Honeywell, Automation and Control Solutions

THM5421R02

FCC 15.247:2013

Report #: HNYW0029.1

Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

WTD 12.5.23

Last Date of Test: January 3, 2013
Honeywell, Automation and Control Solutions
Model: THM5421R02

Emissions

Test Description	Specification	Test Method	Pass/Fail
Duty Cycle	FCC 15.247:2013	ANSI C63.10:2009	Pass
Channel Spacing	FCC 15.247:2013	ANSI C63.10:2009	Pass
Dwell Time	FCC 15.247:2013	ANSI C63.10:2009	Pass
Number of Hopping Frequencies	FCC 15.247:2013	ANSI C63.10:2009	Pass
Occupied Bandwidth	FCC 15.247:2013	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2013	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2013	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2013	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2013	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions - Transmit	FCC 15.207:2013	ANSI C63.10:2009	Pass
Receiver Spurious Emissions	FCC 15.109:2013 Class B	ANSI C63.4:2009	Pass
AC Powerline Conducted Emissions - Receiver	FCC 15.107:2013 Class B	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:

Tim O'Shea, Operations Manager

NVLAP Lab Code: 200881-0

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).

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 Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

NORTHWEST EMC

REV 2012.05.24

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC Guide 65 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

IC - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

European Union

European Commission – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

KCC / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Hong Kong

OFTA – Recognized by OFTA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

Russia

GOST – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.

SCOPE

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

MEASUREMENT UNCERTAINTY

Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

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 (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-1 as applicable), and are available upon request.

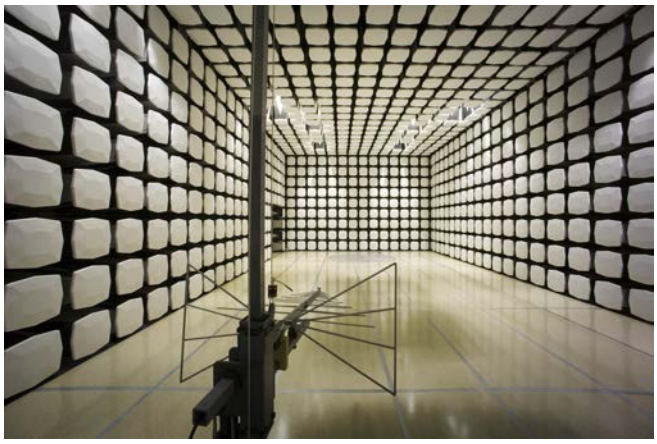
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy (Hz)	0.12	-0.01
Amplitude Accuracy (dB)	0.49	-0.49
Conducted Power (dB)	0.41	-0.41
Radiated Power via Substitution (dB)	0.69	-0.68
Temperature (degrees C)	0.81	-0.81
Humidity (% RH)	2.89	-2.89
Field Strength (dB)	4.00	-4.00
AC Powerline Conducted Emissions (dB)	2.70	-2.70

LOCATIONS

REV 2013.01.07

Oregon	California	New York	Minnesota	Washington
Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs WA01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	Labs MN01-08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281	Labs NC01-05,SU02,SU07 19201 120th Ave. NE Bothell, WA 98011 (425) 984-6600
VCCI				
A-0108	A-0029		A-0109	A-0110
Industry Canada				
2834D-1, 2834D-*2*	2834B-1, 2834B-2, 2834B-3		2834E-1	2834C-1



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Honeywell, Automation and Control Solutions
Address:	1985 Douglas Drive North
City, State, Zip:	Golden Valley, MN 55422-3992
Test Requested By:	Pavel Kalina
Model:	THM5421R02
First Date of Test:	January 02, 2013
Last Date of Test:	January 03, 2013
Receipt Date of Samples:	January 02, 2013
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
902 - 928 transceiver operating with a maximum output power of 10 dBm

Testing Objective:
To demonstrate compliance to FCC 15.247 requirements.

CONFIGURATIONS

Configuration HNYW0029- 1

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Equipment Interface Module	Honeywell, Automation and Control Solutions	THM5421R02	77758015000427

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Transformer Load Board	Honeywell, Automation and Control Solutions	None	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	2.2m	No	Equipment Interface Module	Transformer Load Board
AC Power	No	1.4m	No	Transformer Load Board	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Configuration HNYW0029- 2

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Equipment Interface Module	Honeywell, Automation and Control Solutions	THM5421R02	77758015000431

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Transformer Load Board	Honeywell, Automation and Control Solutions	None	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	2.2m	No	Equipment Interface Module	Transformer Load Board
AC Power	No	1.4m	No	Transformer Load Board	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

MODIFICATIONS

WTD 12.5.23

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	1/2/2013	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.
2	1/2/2013	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.
3	1/2/2013	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	1/2/2013	Band Edge Compliance – Hopping Mode	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	1/2/2013	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.
6	1/2/2013	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.
7	1/2/2013	Dwell Time	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.
8	1/2/2013	Number of Hopping Frequencies	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.
9	1/2/2013	Channel Spacing	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.
10	1/3/2013	AC Powerline 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.
11	1/3/2013	Receiver Spurious Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

DUTY CYCLE

TEST DESCRIPTION

The Duty Cycle (x) were measured for each of the EUT operating modes. The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

The EUT operates at 100% Duty Cycle.

Channel Spacing

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	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

TEST DESCRIPTION

The channel carrier frequencies in the 902-928MHz band must be separated by 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. The EUT was operated in pseudorandom hopping mode. The spectrum was scanned across two adjacent peaks. The separation between the peaks of these channels was measured.

Channel Spacing

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

Limit is based on measured Occupied Bandwidth.

DEVIATIONS FROM TEST STANDARD

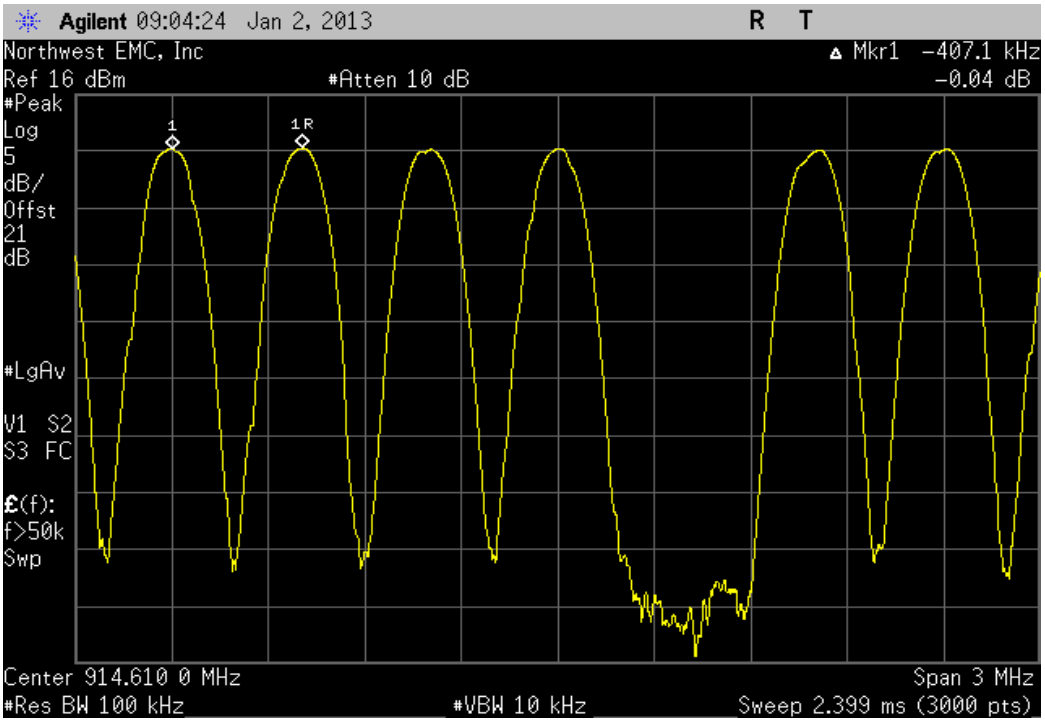
None

Configuration #	1	Signature	Trevor Buls

		Value	Limit	Result
Antenna A				
	Mid Channel, 914.61 MHz	407.1 kHz	> 65 kHz	Pass
Antenna B				
	Mid Channel, 914.61 MHz	391.1 kHz	> 65 kHz	Pass

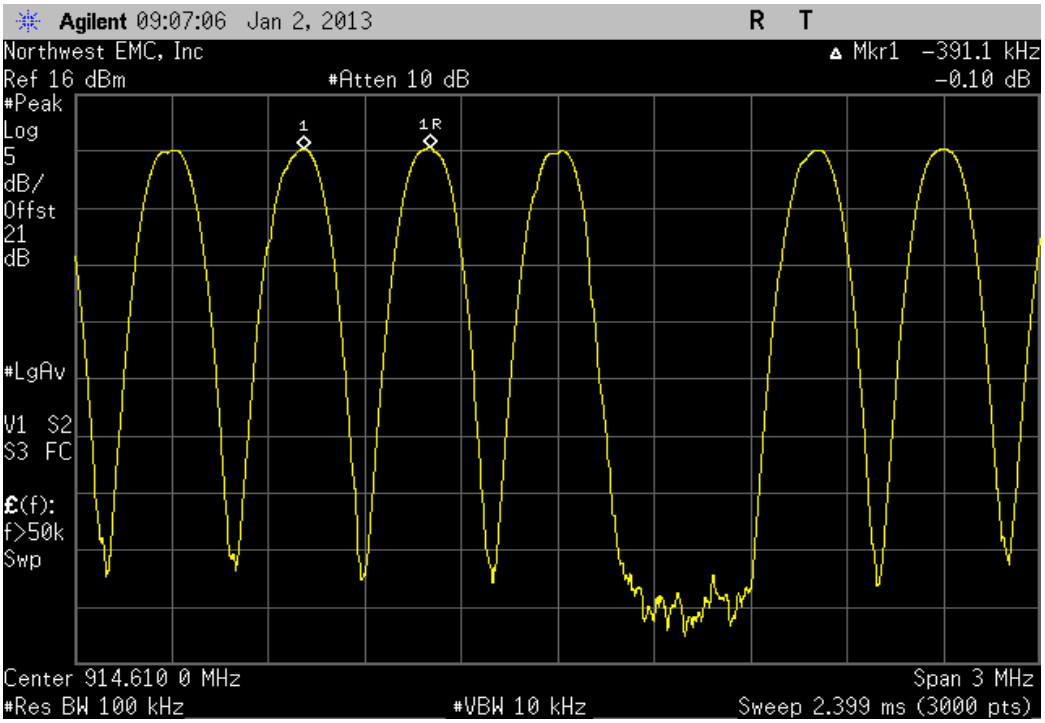
Antenna A, Mid Channel, 914.61 MHz

Value	Limit	Result
407.1 kHz	> 65 kHz	Pass



Antenna B, Mid Channel, 914.61 MHz

Value	Limit	Result
391.1 kHz	> 65 kHz	Pass



Dwell Time

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	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

TEST DESCRIPTION

The average dwell time per hopping channel was measured at one hopping channel in the middle of the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

The dwell time limit is based on the Number of Hopping Channels * 400 mS. (50 Channels * 400mS = 20 Sec)

On Time During 20 Sec = Pulse Width * Average Number of Pulses * Scale Factor

- Scale Factor = 20 Sec / Screen Capture Sweep Time = 20 Sec / 60 Sec = 1/3

Dwell Time

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

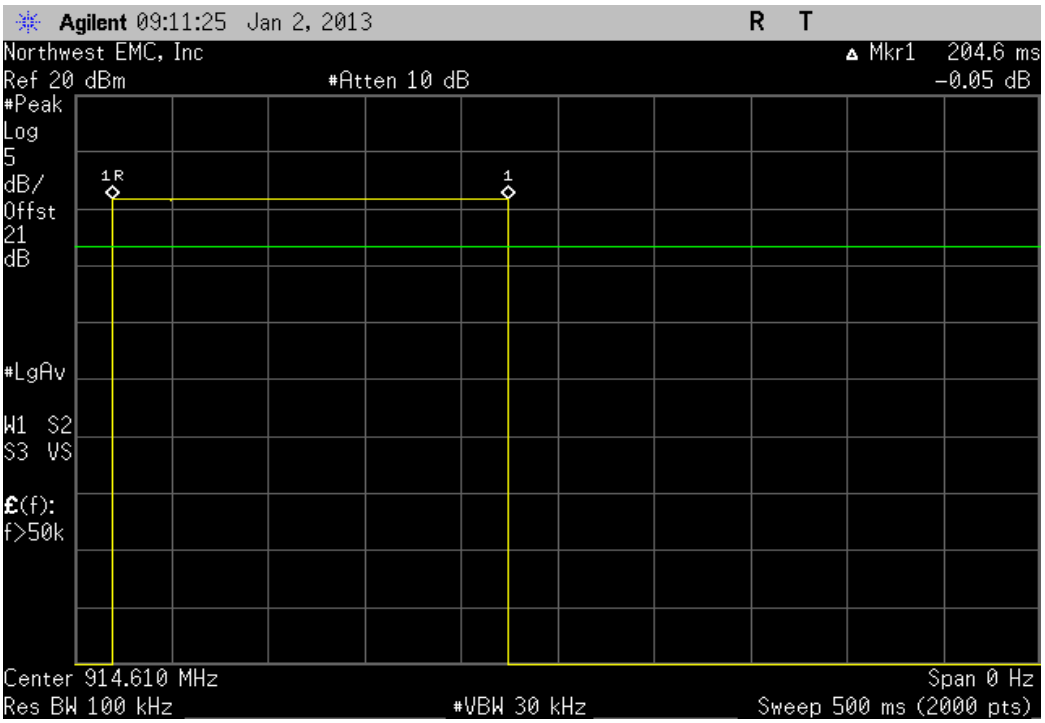
None

Configuration #	1	Signature	Trevor Buls

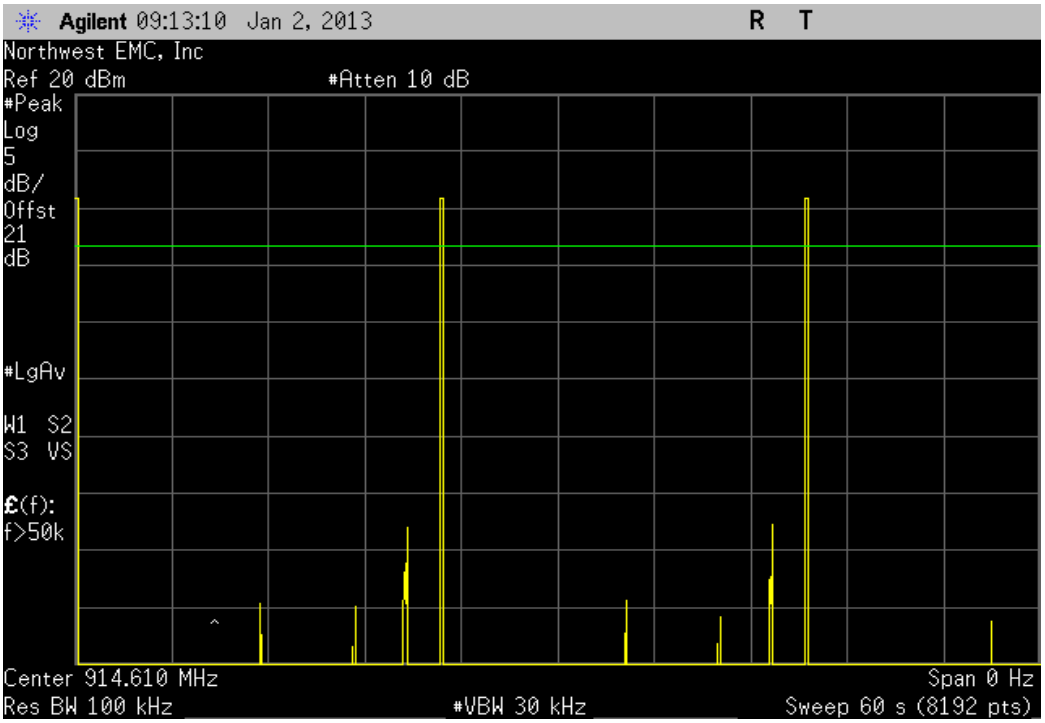
		Pulse Width (mS)	Number of Pulses	Average High Time (mS)	Scale Factor	On Time (mS) During 20 S	Limit (mS)	Result
Antenna A								
	Mid Channel, 914.61 MHz	204.609	N/A	N/A	N/A	N/A	N/A	N/A
	Mid Channel, 914.61 MHz	204.609	3	613.8	1/3	204.6	400	Pass
Antenna B								
	Mid Channel, 914.61 MHz	204.359	N/A	N/A	N/A	N/A	N/A	N/A
	Mid Channel, 914.61 MHz	204.359	3	613.1	1/3	204.4	400	Pass

Dwell Time

Antenna A, Mid Channel, 914.61 MHz						
Pulse Width (mS)	Number of Pulses	Average High Time (mS)	Scale Factor	On Time (mS) During 20 S	Limit (mS)	Result
204.609	N/A	N/A	N/A	N/A	N/A	N/A

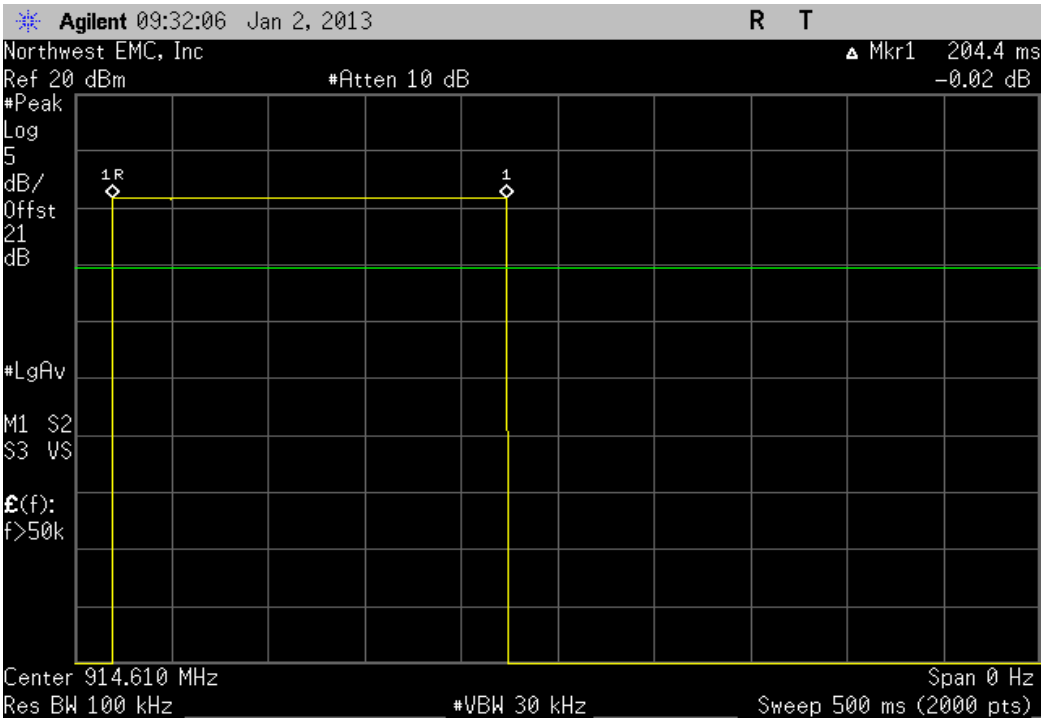


Antenna A, Mid Channel, 914.61 MHz						
Pulse Width (mS)	Number of Pulses	Average High Time (mS)	Scale Factor	On Time (mS) During 20 S	Limit (mS)	Result
204.609	3	613.8	1/3	204.6	400	Pass

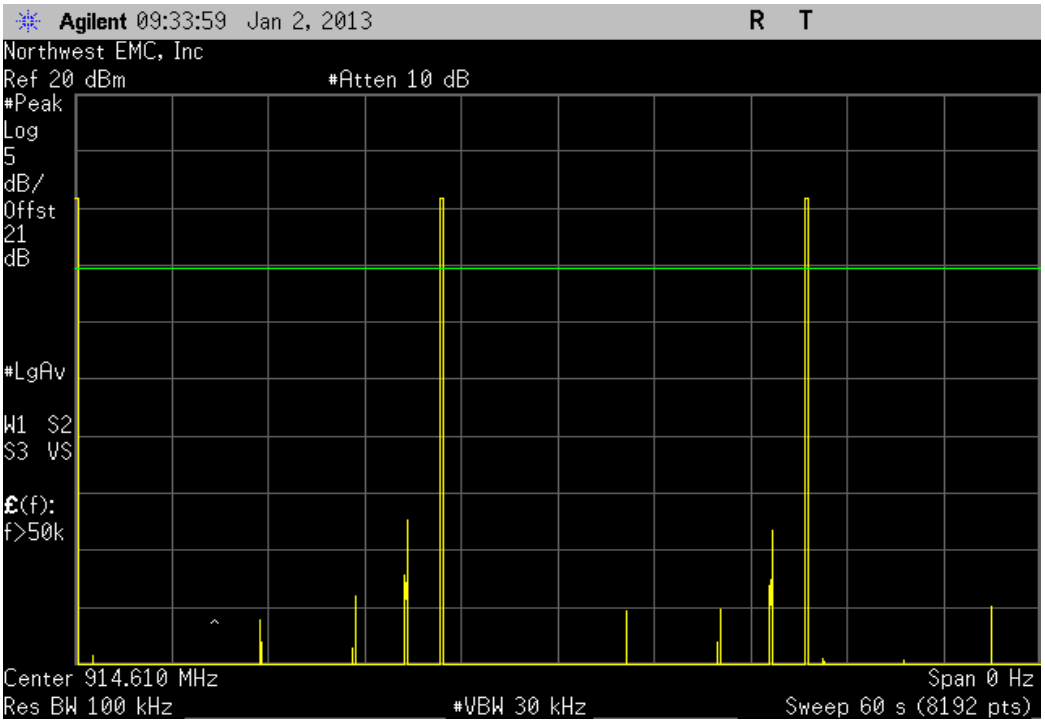


Dwell Time

Antenna B, Mid Channel, 914.61 MHz						
Pulse Width (mS)	Number of Pulses	Average High Time (mS)	Scale Factor	On Time (mS) During 20 S	Limit (mS)	Result
204.359	N/A	N/A	N/A	N/A	N/A	N/A



Antenna B, Mid Channel, 914.61 MHz						
Pulse Width (mS)	Number of Pulses	Average High Time (mS)	Scale Factor	On Time (mS) During 20 S	Limit (mS)	Result
204.359	3	613.1	1/3	204.4	400	Pass



Number of Hopping Frequencies

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	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

TEST DESCRIPTION

The number of hopping frequencies was measured across the authorized band. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

