / -43.6	51.17	H / 1.00 / 0	-42.83*	n/a
4.849 GHz	70.1 Pk	7.62 / 32.9 / 40.05 / -43.6	26.97	V / 1.00 / 0	n/a	-47.03*
7.274 GHz	51.2 Pk	9.73 / 36.11 / 41.24 / -43.6	12.21	V / 1.00 / 0	n/a	-61.79*
7.274 GHz	49.8 Pk	9.73 / 36.11 / 41.24 / -43.6	10.81	H / 1.00 / 0	n/a	-63.19*

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RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSXX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat Page: 3 of 4

Measurement summary for limit1: 15.249 2.4 GHz (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 Fundamental Average
2.48 GHz	81.5 Pk	5.05 / 29.11 / 28.99 / -43.6	43.07	H / 1.00 / 0	-50.93*
2.405 GHz	89.8 Pk	5.01 / 28.95 / 29.13 / -43.6	51.03	H / 1.00 / 0	-42.97*
2.425 GHz	89.85 Pk	5.02 / 28.99 / 29.09 / -43.6	51.17	H / 1.00 / 0	-42.83*

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RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSXX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat Page: 4 of 4

Measurement summary for limit2: 15.249 Harmonic (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 FCC 15.249 Harmonic Peak
7.442 GHz	52.45 Pk	9.89 / 36.33 / 41.16 / -43.6	13.91	V / 2.00 / 0	-60.09*
4.961 GHz	54.5 Pk	7.65 / 33.12 / 39.74 / -43.6	11.94	H / 1.00 / 0	-62.06*
4.81 GHz	58.45 Pk	7.61 / 32.82 / 40.12 / -43.6	15.16	H / 1.00 / 0	-58.84*
7.215 GHz	51.1 Pk	9.67 / 36.04 / 41.29 / -43.6	11.91	H / 1.00 / 0	-62.09*
4.849 GHz	70.1 Pk	7.62 / 32.9 / 40.05 / -43.6	26.97	V / 1.00 / 0	-47.03*
7.274 GHz	51.2 Pk	9.73 / 36.11 / 41.24 / -43.6	12.21	V / 1.00 / 0	-61.79*

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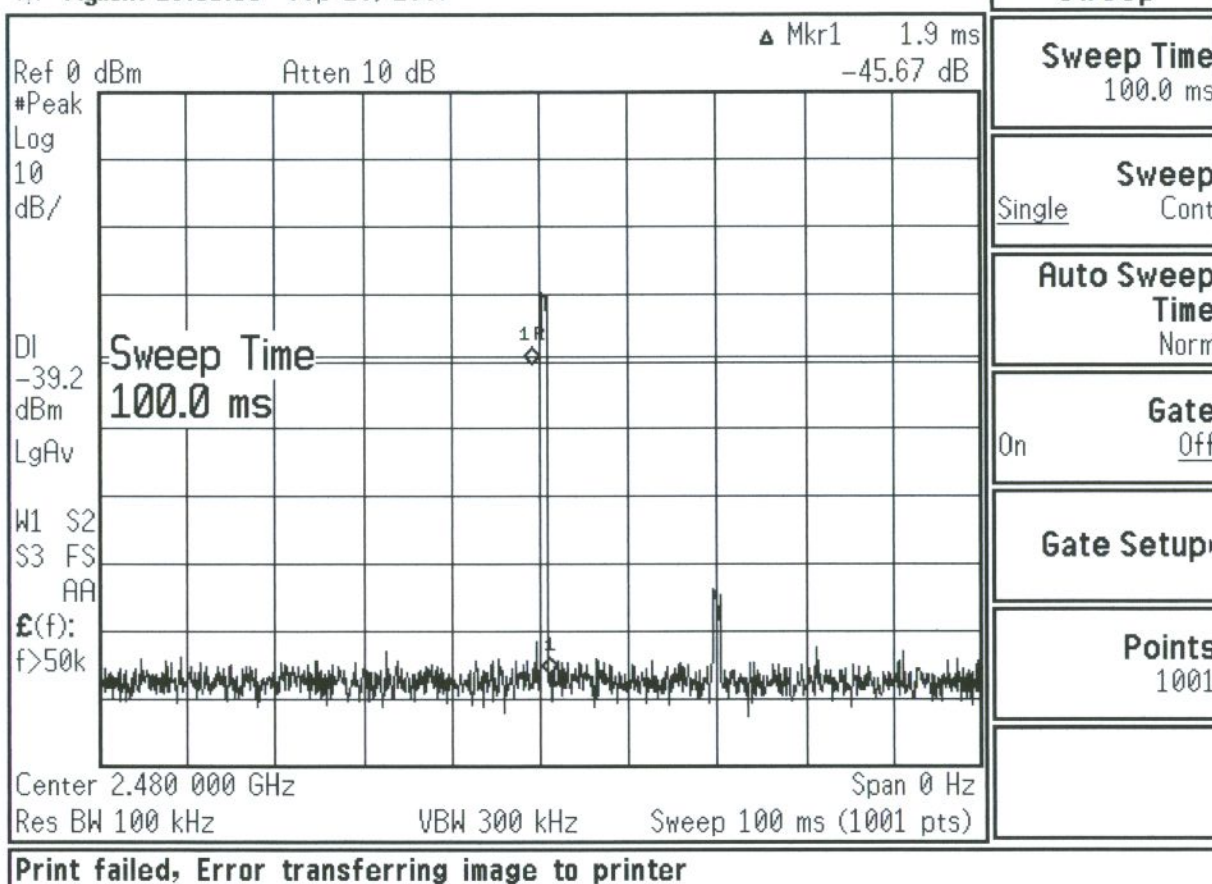
Signature

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Susan L Rupp

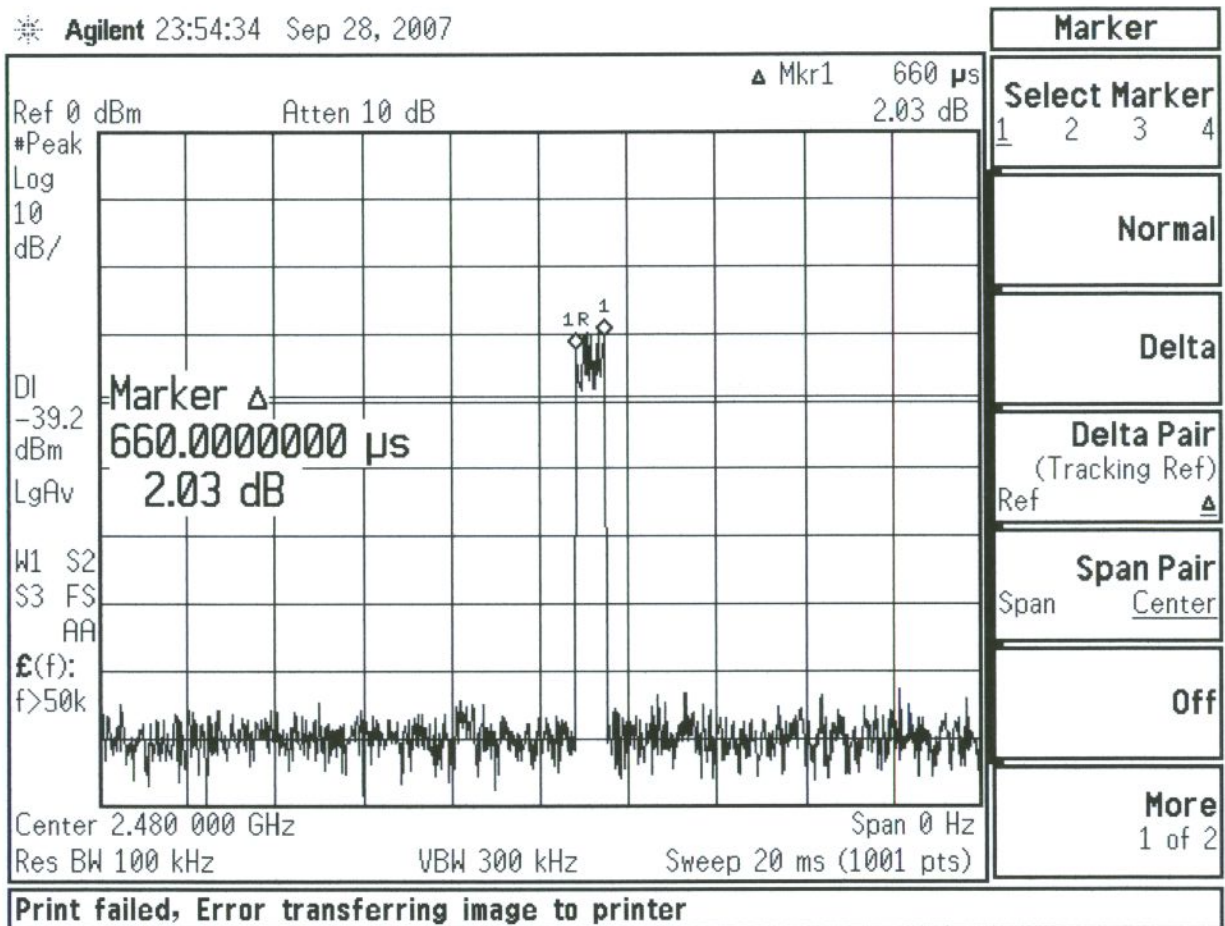
Signature



duty cycle - Select Comfort handheld xmtr

660µs/100msec

same for base



duty cycle - Select Comfort handheld xmtr
- same for base

Field strength of harmonics

FCC 15.249(a), IC RSS-210 A2.9

Test summary

The requirements are: ■ - MET □ - NOT MET

Maximum peak measurement is 26.9 dB μ V/m at 4.85 GHz

Minimum peak margin of compliance is 47 dB

The duty cycle correction factor is calculated by $20 \log (.660/100)$ or -43.6 dB. , This correction factor has been added to the final measurement levels. See pages 10-11 (duty cycle plot).

