Select Comfort Corporation

Adjustable Foundation Interface Model: SNab1

Report No. SECF0001

Report Prepared By



www.nwemc.com 1-888-EMI-CERT

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22975 NW Evergreen Parkway Suite 400 Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: January 19, 2011
Select Comfort Corporation
Adjustable Foundation Interface Model: SNab1

	Emissions		
Test Description	Specification	Test Method	Pass/Fail
Occupied Bandwidth	FCC 15.247:2011	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2011	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2011	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2011	ANSI C63.10:2009	Pass
Power Spectral Density	FCC 15.247:2011	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2011	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15:207:2011	ANSI C63.10:2009	Pass

Modifications made to the product

See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc. 9349 W Broadway Ave. Brooklyn Park, MN 55445

Phone: (763) 425-2281 Fax: (763) 424-3469

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834E-1).

Approved By:

Tim O'Shea, Operations Manager

RAJVN

NVLAP Lab Code: 200881-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.



Revision History

Revision 06/29/09

Revision Number	Description	Date	Page Number
00	None		



Accreditations and Authorizations

FCC

Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP

Northwest EMC, Inc. is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. NVLAP is administered by the National Institute of Standards and Technology (NIST), an agency of the U.S. Commerce Department. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1)

CAB

Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

Australia/New Zealand

The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



Accreditations and Authorizations

VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).

BSMI

Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017).

GOST

Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157, Brooklyn Park: US0175)

VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.

SCOPE

For details on the Scopes of our Accreditations, please visit: http://www.nwemc.com/accreditations/



Northwest EMC Locations





Oregon Labs EV01-EV12 22975 NW Evergreen Pkwy Suite 400 Hillsboro, OR 97124 (503) 844-4066 California Labs OC01-OC13 41 Tesla Irvine, CA 92618 (949) 861-8918 Minnesota Labs MN01-MN08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281 Washington Labs SU01-SU07 14128 339th Ave. SE Sultan, WA 98294 (360) 793-8675 New York Labs WA01-WA04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796







Rev 11/17/06

Party Requesting the Test

Company Name:	Select Comfort Corporation	
Address:	9800 59th Avenue North	
City, State, Zip:	Minneapolis, MN 55442	
Test Requested By:	Paul Mahoney	
Model:	Adjustable Foundation Interface, Model: SNab1	
First Date of Test:	January 17, 2011	
Last Date of Test:	January 19, 2011	
Receipt Date of Samples:	January 17, 2011	
Equipment Design Stage:	Prototype	
Equipment Condition:	No Damage	

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

2.4 GHz IEEE 802.15.4 Transceiver used to wirelessly control and adjust the user's foundation.

The equipment final configuration will have a plastic enclosure. Since that would not affect this testing it was all performed without the enclosure.

Testing Objective:

Demonstrate compliance to FCC 15.247 requirements. 802.15.4 radio

Configurations

Revision 9/21/05

CONFIGURATION 1 SECF0001

Software/Firmware Running during test	
Description	Version
Firmware Rev	77377

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Adjustable Foundation Interface	Select Comfort Corporation	SNab1/115214	3A863798

Peripherals in test setup boundary					
Description	escription Manufacturer Model/Part Number Serial Number				
DC Power Brick	Emerson Network Power	DA12-050US-M	H704GU00B201L		

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power	No	1.53cm	No	Adjustable Foundation Interface	DC Power Brick
PA = Ca	PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.				

CONFIGURATION 2 SECF0001

Software/Firmware Running during test	
Description	Version
Firmware Rev	77364

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Adjustable Foundation Interface	Select Comfort Corporation	SNab1/115214	3A863790

Peripherals in test setup boundary					
Description	ption Manufacturer Model/Part Number Serial Number				
DC Power Brick	Emerson Network Power	DA12-050US-M	H704GU00B201L		
Load Power	Select Comfort Corporation	None	None		

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power	No	1.53cm	No	Adjustable Foundation Interface	DC Power Brick
Ribbon Cable	No	1m	No	Adjustable Foundation Interface	Load Power
Adjustable Foundation Simulator	No	2m	No	Adjustable Foundation Interface	Terminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					



CONFIGURATION 3 SECF0001

Software/Firmware Running during test			
Description	Version		
Firmware Rev	77364		

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Adjustable Foundation Interface	Select Comfort Corporation	SNab1/115214	3A863790

Peripherals in test	setup boundary		
Description	Manufacturer	Model/Part Number	Serial Number
DC Power Brick	Emerson Network Power	DA12-050US-M	H704GU00B201L
Load Power	Select Comfort Corporation	None	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power	No	1.53cm	No	Adjustable Foundation Interface	DC Power Brick
Ribbon Cable	No	1m	No	Adjustable Foundation Interface	Load Power
Adjustable Foundation Simulator	No	2m	No	Adjustable Foundation Interface	Terminated
AC Power	No	83cm	No	DC Power Brick	AC Mains
PA = Cable is permaner	tly attache	d to the device.	Shielding	and/or presence of ferrite may be	unknown.