Number of Hopping Frequencies

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

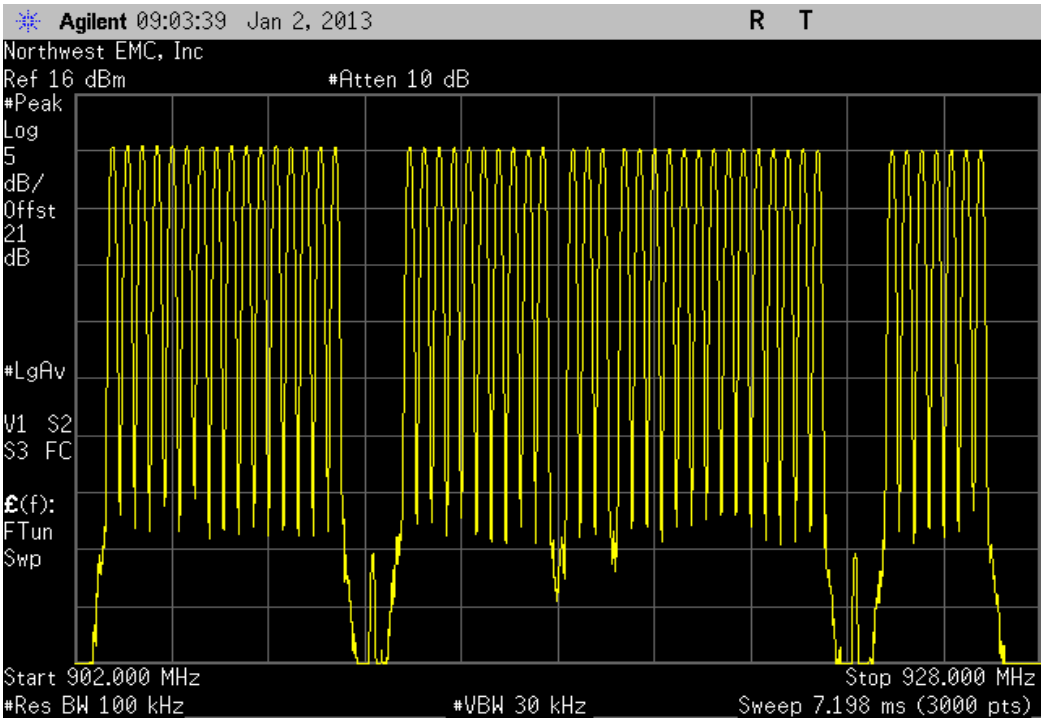
None

Configuration #	1	Signature	Trevor Buls

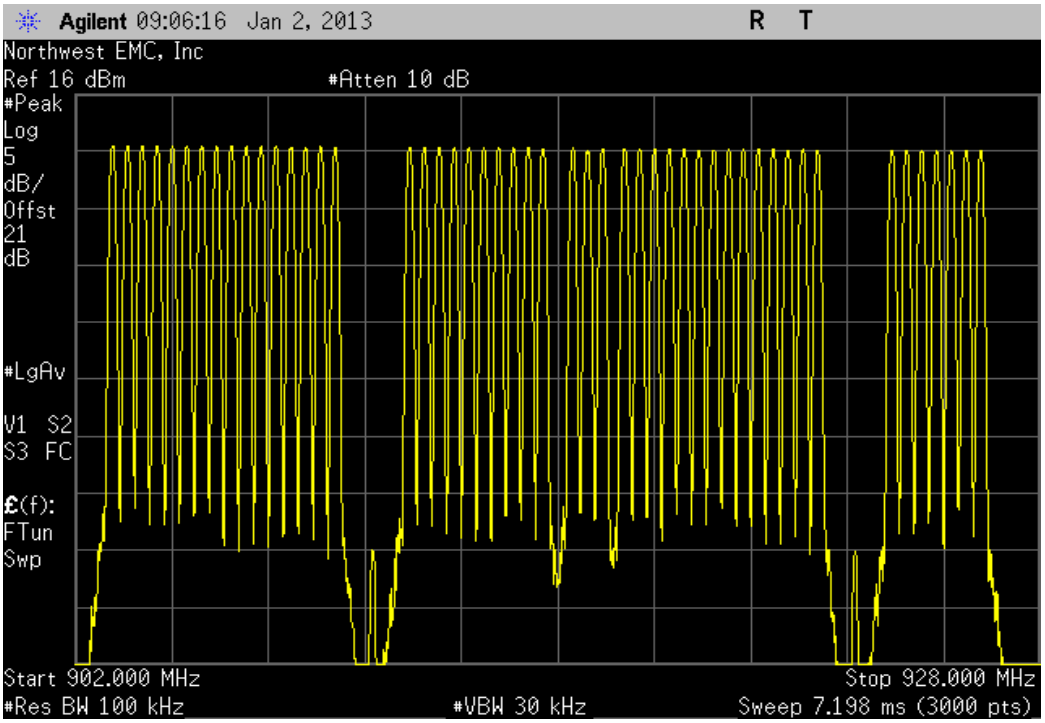
	Number of Channels	Limit	Result
Antenna A			
Mid Channel, 914.61 MHz	50	≥ 50	Pass
Antenna B			
Mid Channel, 914.61 MHz	50	≥ 50	Pass

Number of Hopping Frequencies

Antenna A, Mid Channel, 914.61 MHz						
				Number of Channels	Limit	Result
				50	≥ 50	Pass



Antenna B, Mid Channel, 914.61 MHz						
				Number of Channels	Limit	Result
				50	≥ 50	Pass



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
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

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 the data rate(s) listed in the datasheet in a no-hop mode.

Occupied Bandwidth

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

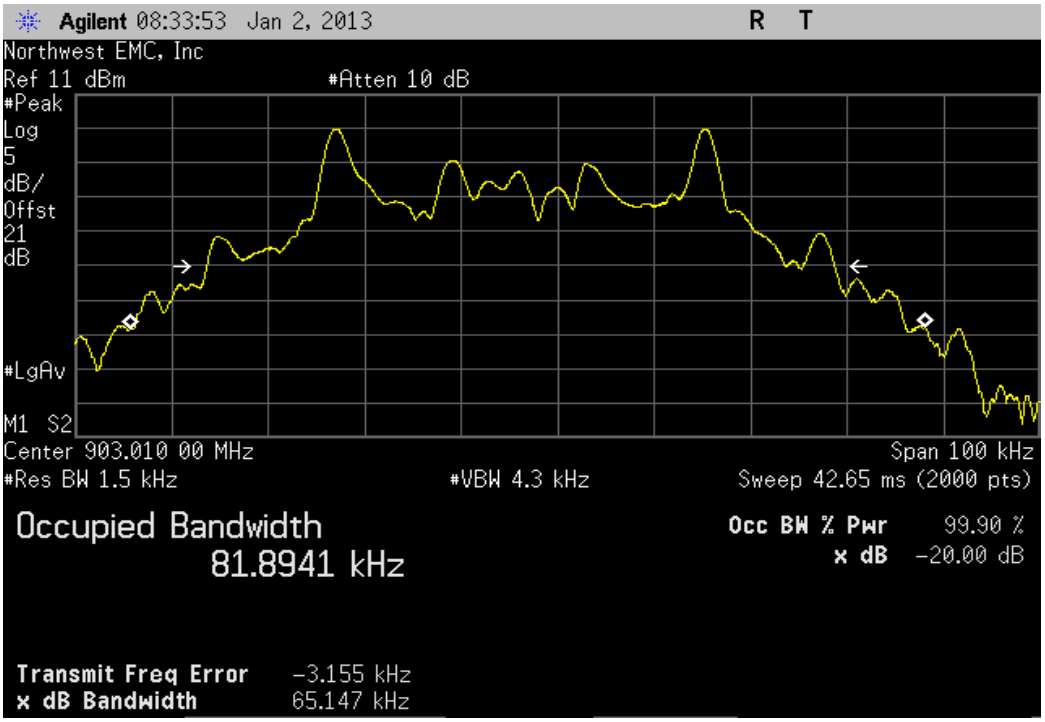
None

Configuration #	1	Signature	Trevor Buls

		Value	Limit	Result
Antenna A				
	Low Channel, 903.01 MHz	65.147 kHz	< 250 kHz	Pass
	Mid Channel, 914.61 MHz	65.136 kHz	< 250 kHz	Pass
	High Channel, 926.4 MHz	65.19 kHz	< 250 kHz	Pass
Antenna B				
	Low Channel, 903.01 MHz	65.183 kHz	< 250 kHz	Pass
	Mid Channel, 914.61 MHz	65.211 kHz	< 250 kHz	Pass
	High Channel, 926.4 MHz	65.163 kHz	< 250 kHz	Pass

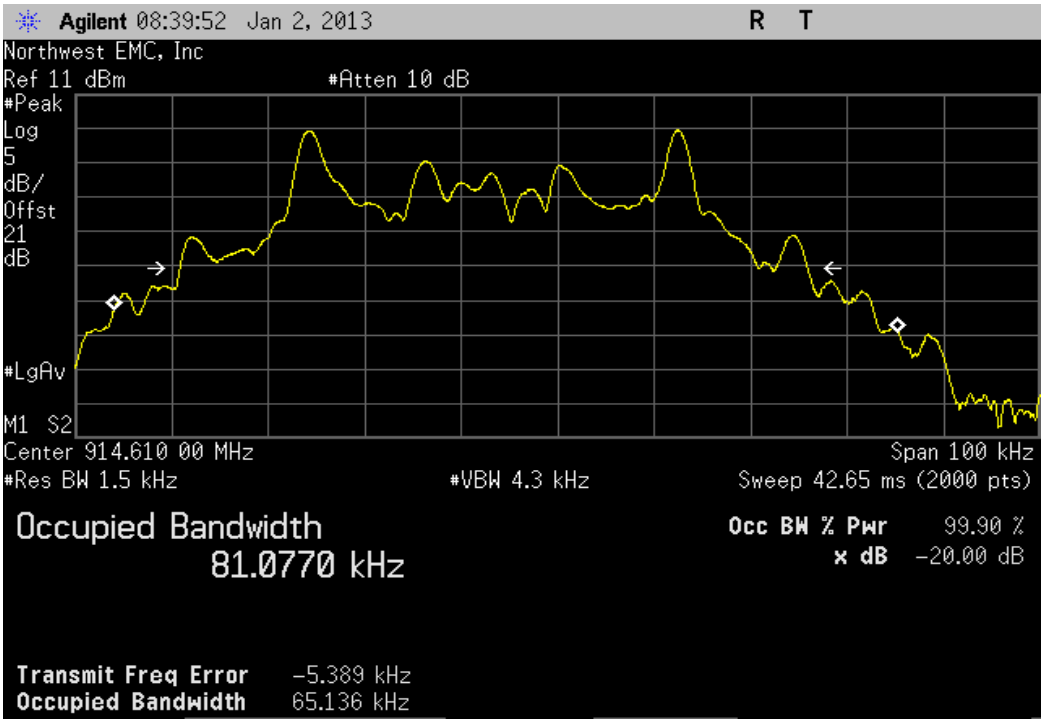
Antenna A, Low Channel, 903.01 MHz

				Value	Limit	Result
				65.147 kHz	< 250 kHz	Pass



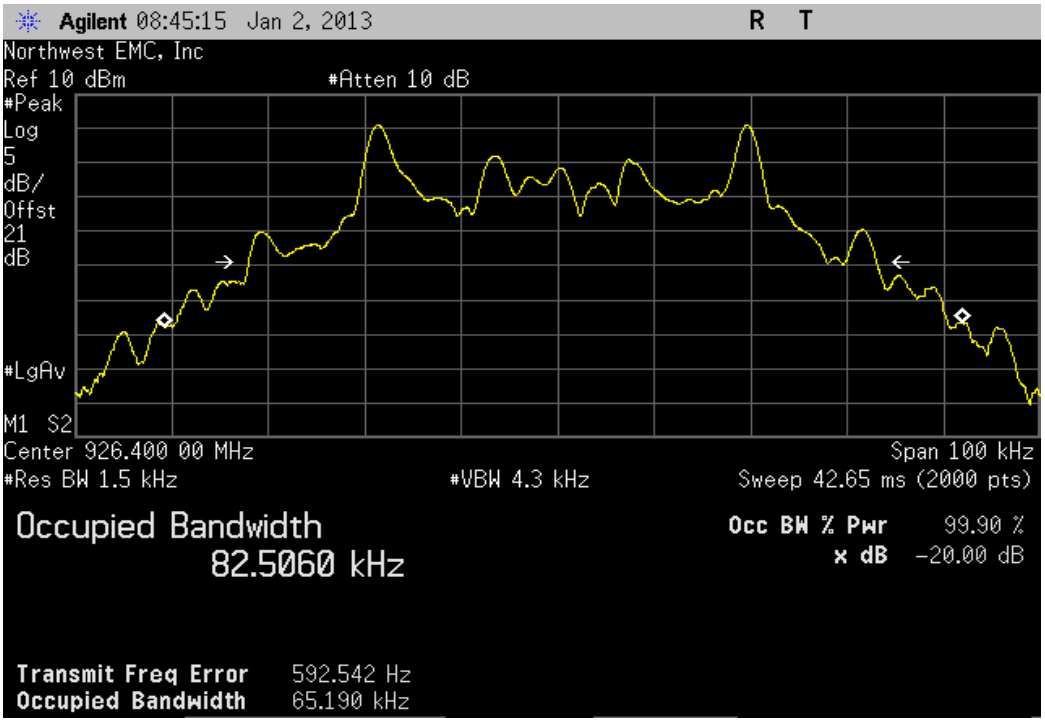
Antenna A, Mid Channel, 914.61 MHz

				Value	Limit	Result
				65.136 kHz	< 250 kHz	Pass



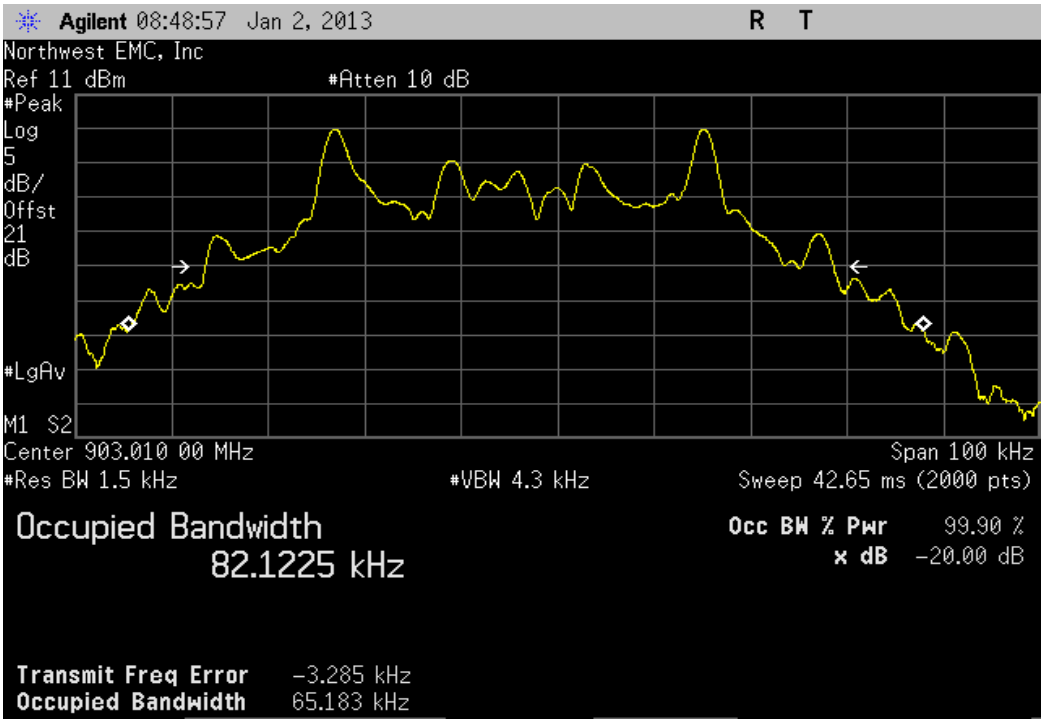
Antenna A, High Channel, 926.4 MHz

				Value	Limit	Result
				65.19 kHz	< 250 kHz	Pass



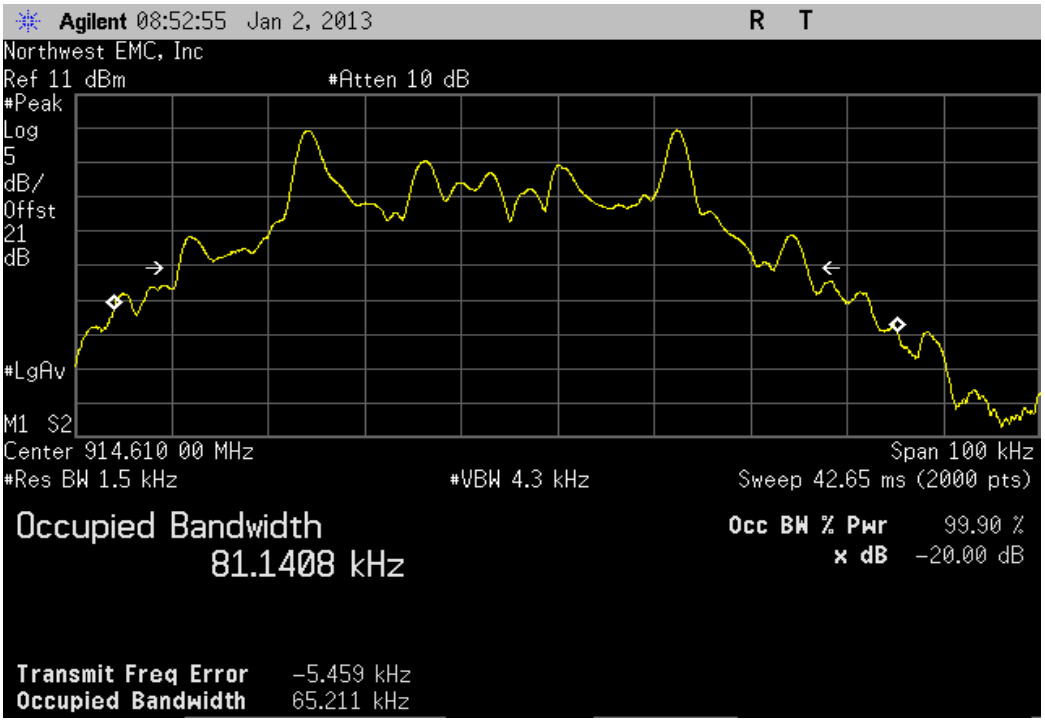
Antenna B, Low Channel, 903.01 MHz

				Value	Limit	Result
				65.183 kHz	< 250 kHz	Pass



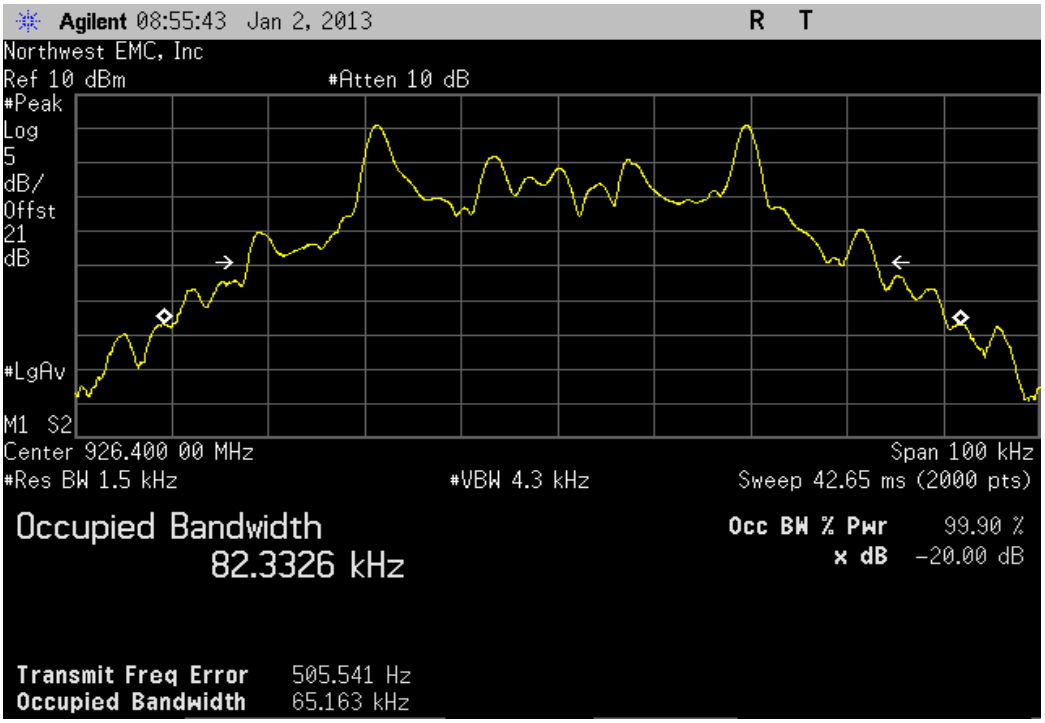
Antenna B, Mid Channel, 914.61 MHz

				Value	Limit	Result
				65.211 kHz	< 250 kHz	Pass



Antenna B, High Channel, 926.4 MHz

				Value	Limit	Result
				65.163 kHz	< 250 kHz	Pass



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	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

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 in a no hop mode at the data rate(s) listed in the datasheet.

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

Output Power

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

None

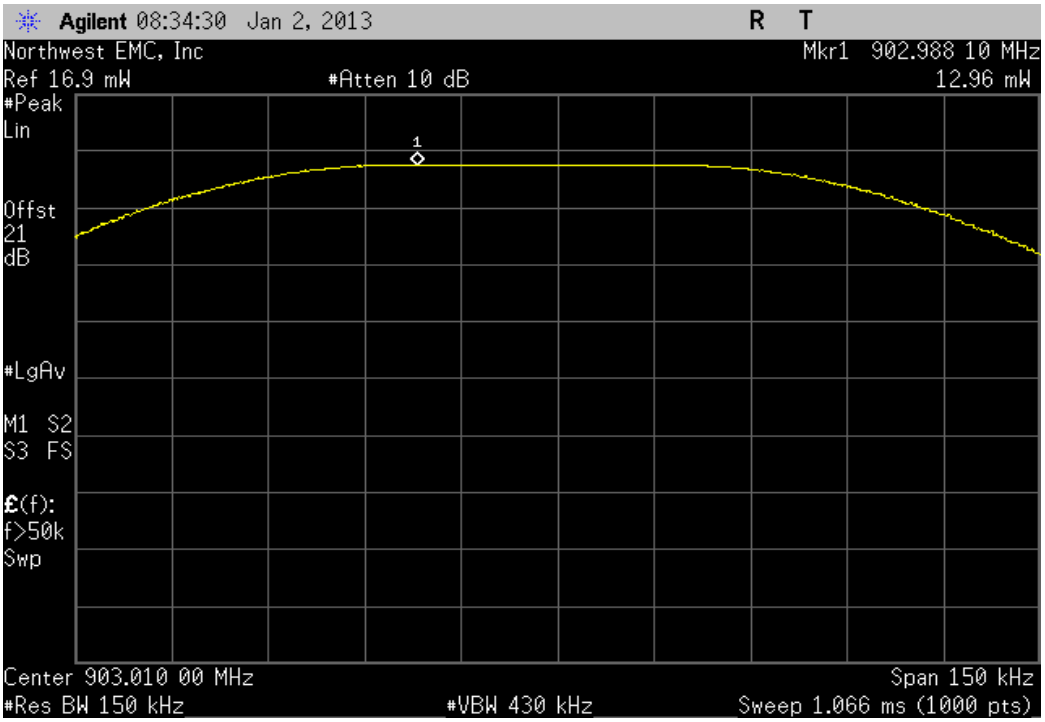
DEVIATIONS FROM TEST STANDARD

None

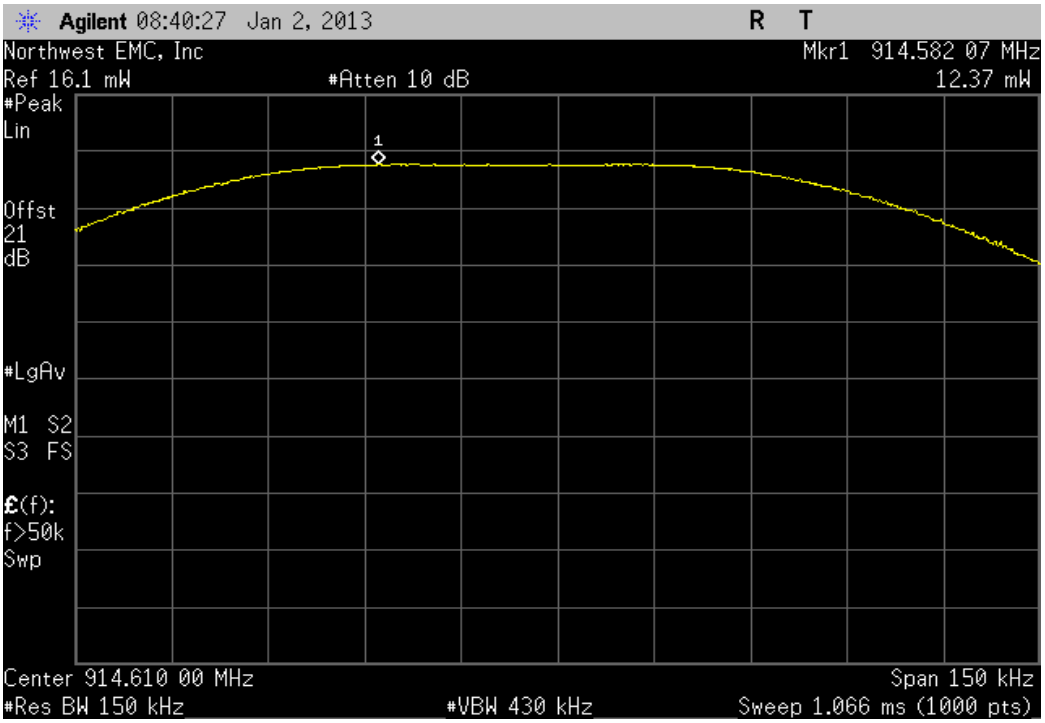
Configuration #	1	Signature	Trevor Buls

		Value	Limit	Result
Antenna A				
	Low Channel, 903.01 MHz	12.957 mW	< 1 W	Pass
	Mid Channel, 914.61 MHz	12.365 mW	< 1 W	Pass
	High Channel, 926.4 MHz	11.703 mW	< 1 W	Pass
Antenna B				
	Low Channel, 903.01 MHz	12.942 mW	< 1 W	Pass
	Mid Channel, 914.61 MHz	12.36 mW	< 1 W	Pass
	High Channel, 926.4 MHz	11.7 mW	< 1 W	Pass