Test location

■ - Wild River Lab Large Test Site (Open Area Test Site)

□ - Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	12-Jan-08
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 3000 MHz	0607	Code B
3958	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0002	Code B
2684	85650A	Hewlett-Packard	Quasi-Peak Adapter	2521A01006	28-Mar-08
2690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Jun-08
2673	85662A	Hewlett-Packard	Analyzer Display	2152A03687	07-Jun-08
3371	E4440A	Agilent	Spectrum Analyzer	MY43362222	29 Nov 07
3978	SL26-3010	Phase One Microwave	Amplifier 18-26.5 GHz	0005	26 Mar 08
6717	3116	EMCO	Ridge Guide Ant 18-40 GHz	2005	05 Oct 07

Cal Code B = Calibration verification performed internally.

Test limits

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

Test data

See run 5 data pages 12 - 15

RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSEX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat

Page: 1 of 4

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 Fundamental Average	DELTA2 FCC 15.249 Harmonic Peak
High Channel						
2.48 GHz	81.5 Pk	5.05 / 29.11 / 28.99 / -43.6	43.07	H / 1.00 / 0	-50.93*	n/a
2.48 GHz	67.3 Pk	5.05 / 29.11 / 28.99 / -43.6	28.87	V / 1.20 / 0	-65.13*	n/a
7.442 GHz	52.3 Pk	9.89 / 36.33 / 41.16 / -43.6	13.76	H / 1.00 / 0	n/a	-60.24*
7.442 GHz	52.45 Pk	9.89 / 36.33 / 41.16 / -43.6	13.91	V / 2.00 / 0	n/a	-60.09*
4.961 GHz	54.5 Pk	7.65 / 33.12 / 39.74 / -43.6	11.94	H / 1.00 / 0	n/a	-62.06*
Low Channel						
2.405 GHz	89.8 Pk	5.01 / 28.95 / 29.13 / -43.6	51.03	H / 1.00 / 0	-42.97*	n/a
4.81 GHz	58.45 Pk	7.61 / 32.82 / 40.12 / -43.6	15.16	H / 1.00 / 0	n/a	-58.84*
4.81 GHz	54.9 Pk	7.61 / 32.82 / 40.12 / -43.6	11.61	V / 1.00 / 0	n/a	-62.39*
7.215 GHz	48.15 Pk	9.67 / 36.04 / 41.29 / -43.6	8.96	V / 1.00 / 0	n/a	-65.04*
7.215 GHz	51.1 Pk	9.67 / 36.04 / 41.29 / -43.6	11.91	H / 1.00 / 0	n/a	-62.09*
2.405 GHz	68.9 Pk	5.01 / 28.95 / 29.13 / -43.6	30.13	V / 1.00 / 0	-63.87*	n/a

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Susan L Rupp

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RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSXX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat

Page: 2 of 4

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 Fundamental Average	DELTA2 FCC 15.249 Harmonic Peak
Mid Channel						
2.425 GHz	62.65 Pk	5.02 / 28.99 / 29.09 / -43.6	23.97	V / 1.00 / 0	-70.03*	n/a
2.425 GHz	89.85 Pk	5.02 / 28.99 / 29.09 / -43.6	51.17	H / 1.00 / 0	-42.83*	n/a
4.849 GHz	70.1 Pk	7.62 / 32.9 / 40.05 / -43.6	26.97	V / 1.00 / 0	n/a	-47.03*
7.274 GHz	51.2 Pk	9.73 / 36.11 / 41.24 / -43.6	12.21	V / 1.00 / 0	n/a	-61.79*
7.274 GHz	49.8 Pk	9.73 / 36.11 / 41.24 / -43.6	10.81	H / 1.00 / 0	n/a	-63.19*

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RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSXX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat Page: 3 of 4

Measurement summary for limit1: 15.249 2.4 GHz (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.249 Fundamental Average
2.48 GHz	81.5 Pk	5.05 / 29.11 / 28.99 / -43.6	43.07	H / 1.00 / 0	-50.93*
2.405 GHz	89.8 Pk	5.01 / 28.95 / 29.13 / -43.6	51.03	H / 1.00 / 0	-42.97*
2.425 GHz	89.85 Pk	5.02 / 28.99 / 29.09 / -43.6	51.17	H / 1.00 / 0	-42.83*

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Reviewed by: S. L. Rupp

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Susan L Rupp

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RADIATED EMISSIONS



Test Report #: WC705782 Run 5 Test Area: LTS

EUT Model #: RFCSXX-YY Date: 8/29/2007

EUT Serial #: _____ EUT Power: 60Hz/120VAC Temperature: 20.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: Select Comfort Rel. Humidity: 74.0 %

EUT Description: Pegasus Pump Wireless

Notes: Transmitter - Base Unit

Data File Name: 5782.dat Page: 4 of 4

Measurement summary for limit2: 15.249 Harmonic (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / Duty Cycle Factor (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 FCC 15.249 Harmonic Peak
7.442 GHz	52.45 Pk	9.89 / 36.33 / 41.16 / -43.6	13.91	V / 2.00 / 0	-60.09*
4.961 GHz	54.5 Pk	7.65 / 33.12 / 39.74 / -43.6	11.94	H / 1.00 / 0	-62.06*
4.81 GHz	58.45 Pk	7.61 / 32.82 / 40.12 / -43.6	15.16	H / 1.00 / 0	-58.84*
7.215 GHz	51.1 Pk	9.67 / 36.04 / 41.29 / -43.6	11.91	H / 1.00 / 0	-62.09*
4.849 GHz	70.1 Pk	7.62 / 32.9 / 40.05 / -43.6	26.97	V / 1.00 / 0	-47.03*
7.274 GHz	51.2 Pk	9.73 / 36.11 / 41.24 / -43.6	12.21	V / 1.00 / 0	-61.79*

Tested by: T. K. Swanson

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Emissions outside of the specified frequency bands other than harmonics

FCC 15.249(d), IC RSS-210 A2.9

Test summary

The requirements are: ■ - MET □ - NOT MET

No emissions detected. Minimum margin of compliance is > 10 dB.

Test location

■ - Wild River Lab Large Test Site (Open Area Test Site)

□ - Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	12-Jan-08
2665	ZHL-1042J	Mini-Circuits	Preamplifier	32296	Code B
3958	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0002	Code B
2684	85650A	Hewlett-Packard	Quasi-Peak Adapter	2521A01006	28-Mar-08
2690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Jun-08
2673	85662A	Hewlett-Packard	Analyzer Display	2152A03687	07-Jun-08
3371	E4440A	Agilent	Spectrum Analyzer	MY43362222	29 Nov 07
3978	SL26-3010	Phase One Microwave	Amplifier 18-26.5 GHz	0005	26 Mar 08
6717	3116	EMCO	Ridge Guide Ant 18-40 GHz	2005	10 Oct 08
3202	EM-6917B	Electro-Metrics	Biconicalog Periodic	101	10-May-08

Cal Code B = Calibration verification performed internally.

Test limits

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

Test data

See run 5 data on pages 12-15

Band edge compliance

FCC 15.249(d), IC RSS-210 A2.9

Test summary

The requirements are: ■ - MET □ - NOT MET

The fundamental emissions are within 2400 – 2483.5 MHz

Test location

■ - Wild River Lab Large Test Site (Open Area Test Site)

□ - Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	12-Jan-08
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 3000 MHz	0607	Code B
2690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Jun-08
2673	85662A	Hewlett-Packard	Analyzer Display	2152A03687	07-Jun-08

Cal Code B = Calibration verification performed internally.