CONFIGURATION 4 SECF0001

Software/Firmware Running during test	
Description	Version
Firmware Rev	77364

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Adjustable Foundation Interface	Select Comfort Corporation	SNab1/115214	3A863790

Peripherals in test	setup boundary		
Description	Manufacturer	Model/Part Number	Serial Number
DC Power Brick	Emerson Network Power	DA12-050US-M	H704GU00B201L
Load Power	Select Comfort Corporation	None	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power	No	1.53cm	No	Adjustable Foundation Interface	DC Power Brick
Ribbon Cable	No	1m	No	Adjustable Foundation Interface	Load Power
Adjustable Foundation Simulator	No	2m	No	Adjustable Foundation Interface	Terminated
AC Power	No	1.8m	No	DC Power Brick	AC Mains
PA = Cable is perman	ently attache	d to the device	. Shielding	and/or presence of ferrite may be	unknown.

			Equipment mo	odifications	
Item	Date	Test	Modification	Note	Disposition of EUT
1	1/17/2011	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	1/17/2011	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	1/17/2011	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	1/17/2011	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	1/17/2011	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	1/17/2011	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	1/19/2011	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

OCCUPIED BANDWIDTH

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Signal Generator	Agilent	E4422B	TGQ	3/16/2009	24
Attenuator, 20 dB 'SMA'	Fairview Microwave	SA18S5W-20	RFX	10/6/2010	13
40 GHz DC block	Fairview Microwave	SD3379	AMI	11/1/2010	13
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate with the typical modulation.

NORTHWEST		0.00110155	ANDMOTH			XMit 2010.11.
EMC		OCCUPIED I	BANDWIDTH			
EUT:	Adjustable Foundation Interfac	e, Model: SNab1			Work Order: S	SECF0001
Serial Number:	3A863798				Date: ()1/17/11
Customer:	Select Comfort Corporation				Temperature: 2	23.52°C
Attendees:	Paul Mahoney				Humidity: 1	
Project:				Baro	ometric Pres.: 1	
	Trevor Buls		Power: 120VAC/60Hz		Job Site:	MN05
TEST SPECIFICAT	IONS		Test Method			
FCC 15.247:2011			ANSI C63.10:2009			
COMMENTS						
None						
DEVIATIONS FROM	M TEST STANDARD					
No deviations.						
Configuration #	1	Signature True	vor Buls	-		
				Value	Lim	it Results
Low Channel	·	_	_	1.496 MHz	> 500	
Mid Channel				1.587 MHz	> 500	kHz Pass
High Channel				1.571 MHz	> 500	kHz Pass

OCCUPIED BANDWIDTH

Low Channel

Result: Pass Value: 1.496 MHz Limit: > 500 kHz



Mid Channel

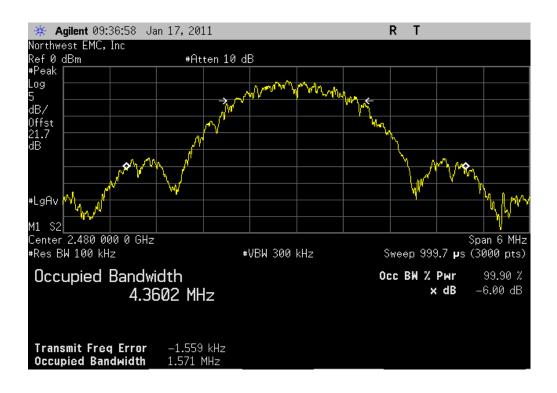
Result: Pass Value: 1.587 MHz Limit: > 500 kHz



OCCUPIED BANDWIDTH

High Channel

Result: Pass Value: 1.571 MHz Limit: > 500 kHz



OUTPUT POWER

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
40 GHz DC block	Fairview Microwave	SD3379	AMI	11/1/2010	13
Attenuator, 20 dB 'SMA'	Fairview Microwave	SA18S5W-20	RFX	10/6/2010	13
Signal Generator	Agilent	E4422B	TGQ	3/16/2009	24
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode.

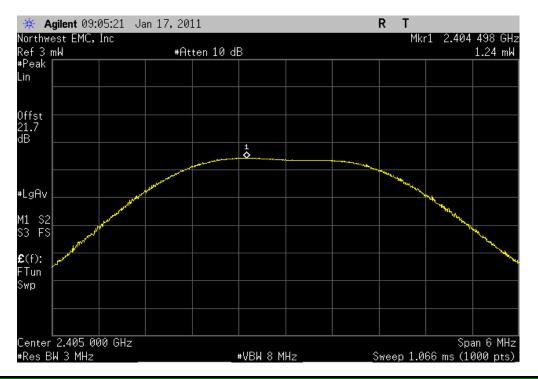
De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

EMC	OUTP	UT POWER		XMit 2010.11.03
EUT: Adji	ustable Foundation Interface, Model: SNab1		Work Order:	SECF0001
Serial Number: 3A8	863798		Date:	01/17/11
Customer: Sele	ect Comfort Corporation		Temperature:	23.52°C
Attendees: Pau			Humidity:	
Project: Non			Barometric Pres.:	
Tested by: Trev		Power: 120VAC/60Hz	Job Site:	MN05
TEST SPECIFICATIONS	\$	Test Method		
FCC 15.247:2011		ANSI C63.10:2009		
DEVIATIONS FROM TES				
		revor Buls		
No deviations.				mit Results
No deviations. Configuration #			1.24 mW 1	W Pass
No deviations.			1.24 mW 1 1.11 mW 1	