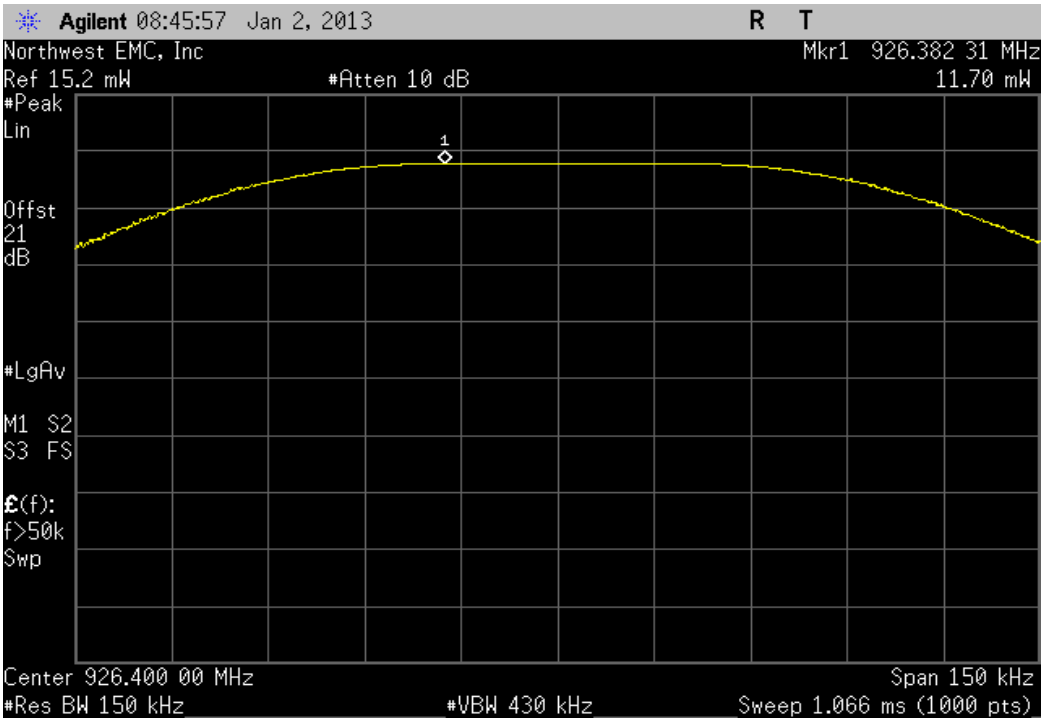
Antenna A, Low Channel, 903.01 MHz						
				Value	Limit	Result
				12.957 mW	< 1 W	Pass



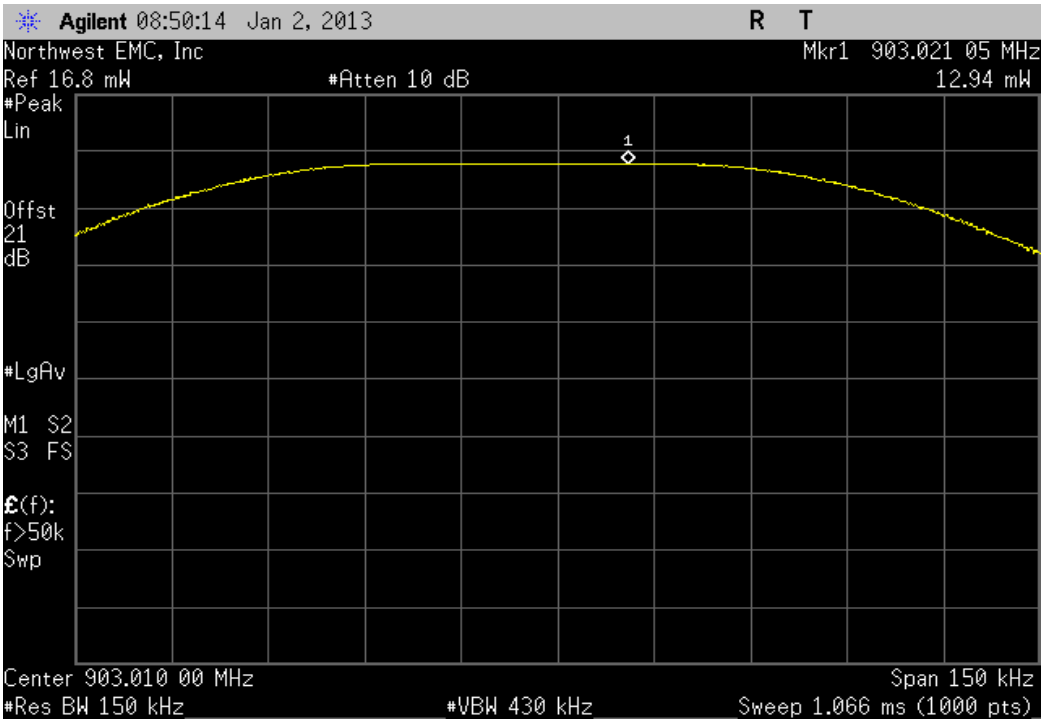
Antenna A, Mid Channel, 914.61 MHz						
				Value	Limit	Result
				12.365 mW	< 1 W	Pass



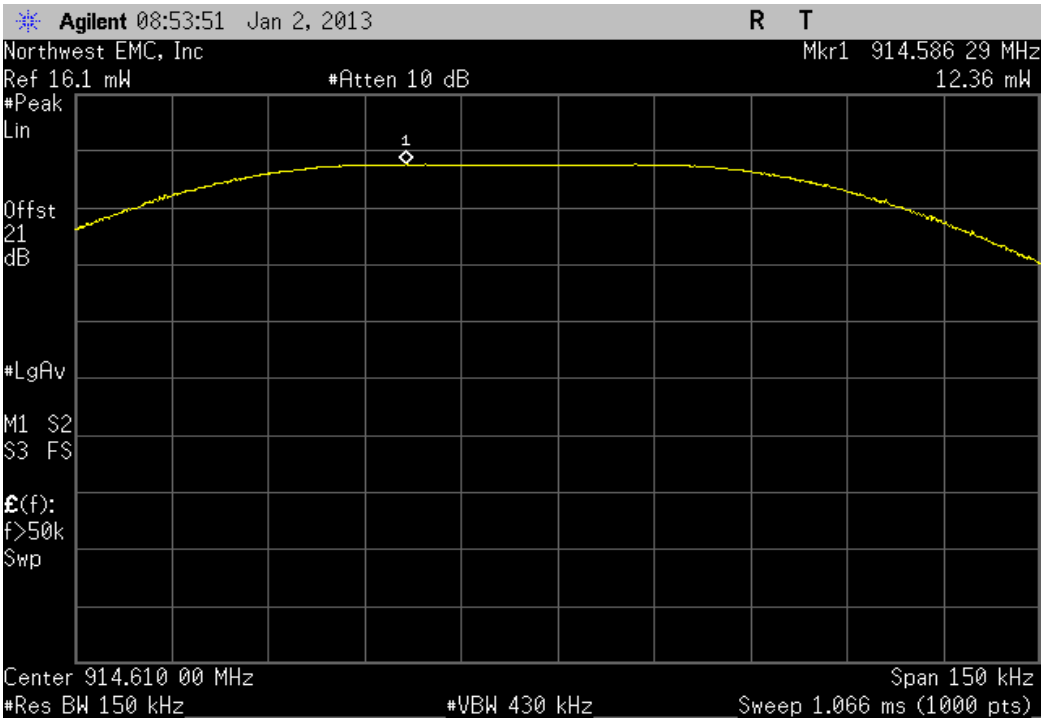
Antenna A, High Channel, 926.4 MHz							
					Value	Limit	Result
					11.703 mW	< 1 W	Pass



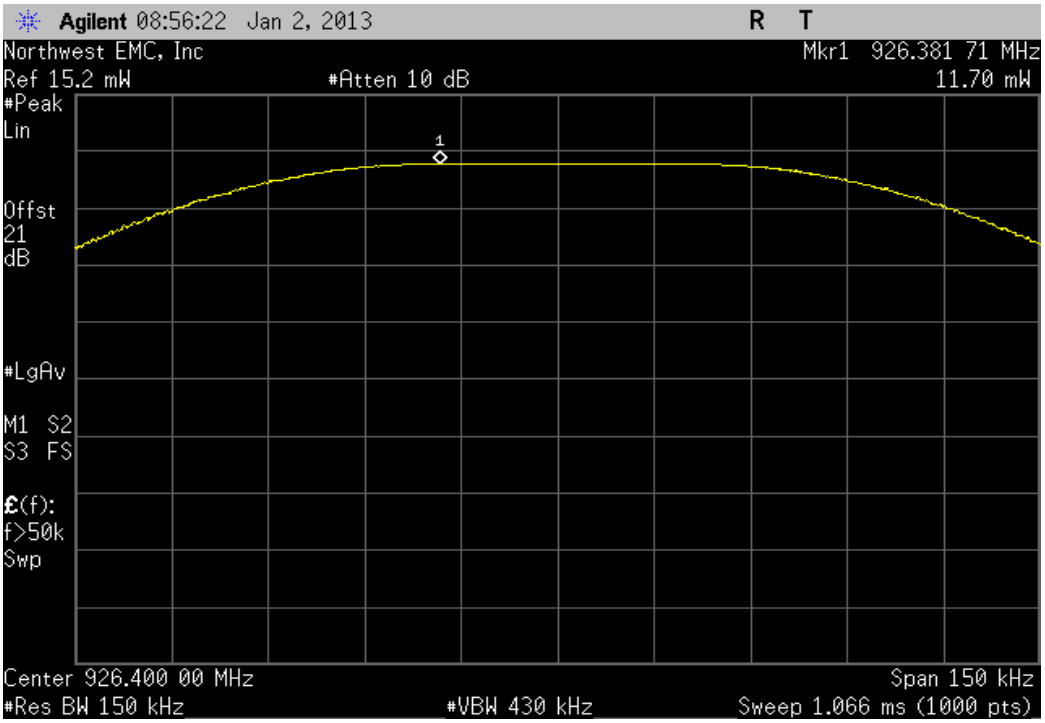
Antenna B, Low Channel, 903.01 MHz							
					Value	Limit	Result
					12.942 mW	< 1 W	Pass



Antenna B, Mid Channel, 914.61 MHz							
					Value	Limit	Result
					12.36 mW	< 1 W	Pass



Antenna B, High Channel, 926.4 MHz							
					Value	Limit	Result
					11.7 mW	< 1 W	Pass



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
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to low 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 the data rate(s) listed in the datasheet in a no hop mode. The channels closest to the band edges were selected.

The spectrum was scanned below the lower band edge and above the higher band edge.

Band Edge Compliance

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

None

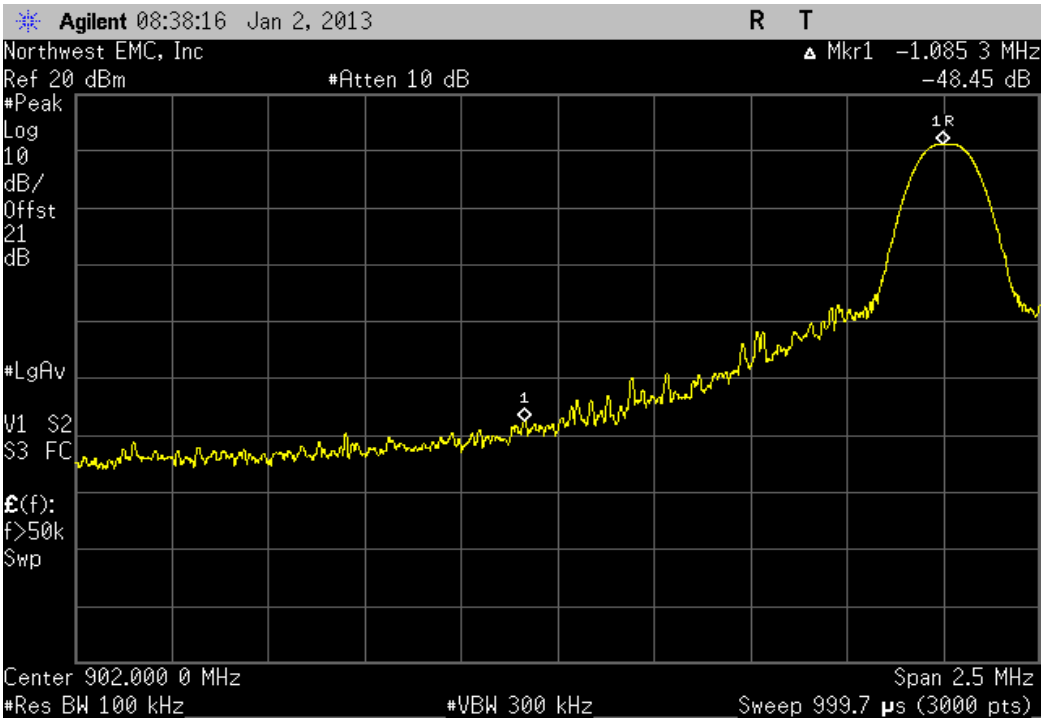
DEVIATIONS FROM TEST STANDARD

None

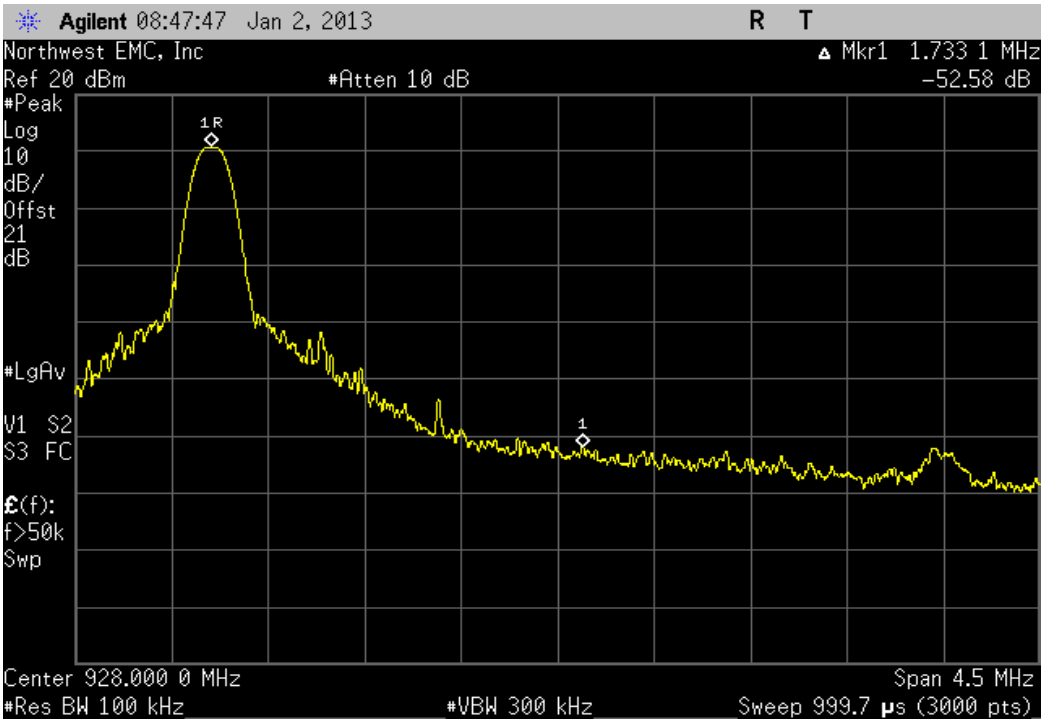
Configuration #	1	Signature	Trevor Buls

		Value	Limit	Result
Antenna A				
	Low Channel, 903.01 MHz	-48.45 dBc	≤ -20 dBc	Pass
	High Channel, 926.4 MHz	-52.58 dBc	≤ -20 dBc	Pass
Antenna B				
	Low Channel, 903.01 MHz	-44.09 dBc	≤ -20 dBc	Pass
	High Channel, 926.4 MHz	-51.81 dBc	≤ -20 dBc	Pass

Antenna A, Low Channel, 903.01 MHz						
				Value	Limit	Result
				-48.45 dBc	≤ -20 dBc	Pass

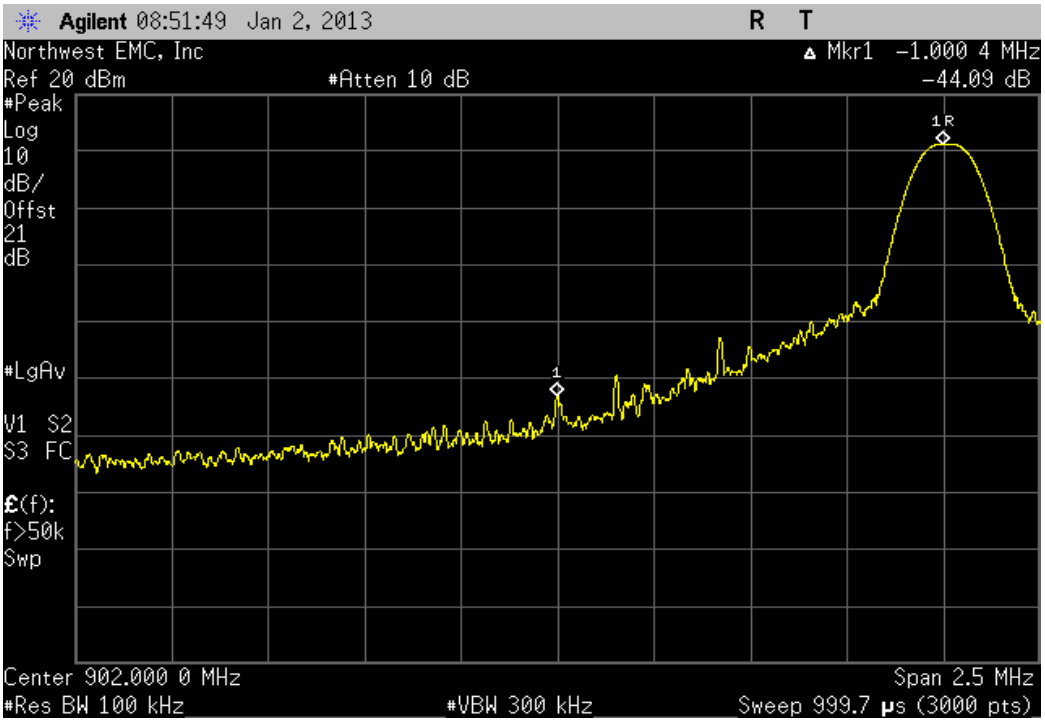


Antenna A, High Channel, 926.4 MHz						
				Value	Limit	Result
				-52.58 dBc	≤ -20 dBc	Pass



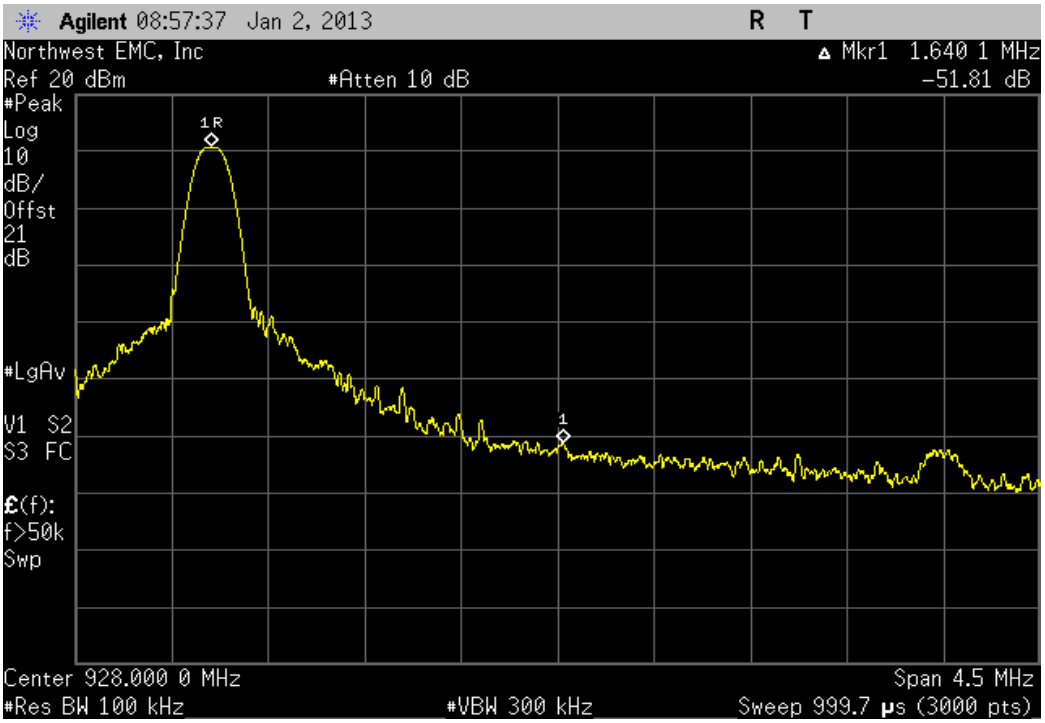
Antenna B, Low Channel, 903.01 MHz

				Value	Limit	Result
				-44.09 dBc	≤ -20 dBc	Pass



Antenna B, High Channel, 926.4 MHz

				Value	Limit	Result
				-51.81 dBc	≤ -20 dBc	Pass



Band Edge Compliance - Hopping Mode

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	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to its normal pseudo-random hopping sequence. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