Test data

See plot on page 18 - 19

47

MR 2.440 0 GHz
47.05 dBμV

POS
PK

DISPLAY LINE

CORR. D

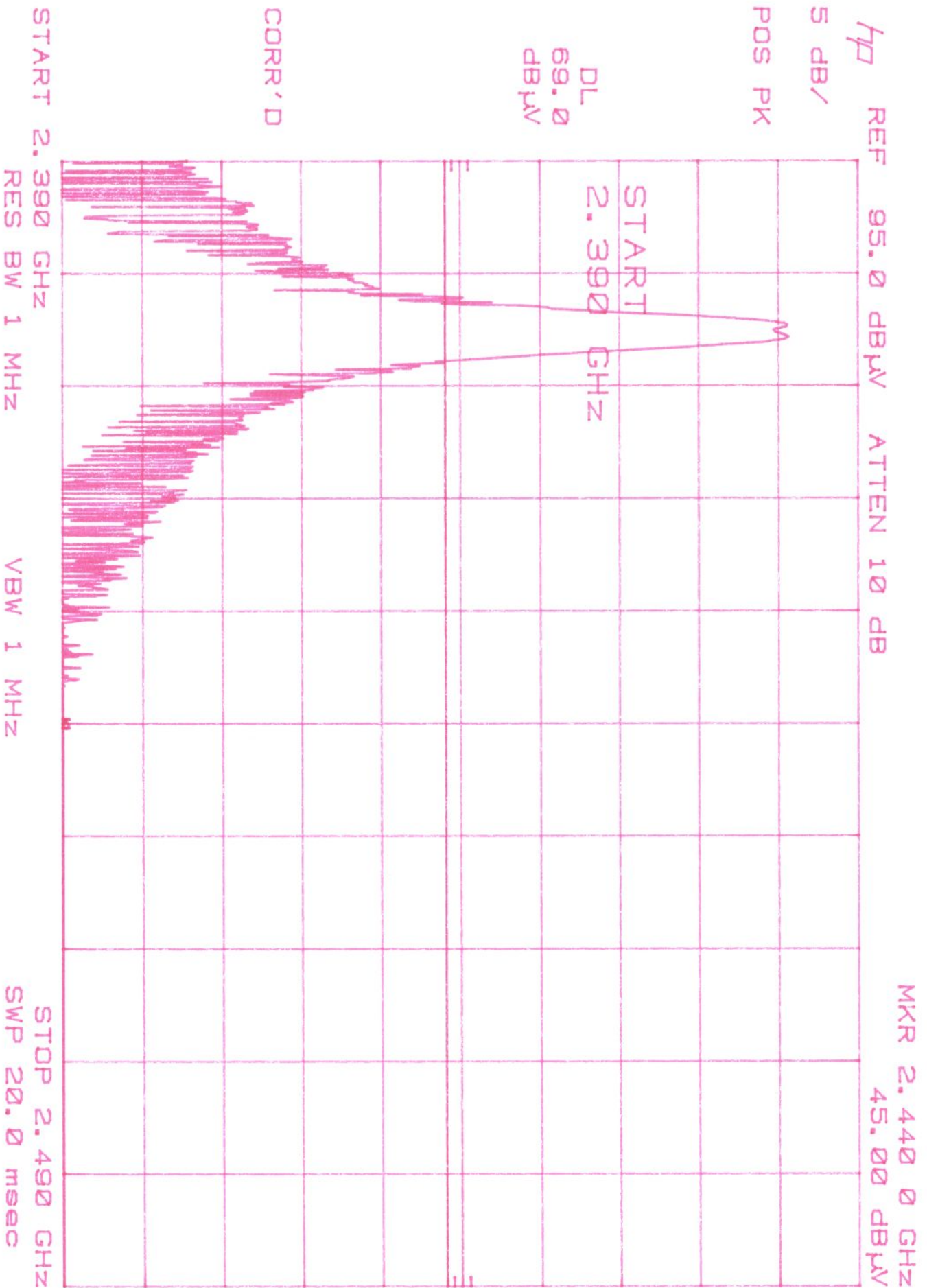
RES BW 1 MHz

VBW 1 MHz

SWP 20.0 msec

18 of 49

Low Channel Band Edge - Base



Occupied Bandwidth

RSS-Gen 4.4.1

Test summary

The requirements are: ☒ - MET ☐ - NOT MET
 The 20 dB (99%) bandwidth is 2.70 MHz

Test location

☒ - Wild River Lab Large Test Site (Open Area Test Site)
☐ - Wild River Lab Small Test Site (Open Area Test Site)

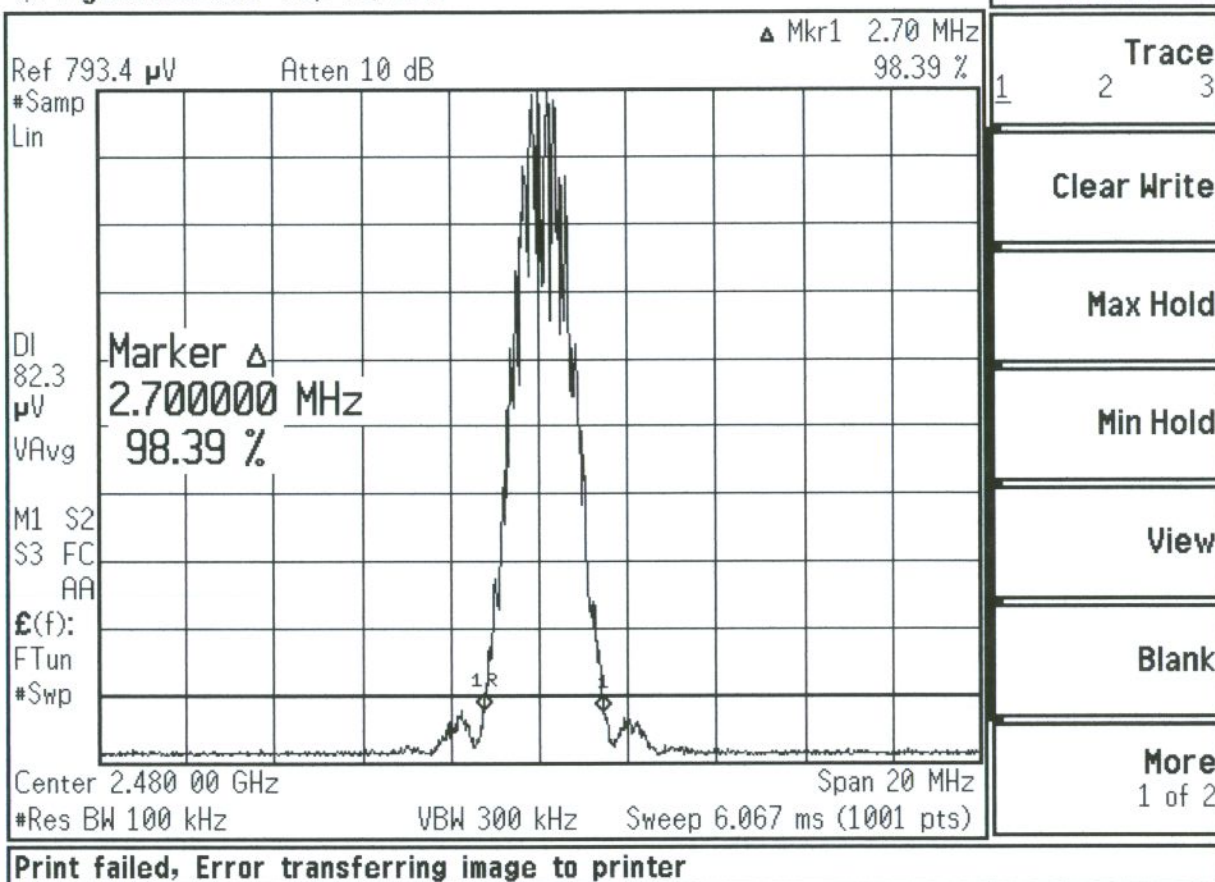
Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	12-Jan-08
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 3000 MHz	0607	Code B
2690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Jun-08
2673	85662A	Hewlett-Packard	Analyzer Display	2152A03687	07-Jun-08

Cal Code B = Calibration verification performed internally.