OUTPUT POWER

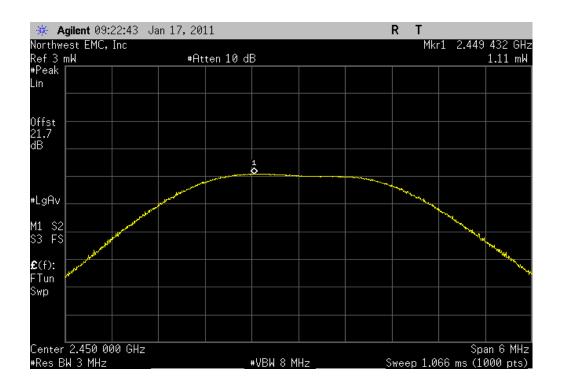
Low Channel

Result: Pass Value: 1.24 mW Limit: 1 W



Mid Channel

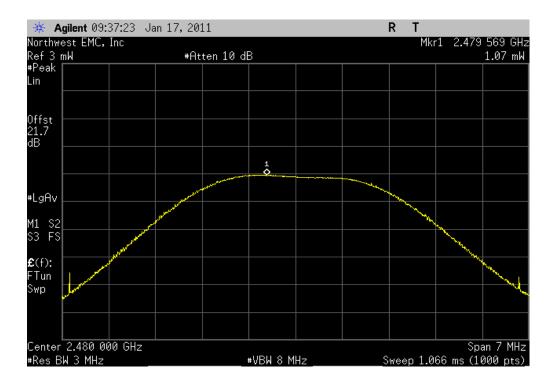
Result: Pass Value: 1.11 mW Limit: 1 W



OUTPUT POWER

High Channel

Result: Pass Value: 1.07 mW Limit: 1 W



BAND EDGE COMPLIANCE

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
40 GHz DC block	Fairview Microwave	SD3379	AMI	11/1/2010	13
Attenuator, 20 dB 'SMA'	Fairview Microwave	SA18S5W-20	RFX	10/6/2010	13
Signal Generator	Agilent	E4422B	TGQ	3/16/2009	24
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its only data rate available.

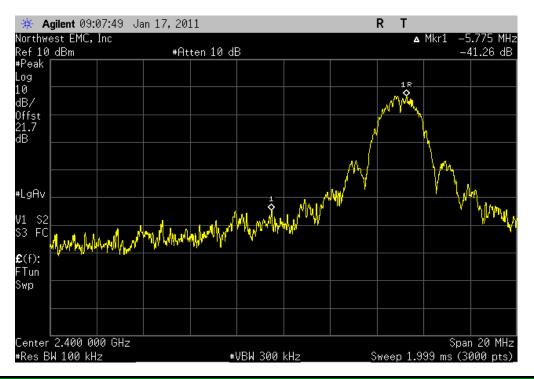
The spectrum was scanned across each band edge from at least 10 MHz below the band edge to 10 MHz above the band edge.

NORTHWEST		DAND EDGE COMP	LIANOE		XMit 2010.11.03
EMC		BAND EDGE COMP	LIANCE		
EUT:	Adjustable Foundation Interface	ce, Model: SNab1		Work Order:	SECF0001
Serial Number:	3A863798			Date:	01/17/11
	Select Comfort Corporation			Temperature:	
	Paul Mahoney			Humidity:	
Project:	None			Barometric Pres.:	1003.2
	Trevor Buls	Power:	120VAC/60Hz	Job Site:	MN05
TEST SPECIFICATI	IONS		Test Method		
FCC 15.247:2011			ANSI C63.10:2009		
COMMENTS					
None					
DEVIATIONS FROM	/I TEST STANDARD				
No deviations.					
Configuration #	1	Signature Trevor	Buls		
					mit Results
Low Channel					dBc Pass
High Channel			-37.7	2 dBc ≤ -20	dBc Pass

BAND EDGE COMPLIANCE

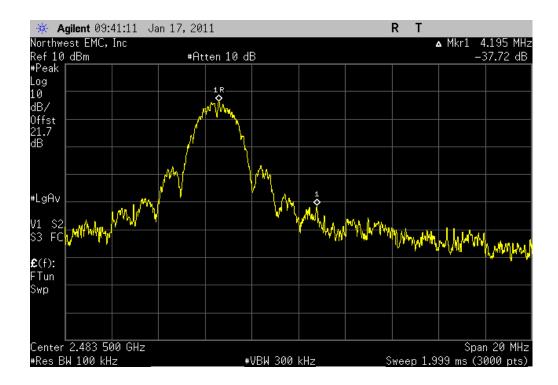
 Low Channel

 Result: Pass
 Value: -41.26 dBc
 Limit: ≤ -20 dBc



 High Channel

 Result:
 Pass
 Value:
 -37.72 dBc
 Limit:
 ≤ -20 dBc



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 20 dB 'SMA'	Fairview Microwave	SA18S5W-20	RFX	10/6/2010	13
40 GHz DC block	Fairview Microwave	SD3379	AMI	11/1/2010	13
Signal Generator	Agilent	E4422B	TGQ	3/16/2009	24
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