Band Edge Compliance - Hopping Mode

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

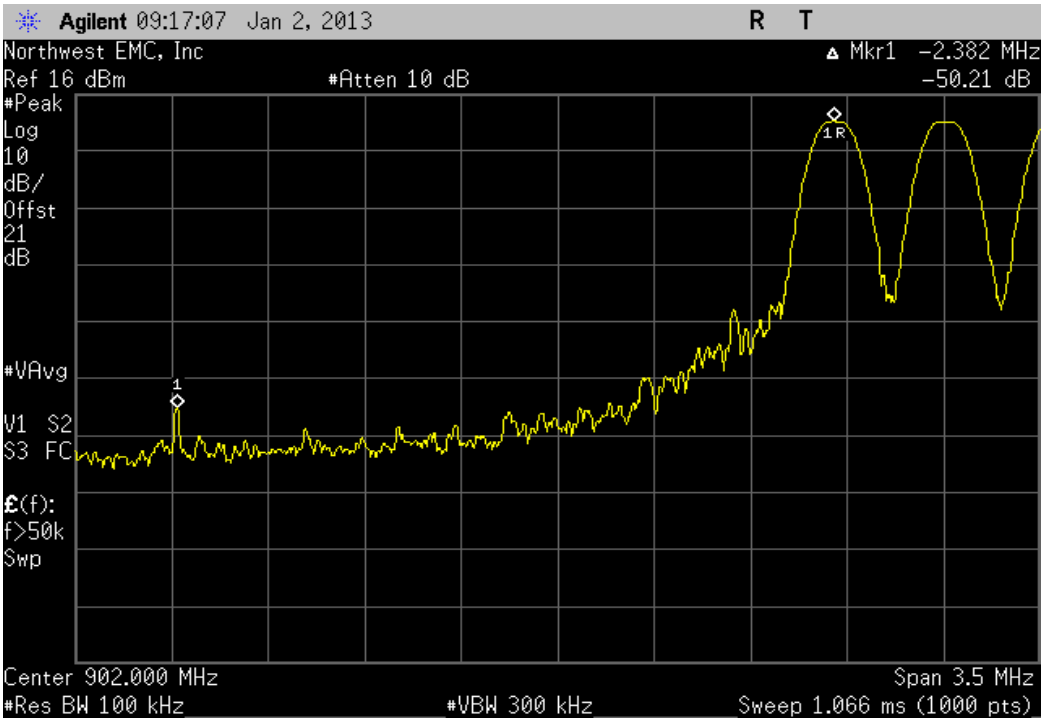
None

Configuration #	1	Signature	Trevor Buls

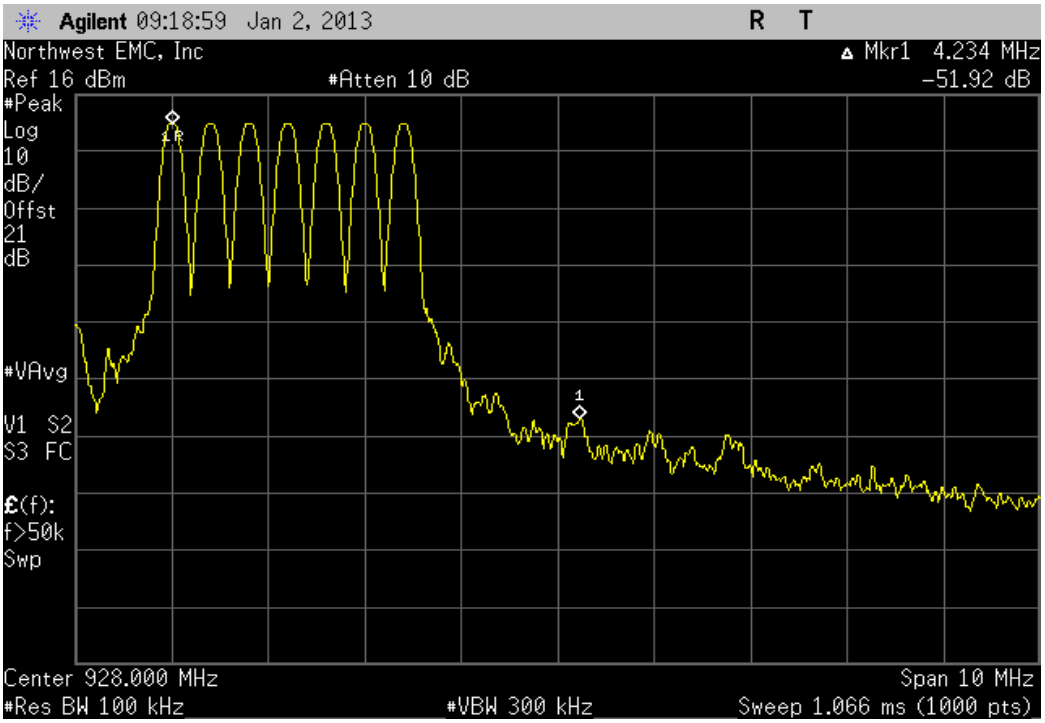
		Value	Limit	Result
Antenna A				
	Low Channel, 903.01 MHz	-50.21 dBc	≤ -20 dBc	Pass
	High Channel, 926.4 MHz	-51.92 dBc	≤ -20 dBc	Pass
Antenna B				
	Low Channel, 903.01 MHz	-45.39 dBc	≤ -20 dBc	Pass
	High Channel, 926.4 MHz	-48.54 dBc	≤ -20 dBc	Pass

Band Edge Compliance - Hopping Mode

Antenna A, Low Channel, 903.01 MHz							
					Value	Limit	Result
					-50.21 dBc	≤ -20 dBc	Pass

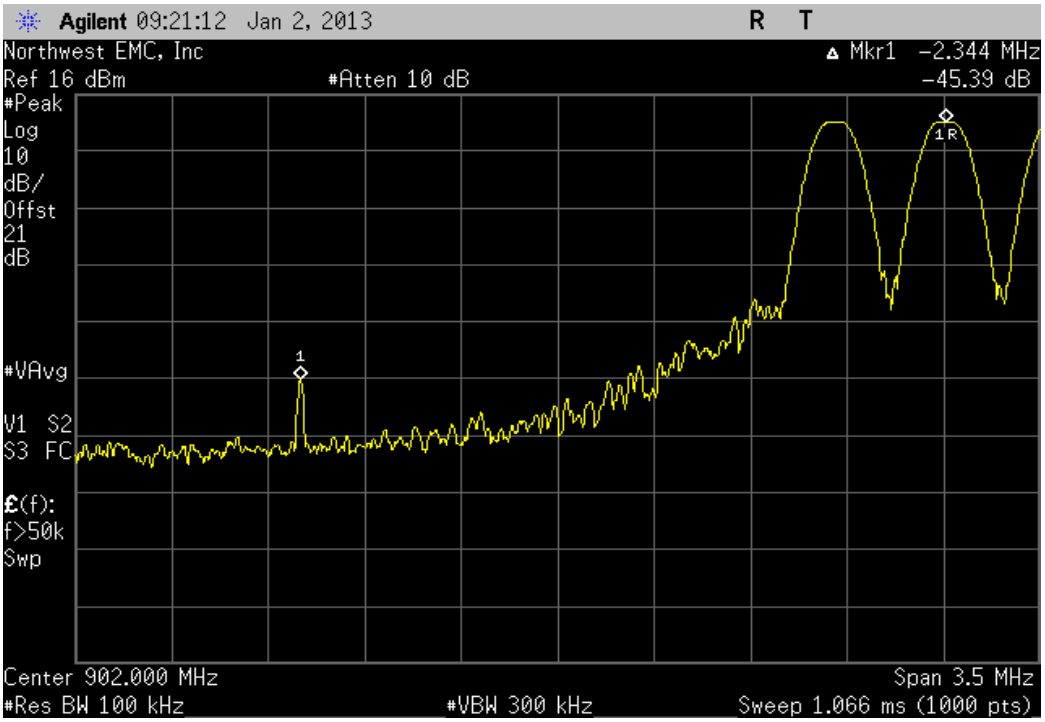


Antenna A, High Channel, 926.4 MHz							
					Value	Limit	Result
					-51.92 dBc	≤ -20 dBc	Pass

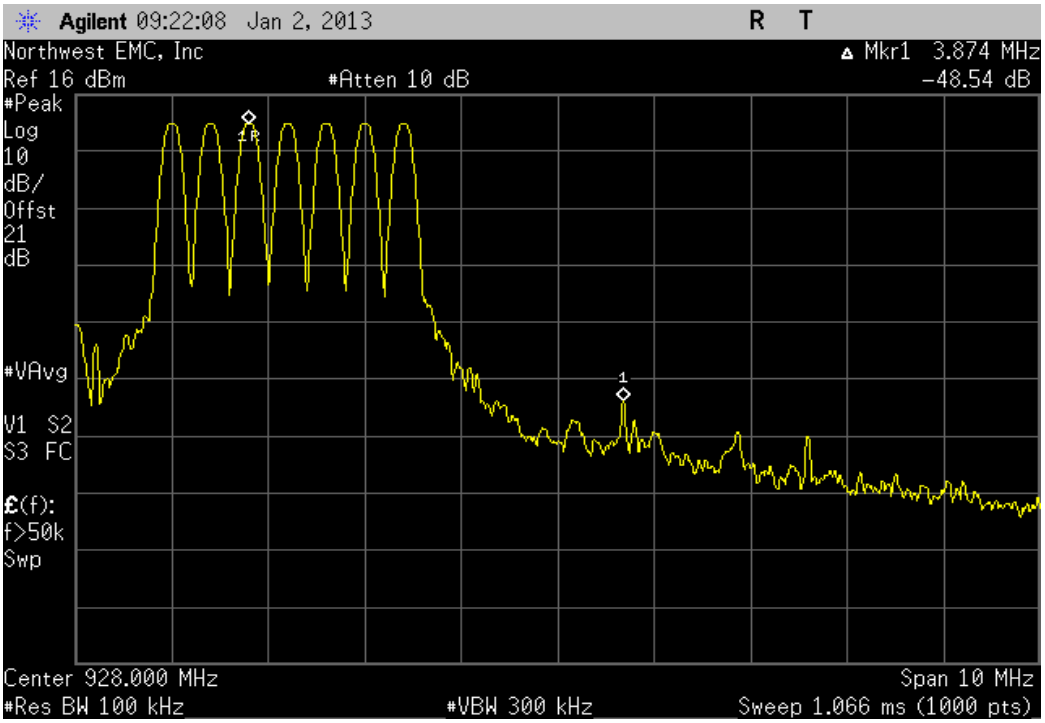


Band Edge Compliance - Hopping Mode

Antenna B, Low Channel, 903.01 MHz							
					Value	Limit	Result
					-45.39 dBc	≤ -20 dBc	Pass



Antenna B, High Channel, 926.4 MHz							
					Value	Limit	Result
					-48.54 dBc	≤ -20 dBc	Pass



Spurious 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.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/19/2012	12
Signal Generator	Agilent	N5183A	TIA	1/27/2012	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	12

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 the data rate(s) listed in the datasheet in a no-hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

Spurious Conducted Emissions

EUT:	THM5421R02			**Work Order:**	HNYW0029
Serial Number:	77758015000427			**Date:**	01/02/13
Customer:	Honeywell, Automation and Control Solutions			**Temperature:**	23.50°C
Attendees:	None			**Humidity:**	12%
Project:	None			**Barometric Pres.:**	1016.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 15.247:2013	ANSI C63.10:2009

COMMENTS

None

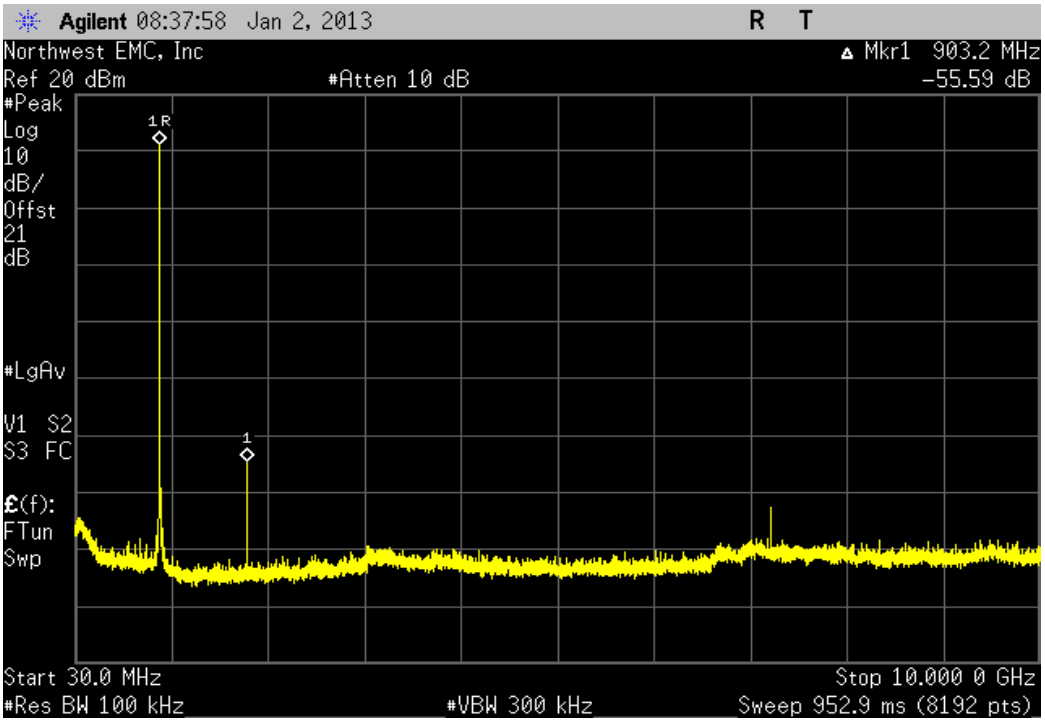
DEVIATIONS FROM TEST STANDARD

None

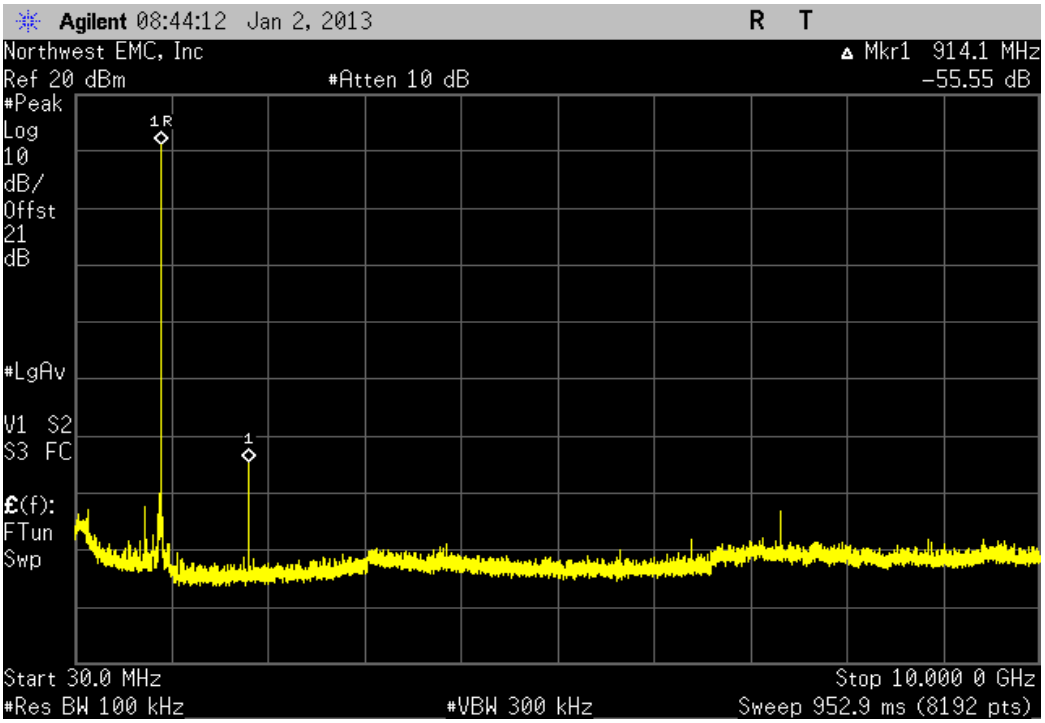
Configuration #	1	Signature	Trevor Buls

		Frequency Range	Value	Limit	Result
Antenna A					
	Low Channel, 903.01 MHz	30 MHz - 10 GHz	-55.59 dBc	≤ -20 dBc	Pass
	Mid Channel, 914.61 MHz	30 MHz - 10 GHz	-55.55 dBc	≤ -20 dBc	Pass
	High Channel, 926.4 MHz	30 MHz - 10 GHz	-57.12 dBc	≤ -20 dBc	Pass
Antenna B					
	Low Channel, 903.01 MHz	30 MHz - 10 GHz	-55.42 dBc	≤ -20 dBc	Pass
	Mid Channel, 914.61 MHz	30 MHz - 10 GHz	-55.35 dBc	≤ -20 dBc	Pass
	High Channel, 926.4 MHz	30 MHz - 10 GHz	-57.09 dBc	≤ -20 dBc	Pass

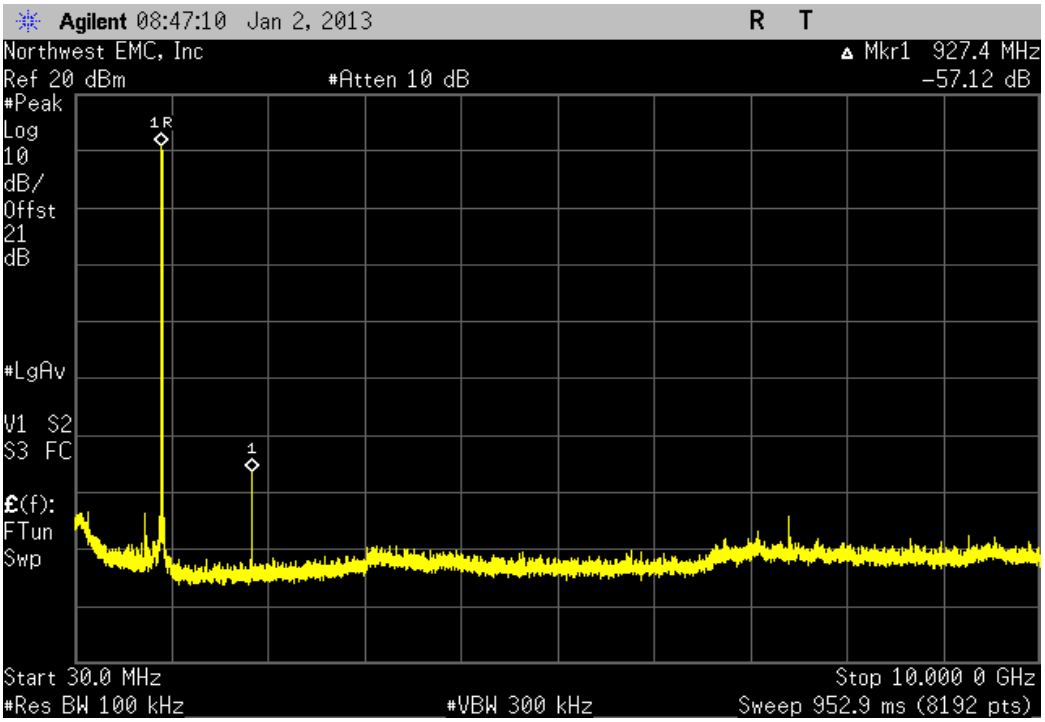
Antenna A, Low Channel, 903.01 MHz				
Frequency Range		**Value**	**Limit**	**Result**
30 MHz - 10 GHz		-55.59 dBc	≤ -20 dBc	Pass



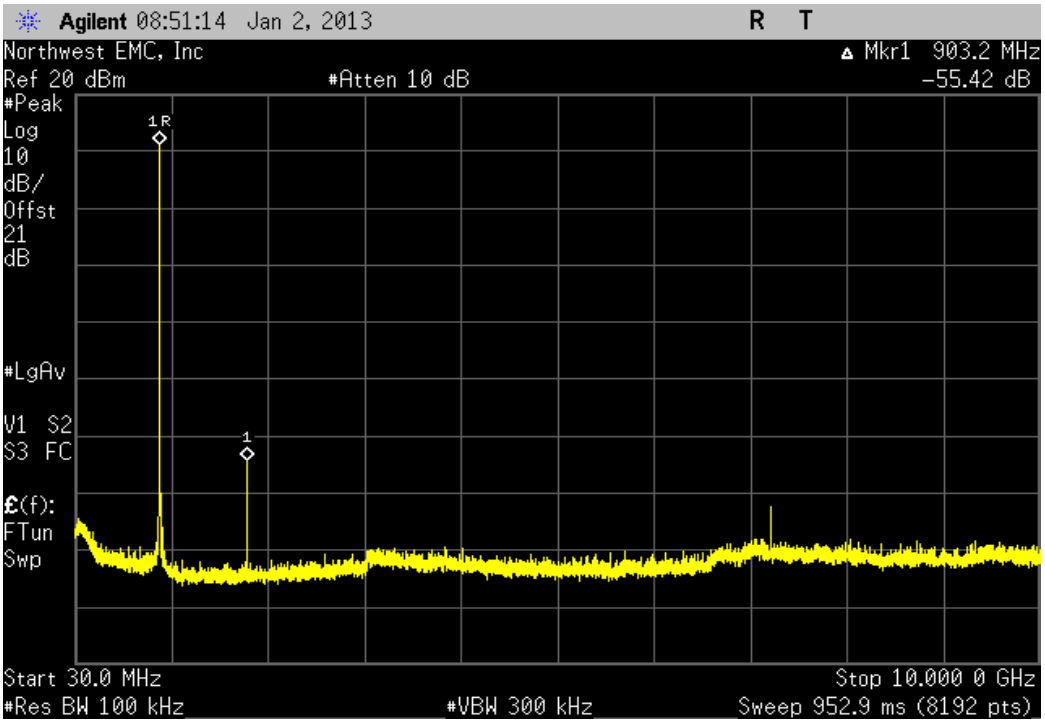
Antenna A, Mid Channel, 914.61 MHz				
Frequency Range		**Value**	**Limit**	**Result**
30 MHz - 10 GHz		-55.55 dBc	≤ -20 dBc	Pass



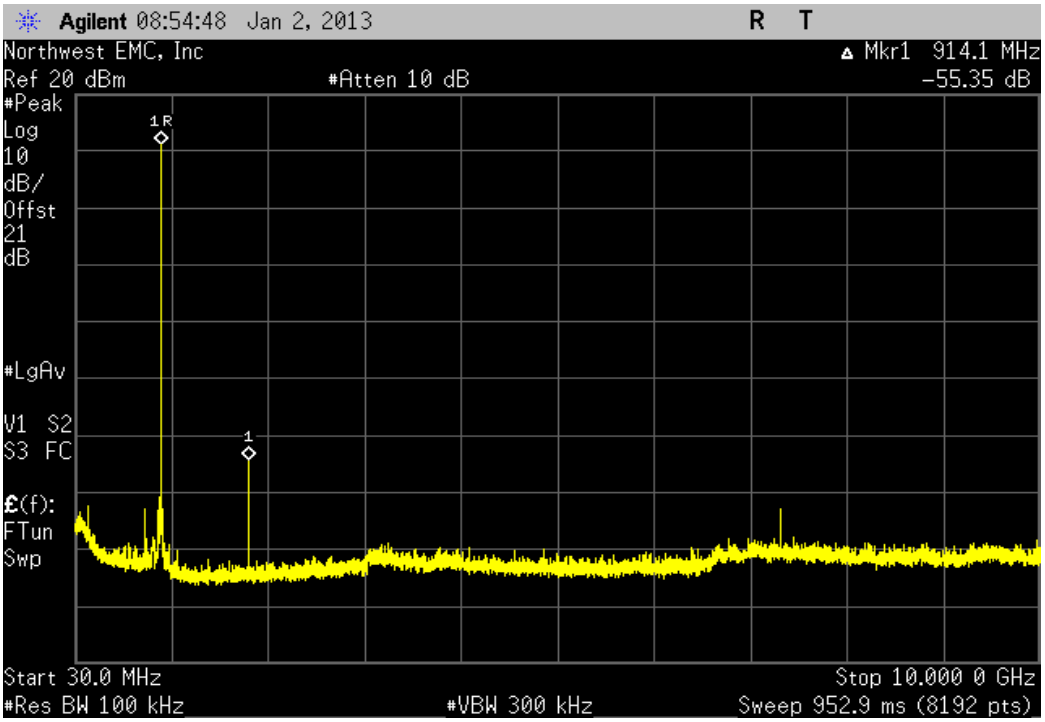
Antenna A, High Channel, 926.4 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 10 GHz		-57.12 dBc	≤ -20 dBc	Pass