Test data

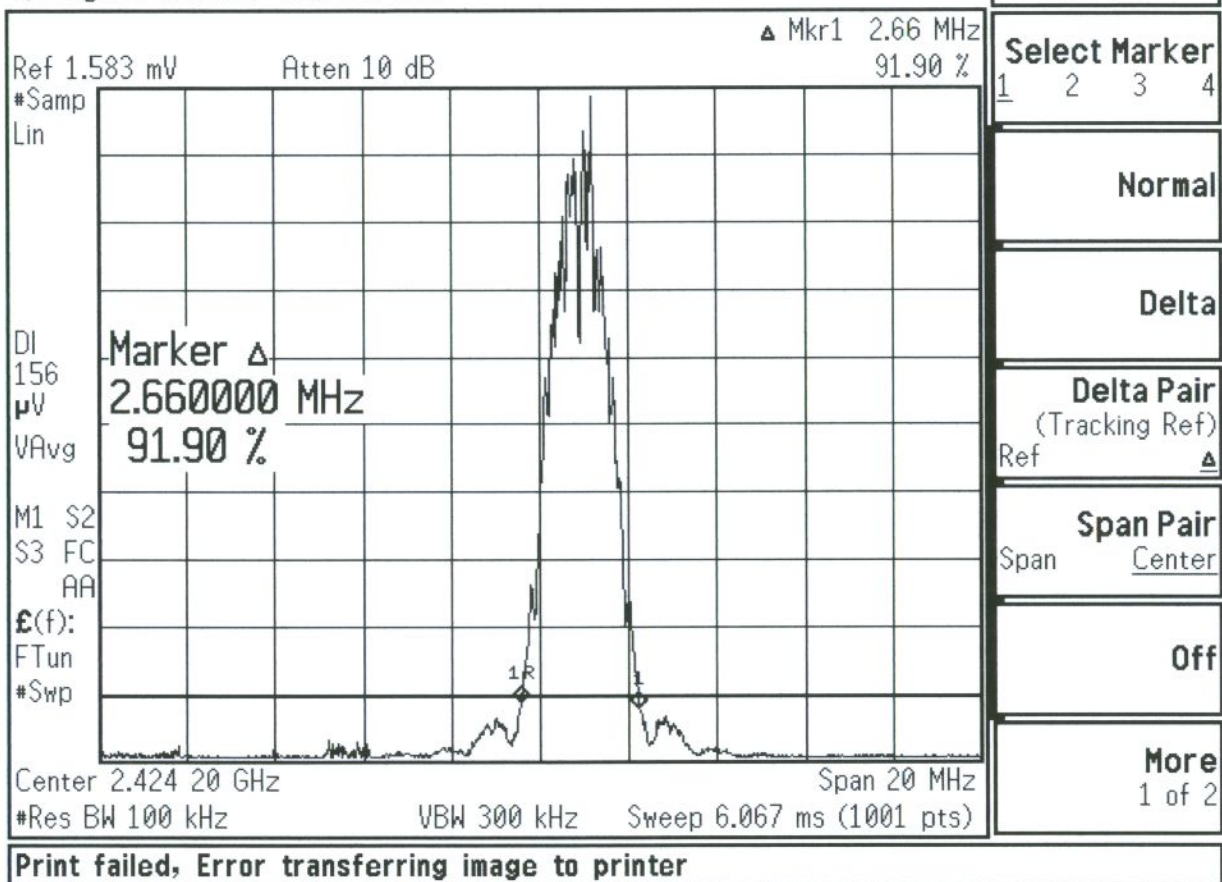
See plots on page 21 - 23



99% BW

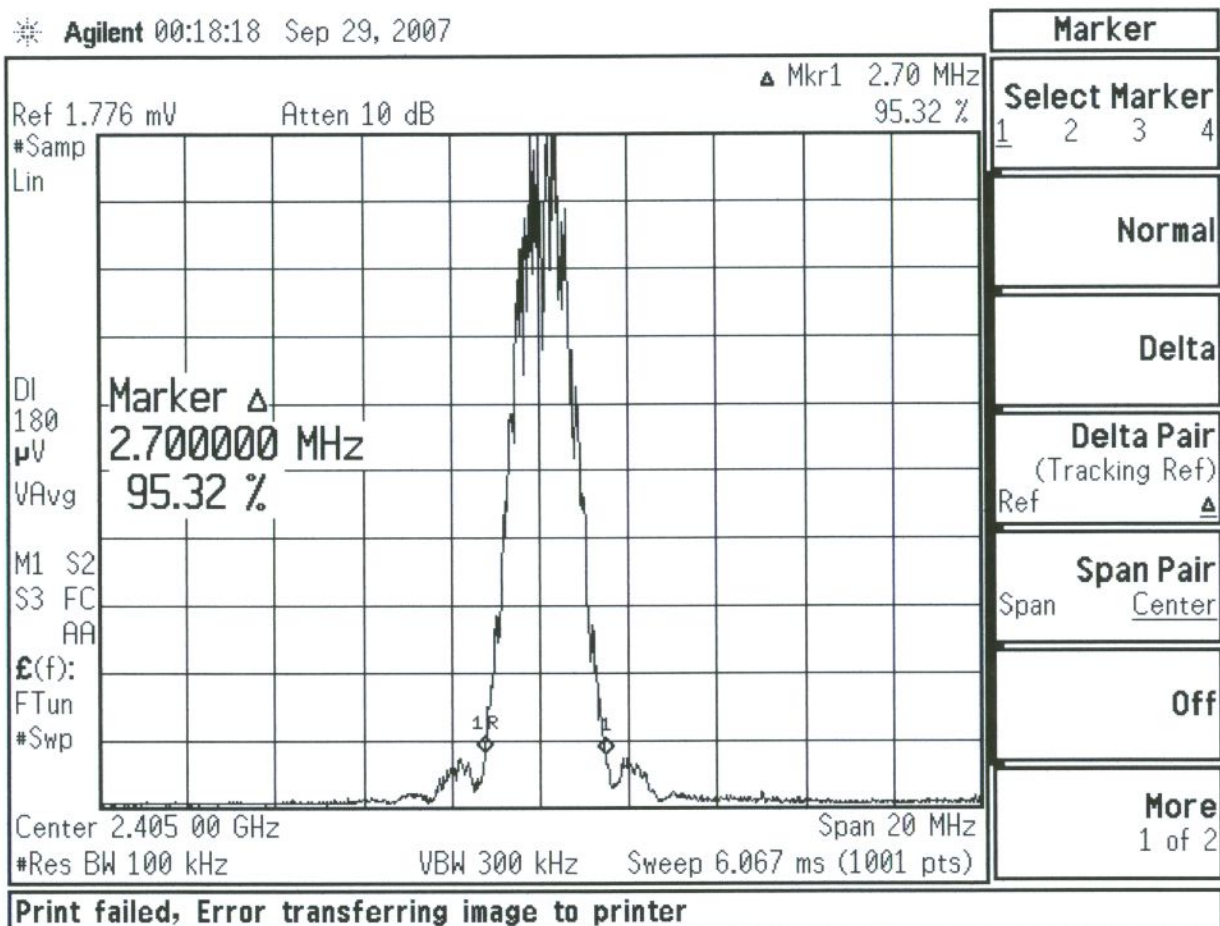
select Comfort base xmtr

high channel



99% BW

Select Comfort base xmitr
mid channel



99% BW

Select Comfort base xmt'r

Low channel

AC line conducted emissions

FCC 15.207, IC RSS-Gen 7.2.2

Test summary

The requirements are: ☒ - MET ☐ - NOT MET ☐ - Not Applicable
 Minimum quasi-peak margin of compliance is 9 dB at 405.0 kHz
 Minimum average margin of compliance is 15 dB at 405.0 kHz

Test location

☒ - Wild River Lab Large Test Site (Open Area Test Site)
☐ - Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
2416	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN	8812-1437	Code B
3800	ESCS 30	Rohde & Schwarz	EMI Receiver	100312	20-Jul 08

Cal Code B = Calibration verification performed internally.

Test limits

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

*Decreases with the logarithm of the frequency.

Test data

See run 2 on following pages

CONDUCTED EMISSIONS



Test Report #: WC705782 Run 2 Test Area: LTS

EUT Model #: RFCSXX-YR Date: 8/28/2007

EUT Serial #: 2 EUT Power: 50/60Hz / 120/230VAC Temperature: 26.0 °C

Test Method: EN55022 B Air Pressure: 98.0 kPa

Customer: Select Comfort Rel. Humidity: 64.0 %

EUT Description: Pegasus Pump - wireless

Notes:

Data File Name: 5782.dat

Page: 1 of 7

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
60Hz/120VAC						
165.0 kHz	35.71 Qp	0.12 / 0.26 / 0.0 / 0.0	36.09	L1	-29.12	n/a
200.0 kHz	36.09 Qp	0.13 / 0.17 / 0.0 / 0.0	36.38	L1	-27.23	n/a
365.0 kHz	42.71 Qp	0.16 / 0.1 / 0.0 / 0.0	42.97	L1	-15.65	n/a
405.0 kHz	42.31 Qp	0.16 / 0.1 / 0.0 / 0.0	42.57	L1	-15.18	n/a
765.0 kHz	32.93 Qp	0.22 / 0.1 / 0.0 / 0.0	33.25	L1	-22.75	n/a
1.295 MHz	30.63 Qp	0.27 / 0.0 / 0.0 / 0.0	30.9	L1	-25.1	n/a
1.985 MHz	28.59 Qp	0.34 / 0.0 / 0.0 / 0.0	28.93	L1	-27.07	n/a
3.155 MHz	28.33 Qp	0.44 / 0.0 / 0.0 / 0.0	28.77	L1	-27.23	n/a
4.815 MHz	23.81 Qp	0.54 / 0.0 / 0.0 / 0.0	24.35	L1	-31.65	n/a
12.75 MHz	19.27 Qp	0.85 / 0.23 / 0.0 / 0.0	20.35	L1	-39.65	n/a
28.0 MHz	24.51 Qp	1.27 / 0.94 / 0.0 / 0.0	26.72	L1	-33.28	n/a
165.0 kHz	25.48 Av	0.12 / 0.26 / 0.0 / 0.0	25.86	L1	n/a	-29.35
200.0 kHz	28.36 Av	0.13 / 0.17 / 0.0 / 0.0	28.65	L1	n/a	-24.96
365.0 kHz	37.93 Av	0.16 / 0.1 / 0.0 / 0.0	38.19	L1	n/a	-10.43
405.0 kHz	37.64 Av	0.16 / 0.1 / 0.0 / 0.0	37.9	L1	n/a	-9.85
765.0 kHz	26.11 Av	0.22 / 0.1 / 0.0 / 0.0	26.43	L1	n/a	-19.57
1.295 MHz	24.92 Av	0.27 / 0.0 / 0.0 / 0.0	25.19	L1	n/a	-20.81
1.985 MHz	23.91 Av	0.34 / 0.0 / 0.0 / 0.0	24.25	L1	n/a	-21.75
3.155 MHz	22.08 Av	0.44 / 0.0 / 0.0 / 0.0	22.52	L1	n/a	-23.48
4.815 MHz	16.33 Av	0.54 / 0.0 / 0.0 / 0.0	16.87	L1	n/a	-29.13
12.75 MHz	9.15 Av	0.85 / 0.23 / 0.0 / 0.0	10.23	L1	n/a	-39.77
28.0 MHz	23.57 Av	1.27 / 0.94 / 0.0 / 0.0	25.78	L1	n/a	-24.22
165.0 kHz	35.59 Qp	0.12 / 0.26 / 0.0 / 0.0	35.97	N	-29.24	n/a
200.0 kHz	35.85 Qp	0.13 / 0.17 / 0.0 / 0.0	36.14	N	-27.47	n/a

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Susan L Rupp

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CONDUCTED EMISSIONS



Test Report #: WC705782 Run 2 Test Area: LTS

EUT Model #: RFCSXX-YR Date: 8/28/2007

EUT Serial #: 2 EUT Power: 50/60Hz / 120/230VAC Temperature: 26.0 °C

Test Method: EN55022 B Air Pressure: 98.0 kPa

Customer: Select Comfort Rel. Humidity: 64.0 %

EUT Description: Pegasus Pump - wireless

Notes:

Data File Name: 5782.dat

Page: 2 of 7

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
365.0 kHz	35.29 Qp	0.16 / 0.1 / 0.0 / 0.0	35.55	N	-23.07	n/a
405.0 kHz	34.27 Qp	0.16 / 0.1 / 0.0 / 0.0	34.53	N	-23.22	n/a
765.0 kHz	26.97 Qp	0.22 / 0.1 / 0.0 / 0.0	27.29	N	-28.71	n/a
1.295 MHz	23.15 Qp	0.27 / 0.0 / 0.0 / 0.0	23.42	N	-32.58	n/a
1.985 MHz	21.67 Qp	0.34 / 0.0 / 0.0 / 0.0	22.01	N	-33.99	n/a
3.155 MHz	21.33 Qp	0.44 / 0.0 / 0.0 / 0.0	21.77	N	-34.23	n/a
4.815 MHz	17.97 Qp	0.54 / 0.0 / 0.0 / 0.0	18.51	N	-37.49	n/a
12.75 MHz	17.95 Qp	0.85 / 0.23 / 0.0 / 0.0	19.03	N	-40.97	n/a
28.0 MHz	22.05 Qp	1.27 / 0.94 / 0.0 / 0.0	24.26	N	-35.74	n/a
165.0 kHz	19.56 Av	0.12 / 0.26 / 0.0 / 0.0	19.94	N	n/a	-35.27
200.0 kHz	20.41 Av	0.13 / 0.17 / 0.0 / 0.0	20.7	N	n/a	-32.91
365.0 kHz	25.5 Av	0.16 / 0.1 / 0.0 / 0.0	25.76	N	n/a	-22.86
405.0 kHz	24.8 Av	0.16 / 0.1 / 0.0 / 0.0	25.06	N	n/a	-22.69
765.0 kHz	14.92 Av	0.22 / 0.1 / 0.0 / 0.0	15.24	N	n/a	-30.76
1.295 MHz	14.05 Av	0.27 / 0.0 / 0.0 / 0.0	14.32	N	n/a	-31.68
1.985 MHz	12.34 Av	0.34 / 0.0 / 0.0 / 0.0	12.68	N	n/a	-33.32
3.155 MHz	11.19 Av	0.44 / 0.0 / 0.0 / 0.0	11.63	N	n/a	-34.37
4.815 MHz	7.21 Av	0.54 / 0.0 / 0.0 / 0.0	7.75	N	n/a	-38.25
12.75 MHz	7.44 Av	0.85 / 0.23 / 0.0 / 0.0	8.52	N	n/a	-41.48
28.0 MHz	18.86 Av	1.27 / 0.94 / 0.0 / 0.0	21.07	N	n/a	-28.93
50Hz/230VAC						
170.0 kHz	32.45 Qp	0.12 / 0.25 / 0.0 / 0.0	32.82	L1	-32.14	n/a
320.0 kHz	35.73 Qp	0.15 / 0.1 / 0.0 / 0.0	35.98	L1	-23.73	n/a
405.0 kHz	41.37 Qp	0.16 / 0.1 / 0.0 / 0.0	41.63	L1	-16.12	n/a
575.0 kHz	34.25 Qp	0.2 / 0.1 / 0.0 / 0.0	34.55	L1	-21.45	n/a

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CONDUCTED EMISSIONS



Test Report #: WC705782 Run 2 Test Area: LTS

EUT Model #: RFCSXX-YR Date: 8/28/2007

EUT Serial #: 2 EUT Power: 50/60Hz / 120/230VAC Temperature: 26.0 °C

Test Method: EN55022 B Air Pressure: 98.0 kPa

Customer: Select Comfort Rel. Humidity: 64.0 %

EUT Description: Pegasus Pump - wireless

Notes:

Data File Name: 5782.dat

Page: 3 of 7

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
750.0 kHz	31.21 Qp	0.22 / 0.1 / 0.0 / 0.0	31.53	L1	-24.47	n/a
1.585 MHz	31.95 Qp	0.3 / 0.0 / 0.0 / 0.0	32.25	L1	-23.75	n/a
2.455 MHz	31.03 Qp	0.39 / 0.0 / 0.0 / 0.0	31.42	L1	-24.58	n/a
3.495 MHz	27.07 Qp	0.46 / 0.0 / 0.0 / 0.0	27.53	L1	-28.47	n/a
10.485 MHz	13.21 Qp	0.78 / 0.2 / 0.0 / 0.0	14.2	L1	-45.8	n/a
16.475 MHz	14.97 Qp	0.99 / 0.26 / 0.0 / 0.0	16.23	L1	-43.77	n/a
28.0 MHz	24.67 Qp	1.27 / 0.94 / 0.0 / 0.0	26.88	L1	-33.12	n/a
170.0 kHz	23.8 Av	0.12 / 0.25 / 0.0 / 0.0	24.17	L1	n/a	-30.79
320.0 kHz	30.0 Av	0.15 / 0.1 / 0.0 / 0.0	30.25	L1	n/a	-19.46
575.0 kHz	27.4 Av	0.2 / 0.1 / 0.0 / 0.0	27.7	L1	n/a	-18.3
750.0 kHz	26.02 Av	0.22 / 0.1 / 0.0 / 0.0	26.34	L1	n/a	-19.66
1.585 MHz	24.8 Av	0.3 / 0.0 / 0.0 / 0.0	25.1	L1	n/a	-20.9
2.455 MHz	23.28 Av	0.39 / 0.0 / 0.0 / 0.0	23.67	L1	n/a	-22.33
3.495 MHz	18.1 Av	0.46 / 0.0 / 0.0 / 0.0	18.56	L1	n/a	-27.44
10.485 MHz	3.38 Av	0.78 / 0.2 / 0.0 / 0.0	4.37	L1	n/a	-45.63
16.475 MHz	5.27 Av	0.99 / 0.26 / 0.0 / 0.0	6.53	L1	n/a	-43.47
28.0 MHz	23.38 Av	1.27 / 0.94 / 0.0 / 0.0	25.59	L1	n/a	-24.41
170.0 kHz	32.09 Qp	0.12 / 0.25 / 0.0 / 0.0	32.46	N	-32.5	n/a
320.0 kHz	29.63 Qp	0.15 / 0.1 / 0.0 / 0.0	29.88	N	-29.83	n/a
575.0 kHz	27.51 Qp	0.2 / 0.1 / 0.0 / 0.0	27.81	N	-28.19	n/a
750.0 kHz	24.71 Qp	0.22 / 0.1 / 0.0 / 0.0	25.03	N	-30.97	n/a
1.585 MHz	26.53 Qp	0.3 / 0.0 / 0.0 / 0.0	26.83	N	-29.17	n/a
2.455 MHz	26.03 Qp	0.39 / 0.0 / 0.0 / 0.0	26.42	N	-29.58	n/a
3.495 MHz	21.61 Qp	0.46 / 0.0 / 0.0 / 0.0	22.07	N	-33.93	n/a
10.485 MHz	11.33 Qp	0.78 / 0.2 / 0.0 / 0.0	12.32	N	-47.68	n/a

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CONDUCTED EMISSIONS



Test Report #: WC705782 Run 2 Test Area: LTS

EUT Model #: RFCSXX-YR Date: 8/28/2007

EUT Serial #: 2 EUT Power: 50/60Hz / 120/230VAC Temperature: 26.0 °C

Test Method: EN55022 B Air Pressure: 98.0 kPa

Customer: Select Comfort Rel. Humidity: 64.0 %

EUT Description: Pegasus Pump - wireless

Notes: _____

Data File Name: 5782.dat

Page: 4 of 7

List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
16.475 MHz	16.39 Qp	0.99 / 0.26 / 0.0 / 0.0	17.65	N	-42.35	n/a
28.0 MHz	21.83 Qp	1.27 / 0.94 / 0.0 / 0.0	24.04	N	-35.96	n/a
170.0 kHz	14.39 Av	0.12 / 0.25 / 0.0 / 0.0	14.76	N	n/a	-40.2
320.0 kHz	17.5 Av	0.15 / 0.1 / 0.0 / 0.0	17.75	N	n/a	-31.96
575.0 kHz	14.86 Av	0.2 / 0.1 / 0.0 / 0.0	15.16	N	n/a	-30.84
750.0 kHz	12.92 Av	0.22 / 0.1 / 0.0 / 0.0	13.24	N	n/a	-32.76
1.585 MHz	13.08 Av	0.3 / 0.0 / 0.0 / 0.0	13.38	N	n/a	-32.62
2.455 MHz	12.12 Av	0.39 / 0.0 / 0.0 / 0.0	12.51	N	n/a	-33.49
3.495 MHz	8.24 Av	0.46 / 0.0 / 0.0 / 0.0	8.7	N	n/a	-37.3
10.485 MHz	0.72 Av	0.78 / 0.2 / 0.0 / 0.0	1.71	N	n/a	-48.29
16.475 MHz	5.79 Av	0.99 / 0.26 / 0.0 / 0.0	7.05	N	n/a	-42.95
28.0 MHz	17.83 Av	1.27 / 0.94 / 0.0 / 0.0	20.04	N	n/a	-29.96
End of Scan						

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CONDUCTED EMISSIONS



Test Report #: WC705782 Run 2 Test Area: LTS

EUT Model #: RFCSXX-YR Date: 8/28/2007

EUT Serial #: 2 EUT Power: 50/60Hz / 120/230VAC Temperature: 26.0 °C

Test Method: EN55022 B Air Pressure: 98.0 kPa

Customer: Select Comfort Rel. Humidity: 64.0 %

EUT Description: Pegasus Pump - wireless

Notes:

Data File Name: 5782.dat

Page: 5 of 7

Measurement summary for limit1: EN55022 B Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp
405.0 kHz	42.31 Qp	0.16 / 0.1 / 0.0 / 0.0	42.57	L1	-15.18
365.0 kHz	42.71 Qp	0.16 / 0.1 / 0.0 / 0.0	42.97	L1	-15.65
575.0 kHz	34.25 Qp	0.2 / 0.1 / 0.0 / 0.0	34.55	L1	-21.45
765.0 kHz	32.93 Qp	0.22 / 0.1 / 0.0 / 0.0	33.25	L1	-22.75
320.0 kHz	35.73 Qp	0.15 / 0.1 / 0.0 / 0.0	35.98	L1	-23.73
1.585 MHz	31.95 Qp	0.3 / 0.0 / 0.0 / 0.0	32.25	L1	-23.75
750.0 kHz	31.21 Qp	0.22 / 0.1 / 0.0 / 0.0	31.53	L1	-24.47
2.455 MHz	31.03 Qp	0.39 / 0.0 / 0.0 / 0.0	31.42	L1	-24.58
1.295 MHz	30.63 Qp	0.27 / 0.0 / 0.0 / 0.0	30.9	L1	-25.1
1.985 MHz	28.59 Qp	0.34 / 0.0 / 0.0 / 0.0	28.93	L1	-27.07
200.0 kHz	36.09 Qp	0.13 / 0.17 / 0.0 / 0.0	36.38	L1	-27.23
3.155 MHz	28.33 Qp	0.44 / 0.0 / 0.0 / 0.0	28.77	L1	-27.23
3.495 MHz	27.07 Qp	0.46 / 0.0 / 0.0 / 0.0	27.53	L1	-28.47
165.0 kHz	35.71 Qp	0.12 / 0.26 / 0.0 / 0.0	36.09	L1	-29.12
4.815 MHz	23.81 Qp	0.54 / 0.0 / 0.0 / 0.0	24.35	L1	-31.65
28.0 MHz	24.67 Qp	1.27 / 0.94 / 0.0 / 0.0	26.88	L1	-33.12
12.75 MHz	19.27 Qp	0.85 / 0.23 / 0.0 / 0.0	20.35	L1	-39.65
16.475 MHz	16.39 Qp	0.99 / 0.26 / 0.0 / 0.0	17.65	N	-42.35
10.485 MHz	13.21 Qp	0.78 / 0.2 / 0.0 / 0.0	14.2	L1	-45.8