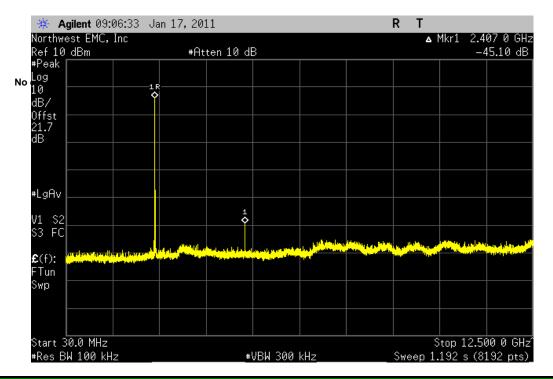
The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

EMC		SPURIO	US CONI	DUCTED EMIS	SSIONS		XMit 2010.11.
	☐: Adjustable Foundation In	terface. Model:	SNab1			Work Order: SECF0001	
Serial Number		,				Date: 01/17/11	
Custome	r: Select Comfort Corporati	ion				Temperature: 23.52°C	
	: Paul Mahoney					Humidity: 11%	
	t: None					Barometric Pres.: 1003.2	
Tested by	/: Trevor Buls			Power: 120VAC/60	0Hz	Job Site: MN05	
EST SPECIFICA	TIONS			Test Metho	od		
FCC 15.247:2011				ANSI C63.	10:2009		
COMMENTS							
None							
	M TEST STANDARD						
DEVIATIONS FRO	OM TEST STANDARD						
	OM TEST STANDARD	Si	ignature Jr	revor Bi	ıls		
lo deviations.		Si	ignature J	revor Bi	uls Value	Limit	Results
No deviations.	1	Si	ignature J	ievor Bi	Value	Limit	Results
No deviations.		Si	ignature J	ievor Bi		Limit ≤-20 dBc	Results Pass
lo deviations.	1	Si	ignature Tr	ievor Bi	Value		1100
o deviations. Configuration #	1 30MHz - 12.5GHz 12.5GHz - 25GHz	Si	ignature J	ievor Bi	-45.10 dBc -45.41 dBc	≤ -20 dBc ≤ -20 dBc	Pass
o deviations. configuration #	1 30MHz - 12.5GHz	Si	ignature J	ievor Bi	Value -45.10 dBc	≤ -20 dBc	Pass
o deviations. configuration # ow Channel	1 30MHz - 12.5GHz 12.5GHz - 25GHz	Si	ignature J	ievor Bi	-45.10 dBc -45.41 dBc	≤ -20 dBc ≤ -20 dBc	Pass Pass
odeviations. Configuration # Ow Channel	1 30MHz - 12.5GHz 12.5GHz - 25GHz 30MHz - 12.5GHz	Si	ignature Tr	ievor Bi	Value -45.10 dBc -45.41 dBc -27.26 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass Pass
No deviations.	1 30MHz - 12.5GHz 12.5GHz - 25GHz 30MHz - 12.5GHz	Si	ignature J	ievor Bi	Value -45.10 dBc -45.41 dBc -27.26 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass Pass

Adjustable Foundation Interface, Model: SNab1

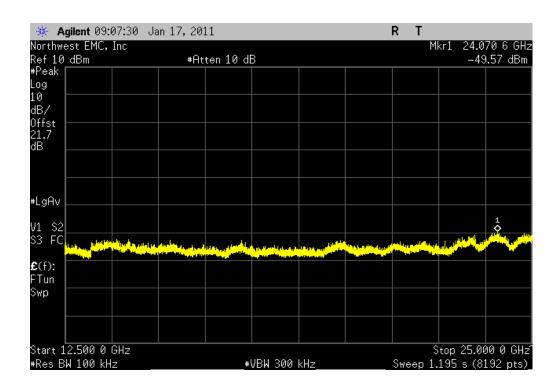
 Low Channel, 30MHz - 12.5GHz

 Result: Pass
 Value: -45.10 dBc
 Limit: ≤ -20 dBc



 Low Channel, 12.5GHz - 25GHz

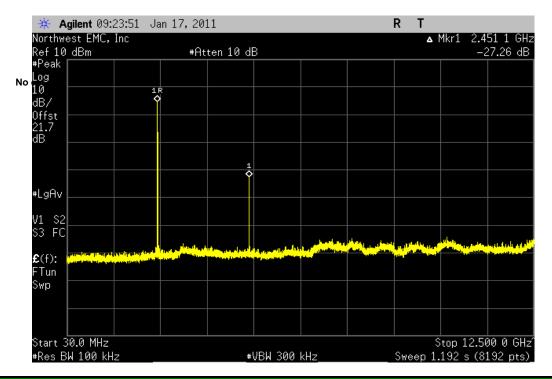
 Result: Pass
 Value: -45.41 dBc
 Limit: ≤ -20 dBc