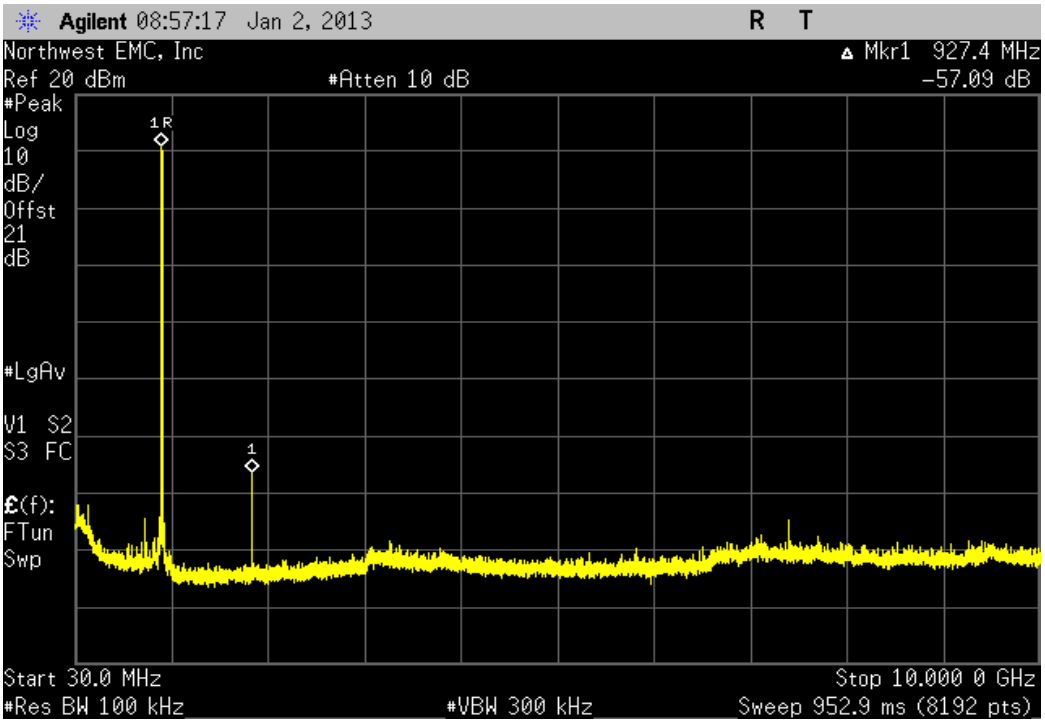
Antenna B, Low Channel, 903.01 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 10 GHz		-55.42 dBc	≤ -20 dBc	Pass



Antenna B, Mid Channel, 914.61 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 10 GHz		-55.35 dBc	≤ -20 dBc	Pass



Antenna B, High Channel, 926.4 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 10 GHz		-57.09 dBc	≤ -20 dBc	Pass



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, Antenna B, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)
Transmitting modulated, Antenna A, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

HNYW0029 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	10 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 10db, 'SMA'	S.M. Electronics	SA18H-10	REN	5/31/2012	12 mo
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	HGO	5/31/2012	24 mo
High Pass Filter	Micro-Tronics	HPM50108	HGP	5/31/2012	24 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	5/30/2012	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	5/30/2012	12 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	5/30/2012	12 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	5/30/2012	12 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	6/29/2011	24 mo
Pre-Amplifier	Miteq	AM-1616-1000	PAD	8/28/2012	12 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	5/31/2012	12 mo
Antenna, Bilog	Teseq	CBL 6141B	AYD	12/17/2012	12 mo
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (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

TEST DESCRIPTION

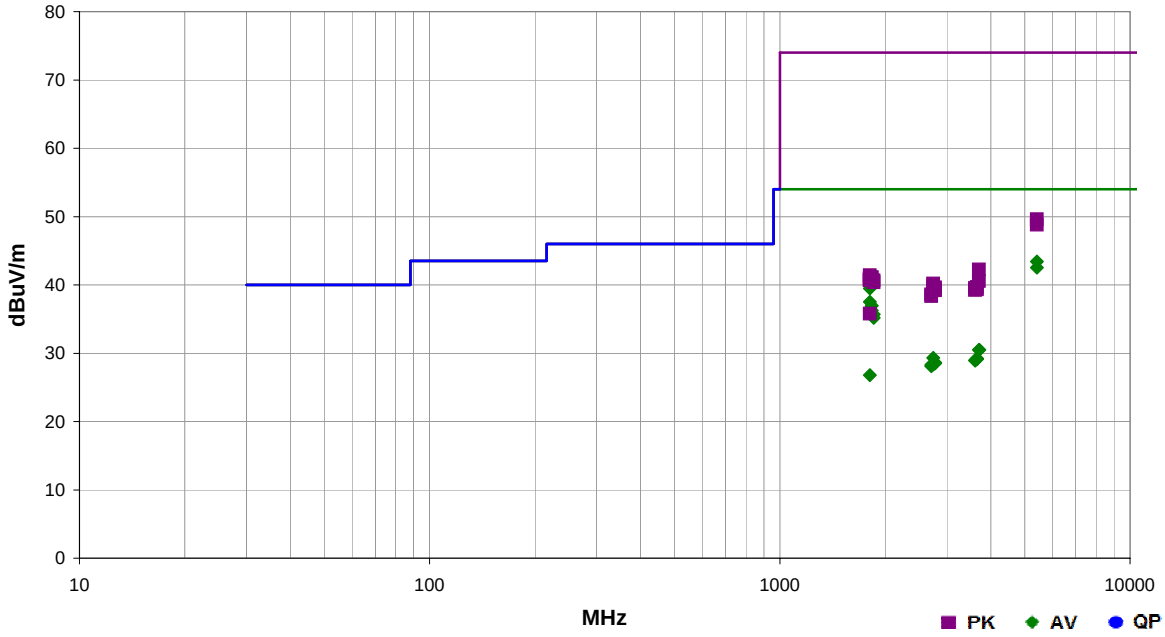
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify 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. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Spurious Radiated Emissions

Work Order:	HNYW0029	**Date:**	01/02/13	Trevor Buls	
Project:	None	**Temperature:**	23.83 °C		
Job Site:	MN05	**Humidity:**	12.18% RH		
Serial Number:	77758015000431	**Barometric Pres.:**	1016.9 mbar	**Tested by:**	Trevor Buls
EUT:	THM5421R02				
Configuration:	2				
Customer:	Honeywell, Automation and Control Solutions				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting modulated, Antenna A, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.247:2013	ANSI C63.10:2009

Run #	1	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



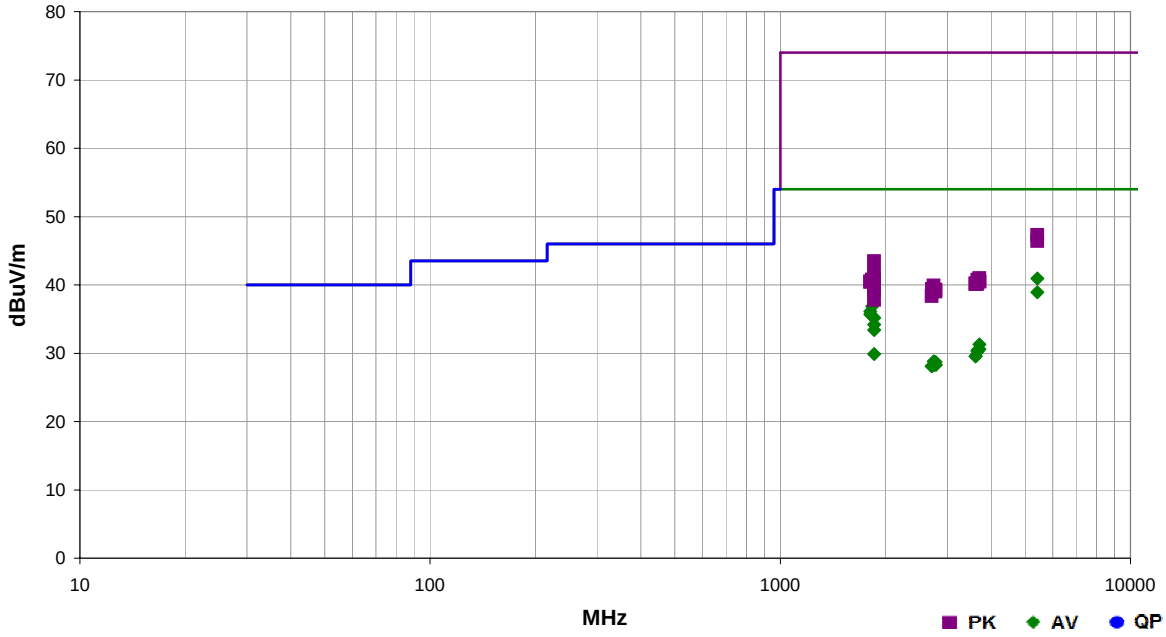
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
5417.996	37.9	5.5	1.2	331.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	EUT Vertical, Low Ch
5417.955	37.0	5.5	1.4	259.0	3.0	0.0	Vert	AV	0.0	42.5	54.0	-11.5	EUT on Side, Low Ch
1805.992	45.1	-5.6	1.1	232.0	3.0	0.0	Horz	AV	0.0	39.5	54.0	-14.5	EUT Vertical, Low Ch
1805.967	43.1	-5.6	1.7	137.0	3.0	0.0	Horz	AV	0.0	37.5	54.0	-16.5	EUT Horizontal, Low Ch
1829.117	42.2	-5.3	1.0	359.0	3.0	0.0	Horz	AV	0.0	36.9	54.0	-17.1	EUT Vertical, Mid Ch
1805.983	42.1	-5.6	1.0	35.0	3.0	0.0	Vert	AV	0.0	36.5	54.0	-17.5	EUT on Side, Low Ch
1806.067	42.0	-5.6	1.0	190.0	3.0	0.0	Vert	AV	0.0	36.4	54.0	-17.6	EUT Vertical, Low Ch
1829.192	41.5	-5.3	1.0	36.0	3.0	0.0	Vert	AV	0.0	36.2	54.0	-17.8	EUT on Side, Mid Ch
1806.008	41.8	-5.6	1.0	18.0	3.0	0.0	Horz	AV	0.0	36.2	54.0	-17.8	EUT on Side, Low Ch
1852.775	40.6	-4.9	1.0	15.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	EUT on Side, High Ch
1852.842	40.1	-4.9	1.0	209.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	EUT Vertical, High Ch
3708.358	30.7	-0.2	1.0	0.0	3.0	0.0	Horz	AV	0.0	30.5	54.0	-23.5	EUT Vertical, High Ch
3705.783	30.7	-0.2	1.0	146.0	3.0	0.0	Vert	AV	0.0	30.5	54.0	-23.5	EUT on Side, High Ch
5417.971	44.1	5.5	1.2	331.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT Vertical, Low Ch
2743.717	32.5	-3.2	1.0	16.0	3.0	0.0	Horz	AV	0.0	29.3	54.0	-24.7	EUT Vertical, Mid Ch
3658.933	29.8	-0.6	1.0	151.0	3.0	0.0	Horz	AV	0.0	29.2	54.0	-24.8	EUT Vertical, Mid Ch
3657.583	29.7	-0.6	1.0	338.0	3.0	0.0	Vert	AV	0.0	29.1	54.0	-24.9	EUT on Side, Mid Ch
3614.500	29.8	-0.9	1.0	11.0	3.0	0.0	Horz	AV	0.0	28.9	54.0	-25.1	EUT Vertical, Low Ch
3614.450	29.8	-0.9	1.0	337.0	3.0	0.0	Vert	AV	0.0	28.9	54.0	-25.1	EUT on Side, Low Ch
5418.338	43.3	5.5	1.4	259.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	EUT on Side, Low Ch

Spurious Radiated Emissions

Work Order:	HNYW0029	**Date:**	01/02/13	Trevor Buls	
Project:	None	**Temperature:**	23.83 °C		
Job Site:	MN05	**Humidity:**	12.18% RH		
Serial Number:	77758015000431	**Barometric Pres.:**	1016.9 mbar	**Tested by:**	Trevor Buls
EUT:	THM5421R02				
Configuration:	2				
Customer:	Honeywell, Automation and Control Solutions				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting modulated, Antenna B, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.247:2013	ANSI C63.10:2009

Run #	11	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



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)	Comments
5417.967	35.4	5.5	1.0	321.0	3.0	0.0	Vert	AV	0.0	40.9	54.0	-13.1	EUT on Side, Low Ch
1852.820	45.0	-4.9	1.8	134.0	3.0	0.0	Horz	AV	0.0	40.1	54.0	-13.9	EUT Horizontal, High Ch
5417.950	33.4	5.5	1.0	254.0	3.0	0.0	Horz	AV	0.0	38.9	54.0	-15.1	EUT Horizontal, Low Ch
1852.812	42.2	-4.9	1.2	49.0	3.0	0.0	Vert	AV	0.0	37.3	54.0	-16.7	EUT on Side, High Ch
1829.138	42.1	-5.3	1.1	30.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2	EUT Horizontal, Mid Ch
1806.008	41.7	-5.6	1.0	40.0	3.0	0.0	Horz	AV	0.0	36.1	54.0	-17.9	EUT Horizontal, Low Ch
1805.958	41.3	-5.6	1.0	55.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	EUT on Side, Low Ch
1829.166	40.7	-5.3	1.2	91.0	3.0	0.0	Vert	AV	0.0	35.4	54.0	-18.6	EUT on Side, Mid Ch
1852.770	40.1	-4.9	1.2	188.0	3.0	0.0	Horz	AV	0.0	35.2	54.0	-18.8	EUT Vertical, High Ch
1852.770	39.1	-4.9	1.7	111.0	3.0	0.0	Vert	AV	0.0	34.2	54.0	-19.8	EUT Vertical, High Ch
1852.820	38.3	-4.9	1.0	229.0	3.0	0.0	Horz	AV	0.0	33.4	54.0	-20.6	EUT on Side, High Ch
3705.633	31.5	-0.2	1.0	175.0	3.0	0.0	Horz	AV	0.0	31.3	54.0	-22.7	EUT Horizontal, High Ch
3705.758	30.8	-0.2	1.0	237.0	3.0	0.0	Vert	AV	0.0	30.6	54.0	-23.4	EUT on Side, High Ch
3658.267	31.0	-0.6	1.0	72.0	3.0	0.0	Vert	AV	0.0	30.4	54.0	-23.6	EUT on Side, Mid Ch
3657.208	30.8	-0.6	1.0	289.0	3.0	0.0	Horz	AV	0.0	30.2	54.0	-23.8	EUT Horizontal, Mid Ch
1852.770	34.8	-4.9	1.2	42.0	3.0	0.0	Vert	AV	0.0	29.9	54.0	-24.1	EUT Horizontal, High Ch
3614.483	30.4	-0.9	1.7	55.0	3.0	0.0	Horz	AV	0.0	29.5	54.0	-24.5	EUT Horizontal, Low Ch
3614.433	30.4	-0.9	1.4	308.0	3.0	0.0	Vert	AV	0.0	29.5	54.0	-24.5	EUT on Side, Low Ch
2743.783	32.0	-3.2	1.0	7.0	3.0	0.0	Vert	AV	0.0	28.8	54.0	-25.2	EUT on Side, Mid Ch
2779.333	31.9	-3.2	1.1	21.0	3.0	0.0	Vert	AV	0.0	28.7	54.0	-25.3	EUT on Side, High Ch

AC POWERLINE CONDUCTED EMISSIONS

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.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Receiver	Rohde & Schwarz	ESCI	ARG	03/22/2012	12 mo
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	05/30/2012	12 mo
MN03 Cables	ESM Cable Corp.	Conducted Cables	MNC	04/16/2012	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HGN	05/31/2012	24 mo
Attenuator, 20 dB	SM Electronics	SA01B-20	REF	12/17/2012	12 mo

CONFIGURATIONS INVESTIGATED

HNYW0029-2

MODES INVESTIGATED

Transmitting modulated, Antenna A, High Channel: 926.4 MHz
Transmitting modulated, Antenna A, Low Channel: 903.0 MHz
Transmitting modulated, Antenna A, Mid Channel: 914.6 MHz
Transmitting modulated, Antenna B, High Channel: 926.4 MHz
Transmitting modulated, Antenna B, Low Channel: 903.0 MHz
Transmitting modulated, Antenna B, Mid Channel: 914.6 MHz

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	13	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

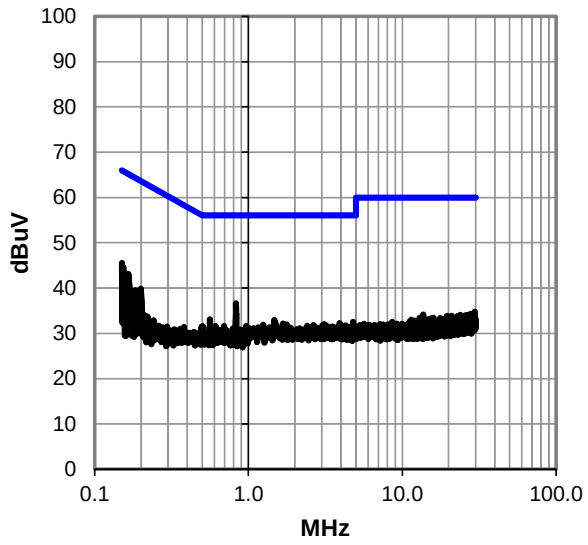
EUT OPERATING MODES

Transmitting modulated, Antenna A, Low Channel: 903.0 MHz

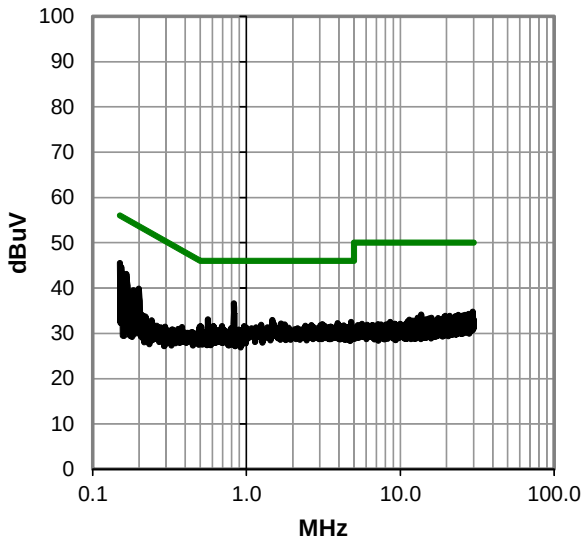
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #13

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.4	20.2	36.6	56.0	-19.4
0.150	25.3	20.2	45.5	66.0	-20.5
0.153	24.5	20.2	44.7	65.8	-21.1
0.165	22.9	20.2	43.1	65.2	-22.1
0.563	12.9	20.2	33.1	56.0	-22.9
1.472	12.7	20.2	32.9	56.0	-23.1
4.792	12.1	20.4	32.5	56.0	-23.5
3.912	11.9	20.4	32.3	56.0	-23.7
0.199	19.7	20.2	39.9	63.6	-23.7
1.680	11.9	20.3	32.2	56.0	-23.8
3.104	11.7	20.3	32.0	56.0	-24.0
1.248	11.7	20.2	31.9	56.0	-24.1
2.648	11.5	20.3	31.8	56.0	-24.2
4.296	11.4	20.4	31.8	56.0	-24.2
4.016	11.4	20.4	31.8	56.0	-24.2
2.416	11.4	20.3	31.7	56.0	-24.3
0.500	11.4	20.2	31.6	56.0	-24.4
0.609	11.4	20.2	31.6	56.0	-24.4
0.694	11.4	20.2	31.6	56.0	-24.4
0.964	11.4	20.2	31.6	56.0	-24.4
0.612	11.3	20.2	31.5	56.0	-24.5
0.495	11.2	20.2	31.4	56.1	-24.7
0.993	11.1	20.2	31.3	56.0	-24.7
0.798	11.0	20.2	31.2	56.0	-24.8
0.184	19.3	20.2	39.5	64.3	-24.8
0.889	10.6	20.2	30.8	56.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.4	20.2	36.6	46.0	-9.4
0.150	25.3	20.2	45.5	56.0	-10.5
0.153	24.5	20.2	44.7	55.8	-11.1
0.165	22.9	20.2	43.1	55.2	-12.1
0.563	12.9	20.2	33.1	46.0	-12.9
1.472	12.7	20.2	32.9	46.0	-13.1
4.792	12.1	20.4	32.5	46.0	-13.5
3.912	11.9	20.4	32.3	46.0	-13.7
0.199	19.7	20.2	39.9	53.6	-13.7
1.680	11.9	20.3	32.2	46.0	-13.8
3.104	11.7	20.3	32.0	46.0	-14.0
1.248	11.7	20.2	31.9	46.0	-14.1
2.648	11.5	20.3	31.8	46.0	-14.2
4.296	11.4	20.4	31.8	46.0	-14.2
4.016	11.4	20.4	31.8	46.0	-14.2
2.416	11.4	20.3	31.7	46.0	-14.3
0.500	11.4	20.2	31.6	46.0	-14.4
0.609	11.4	20.2	31.6	46.0	-14.4
0.694	11.4	20.2	31.6	46.0	-14.4
0.964	11.4	20.2	31.6	46.0	-14.4
0.612	11.3	20.2	31.5	46.0	-14.5
0.495	11.2	20.2	31.4	46.1	-14.7
0.993	11.1	20.2	31.3	46.0	-14.7
0.798	11.0	20.2	31.2	46.0	-14.8
0.184	19.3	20.2	39.5	54.3	-14.8
0.889	10.6	20.2	30.8	46.0	-15.2

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

WTD.2012.11.07, PSA-ESCI 2012.12.14, PSA-ESCI Version 2011.12.21

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	14	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

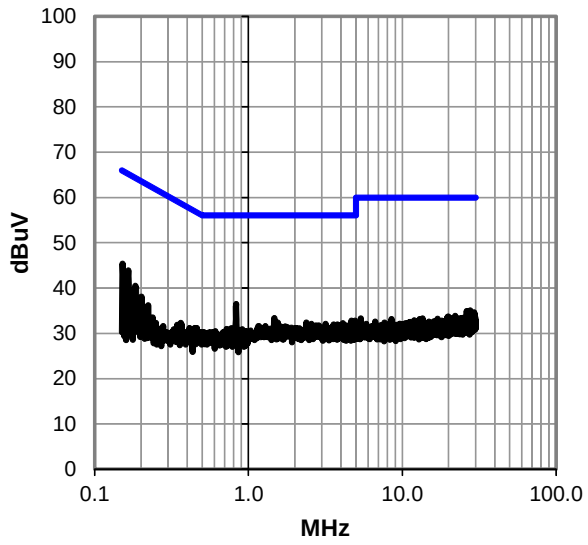
EUT OPERATING MODES

Transmitting modulated, Antenna A, Low Channel: 903.0 MHz

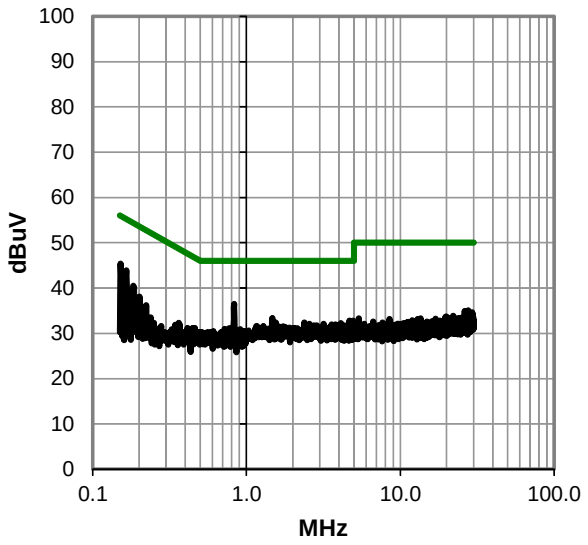
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #14