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CONDUCTED EMISSIONS



Test Report #: WC705782 Run 2 Test Area: LTS

EUT Model #: RFCSEX-YY Date: 8/28/2007

EUT Serial #: 2 EUT Power: 50/60Hz / 120/230VAC Temperature: 26.0 °C

Test Method: EN55022 B Air Pressure: 98.0 kPa

Customer: Select Comfort Rel. Humidity: 64.0 %

EUT Description: Pegasus Pump - wireless

Notes: _____

Data File Name: 5782.dat

Page: 6 of 7

Measurement summary for limit2: EN55022 B Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA2 EN55022 B Avg
405.0 kHz	37.64 Av	0.16 / 0.1 / 0.0 / 0.0	37.9	L1	-9.85
365.0 kHz	37.93 Av	0.16 / 0.1 / 0.0 / 0.0	38.19	L1	-10.43
575.0 kHz	27.4 Av	0.2 / 0.1 / 0.0 / 0.0	27.7	L1	-18.3
320.0 kHz	30.0 Av	0.15 / 0.1 / 0.0 / 0.0	30.25	L1	-19.46
765.0 kHz	26.11 Av	0.22 / 0.1 / 0.0 / 0.0	26.43	L1	-19.57
750.0 kHz	26.02 Av	0.22 / 0.1 / 0.0 / 0.0	26.34	L1	-19.66
1.295 MHz	24.92 Av	0.27 / 0.0 / 0.0 / 0.0	25.19	L1	-20.81
1.585 MHz	24.8 Av	0.3 / 0.0 / 0.0 / 0.0	25.1	L1	-20.9
1.985 MHz	23.91 Av	0.34 / 0.0 / 0.0 / 0.0	24.25	L1	-21.75
2.455 MHz	23.28 Av	0.39 / 0.0 / 0.0 / 0.0	23.67	L1	-22.33
3.155 MHz	22.08 Av	0.44 / 0.0 / 0.0 / 0.0	22.52	L1	-23.48
28.0 MHz	23.57 Av	1.27 / 0.94 / 0.0 / 0.0	25.78	L1	-24.22
200.0 kHz	28.36 Av	0.13 / 0.17 / 0.0 / 0.0	28.65	L1	-24.96
3.495 MHz	18.1 Av	0.46 / 0.0 / 0.0 / 0.0	18.56	L1	-27.44
4.815 MHz	16.33 Av	0.54 / 0.0 / 0.0 / 0.0	16.87	L1	-29.13
165.0 kHz	25.48 Av	0.12 / 0.26 / 0.0 / 0.0	25.86	L1	-29.35
12.75 MHz	9.15 Av	0.85 / 0.23 / 0.0 / 0.0	10.23	L1	-39.77
16.475 MHz	5.79 Av	0.99 / 0.26 / 0.0 / 0.0	7.05	N	-42.95
10.485 MHz	3.38 Av	0.78 / 0.2 / 0.0 / 0.0	4.37	L1	-45.63

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Reviewed by: S. L. Rupp

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CONDUCTED EMISSIONS



Test Report #: WC705782 Run 2 Test Area: LTS

EUT Model #: RFCSEX-YY Date: 8/28/2007

EUT Serial #: 2 EUT Power: 50/60Hz / 120/230VAC Temperature: 26.0 °C

Test Method: EN55022 B Air Pressure: 98.0 kPa

Customer: Select Comfort Rel. Humidity: 64.0 %

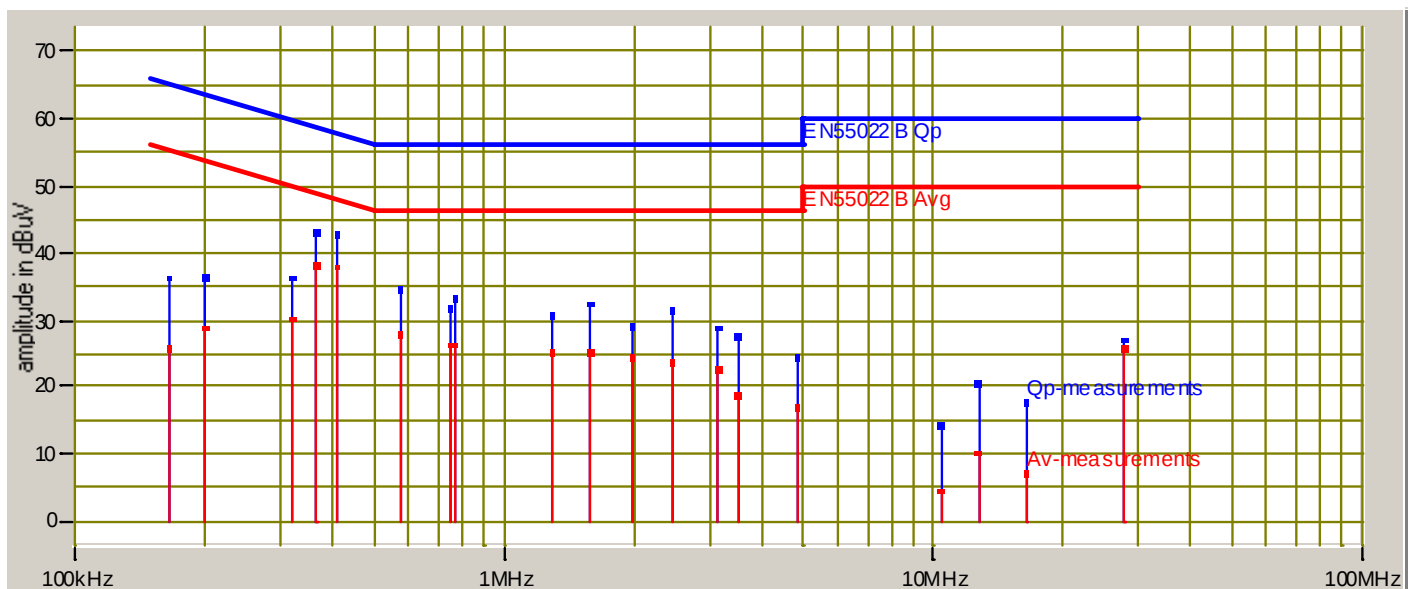
EUT Description: Pegasus Pump - wireless

Notes:

Data File Name: 5782.dat

Page: 7 of 7

Graph:



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Test Operation Mode:

The device under test was operated under the following conditions during emissions testing:

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☐ - Test program (color bar)
- ☐ - Test program (customer specific)
- ☐ - Practice operation
- ☒ - Measurements were made with the EUT transmitting on the low or high channel in cw mode, and with the EUT transmitting normally on all channels.

Configuration of the device under test:

- ☒ - See "Constructional Data Form" in Appendix A

DEVIATIONS FROM STANDARD:

None.

GENERAL REMARKS:

Modifications required to pass:

- ☒ None
- ☐ As indicated on the data sheet(s)

Test Specification Deviations: Additions to or Exclusions from:

- ☒ None
- ☐ As indicated in the Test Plan

SUMMARY:

The requirements according to the technical regulations are

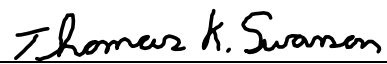
- ☒ - met
- ☐ - **not** met.

The device under test does

- ☒ - fulfill the general approval requirements mentioned on page 3.
- ☐ - **not** fulfill the general approval requirements mentioned on page 3.