Adjustable Foundation Interface, Model: SNab1

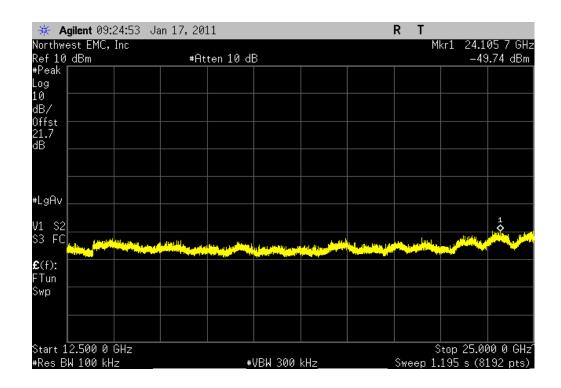
 Mid Channel, 30MHz - 12.5GHz

 Result: Pass
 Value: -27.26 dBc
 Limit: ≤ -20 dBc



 Mid Channel, 12.5GHz - 25GHz

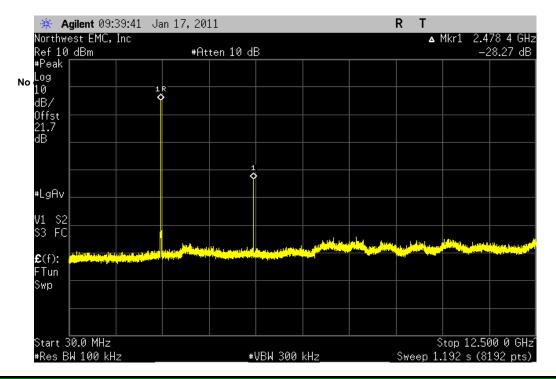
 Result: Pass
 Value: -44.44 dBc
 Limit: ≤ -20 dBc



Adjustable Foundation Interface, Model: SNab1

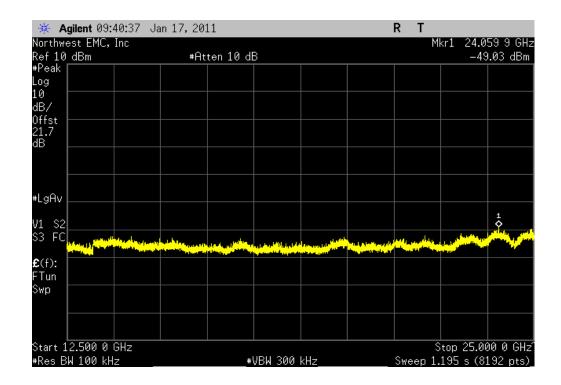
 High Channel, 30MHz - 12.5GHz

 Result:
 Pass
 Value:
 -28.27 dBc
 Limit:
 ≤ -20 dBc



High Channel, 12.5GHz - 25GHz

Result: Pass Value: -44.02 dBc Limit: ≤ -20 dBc



POWER SPECTRAL DENSITY

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 20 dB 'SMA'	Fairview Microwave	SA18S5W-20	RFX	10/6/2010	13
40 GHz DC block	Fairview Microwave	SD3379	AMI	11/1/2010	13
Signal Generator	Agilent	E4422B	TGQ	3/16/2009	24
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The peak power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate for each modulation type available. Per the procedure outlined in FCC KDB 558074, March 23, 2005, the spectrum analyzer was used as follows:

The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = (SPAN/3 kHz)). For example, given a span of 1.5 MHz, the sweep should be 1.5 x $10^6 \div 3 \times 10^3 = 500$ seconds. External attenuation was used and added to the reading. The following FCC procedure was used for modifying the power spectral density measurements:

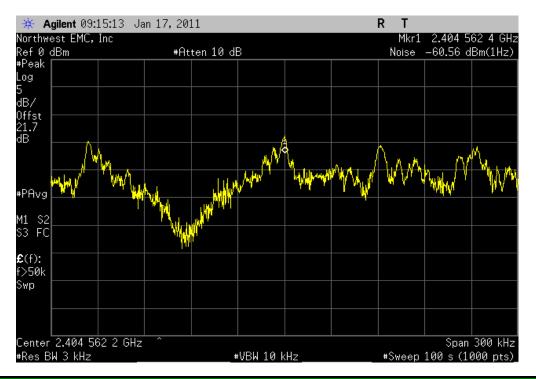
"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 35 dB for correction to 3 kHz."