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	16.3	20.2	36.5	56.0	-19.5
0.152	25.2	20.2	45.4	65.9	-20.5
0.165	23.7	20.2	43.9	65.2	-21.3
1.472	13.1	20.2	33.3	56.0	-22.7
4.928	12.4	20.4	32.8	56.0	-23.2
4.672	12.4	20.4	32.8	56.0	-23.2
2.376	12.1	20.3	32.4	56.0	-23.6
1.552	12.1	20.3	32.4	56.0	-23.6
4.112	11.9	20.4	32.3	56.0	-23.7
0.184	20.3	20.2	40.5	64.3	-23.8
3.176	11.8	20.3	32.1	56.0	-23.9
2.568	11.8	20.3	32.1	56.0	-23.9
3.792	11.6	20.4	32.0	56.0	-24.0
3.576	11.6	20.4	32.0	56.0	-24.0
4.320	11.4	20.4	31.8	56.0	-24.2
2.864	11.4	20.3	31.7	56.0	-24.3
1.288	11.4	20.2	31.6	56.0	-24.4
0.770	10.9	20.2	31.1	56.0	-24.9
27.620	12.9	22.2	35.1	60.0	-24.9
0.719	10.8	20.2	31.0	56.0	-25.0
26.290	12.9	22.0	34.9	60.0	-25.1
0.910	10.7	20.2	30.9	56.0	-25.1
29.360	12.3	22.3	34.6	60.0	-25.4
0.201	17.9	20.2	38.1	63.6	-25.5
0.461	11.0	20.2	31.2	56.7	-25.5
0.609	10.3	20.2	30.5	56.0	-25.5

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	16.3	20.2	36.5	46.0	-9.5
0.152	25.2	20.2	45.4	55.9	-10.5
0.165	23.7	20.2	43.9	55.2	-11.3
1.472	13.1	20.2	33.3	46.0	-12.7
4.928	12.4	20.4	32.8	46.0	-13.2
4.672	12.4	20.4	32.8	46.0	-13.2
2.376	12.1	20.3	32.4	46.0	-13.6
1.552	12.1	20.3	32.4	46.0	-13.6
4.112	11.9	20.4	32.3	46.0	-13.7
0.184	20.3	20.2	40.5	54.3	-13.8
3.176	11.8	20.3	32.1	46.0	-13.9
2.568	11.8	20.3	32.1	46.0	-13.9
3.792	11.6	20.4	32.0	46.0	-14.0
3.576	11.6	20.4	32.0	46.0	-14.0
4.320	11.4	20.4	31.8	46.0	-14.2
2.864	11.4	20.3	31.7	46.0	-14.3
1.288	11.4	20.2	31.6	46.0	-14.4
0.770	10.9	20.2	31.1	46.0	-14.9
27.620	12.9	22.2	35.1	50.0	-14.9
0.719	10.8	20.2	31.0	46.0	-15.0
26.290	12.9	22.0	34.9	50.0	-15.1
0.910	10.7	20.2	30.9	46.0	-15.1
29.360	12.3	22.3	34.6	50.0	-15.4
0.201	17.9	20.2	38.1	53.6	-15.5
0.461	11.0	20.2	31.2	46.7	-15.5
0.609	10.3	20.2	30.5	46.0	-15.5

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	15	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

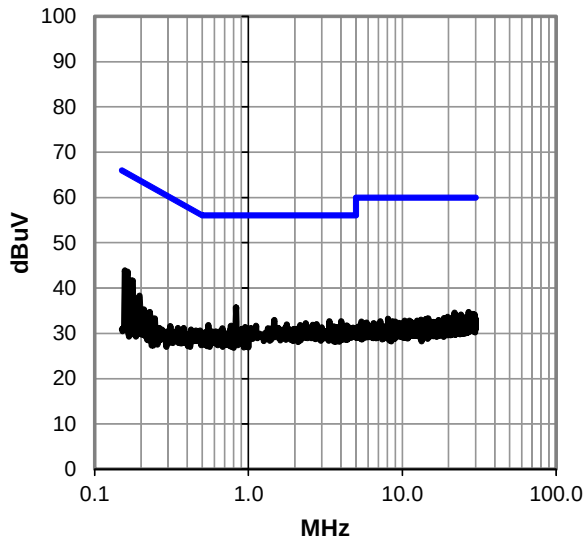
EUT OPERATING MODES

Transmitting modulated, Antenna A, Mid Channel: 914.6 MHz

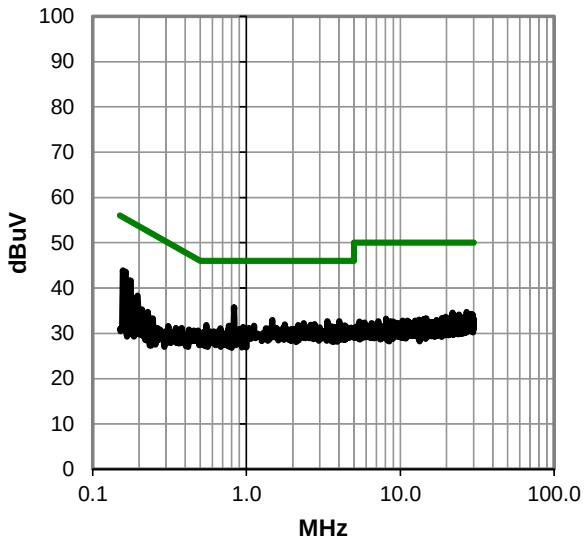
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #15

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.828	15.5	20.2	35.7	56.0	-20.3
0.164	23.4	20.2	43.6	65.3	-21.7
0.157	23.7	20.2	43.9	65.6	-21.7
0.176	21.5	20.2	41.7	64.7	-23.0
1.472	12.7	20.2	32.9	56.0	-23.1
4.008	12.3	20.4	32.7	56.0	-23.3
3.352	12.3	20.3	32.6	56.0	-23.4
2.360	11.9	20.3	32.2	56.0	-23.8
2.768	11.7	20.3	32.0	56.0	-24.0
1.776	11.7	20.3	32.0	56.0	-24.0
2.616	11.6	20.3	31.9	56.0	-24.1
2.168	11.5	20.3	31.8	56.0	-24.2
0.550	11.6	20.2	31.8	56.0	-24.2
4.352	11.4	20.4	31.8	56.0	-24.2
1.120	11.5	20.2	31.7	56.0	-24.3
0.770	11.5	20.2	31.7	56.0	-24.3
4.160	11.3	20.4	31.7	56.0	-24.3
3.584	11.2	20.4	31.6	56.0	-24.4
0.952	11.2	20.2	31.4	56.0	-24.6
3.760	11.0	20.4	31.4	56.0	-24.6
0.963	11.0	20.2	31.2	56.0	-24.8
0.679	10.9	20.2	31.1	56.0	-24.9
0.898	10.7	20.2	30.9	56.0	-25.1
0.794	10.6	20.2	30.8	56.0	-25.2
0.810	10.6	20.2	30.8	56.0	-25.2
27.030	12.6	22.1	34.7	60.0	-25.3

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.828	15.5	20.2	35.7	46.0	-10.3
0.164	23.4	20.2	43.6	55.3	-11.7
0.157	23.7	20.2	43.9	55.6	-11.7
0.176	21.5	20.2	41.7	54.7	-13.0
1.472	12.7	20.2	32.9	46.0	-13.1
4.008	12.3	20.4	32.7	46.0	-13.3
3.352	12.3	20.3	32.6	46.0	-13.4
2.360	11.9	20.3	32.2	46.0	-13.8
2.768	11.7	20.3	32.0	46.0	-14.0
1.776	11.7	20.3	32.0	46.0	-14.0
2.616	11.6	20.3	31.9	46.0	-14.1
2.168	11.5	20.3	31.8	46.0	-14.2
0.550	11.6	20.2	31.8	46.0	-14.2
4.352	11.4	20.4	31.8	46.0	-14.2
1.120	11.5	20.2	31.7	46.0	-14.3
0.770	11.5	20.2	31.7	46.0	-14.3
4.160	11.3	20.4	31.7	46.0	-14.3
3.584	11.2	20.4	31.6	46.0	-14.4
0.952	11.2	20.2	31.4	46.0	-14.6
3.760	11.0	20.4	31.4	46.0	-14.6
0.963	11.0	20.2	31.2	46.0	-14.8
0.679	10.9	20.2	31.1	46.0	-14.9
0.898	10.7	20.2	30.9	46.0	-15.1
0.794	10.6	20.2	30.8	46.0	-15.2
0.810	10.6	20.2	30.8	46.0	-15.2
27.030	12.6	22.1	34.7	50.0	-15.3

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	16	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

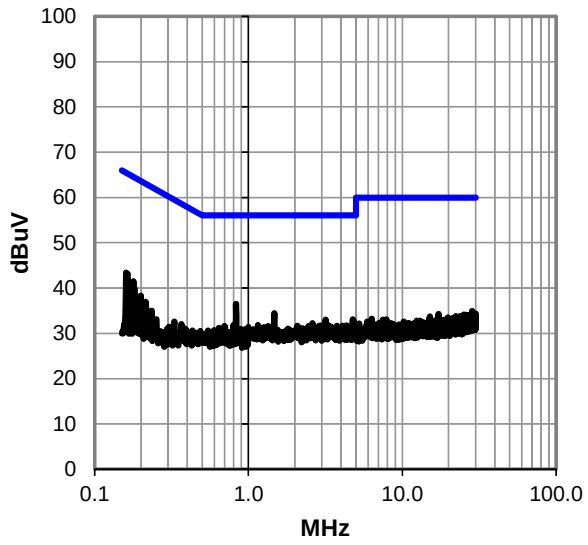
EUT OPERATING MODES

Transmitting modulated, Antenna A, Mid Channel: 914.6 MHz

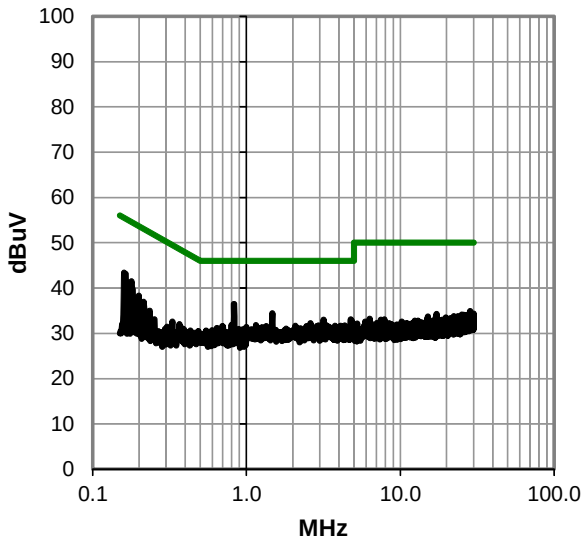
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #16

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.3	20.2	36.5	56.0	-19.5
1.472	14.2	20.2	34.4	56.0	-21.6
0.160	23.2	20.2	43.4	65.5	-22.1
4.760	12.7	20.4	33.1	56.0	-22.9
3.168	12.7	20.3	33.0	56.0	-23.0
0.179	21.3	20.2	41.5	64.5	-23.0
4.824	12.4	20.4	32.8	56.0	-23.2
2.608	11.9	20.3	32.2	56.0	-23.8
0.801	11.7	20.2	31.9	56.0	-24.1
1.152	11.6	20.2	31.8	56.0	-24.2
4.352	11.4	20.4	31.8	56.0	-24.2
3.312	11.4	20.3	31.7	56.0	-24.3
2.936	11.4	20.3	31.7	56.0	-24.3
2.080	11.4	20.3	31.7	56.0	-24.3
4.096	11.3	20.4	31.7	56.0	-24.3
3.760	11.3	20.4	31.7	56.0	-24.3
1.344	11.4	20.2	31.6	56.0	-24.4
0.696	11.4	20.2	31.6	56.0	-24.4
0.704	11.3	20.2	31.5	56.0	-24.5
0.643	11.0	20.2	31.2	56.0	-24.8
0.889	10.8	20.2	31.0	56.0	-25.0
28.490	12.7	22.2	34.9	60.0	-25.1
0.947	10.7	20.2	30.9	56.0	-25.1
0.973	10.6	20.2	30.8	56.0	-25.2
0.597	10.5	20.2	30.7	56.0	-25.3
0.199	18.1	20.2	38.3	63.6	-25.3

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.3	20.2	36.5	46.0	-9.5
1.472	14.2	20.2	34.4	46.0	-11.6
0.160	23.2	20.2	43.4	55.5	-12.1
4.760	12.7	20.4	33.1	46.0	-12.9
3.168	12.7	20.3	33.0	46.0	-13.0
0.179	21.3	20.2	41.5	54.5	-13.0
4.824	12.4	20.4	32.8	46.0	-13.2
2.608	11.9	20.3	32.2	46.0	-13.8
0.801	11.7	20.2	31.9	46.0	-14.1
1.152	11.6	20.2	31.8	46.0	-14.2
4.352	11.4	20.4	31.8	46.0	-14.2
3.312	11.4	20.3	31.7	46.0	-14.3
2.936	11.4	20.3	31.7	46.0	-14.3
2.080	11.4	20.3	31.7	46.0	-14.3
4.096	11.3	20.4	31.7	46.0	-14.3
3.760	11.3	20.4	31.7	46.0	-14.3
1.344	11.4	20.2	31.6	46.0	-14.4
0.696	11.4	20.2	31.6	46.0	-14.4
0.704	11.3	20.2	31.5	46.0	-14.5
0.643	11.0	20.2	31.2	46.0	-14.8
0.889	10.8	20.2	31.0	46.0	-15.0
28.490	12.7	22.2	34.9	50.0	-15.1
0.947	10.7	20.2	30.9	46.0	-15.1
0.973	10.6	20.2	30.8	46.0	-15.2
0.597	10.5	20.2	30.7	46.0	-15.3
0.199	18.1	20.2	38.3	53.6	-15.3

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	17	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

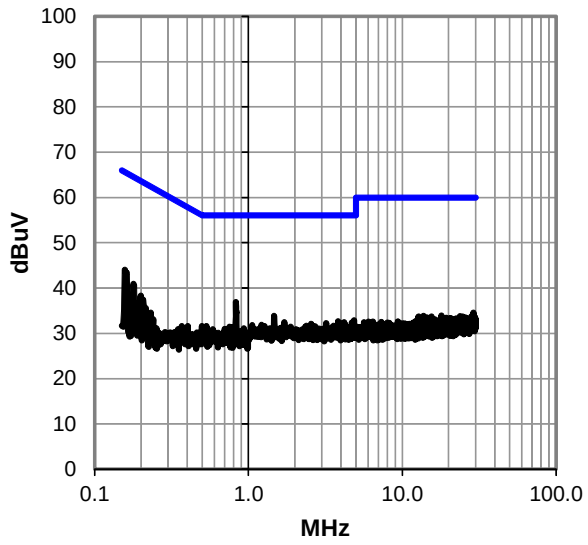
EUT OPERATING MODES

Transmitting modulated, Antenna A, High Channel: 926.4 MHz

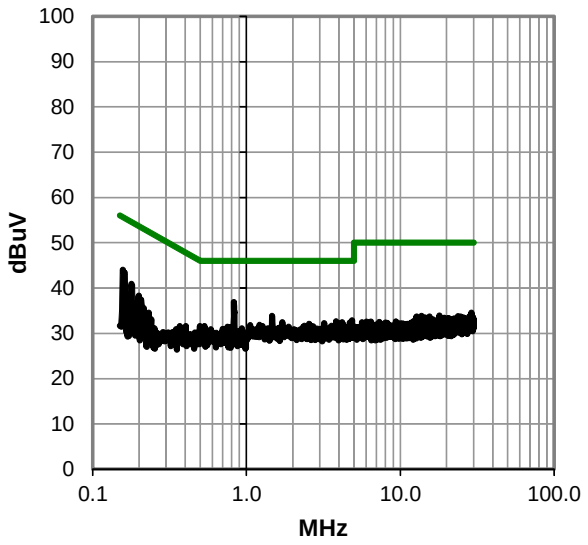
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #17

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.7	20.2	36.9	56.0	-19.1
0.157	23.8	20.2	44.0	65.6	-21.6
1.464	13.6	20.2	33.8	56.0	-22.2
4.848	12.5	20.4	32.9	56.0	-23.1
3.824	12.3	20.4	32.7	56.0	-23.3
4.184	12.1	20.4	32.5	56.0	-23.5
1.712	12.2	20.3	32.5	56.0	-23.5
4.704	12.0	20.4	32.4	56.0	-23.6
0.179	20.7	20.2	40.9	64.5	-23.6
3.200	11.9	20.3	32.2	56.0	-23.8
2.552	11.8	20.3	32.1	56.0	-23.9
1.216	11.7	20.2	31.9	56.0	-24.1
0.533	11.4	20.2	31.6	56.0	-24.4
0.499	11.4	20.2	31.6	56.0	-24.4
2.720	11.2	20.3	31.5	56.0	-24.5
0.752	11.3	20.2	31.5	56.0	-24.5
0.808	11.3	20.2	31.5	56.0	-24.5
0.767	11.1	20.2	31.3	56.0	-24.7
0.538	11.0	20.2	31.2	56.0	-24.8
0.934	10.9	20.2	31.1	56.0	-24.9
0.701	10.8	20.2	31.0	56.0	-25.0
0.585	10.7	20.2	30.9	56.0	-25.1
0.199	18.1	20.2	38.3	63.6	-25.3
29.000	12.3	22.3	34.6	60.0	-25.4
0.206	17.3	20.2	37.5	63.4	-25.9
17.990	12.7	21.2	33.9	60.0	-26.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.7	20.2	36.9	46.0	-9.1
0.157	23.8	20.2	44.0	55.6	-11.6
1.464	13.6	20.2	33.8	46.0	-12.2
4.848	12.5	20.4	32.9	46.0	-13.1
3.824	12.3	20.4	32.7	46.0	-13.3
4.184	12.1	20.4	32.5	46.0	-13.5
1.712	12.2	20.3	32.5	46.0	-13.5
4.704	12.0	20.4	32.4	46.0	-13.6
0.179	20.7	20.2	40.9	54.5	-13.6
3.200	11.9	20.3	32.2	46.0	-13.8
2.552	11.8	20.3	32.1	46.0	-13.9
1.216	11.7	20.2	31.9	46.0	-14.1
0.533	11.4	20.2	31.6	46.0	-14.4
0.499	11.4	20.2	31.6	46.0	-14.4
2.720	11.2	20.3	31.5	46.0	-14.5
0.752	11.3	20.2	31.5	46.0	-14.5
0.808	11.3	20.2	31.5	46.0	-14.5
0.767	11.1	20.2	31.3	46.0	-14.7
0.538	11.0	20.2	31.2	46.0	-14.8
0.934	10.9	20.2	31.1	46.0	-14.9
0.701	10.8	20.2	31.0	46.0	-15.0
0.585	10.7	20.2	30.9	46.0	-15.1
0.199	18.1	20.2	38.3	53.6	-15.3
29.000	12.3	22.3	34.6	50.0	-15.4
0.206	17.3	20.2	37.5	53.4	-15.9
17.990	12.7	21.2	33.9	50.0	-16.1

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	18	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

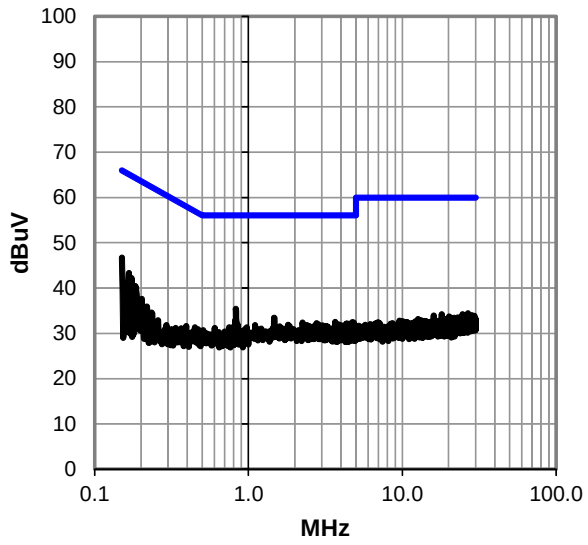
EUT OPERATING MODES

Transmitting modulated, Antenna A, High Channel: 926.4 MHz

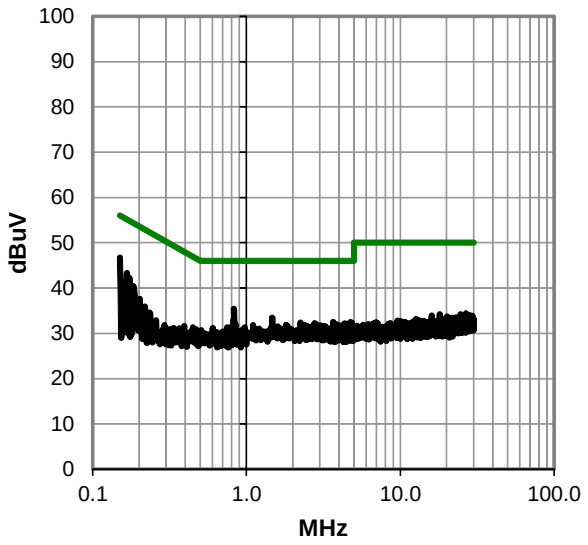
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #18

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	26.5	20.2	46.7	66.0	-19.3
0.828	15.2	20.2	35.4	56.0	-20.6
0.167	23.1	20.2	43.3	65.1	-21.8
1.472	13.2	20.2	33.4	56.0	-22.6
0.174	22.0	20.2	42.2	64.8	-22.6
3.664	12.2	20.4	32.6	56.0	-23.4
4.720	12.1	20.4	32.5	56.0	-23.5
2.248	12.1	20.3	32.4	56.0	-23.6
4.824	12.0	20.4	32.4	56.0	-23.6
2.768	11.9	20.3	32.2	56.0	-23.8
4.384	11.8	20.4	32.2	56.0	-23.8
0.184	20.2	20.2	40.4	64.3	-23.9
4.312	11.7	20.4	32.1	56.0	-23.9
0.849	11.8	20.2	32.0	56.0	-24.0
3.856	11.6	20.4	32.0	56.0	-24.0
2.848	11.6	20.3	31.9	56.0	-24.1
1.808	11.6	20.3	31.9	56.0	-24.1
1.104	11.6	20.2	31.8	56.0	-24.2
4.024	11.4	20.4	31.8	56.0	-24.2
3.032	11.4	20.3	31.7	56.0	-24.3
3.240	11.2	20.3	31.5	56.0	-24.5
3.600	11.0	20.4	31.4	56.0	-24.6
0.748	11.1	20.2	31.3	56.0	-24.7
0.787	11.1	20.2	31.3	56.0	-24.7
0.976	11.1	20.2	31.3	56.0	-24.7
0.604	11.0	20.2	31.2	56.0	-24.8

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	26.5	20.2	46.7	56.0	-9.3
0.828	15.2	20.2	35.4	46.0	-10.6
0.167	23.1	20.2	43.3	55.1	-11.8
1.472	13.2	20.2	33.4	46.0	-12.6
0.174	22.0	20.2	42.2	54.8	-12.6
3.664	12.2	20.4	32.6	46.0	-13.4
4.720	12.1	20.4	32.5	46.0	-13.5
2.248	12.1	20.3	32.4	46.0	-13.6
4.824	12.0	20.4	32.4	46.0	-13.6
2.768	11.9	20.3	32.2	46.0	-13.8
4.384	11.8	20.4	32.2	46.0	-13.8
0.184	20.2	20.2	40.4	54.3	-13.9
4.312	11.7	20.4	32.1	46.0	-13.9
0.849	11.8	20.2	32.0	46.0	-14.0
3.856	11.6	20.4	32.0	46.0	-14.0
2.848	11.6	20.3	31.9	46.0	-14.1
1.808	11.6	20.3	31.9	46.0	-14.1
1.104	11.6	20.2	31.8	46.0	-14.2
4.024	11.4	20.4	31.8	46.0	-14.2
3.032	11.4	20.3	31.7	46.0	-14.3
3.240	11.2	20.3	31.5	46.0	-14.5
3.600	11.0	20.4	31.4	46.0	-14.6
0.748	11.1	20.2	31.3	46.0	-14.7
0.787	11.1	20.2	31.3	46.0	-14.7
0.976	11.1	20.2	31.3	46.0	-14.7
0.604	11.0	20.2	31.2	46.0	-14.8

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	19	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