EUT Received Date: 29 August 2007
Condition of EUT: Normal
Testing Start Date: 29 August 2007
Testing End Date: 29 September 2007

- TÜV AMERICA INC -



T. K. Swanson
Senior EMC Technician



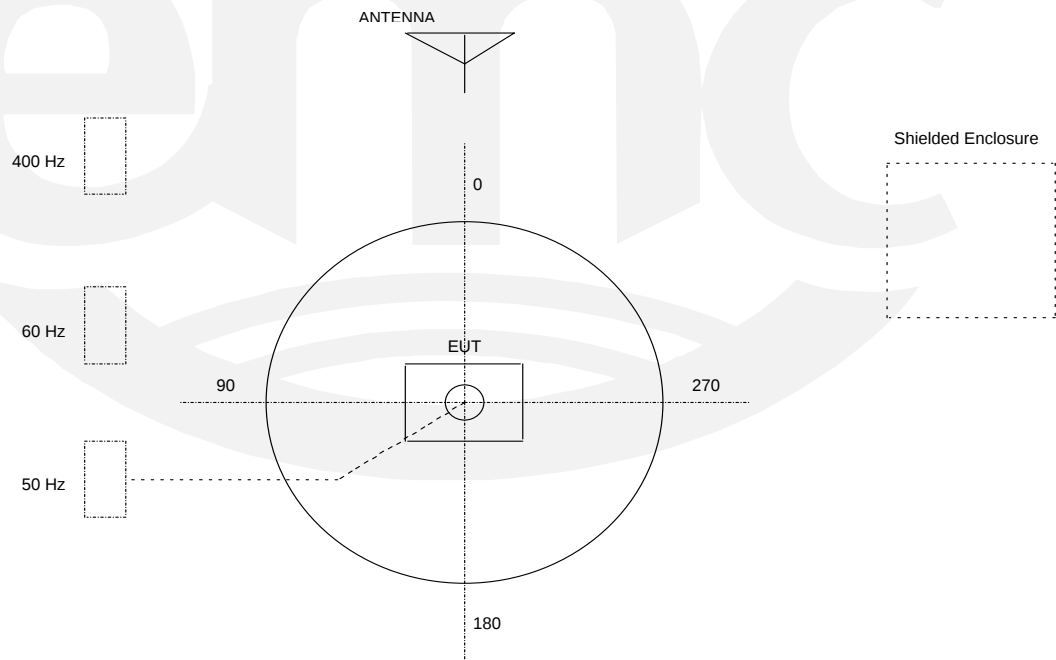
Susan L Rupp
EMC Technical Writer

TEST SETUP FOR EMISSIONS TESTING

WILD RIVER LAB Large Test Site

Notes:

1. Items shown in dotted lines are located on the floor below the test area. It is 5 meters vertically from the ground floor to the test area.
2. 50 Hz, 60 Hz, and 400 Hz are power panels for alternating current.
3. The antenna may be positioned horizontally 3, 10 or 30 meters from the center of the turntable.
4. The circle is a 6.7 meter diameter turntable.
5. A ground plane is in the plane of this sheet.
6. The test sample is shown in the azimuthal position representing zero degrees.



Test-setup photo, radiated emissions



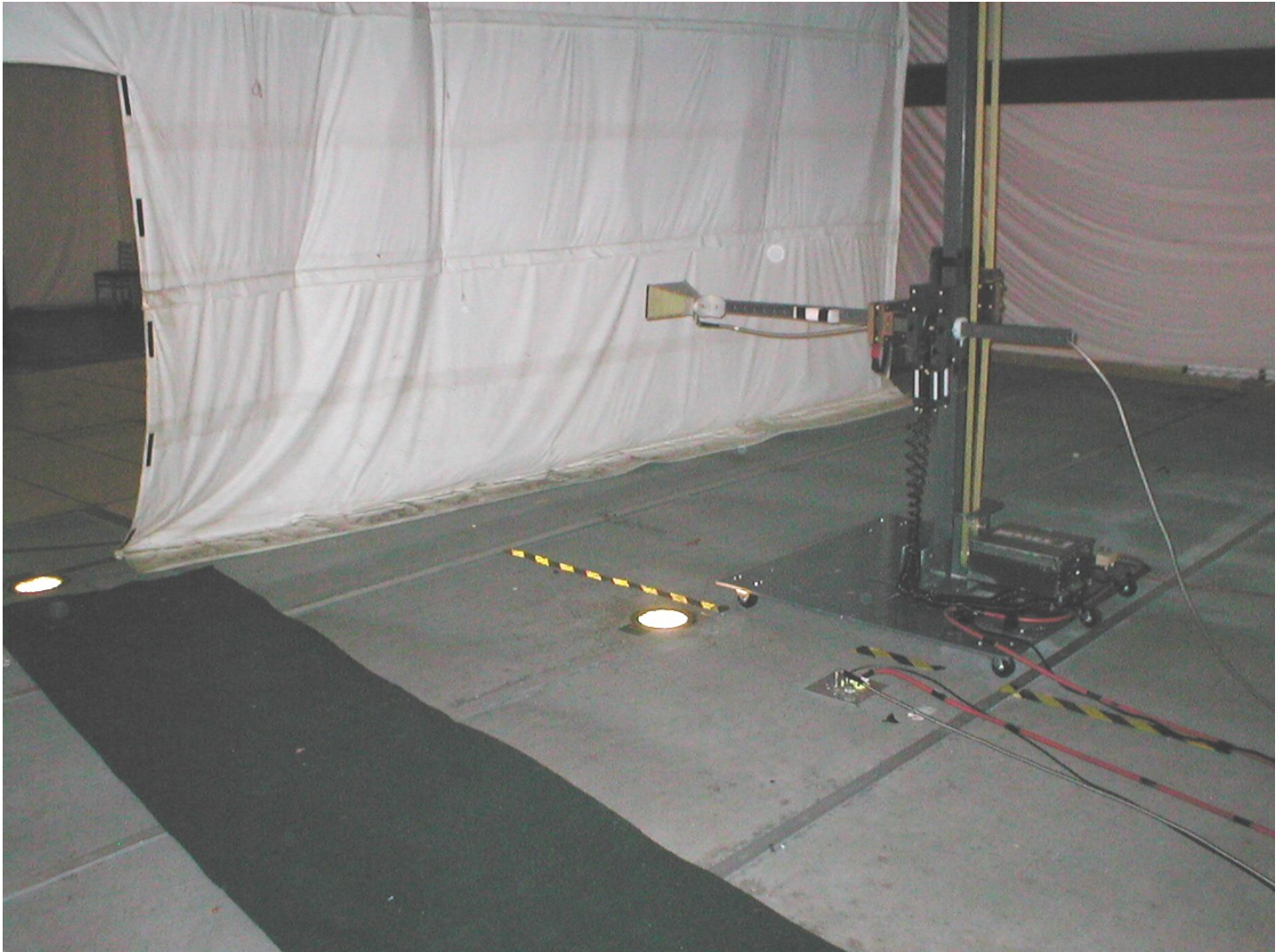
Test-setup photo, radiated emissions



Test-setup photo, radiated emissions



Test-setup photo, radiated emissions



Appendix A

Constructional Data Form





EMC Test Plan and Constructional Data Form

PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE. IF TESTING RESULTS IN MODIFICATIONS TO THE EQUIPMENT, PLEASE SUBMIT A REVISED TP/CDF INDICATING THOSE MODIFICATIONS.
NOTE: This information will be input into your test report as shown below. Press the F1 key at any time to get HELP for the current field selected.

Company: Select Comfort Corporation
 Address: 6105 Trenton Ln N
Minneapolis, MN 55442
 Contact: Paul Mahoney Position: Sr Project Engineer
 Phone: 763.551.7157 Fax: 763.551.7826
 E-mail Address: mahopj@comfort.com

General Equipment Description -- NOTE: This information will be input into your test report as shown below.

EUT Description Wireless Base Unit
 EUT Name RFCS
 Model No.: XX-YR Serial No.: 002
 Product Options: NA
 Configurations to be tested: Dual wireless base

Equipment Modification (If applicable, indicate modifications since EUT was last tested. If modifications are made during this testing, submit revised TP/CDF after testing is complete.)

Modifications since last test: NA
 Modifications made during test: NA

Test Objective(s): Please indicate the tests to be performed, entering the applicable standard(s) where noted.

- | | |
|---|---|
| ☒ EMC Directive 2004/108/EC (EMC)
Std: _____ | ☐ FCC: Class ☐ A ☒ B Part _____ |
| ☐ Machinery Directive 89/392/EEC (EMC)
Std: _____ | ☐ VCCI: Class ☐ A ☐ B |
| ☐ Medical Device Directive 93/42/EEC (EMC)
Std: _____ | ☐ BSMI: Class ☐ A ☐ B |
| ☐ Vehicle Directive: ☐ 2001/3/EC (EMC) ☐ 2004/104/EC (EMC) | ☐ Canada: Class ☐ A ☒ B |
| ☐ Other Vehicle Std: _____ | ☐ Australia: Class ☐ A ☐ B |
| ☐ FDA Reviewers Guidance for Premarket Notification Submissions (EMC) | ☐ Other: _____ |

Third Party Certification, if applicable (*Signature on Page 6 Required)

- | | |
|---|---|
| ☐ Attestation of Conformity (AoC)* | ☐ EMC Certification (used with Octagon Mark)* |
| ☐ Certificate of Conformity (CoC)* | ☒ Compliance Document* |
| Protection Class (N/A for vehicles) | ☐ Class I ☐ Class II ☐ Class III |
| (Press F1 when field is selected to show additional information on Protection Class.) | |
| ☒ FCC / TCB Certification | ☒ Industry Canada / FCB Certification |
| ☐ E-Mark Certification | ☐ Taiwan Certification |

**EMC Test Plan and Constructional Data Form****Attendance**Test will be: ☒ Attended by the customer ☐ Unattended by the customer**Failure - Complete this section if testing will not be attended by the customer.**

If a failure occurs, TÜV America should:

- ☐ Call contact listed above, if not available then stop testing. (After hrs phone): _____
- ☐ Continue testing to complete test series.
- ☐ Continue testing to define corrective action.
- ☐ Stop testing.

EUT Specifications and RequirementsLength: 11" Width: 7" Height: 4" Weight: 5lbs**Power Requirements***Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)*Voltage: 120/230 (If battery powered, make sure battery life is sufficient to complete testing.)# of Phases: 1Current (Amps/phase(max)): <1 Current (Amps/phase(nominal)): 100mA

Other _____

Other Special Requirements**Typical Installation and/or Operating Environment**(ie. Hospital, Small Business, Industrial/Factory, etc.)
Appliance**EUT Power Cable**

☐ Permanent OR ☒ Removable Length (in meters): 2

☐ Shielded OR ☒ Unshielded

☐ Not Applicable

EMC Test Plan and Constructional Data Form

EUT Interface Ports and Cables														
Type	Analog	Digital	During Test		Qty	Shielding		Termination	Connector Type	Port Termination	Length tested (in meters)	Removable	Permanent	
			Active	Passive		Yes	No							Type
EXAMPLE: RS232	☐	☒	☒	☐	2	☒	☐	Foil over braid	Coaxial	Metallized 9-pin D-Sub	Characteristic Impedance	6	☒	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐
	☐	☐	☐	☐		☐	☐						☐	☐

**EMC Test Plan and Constructional Data Form****EUT Software.**

Revision Level: v 1.04.1 base (Intentional radiator),

Description: Firmware for base

Equipment Under Test (EUT) Operating Modes to be Tested -- list the operating modes to be used during test. It is recommended the equipment be tested while operating in a typical operation mode. FCC testing of personal computers and/or peripherals requires that a simple program generate a complete line of upper case H's. Provide a general description of all software, firmware, and PLD algorithms used in the equipment. List all code modules as described above, with the revision level used during testing. Consult with your TÜV Product Service Representative if additional assistance is required.