NORTHWEST		DOWED ODEO	EDAL DEMOIT	->/		XMit 2010.11.03
EMC		POWER SPECT	IRAL DENSII	Υ		
EUT:	Adjustable Foundation Interfac	e, Model: SNab1			Work Order: SECF0001	
Serial Number:	3A863798				Date: 01/17/11	
Customer:	Select Comfort Corporation			T	emperature: 23.52°C	
Attendees	Paul Mahoney				Humidity: 11%	
Project:	None			Baror	netric Pres.: 1003.2	
	Trevor Buls		Power: 120VAC/60Hz		Job Site: MN05	
TEST SPECIFICAT	TONS		Test Method			
FCC 15.247:2011			ANSI C63.10:	2009		
COMMENTS						
None						
	M TEST STANDARD					
No deviations.						
Configuration #	1	Signature Tre	vor Bul	2		
				Value	Limit	Results
Low Channel	·	·	·	-25.76 dBm / 3 kHz	8 dBm / 3 kHz	Pass
Mid Channel				-25.25 dBm / 3 kHz	8 dBm / 3 kHz	Pass
High Channel				-25.46 dBm / 3 kHz	8 dBm / 3 kHz	Pass

POWER SPECTRAL DENSITY

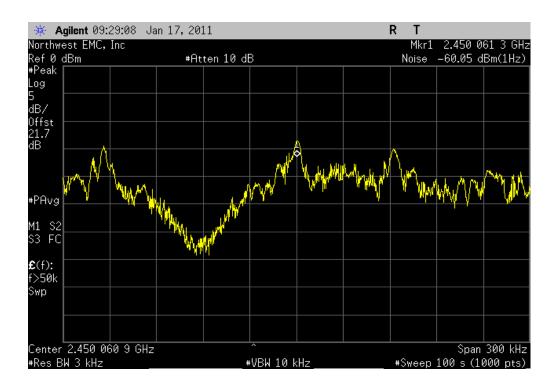
Low Channel

Result: Pass Value: -25.76 dBm / 3 kHz Limit: 8 dBm / 3 kHz



Mid Channel

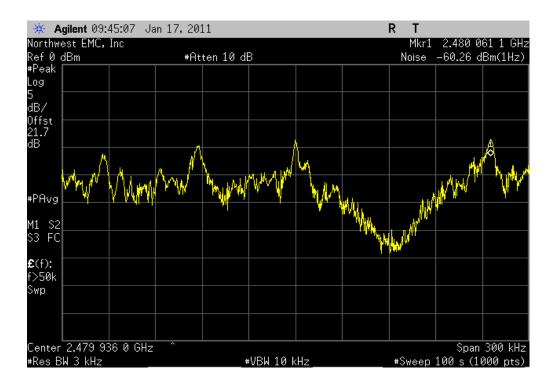
Result: Pass Value: -25.25 dBm / 3 kHz Limit: 8 dBm / 3 kHz



POWER SPECTRAL DENSITY

High Channel

Result: Pass Value: -25.46 dBm / 3 kHz Limit: 8 dBm / 3 kHz



EMC

Spurious Radiated Emissions

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmitting Modulated signal at High Channel - 2480 MHz

Transmitting Modulated signal at Mid Channel - 2450 MHz

Transmitting Modulated signal at Low Channel - 2405 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

SECF0001 - 2

FREQUENCY RANGE INVESTIGATED
Start Frequency 30 MHz Stop Frequency 25 GHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

EST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
High Pass Filter	Micro-Tronics	HPM50111	HGQ	7/9/2010	13 mo
Low Pass Filter	Micro-Tronics	LPM50004	HGK	7/9/2010	13 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	7/9/2010	13 mo
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	1/27/2010	13 mo
MN05 Cables	N/A	6GHz Standard Gain Horn C	EVD	1/27/2010	13 mo
Antenna, Horn	ETS	3160-09	AHG	NCR	0 mo
Antenna, Horn	ETS Lindgren	3160-08	AIQ	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	7/19/2010	13 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	7/19/2010	13 mo
		Double Ridge Guide Horn			
MN05 Cables	ESM Cable Corp.	Cables	MNI	7/19/2010	13 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	12/22/2009	24 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	7/19/2010	13 mo
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/19/2010	13 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	1/15/2010	13 mo
Antenna, Biconilog	ETS Lindgren	3142D	AXN	12/30/2009	13 mo
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12 mo

MEASUREMENT BANDWIDTHS											
	Frequency Range	Peak Data	Quasi-Peak Data	Average Data							
	(MHz)	(kHz)	(kHz)	(kHz)							
	0.01 - 0.15	1.0	0.2	0.2							
	0.15 - 30.0	10.0	9.0	9.0							
	30.0 - 1000	100.0	120.0	120.0							
	Above 1000	1000.0	N/A	1000.0							

Measurements were made using the IF bandwidths and detectors specified. No video filter was used, except in the case of the FC0 Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth was used.

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

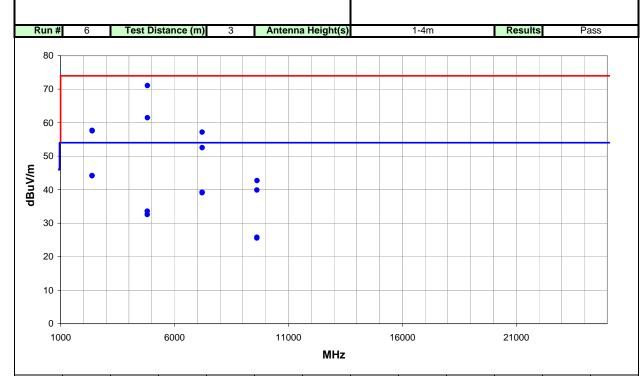
TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