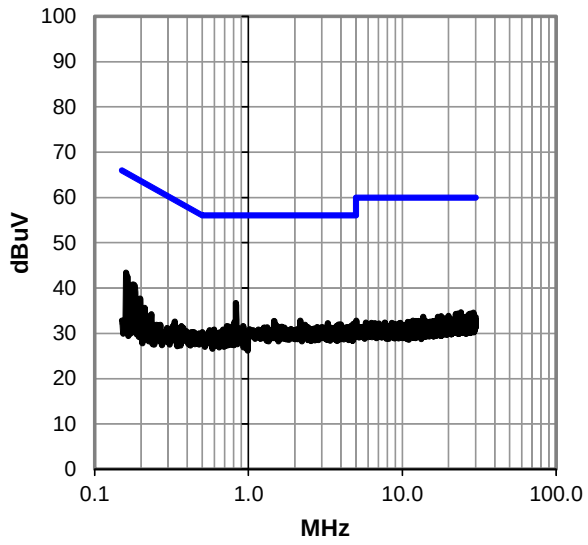
EUT OPERATING MODES

Transmitting modulated, Antenna B, High Channel: 926.4 MHz

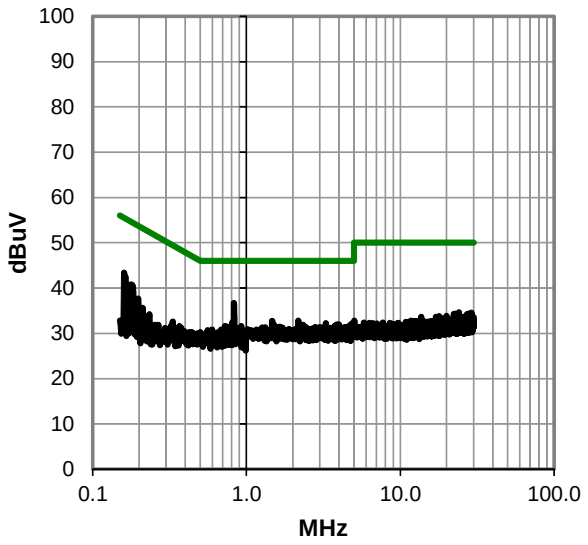
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #19

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.5	20.2	36.7	56.0	-19.3
0.160	23.2	20.2	43.4	65.5	-22.1
2.168	12.5	20.3	32.8	56.0	-23.2
1.472	12.5	20.2	32.7	56.0	-23.3
0.813	12.3	20.2	32.5	56.0	-23.5
3.280	11.9	20.3	32.2	56.0	-23.8
0.177	20.6	20.2	40.8	64.6	-23.8
4.808	11.7	20.4	32.1	56.0	-23.9
3.984	11.6	20.4	32.0	56.0	-24.0
3.872	11.6	20.4	32.0	56.0	-24.0
2.328	11.6	20.3	31.9	56.0	-24.1
4.664	11.3	20.4	31.7	56.0	-24.3
3.752	11.3	20.4	31.7	56.0	-24.3
0.725	11.4	20.2	31.6	56.0	-24.4
0.927	11.4	20.2	31.6	56.0	-24.4
0.753	11.3	20.2	31.5	56.0	-24.5
0.804	11.2	20.2	31.4	56.0	-24.6
1.328	11.1	20.2	31.3	56.0	-24.7
0.599	10.6	20.2	30.8	56.0	-25.2
0.684	10.6	20.2	30.8	56.0	-25.2
0.558	10.5	20.2	30.7	56.0	-25.3
0.697	10.5	20.2	30.7	56.0	-25.3
24.080	12.9	21.7	34.6	60.0	-25.4
29.090	12.3	22.3	34.6	60.0	-25.4
0.934	10.3	20.2	30.5	56.0	-25.5
27.800	12.2	22.2	34.4	60.0	-25.6

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.5	20.2	36.7	46.0	-9.3
0.160	23.2	20.2	43.4	55.5	-12.1
2.168	12.5	20.3	32.8	46.0	-13.2
1.472	12.5	20.2	32.7	46.0	-13.3
0.813	12.3	20.2	32.5	46.0	-13.5
3.280	11.9	20.3	32.2	46.0	-13.8
0.177	20.6	20.2	40.8	54.6	-13.8
4.808	11.7	20.4	32.1	46.0	-13.9
3.984	11.6	20.4	32.0	46.0	-14.0
3.872	11.6	20.4	32.0	46.0	-14.0
2.328	11.6	20.3	31.9	46.0	-14.1
4.664	11.3	20.4	31.7	46.0	-14.3
3.752	11.3	20.4	31.7	46.0	-14.3
0.725	11.4	20.2	31.6	46.0	-14.4
0.927	11.4	20.2	31.6	46.0	-14.4
0.753	11.3	20.2	31.5	46.0	-14.5
0.804	11.2	20.2	31.4	46.0	-14.6
1.328	11.1	20.2	31.3	46.0	-14.7
0.599	10.6	20.2	30.8	46.0	-15.2
0.684	10.6	20.2	30.8	46.0	-15.2
0.558	10.5	20.2	30.7	46.0	-15.3
0.697	10.5	20.2	30.7	46.0	-15.3
24.080	12.9	21.7	34.6	50.0	-15.4
29.090	12.3	22.3	34.6	50.0	-15.4
0.934	10.3	20.2	30.5	46.0	-15.5
27.800	12.2	22.2	34.4	50.0	-15.6

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	20	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

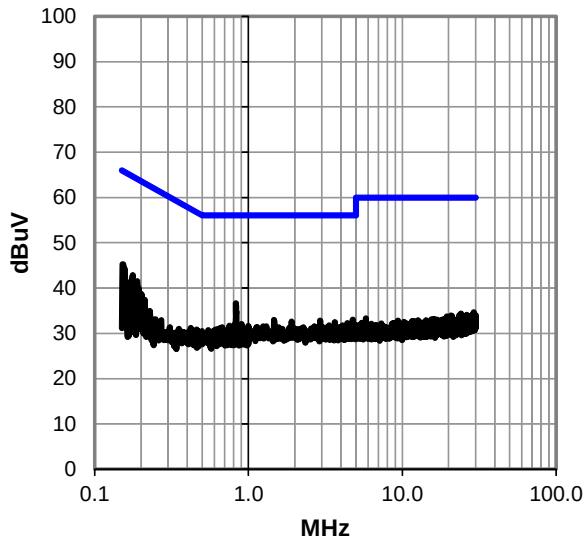
EUT OPERATING MODES

Transmitting modulated, Antenna B, High Channel: 926.4 MHz

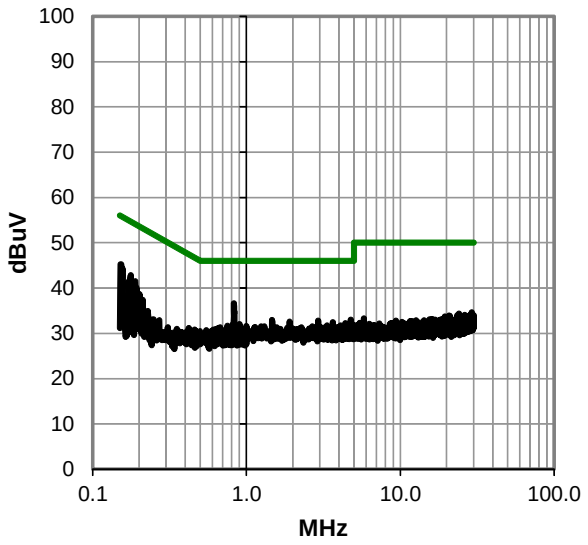
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #20

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.4	20.2	36.6	56.0	-19.4
0.152	25.0	20.2	45.2	65.9	-20.7
0.177	22.6	20.2	42.8	64.6	-21.8
0.189	21.3	20.2	41.5	64.1	-22.6
4.760	12.6	20.4	33.0	56.0	-23.0
1.464	12.7	20.2	32.9	56.0	-23.1
2.928	12.5	20.3	32.8	56.0	-23.2
1.912	12.3	20.3	32.6	56.0	-23.4
3.640	12.1	20.4	32.5	56.0	-23.5
4.392	11.9	20.4	32.3	56.0	-23.7
4.832	11.7	20.4	32.1	56.0	-23.9
0.900	11.8	20.2	32.0	56.0	-24.0
4.096	11.4	20.4	31.8	56.0	-24.2
3.344	11.4	20.3	31.7	56.0	-24.3
0.753	11.5	20.2	31.7	56.0	-24.3
1.000	11.4	20.2	31.6	56.0	-24.4
1.304	11.3	20.2	31.5	56.0	-24.5
2.680	11.2	20.3	31.5	56.0	-24.5
0.675	11.1	20.2	31.3	56.0	-24.7
0.770	11.1	20.2	31.3	56.0	-24.7
0.655	11.0	20.2	31.2	56.0	-24.8
0.201	18.5	20.2	38.7	63.6	-24.9
0.629	10.7	20.2	30.9	56.0	-25.1
0.611	10.6	20.2	30.8	56.0	-25.2
0.855	10.6	20.2	30.8	56.0	-25.2
0.973	10.6	20.2	30.8	56.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.4	20.2	36.6	46.0	-9.4
0.152	25.0	20.2	45.2	55.9	-10.7
0.177	22.6	20.2	42.8	54.6	-11.8
0.189	21.3	20.2	41.5	54.1	-12.6
4.760	12.6	20.4	33.0	46.0	-13.0
1.464	12.7	20.2	32.9	46.0	-13.1
2.928	12.5	20.3	32.8	46.0	-13.2
1.912	12.3	20.3	32.6	46.0	-13.4
3.640	12.1	20.4	32.5	46.0	-13.5
4.392	11.9	20.4	32.3	46.0	-13.7
4.832	11.7	20.4	32.1	46.0	-13.9
0.900	11.8	20.2	32.0	46.0	-14.0
4.096	11.4	20.4	31.8	46.0	-14.2
3.344	11.4	20.3	31.7	46.0	-14.3
0.753	11.5	20.2	31.7	46.0	-14.3
1.000	11.4	20.2	31.6	46.0	-14.4
1.304	11.3	20.2	31.5	46.0	-14.5
2.680	11.2	20.3	31.5	46.0	-14.5
0.675	11.1	20.2	31.3	46.0	-14.7
0.770	11.1	20.2	31.3	46.0	-14.7
0.655	11.0	20.2	31.2	46.0	-14.8
0.201	18.5	20.2	38.7	53.6	-14.9
0.629	10.7	20.2	30.9	46.0	-15.1
0.611	10.6	20.2	30.8	46.0	-15.2
0.855	10.6	20.2	30.8	46.0	-15.2
0.973	10.6	20.2	30.8	46.0	-15.2

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	21	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

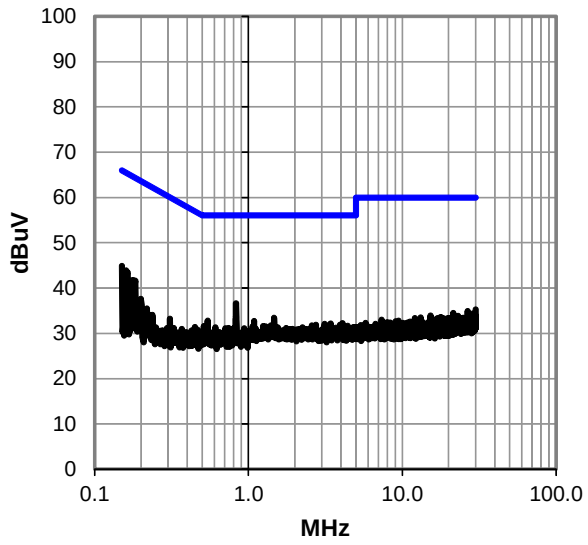
EUT OPERATING MODES

Transmitting modulated, Antenna B, Mid Channel: 914.6 MHz

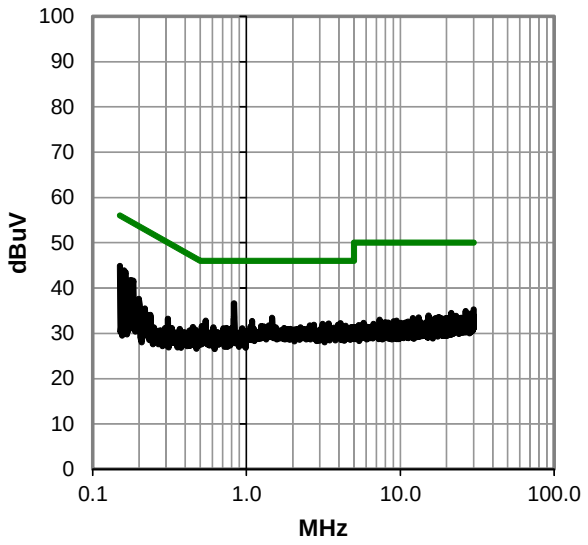
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #21

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.4	20.2	36.6	56.0	-19.4
0.150	24.7	20.2	44.9	66.0	-21.1
0.160	23.7	20.2	43.9	65.5	-21.6
1.464	13.2	20.2	33.4	56.0	-22.6
0.177	21.6	20.2	41.8	64.6	-22.8
0.543	12.6	20.2	32.8	56.0	-23.2
1.088	12.5	20.2	32.7	56.0	-23.3
4.080	11.9	20.4	32.3	56.0	-23.7
3.424	11.8	20.3	32.1	56.0	-23.9
3.128	11.8	20.3	32.1	56.0	-23.9
3.384	11.6	20.3	31.9	56.0	-24.1
2.744	11.6	20.3	31.9	56.0	-24.1
2.584	11.4	20.3	31.7	56.0	-24.3
4.416	11.3	20.4	31.7	56.0	-24.3
0.512	11.4	20.2	31.6	56.0	-24.4
0.611	11.1	20.2	31.3	56.0	-24.7
30.000	12.9	22.4	35.3	60.0	-24.7
0.743	11.0	20.2	31.2	56.0	-24.8
0.808	11.0	20.2	31.2	56.0	-24.8
0.706	10.9	20.2	31.1	56.0	-24.9
0.940	10.9	20.2	31.1	56.0	-24.9
0.774	10.8	20.2	31.0	56.0	-25.0
26.610	12.9	22.0	34.9	60.0	-25.1
21.480	13.0	21.5	34.5	60.0	-25.5
0.449	11.2	20.2	31.4	56.9	-25.5
28.570	12.1	22.3	34.4	60.0	-25.6

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.4	20.2	36.6	46.0	-9.4
0.150	24.7	20.2	44.9	56.0	-11.1
0.160	23.7	20.2	43.9	55.5	-11.6
1.464	13.2	20.2	33.4	46.0	-12.6
0.177	21.6	20.2	41.8	54.6	-12.8
0.543	12.6	20.2	32.8	46.0	-13.2
1.088	12.5	20.2	32.7	46.0	-13.3
4.080	11.9	20.4	32.3	46.0	-13.7
3.424	11.8	20.3	32.1	46.0	-13.9
3.128	11.8	20.3	32.1	46.0	-13.9
3.384	11.6	20.3	31.9	46.0	-14.1
2.744	11.6	20.3	31.9	46.0	-14.1
2.584	11.4	20.3	31.7	46.0	-14.3
4.416	11.3	20.4	31.7	46.0	-14.3
0.512	11.4	20.2	31.6	46.0	-14.4
0.611	11.1	20.2	31.3	46.0	-14.7
30.000	12.9	22.4	35.3	50.0	-14.7
0.743	11.0	20.2	31.2	46.0	-14.8
0.808	11.0	20.2	31.2	46.0	-14.8
0.706	10.9	20.2	31.1	46.0	-14.9
0.940	10.9	20.2	31.1	46.0	-14.9
0.774	10.8	20.2	31.0	46.0	-15.0
26.610	12.9	22.0	34.9	50.0	-15.1
21.480	13.0	21.5	34.5	50.0	-15.5
0.449	11.2	20.2	31.4	46.9	-15.5
28.570	12.1	22.3	34.4	50.0	-15.6

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	22	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

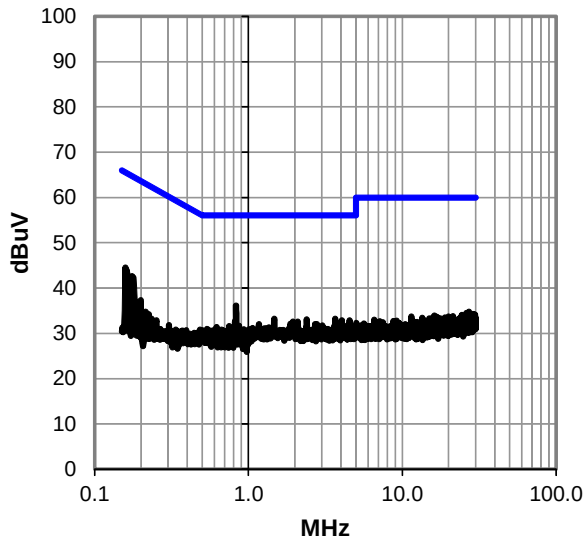
EUT OPERATING MODES

Transmitting modulated, Antenna B, Mid Channel: 914.6 MHz

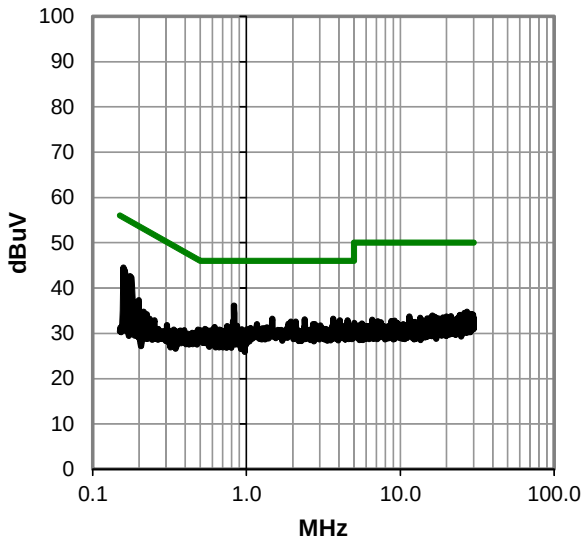
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #22

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.9	20.2	36.1	56.0	-19.9
0.159	24.3	20.2	44.5	65.5	-21.0
0.162	23.7	20.2	43.9	65.4	-21.5
0.176	22.4	20.2	42.6	64.7	-22.1
3.664	12.9	20.4	33.3	56.0	-22.7
1.472	13.0	20.2	33.2	56.0	-22.8
2.392	12.8	20.3	33.1	56.0	-22.9
4.552	12.5	20.4	32.9	56.0	-23.1
4.040	12.5	20.4	32.9	56.0	-23.1
0.820	12.6	20.2	32.8	56.0	-23.2
2.088	12.3	20.3	32.6	56.0	-23.4
1.944	12.3	20.3	32.6	56.0	-23.4
3.960	11.9	20.4	32.3	56.0	-23.7
2.792	11.7	20.3	32.0	56.0	-24.0
2.712	11.7	20.3	32.0	56.0	-24.0
1.168	11.8	20.2	32.0	56.0	-24.0
3.904	11.6	20.4	32.0	56.0	-24.0
4.384	11.4	20.4	31.8	56.0	-24.2
3.024	11.4	20.3	31.7	56.0	-24.3
0.867	11.5	20.2	31.7	56.0	-24.3
0.750	11.4	20.2	31.6	56.0	-24.4
0.621	11.2	20.2	31.4	56.0	-24.6
0.539	10.8	20.2	31.0	56.0	-25.0
0.879	10.8	20.2	31.0	56.0	-25.0
0.934	10.7	20.2	30.9	56.0	-25.1
0.601	10.6	20.2	30.8	56.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.9	20.2	36.1	46.0	-9.9
0.159	24.3	20.2	44.5	55.5	-11.0
0.162	23.7	20.2	43.9	55.4	-11.5
0.176	22.4	20.2	42.6	54.7	-12.1
3.664	12.9	20.4	33.3	46.0	-12.7
1.472	13.0	20.2	33.2	46.0	-12.8
2.392	12.8	20.3	33.1	46.0	-12.9
4.552	12.5	20.4	32.9	46.0	-13.1
4.040	12.5	20.4	32.9	46.0	-13.1
0.820	12.6	20.2	32.8	46.0	-13.2
2.088	12.3	20.3	32.6	46.0	-13.4
1.944	12.3	20.3	32.6	46.0	-13.4
3.960	11.9	20.4	32.3	46.0	-13.7
2.792	11.7	20.3	32.0	46.0	-14.0
2.712	11.7	20.3	32.0	46.0	-14.0
1.168	11.8	20.2	32.0	46.0	-14.0
3.904	11.6	20.4	32.0	46.0	-14.0
4.384	11.4	20.4	31.8	46.0	-14.2
3.024	11.4	20.3	31.7	46.0	-14.3
0.867	11.5	20.2	31.7	46.0	-14.3
0.750	11.4	20.2	31.6	46.0	-14.4
0.621	11.2	20.2	31.4	46.0	-14.6
0.539	10.8	20.2	31.0	46.0	-15.0
0.879	10.8	20.2	31.0	46.0	-15.0
0.934	10.7	20.2	30.9	46.0	-15.1
0.601	10.6	20.2	30.8	46.0	-15.2

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	23	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

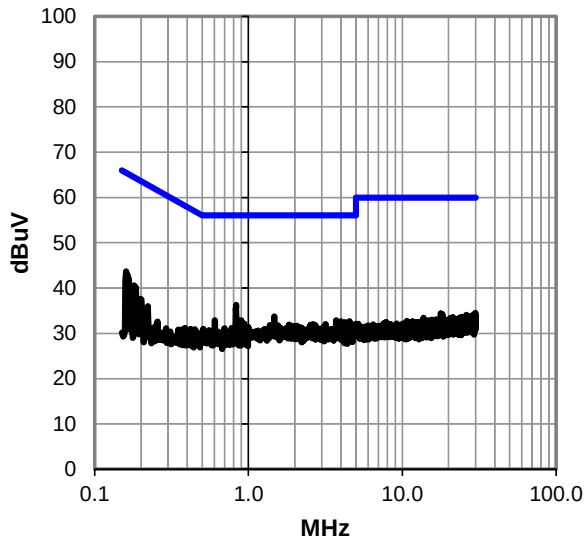
EUT OPERATING MODES

Transmitting modulated, Antenna B, Low Channel: 903.0 MHz

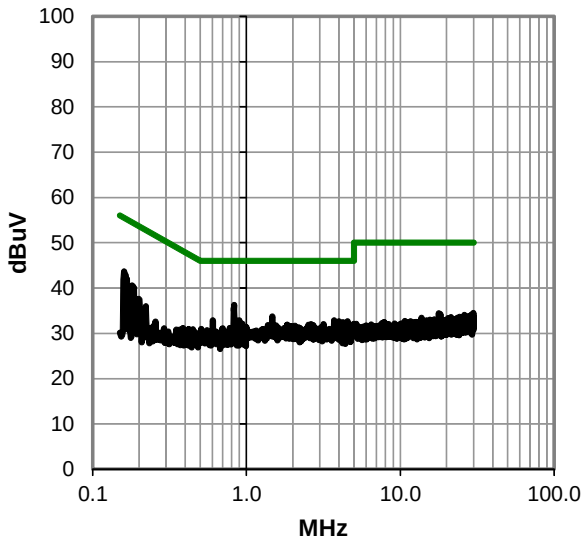
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



NORTHWEST EMC

WTD.2012.11.07, PSA-ESCI 2012.12.14, PSA-ESCI Version 2011.12.21

AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #23

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	16.1	20.2	36.3	56.0	-19.7
0.160	23.5	20.2	43.7	65.5	-21.8
1.472	13.5	20.2	33.7	56.0	-22.3
0.604	12.7	20.2	32.9	56.0	-23.1
0.900	12.7	20.2	32.9	56.0	-23.1
3.712	12.5	20.4	32.9	56.0	-23.1
4.536	12.3	20.4	32.7	56.0	-23.3
4.000	12.3	20.4	32.7	56.0	-23.3
4.240	12.1	20.4	32.5	56.0	-23.5
3.832	12.1	20.4	32.5	56.0	-23.5
0.867	12.0	20.2	32.2	56.0	-23.8
0.181	20.4	20.2	40.6	64.5	-23.9
0.942	11.9	20.2	32.1	56.0	-23.9
3.168	11.7	20.3	32.0	56.0	-24.0
2.624	11.7	20.3	32.0	56.0	-24.0
0.184	20.1	20.2	40.3	64.3	-24.0
4.400	11.6	20.4	32.0	56.0	-24.0
3.936	11.6	20.4	32.0	56.0	-24.0
1.848	11.6	20.3	31.9	56.0	-24.1
2.720	11.5	20.3	31.8	56.0	-24.2
4.360	11.4	20.4	31.8	56.0	-24.2
2.072	11.4	20.3	31.7	56.0	-24.3
0.917	11.2	20.2	31.4	56.0	-24.6
0.985	11.2	20.2	31.4	56.0	-24.6
1.000	11.2	20.2	31.4	56.0	-24.6
0.777	11.0	20.2	31.2	56.0	-24.8