1. Normal operation -- North America. Unit is at idle.
2. Intentional radiator operation. Hand controller and base can be set to bottom, middle or top channel.
3. Normal operation -- CE testing. Unit is on pumping with motor and solenoid actuated and display visible.

Equipment Under Test (EUT) System Components -- List and describe all components which are part of the EUT. For FCC & Taiwan testing a minimum configuration is required. (ie. Mouse, Printer, Monitor, External Disk Drive, Motherboard, etc)

Description	Model #	Serial #	FCC ID #



EMC Test Plan and Constructional Data Form

Support Equipment -- List and describe all support equipment which is not part of the EUT. (i.e. peripherals, simulators, etc)
This information is required for FCC & Taiwan testing.

<i>Description</i>	<i>Model #</i>	<i>Serial #</i>	<i>FCC ID #</i>

Oscillator Frequencies

<i>Manufacturer</i>	<i>Frequency</i>	<i>Derived Frequency</i>	<i>Component # / Location</i>	<i>Description of Use</i>
		16MHz	U1	Internal RC oscillator
	16MHz	2.4GHz	Y2/U11	Internal PLL

Power Supply

<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Type</i>
			☒ Switched-mode: (Frequency) <u>132KHz</u> ☐ Linear ☐ Other: _____
			☐ Switched-mode: (Frequency) _____ ☐ Linear ☐ Other: _____

Power Line Filters

<i>Manufacturer</i>	<i>Model #</i>	<i>Location in EUT</i>



EMC Test Plan and Constructional Data Form

Critical EMI Components (Capacitors, ferrites, etc.)

<i>Description</i>	<i>Manufacturer</i>	<i>Part # or Value</i>	<i>Qty</i>	<i>Component # / Location</i>
CM Choke	Coilcraft	100mH	1	L4
Capacitor	EPCOS	.1uF	1	C17

EMC Critical Detail -- Describe other EMC Design details used to reduce high frequency noise.

Note the above components are only installed in CE versions of the base.

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

Authorization Signatures (Signature Required for Certifications checked on pg 1)

Paul Mahoney

9.18.2007

Customer authorization to perform tests
according to this test plan.

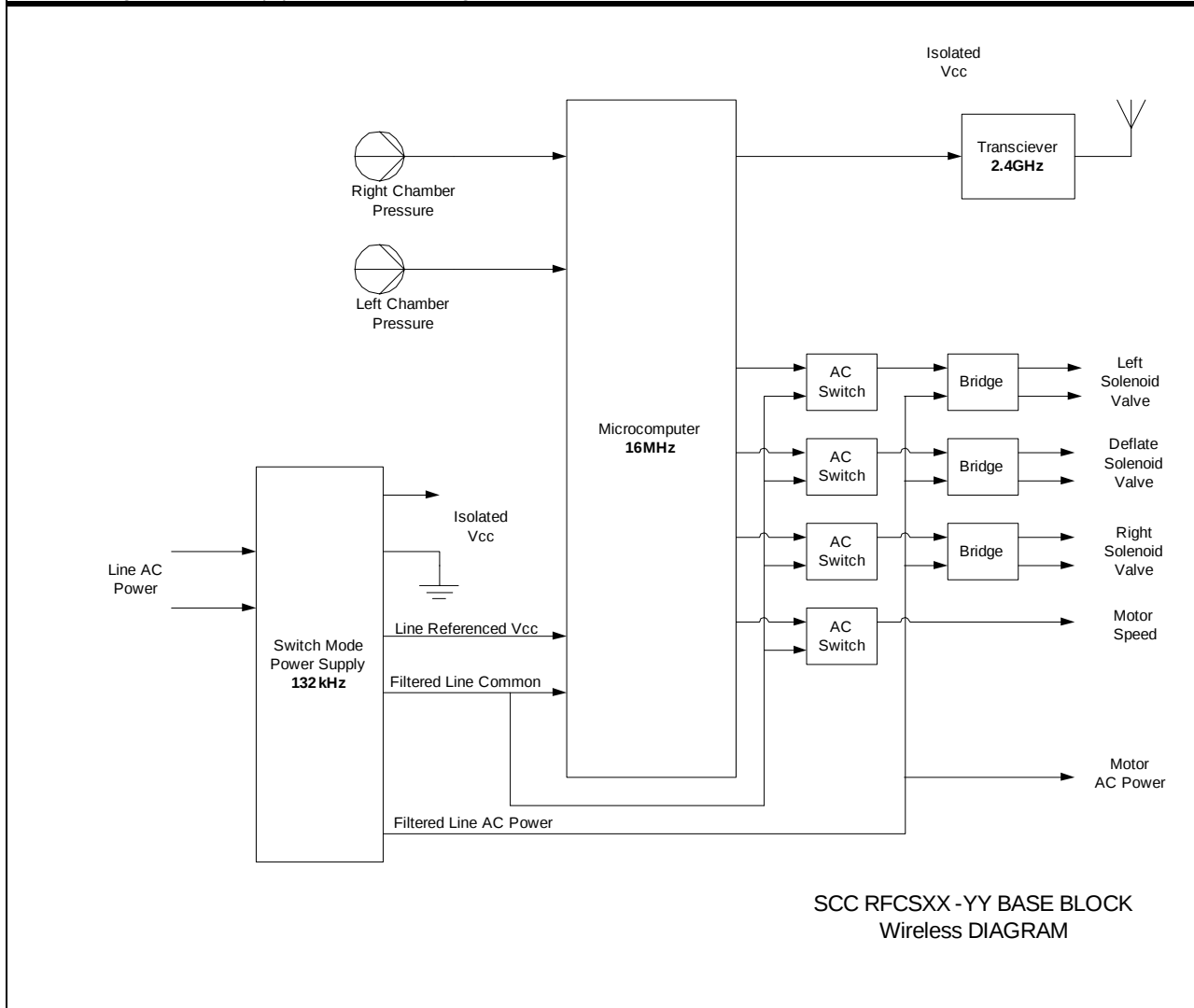
Date

Test Plan/CDF Prepared By (please print)

Date

EMC Block Diagram Form

System Configuration Block Diagram -- Provide a line drawing identifying the EUT, simulators, support equipment, I/O cables, power cables, and any other pertinent components to be used during testing. Use a dashed line to separate the equipment in the testing field versus equipment outside testing field.



Authorization Signatures

Paul Mahoney

9.18.2007

Customer authorization to perform tests according to this test plan.

Date

Test Plan/CDF Prepared By (please print)

Date

Appendix B

Measurement Protocol



MEASUREMENT PROTOCOL

GENERAL INFORMATION

Measurement Uncertainty

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. This test system has a measurement uncertainty of ± 1.8 dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. This test system has a measurement uncertainty of ± 4.8 dB. The equipment comprising the test systems is calibrated on an annual basis.

Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

CONDUCTED EMISSIONS

The final level, expressed in dB μ V, is arrived at by taking the reading directly from the EMI receiver. This level is compared directly to the CISPR limit.

To convert between dB μ V and μ V, the following conversions apply:

$$\text{dB}\mu\text{V} = 20(\log \mu\text{V})$$

$$\mu\text{V} = \text{Inverse log}(\text{dB}\mu\text{V}/20)$$

RADIATED EMISSIONS

The final level, expressed in dB μ V/m, is arrived at by taking the reading from the spectrum analyzer (Level dB μ V) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has the CISPR limit subtracted from it to provide the Delta, which gives the tabular data as shown in the data sheets in Attachment B. The amplifier gain is automatically accounted for by using an analyzer offset.

Example:

FREQ (MHz)	LEVEL (dB μ V)	CABLE/ANT/PREAMP (dB) (dB/m) (dB)			FINAL (dB μ V/m)	POL/HGT/AZ (m) (deg)			DELTA1 EN 55022
60.80	42.5Qp	+	1.2	+ 10.9 - 25.5 =	29.1	V	1.0	0.0	-10.9

DETAILS OF TEST PROCEDURES

General Standard Information

The test methods used comply with 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."

Conducted Emissions

Conducted emissions on the 50 Hz and/or 60 Hz power interface of the EUT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi-peak detection, and a Line Impedance Stabilization Network (LISN), with 50 Ω /50 μ H (CISPR 16) characteristics. Tabletop equipment is placed on a non-conducting table 80 centimeters above the floor and is positioned 40 centimeters from the vertical ground plane (wall) of the screen room. In some cases, a pre-scan using a spectrum analyzer is initially performed on the units comprising the system under test to locate the highest emissions. If the minimum passing margin appears to be less than 20 dB with a peak mode measurement, the emissions are re-measured using a tuned receiver or spectrum analyzer with quasi-peak and average detection and recorded on the data sheets.

Radiated Emissions

Radiated emissions from the EUT are measured in the frequency range of 30 to 2000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz/6 dB bandwidth and peak detection. Tabletop equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3, 10 or 30 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. Intentional radiators are rotated through orthogonal axes to determine the attitude that maximizes the emissions.