NORTHWEST Spurious Radiated Emissions 01/17/11 Work Order: SECF0001 Date: 23.52°C Project: None Temperature: Job Site: MN05 **Humidity**: 11.1 1003.2 Tested by: Trevor Buls 3A863790 Serial Number: **Barometric Pres.** EUT: Adjustable Foundation Interface, Model: SNab1 Configuration: 2 **Customer:** Select Comfort Corporation Attendees: Paul Mahoney EUT Power: 120VAC/60Hz Transmitting Modulated signal at Low Channel - 2405 MHz **Operating Mode: Deviations:** EUT will only be used in horizontal polarity during normal operation. Comments Test Specifications Test Method

FCC 15.247:2011

ANSI C63.10:2009

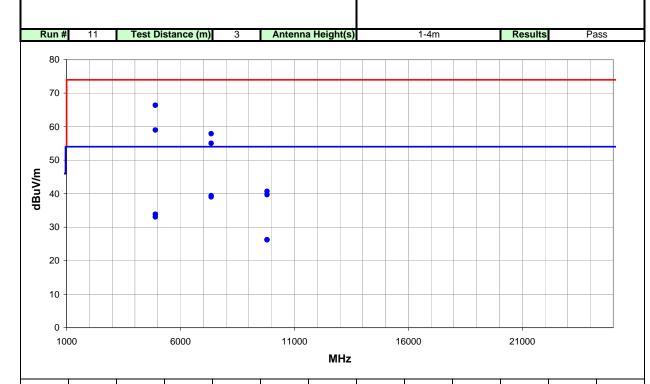


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
4810.966	67.5	3.6	1.2	90.0	3.0	0.0	Horz	PK	0.0	71.1	74.0	-2.9
2385.042	28.6	-4.4	1.0	360.0	3.0	20.0	Horz	AV	0.0	44.2	54.0	-9.8
2385.475	28.6	-4.4	3.7	139.0	3.0	20.0	Vert	AV	0.0	44.2	54.0	-9.8
4811.241	57.9	3.6	1.3	195.0	3.0	0.0	Vert	PK	0.0	61.5	74.0	-12.5
7216.270	28.3	11.0	1.0	226.0	3.0	0.0	Horz	AV	0.0	39.3	54.0	-14.7
7216.061	28.1	11.0	1.0	328.0	3.0	0.0	Vert	AV	0.0	39.1	54.0	-14.9
2386.425	42.1	-4.4	3.7	139.0	3.0	20.0	Vert	PK	0.0	57.7	74.0	-16.3
2389.717	42.0	-4.4	1.0	360.0	3.0	20.0	Horz	PK	0.0	57.6	74.0	-16.4
7216.586	46.2	11.0	1.0	226.0	3.0	0.0	Horz	PK	0.0	57.2	74.0	-16.8
4809.925	30.0	3.6	1.2	90.0	3.0	0.0	Horz	AV	0.0	33.6	54.0	-20.4
4809.916	29.0	3.6	1.3	195.0	3.0	0.0	Vert	AV	0.0	32.6	54.0	-21.4
7214.170	41.6	10.9	1.0	328.0	3.0	0.0	Vert	PK	0.0	52.5	74.0	-21.5
9617.933	35.1	-9.3	1.6	65.0	3.0	0.0	Horz	AV	0.0	25.8	54.0	-28.2
9617.892	34.9	-9.3	1.0	288.0	3.0	0.0	Vert	AV	0.0	25.6	54.0	-28.4
9622.317	52.0	-9.3	1.6	65.0	3.0	0.0	Horz	PK	0.0	42.7	74.0	-31.3
9618.275	49.2	-9.3	1.0	288.0	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1

NORTHWEST Spurious Radiated Emissions 01/17/11 Work Order: SECF0001 Date: 23.52°C Project: None Temperature: Job Site: MN05 **Humidity**: 11.1 1003.2 Tested by: Trevor Buls 3A863790 Serial Number: **Barometric Pres.** EUT: Adjustable Foundation Interface, Model: SNab1 Configuration: 2 **Customer:** Select Comfort Corporation Attendees: Paul Mahoney EUT Power: 120VAC/60Hz Transmitting Modulated signal at Mid Channel - 2450 MHz **Operating Mode: Deviations**: EUT will only be used in horizontal polarity during normal operation. Comments Test Specifications Test Method

FCC 15.247:2011

ANSI C63.10:2009

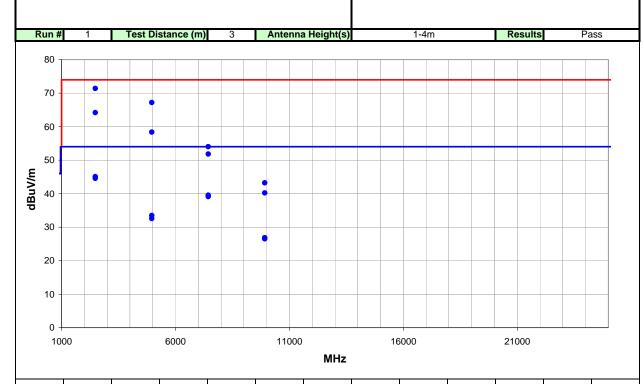


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
4901.080	62.4	4.0	1.0	121.0	3.0	0.0	Horz	PK	0.0	66.4	74.0	-7.6
7348.483	27.6	11.8	1.0	95.0	3.0	0.0	Horz	AV	0.0	39.4	54.0	-14.6
7351.273	27.2	11.8	1.0	328.0	3.0	0.0	Vert	AV	0.0	39.0	54.0	-15.0
4899.016	55.0	4.0	1.0	299.0	3.0	0.0	Vert	PK	0.0	59.0	74.0	-15.0
7348.274	46.1	11.8	1.0	95.0	3.0	0.0	Horz	PK	0.0	57.9	74.0	-16.1
7348.907	43.2	11.8	1.0	328.0	3.0	0.0	Vert	PK	0.0	55.0	74.0	-19.0
4899.822	29.9	4.0	1.0	121.0	3.0	0.0	Horz	AV	0.0	33.9	54.0	-20.1
4899.991	29.1	4.0	1.0	299.0	3.0	0.0	Vert	AV	0.0	33.1	54.0	-20.9
9797.975	35.2	-9.0	1.0	339.0	3.0	0.0	Vert	AV	0.0	26.2	54.0	-27.8
9797.850	35.2	-9.0	1.0	358.0	3.0	0.0	Horz	AV	0.0	26.2	54.0	-27.8
9797.525	49.7	-9.0	1.0	358.0	3.0	0.0	Horz	PK	0.0	40.7	74.0	-33.3
9797.892	48.7	-9.0	1.0	339.0	3.0	0.0	Vert	PK	0.0	39.7	74.0	-34.3

NORTHWEST Spurious Radiated Emissions 01/17/11 Work Order: SECF0001 Date: 23.52°C Project: None Temperature: Job Site: MN05 **Humidity**: 11.1 1003.2 Tested by: Trevor Buls 3A863790 Barometric Pres. Serial Number: EUT: Adjustable Foundation Interface Configuration: 2 **Customer:** Select Comfort Corporation Attendees: Paul Mahoney EUT Power: 120VAC/60Hz Transmitting Modulated signal at High Channel - 2480 MHz **Operating Mode: Deviations**: EUT will only be used in horizontal polarity during normal operation. Comments Test Specifications Test Method

FCC 15.247:2011

ANSI C63.10:2009



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
2484.008	55.8	-4.4	1.0	195.0	3.0	20.0	Horz	PK	0.0	71.4	74.0	-2.6
4960.988	63.0	4.2	1.0	105.0	3.0	0.0	Horz	PK	0.0	67.2	74.0	-6.8
2483.558	29.5	-4.4	1.0	195.0	3.0	20.0	Horz	AV	0.0	45.1	54.0	-8.9
2483.500	29.0	-4.4	2.2	200.0	3.0	20.0	Vert	AV	0.0	44.6	54.0	-9.4
2483.742	48.6	-4.4	2.2	200.0	3.0	20.0	Vert	PK	0.0	64.2	74.0	-9.8
7441.470	27.3	12.2	1.0	100.0	3.0	0.0	Horz	AV	0.0	39.5	54.0	-14.5
7441.420	26.9	12.2	1.0	100.0	3.0	0.0	Vert	AV	0.0	39.1	54.0	-14.9
4961.051	54.2	4.2	1.3	95.0	3.0	0.0	Vert	PK	0.0	58.4	74.0	-15.6
7438.887	41.8	12.2	1.0	100.0	3.0	0.0	Vert	PK	0.0	54.0	74.0	-20.0
4960.988	29.3	4.2	1.0	105.0	3.0	0.0	Horz	AV	0.0	33.5	54.0	-20.5
4960.909	28.4	4.2	1.3	95.0	3.0	0.0	Vert	AV	0.0	32.6	54.0	-21.4
7441.412	39.6	12.2	1.0	100.0	3.0	0.0	Horz	PK	0.0	51.8	74.0	-22.2
9918.125	35.6	-8.8	1.5	73.0	3.0	0.0	Horz	AV	0.0	26.8	54.0	-27.2
9918.200	35.3	-8.8	1.0	5.0	3.0	0.0	Vert	AV	0.0	26.5	54.0	-27.5
9918.242	52.0	-8.8	1.5	73.0	3.0	0.0	Horz	PK	0.0	43.2	74.0	-30.8
9920.350	49.0	-8.8	1.0	5.0	3.0	0.0	Vert	PK	0.0	40.2	74.0	-33.8



AC Powerline Conducted Emissions

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Transmitting modulated signal at High Channel 2480 MHz.

Transmitting modulated signal at Mid Channel 2450 MHz.

Transmitting modulated signal at Low Channel 2405 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

SECF0001 - 4

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
MN03 Cables	ESM Cable Corp.	Conducted Cables	MNC	6/8/2010	13 mo
Attenuator, 20 dB	SM Electronics	SA01B-20	REF	1/3/2011	13 mo
High Pass Filter	TTE	H97-100K-50-720B	HGN	6/28/2010	13 mo
Receiver	Rohde & Schwarz	ESCI	ARF	3/30/2010	12 mo
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	8/3/2010	12 mo

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