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	16.1	20.2	36.3	46.0	-9.7
0.160	23.5	20.2	43.7	55.5	-11.8
1.472	13.5	20.2	33.7	46.0	-12.3
0.604	12.7	20.2	32.9	46.0	-13.1
0.900	12.7	20.2	32.9	46.0	-13.1
3.712	12.5	20.4	32.9	46.0	-13.1
4.536	12.3	20.4	32.7	46.0	-13.3
4.000	12.3	20.4	32.7	46.0	-13.3
4.240	12.1	20.4	32.5	46.0	-13.5
3.832	12.1	20.4	32.5	46.0	-13.5
0.867	12.0	20.2	32.2	46.0	-13.8
0.181	20.4	20.2	40.6	54.5	-13.9
0.942	11.9	20.2	32.1	46.0	-13.9
3.168	11.7	20.3	32.0	46.0	-14.0
2.624	11.7	20.3	32.0	46.0	-14.0
0.184	20.1	20.2	40.3	54.3	-14.0
4.400	11.6	20.4	32.0	46.0	-14.0
3.936	11.6	20.4	32.0	46.0	-14.0
1.848	11.6	20.3	31.9	46.0	-14.1
2.720	11.5	20.3	31.8	46.0	-14.2
4.360	11.4	20.4	31.8	46.0	-14.2
2.072	11.4	20.3	31.7	46.0	-14.3
0.917	11.2	20.2	31.4	46.0	-14.6
0.985	11.2	20.2	31.4	46.0	-14.6
1.000	11.2	20.2	31.4	46.0	-14.6
0.777	11.0	20.2	31.2	46.0	-14.8

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2013	ANSI C63.10:2009

TEST PARAMETERS

Run #:	24	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

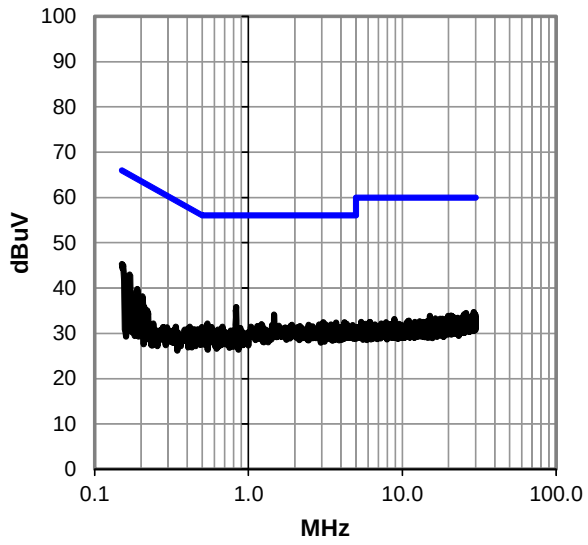
EUT OPERATING MODES

Transmitting modulated, Antenna B, Low Channel: 903.0 MHz

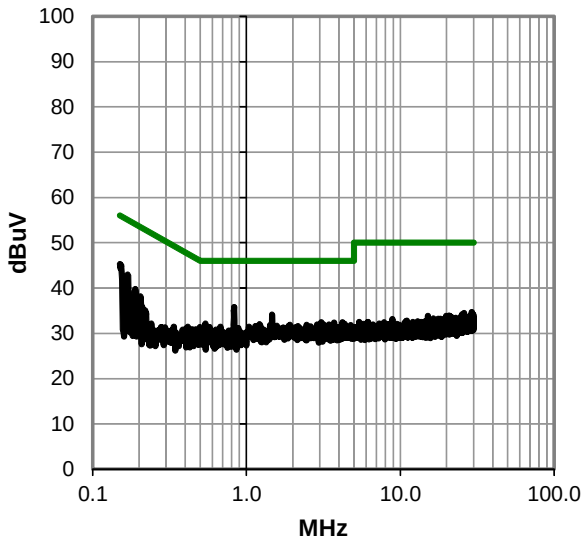
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #24

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.6	20.2	35.8	56.0	-20.2
0.150	25.1	20.2	45.3	66.0	-20.7
1.464	13.9	20.2	34.1	56.0	-21.9
0.169	22.8	20.2	43.0	65.0	-22.0
4.200	12.1	20.4	32.5	56.0	-23.5
3.064	12.1	20.3	32.4	56.0	-23.6
3.712	12.0	20.4	32.4	56.0	-23.6
0.541	12.0	20.2	32.2	56.0	-23.8
4.352	11.7	20.4	32.1	56.0	-23.9
1.216	11.8	20.2	32.0	56.0	-24.0
3.440	11.6	20.3	31.9	56.0	-24.1
3.176	11.6	20.3	31.9	56.0	-24.1
2.880	11.6	20.3	31.9	56.0	-24.1
1.920	11.6	20.3	31.9	56.0	-24.1
3.600	11.5	20.4	31.9	56.0	-24.1
0.189	19.6	20.2	39.8	64.1	-24.3
2.160	11.3	20.3	31.6	56.0	-24.4
0.679	11.3	20.2	31.5	56.0	-24.5
0.577	11.2	20.2	31.4	56.0	-24.6
0.499	11.2	20.2	31.4	56.0	-24.6
0.884	11.0	20.2	31.2	56.0	-24.8
0.633	10.6	20.2	30.8	56.0	-25.2
0.204	18.0	20.2	38.2	63.4	-25.2
29.170	12.4	22.3	34.7	60.0	-25.3
0.769	10.4	20.2	30.6	56.0	-25.4
0.611	10.3	20.2	30.5	56.0	-25.5

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.6	20.2	35.8	46.0	-10.2
0.150	25.1	20.2	45.3	56.0	-10.7
1.464	13.9	20.2	34.1	46.0	-11.9
0.169	22.8	20.2	43.0	55.0	-12.0
4.200	12.1	20.4	32.5	46.0	-13.5
3.064	12.1	20.3	32.4	46.0	-13.6
3.712	12.0	20.4	32.4	46.0	-13.6
0.541	12.0	20.2	32.2	46.0	-13.8
4.352	11.7	20.4	32.1	46.0	-13.9
1.216	11.8	20.2	32.0	46.0	-14.0
3.440	11.6	20.3	31.9	46.0	-14.1
3.176	11.6	20.3	31.9	46.0	-14.1
2.880	11.6	20.3	31.9	46.0	-14.1
1.920	11.6	20.3	31.9	46.0	-14.1
3.600	11.5	20.4	31.9	46.0	-14.1
0.189	19.6	20.2	39.8	54.1	-14.3
2.160	11.3	20.3	31.6	46.0	-14.4
0.679	11.3	20.2	31.5	46.0	-14.5
0.577	11.2	20.2	31.4	46.0	-14.6
0.499	11.2	20.2	31.4	46.0	-14.6
0.884	11.0	20.2	31.2	46.0	-14.8
0.633	10.6	20.2	30.8	46.0	-15.2
0.204	18.0	20.2	38.2	53.4	-15.2
29.170	12.4	22.3	34.7	50.0	-15.3
0.769	10.4	20.2	30.6	46.0	-15.4
0.611	10.3	20.2	30.5	46.0	-15.5

CONCLUSION

Pass

Trevor Buls

Tested By

Receiver Spurious 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

Receive Mode, Antenna B, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)
Receive Mode, Antenna A, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

HNYW0029 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	10 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	5/30/2012	12 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	5/30/2012	12 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	5/30/2012	12 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	6/29/2011	24 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	5/30/2012	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	PAD	8/28/2012	12 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	5/31/2012	12 mo
Antenna, Bilog	Teseq	CBL 6141B	AYD	12/17/2012	12 mo
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (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

TEST DESCRIPTION

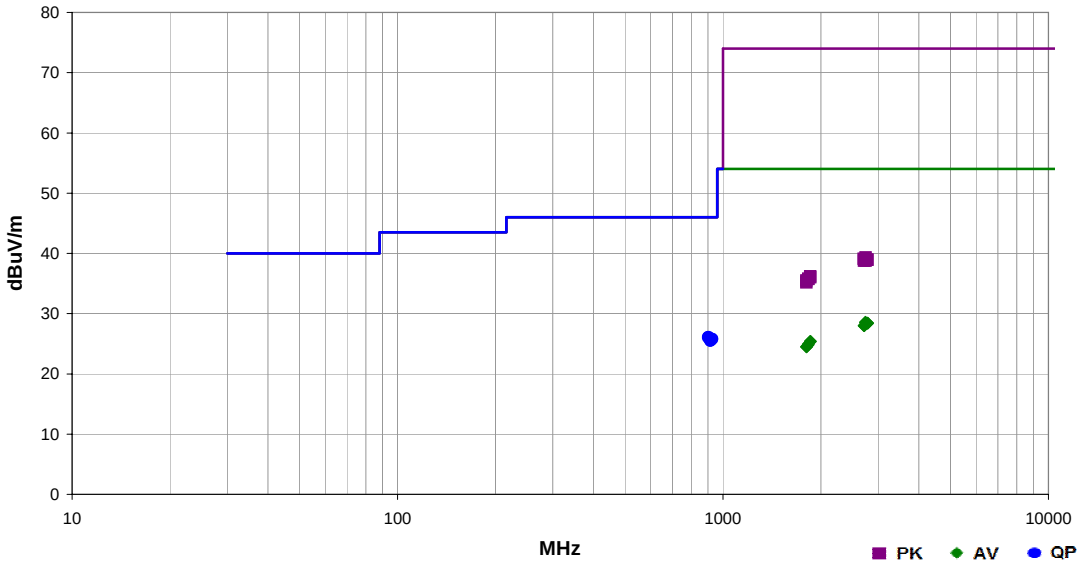
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band receive frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. 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. A preamp was used for this test in order to provide sufficient measurement sensitivity.

Receiver Spurious Emissions

Work Order:	HNYW0029	**Date:**	01/03/13	Trevor Buls	
Project:	None	**Temperature:**	24.36 °C		
Job Site:	MN05	**Humidity:**	11.35% RH		
Serial Number:	77758015000431	**Barometric Pres.:**	1023.2 mbar	**Tested by:**	Trevor Buls
EUT:	THM5421R02				
Configuration:	2				
Customer:	Honeywell, Automation and Control Solutions				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Receive Mode, Antenna A, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)				
Deviations:	None				
Comments:	None				

Test Specifications	**Class B**	**Test Method**	
FCC 15.109:2013		ANSI C63.4:2009	

Run #	31	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



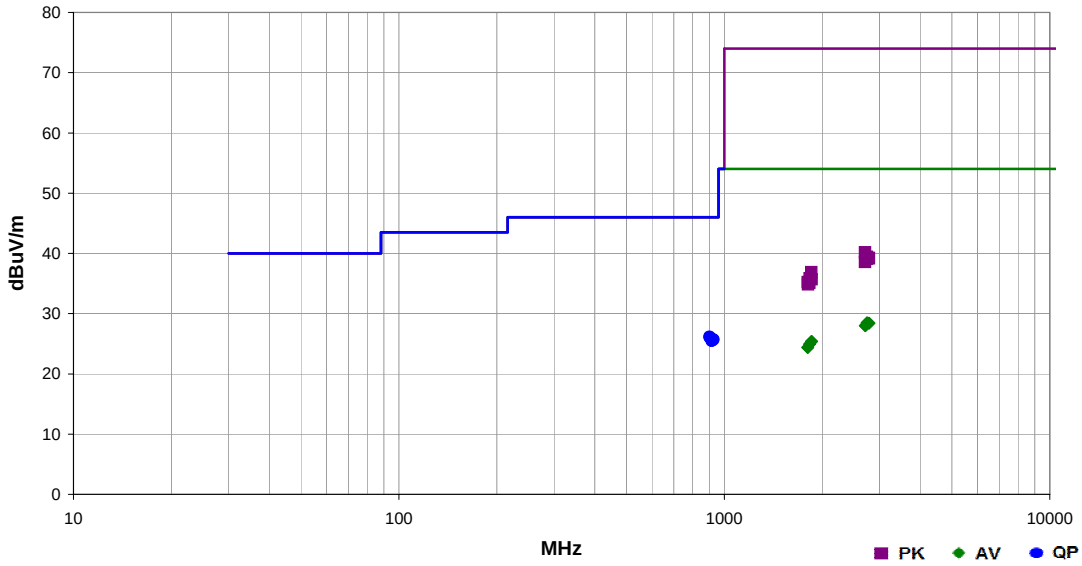
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
902.225	17.1	9.0	1.0	132.0	3.0	0.0	Vert	QP	0.0	26.1	46.0	-19.9	EUT Vertical, Low Ch
901.515	17.0	9.0	1.0	211.0	3.0	0.0	Horz	QP	0.0	26.0	46.0	-20.0	EUT Vertical, Low Ch
926.464	17.0	8.8	1.9	243.0	3.0	0.0	Vert	QP	0.0	25.8	46.0	-20.2	EUT Vertical, High Ch
925.588	17.0	8.7	1.5	271.0	3.0	0.0	Horz	QP	0.0	25.7	46.0	-20.3	EUT Vertical, High Ch
914.465	17.0	8.5	1.0	109.0	3.0	0.0	Horz	QP	0.0	25.5	46.0	-20.5	EUT Vertical, Mid Ch
915.209	17.0	8.5	1.1	288.0	3.0	0.0	Vert	QP	0.0	25.5	46.0	-20.5	EUT Vertical, Mid Ch
2741.600	31.8	-3.2	1.0	355.0	3.0	0.0	Horz	AV	0.0	28.6	54.0	-25.4	EUT Vertical, Mid Ch
2742.675	31.7	-3.2	1.0	199.0	3.0	0.0	Vert	AV	0.0	28.5	54.0	-25.5	EUT Vertical, Mid Ch
2780.992	31.6	-3.2	1.0	315.0	3.0	0.0	Vert	AV	0.0	28.4	54.0	-25.6	EUT Vertical, High Ch
2779.508	31.6	-3.2	1.8	290.0	3.0	0.0	Horz	AV	0.0	28.4	54.0	-25.6	EUT Vertical, High Ch
2711.367	31.2	-3.2	1.0	273.0	3.0	0.0	Vert	AV	0.0	28.0	54.0	-26.0	EUT Vertical, Low Ch
2711.183	31.2	-3.2	3.5	348.0	3.0	0.0	Horz	AV	0.0	28.0	54.0	-26.0	EUT Vertical, Low Ch
1855.083	30.3	-4.9	2.5	312.0	3.0	0.0	Horz	AV	0.0	25.4	54.0	-28.6	EUT Vertical, High Ch
1853.525	30.3	-4.9	1.0	103.0	3.0	0.0	Vert	AV	0.0	25.4	54.0	-28.6	EUT Vertical, High Ch
1830.275	30.2	-5.2	3.0	10.0	3.0	0.0	Horz	AV	0.0	25.0	54.0	-29.0	EUT Vertical, Mid Ch
1826.717	30.1	-5.3	3.1	211.0	3.0	0.0	Vert	AV	0.0	24.8	54.0	-29.2	EUT Vertical, Mid Ch
1804.083	30.1	-5.6	2.3	170.0	3.0	0.0	Horz	AV	0.0	24.5	54.0	-29.5	EUT Vertical, Low Ch
1803.717	30.1	-5.6	3.2	36.0	3.0	0.0	Vert	AV	0.0	24.5	54.0	-29.5	EUT Vertical, Low Ch
2745.925	42.5	-3.2	1.0	355.0	3.0	0.0	Horz	PK	0.0	39.3	74.0	-34.7	EUT Vertical, Mid Ch
2710.983	42.3	-3.2	3.5	348.0	3.0	0.0	Horz	PK	0.0	39.1	74.0	-34.9	EUT Vertical, Low Ch
2781.342	42.1	-3.2	1.8	290.0	3.0	0.0	Horz	PK	0.0	38.9	74.0	-35.1	EUT Vertical, High Ch
2778.300	42.1	-3.2	1.0	315.0	3.0	0.0	Vert	PK	0.0	38.9	74.0	-35.1	EUT Vertical, High Ch
2745.292	42.0	-3.2	1.0	199.0	3.0	0.0	Vert	PK	0.0	38.8	74.0	-35.2	EUT Vertical, Mid Ch
2711.375	42.0	-3.2	1.0	273.0	3.0	0.0	Vert	PK	0.0	38.8	74.0	-35.2	EUT Vertical, Low Ch
1853.533	41.1	-4.9	1.0	103.0	3.0	0.0	Vert	PK	0.0	36.2	74.0	-37.8	EUT Vertical, High Ch
1853.567	40.9	-4.9	2.5	312.0	3.0	0.0	Horz	PK	0.0	36.0	74.0	-38.0	EUT Vertical, High Ch
1829.075	41.0	-5.3	3.0	10.0	3.0	0.0	Horz	PK	0.0	35.7	74.0	-38.3	EUT Vertical, Mid Ch
1828.358	41.0	-5.3	3.1	211.0	3.0	0.0	Vert	PK	0.0	35.7	74.0	-38.3	EUT Vertical, Mid Ch
1804.133	41.1	-5.6	2.3	170.0	3.0	0.0	Horz	PK	0.0	35.5	74.0	-38.5	EUT Vertical, Low Ch
1804.875	40.8	-5.6	3.2	36.0	3.0	0.0	Vert	PK	0.0	35.2	74.0	-38.8	EUT Vertical, Low Ch

Receiver Spurious Emissions

Work Order:	HNYW0029	**Date:**	01/03/13		
Project:	None	**Temperature:**	24.36 °C		
Job Site:	MN05	**Humidity:**	11.35% RH		
Serial Number:	77758015000431	**Barometric Pres.:**	1023.2 mbar	**Tested by:**	Trevor Buls
EUT:	THM5421R02				
Configuration:	2				
Customer:	Honeywell, Automation and Control Solutions				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Receive Mode, Antenna B, Low, Mid, High Channels: 903.0, 924.6, 926.4 MHz (See Comments)				
Deviations:	None				
Comments:	None				

Test Specifications	**Class B**	**Test Method**	
FCC 15.109:2013		ANSI C63.4:2009	

Run #	34	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



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)	Comments
901.491	17.1	9.0	1.0	203.0	3.0	0.0	Horz	QP	0.0	26.1	46.0	-19.9	EUT Horizontal, Low Ch
902.679	17.1	8.9	2.6	329.0	3.0	0.0	Vert	QP	0.0	26.0	46.0	-20.0	EUT Horizontal, Low Ch
924.780	17.0	8.7	1.0	34.0	3.0	0.0	Horz	QP	0.0	25.7	46.0	-20.3	EUT Horizontal, High Ch
926.037	16.9	8.8	1.0	193.0	3.0	0.0	Vert	QP	0.0	25.7	46.0	-20.3	EUT Horizontal, High Ch
915.995	17.0	8.5	1.0	10.0	3.0	0.0	Horz	QP	0.0	25.5	46.0	-20.5	EUT Horizontal, Mid Ch
915.422	17.0	8.5	1.8	210.0	3.0	0.0	Vert	QP	0.0	25.5	46.0	-20.5	EUT Horizontal, Mid Ch
2743.017	31.7	-3.2	3.5	166.0	3.0	0.0	Horz	AV	0.0	28.5	54.0	-25.5	EUT Horizontal, Mid Ch
2742.817	31.7	-3.2	4.0	236.0	3.0	0.0	Vert	AV	0.0	28.5	54.0	-25.5	EUT Horizontal, Mid Ch
2781.408	31.6	-3.2	3.5	32.0	3.0	0.0	Horz	AV	0.0	28.4	54.0	-25.6	EUT Horizontal, High Ch
2780.483	31.6	-3.2	1.6	137.0	3.0	0.0	Vert	AV	0.0	28.4	54.0	-25.6	EUT Horizontal, High Ch
2711.367	31.2	-3.2	1.0	115.0	3.0	0.0	Vert	AV	0.0	28.0	54.0	-26.0	EUT Horizontal, Low Ch
2706.500	31.2	-3.2	1.4	323.0	3.0	0.0	Horz	AV	0.0	28.0	54.0	-26.0	EUT Horizontal, Low Ch
1853.492	30.3	-4.9	1.0	286.0	3.0	0.0	Horz	AV	0.0	25.4	54.0	-28.6	EUT Horizontal, High Ch
1852.117	30.3	-4.9	1.0	130.0	3.0	0.0	Vert	AV	0.0	25.4	54.0	-28.6	EUT Horizontal, High Ch
1830.075	30.2	-5.2	2.5	57.0	3.0	0.0	Horz	AV	0.0	25.0	54.0	-29.0	EUT Horizontal, Mid Ch
1827.083	30.2	-5.3	1.0	69.0	3.0	0.0	Vert	AV	0.0	24.9	54.0	-29.1	EUT Horizontal, Mid Ch
1804.650	30.0	-5.6	1.0	282.0	3.0	0.0	Horz	AV	0.0	24.4	54.0	-29.6	EUT Horizontal, Low Ch
1803.500	30.0	-5.6	1.0	256.0	3.0	0.0	Vert	AV	0.0	24.4	54.0	-29.6	EUT Horizontal, Low Ch
2708.925	43.4	-3.2	1.0	115.0	3.0	0.0	Vert	PK	0.0	40.2	74.0	-33.8	EUT Horizontal, Low Ch
2742.367	42.6	-3.2	3.5	166.0	3.0	0.0	Horz	PK	0.0	39.4	74.0	-34.6	EUT Horizontal, Mid Ch
2780.883	42.4	-3.2	1.6	137.0	3.0	0.0	Vert	PK	0.0	39.2	74.0	-34.8	EUT Horizontal, High Ch
2779.892	42.4	-3.2	3.5	32.0	3.0	0.0	Horz	PK	0.0	39.2	74.0	-34.8	EUT Horizontal, High Ch
2743.275	42.3	-3.2	3.9	236.0	3.0	0.0	Vert	PK	0.0	39.1	74.0	-34.9	EUT Horizontal, Mid Ch
2706.675	41.8	-3.2	1.4	323.0	3.0	0.0	Horz	PK	0.0	38.6	74.0	-35.4	EUT Horizontal, Low Ch
1850.750	41.8	-4.9	1.0	130.0	3.0	0.0	Vert	PK	0.0	36.9	74.0	-37.1	EUT Horizontal, High Ch
1828.567	41.1	-5.3	2.5	57.0	3.0	0.0	Horz	PK	0.0	35.8	74.0	-38.2	EUT Horizontal, Mid Ch
1853.500	40.6	-4.9	1.0	286.0	3.0	0.0	Horz	PK	0.0	35.7	74.0	-38.3	EUT Horizontal, High Ch
1807.642	40.8	-5.6	1.0	282.0	3.0	0.0	Horz	PK	0.0	35.2	74.0	-38.8	EUT Horizontal, Low Ch
1827.858	40.4	-5.3	1.0	69.0	3.0	0.0	Vert	PK	0.0	35.1	74.0	-38.9	EUT Horizontal, Mid Ch
1808.000	40.4	-5.6	1.0	256.0	3.0	0.0	Vert	PK	0.0	34.8	74.0	-39.2	EUT Horizontal, Low Ch

AC POWERLINE CONDUCTED EMISSIONS

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50Ω.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
High Pass Filter	TTE	H97-100K-50-720B	HGN	05/31/2012	24 mo
Attenuator, 20 dB	SM Electronics	SA01B-20	REF	12/17/2012	12 mo
Receiver	Rohde & Schwarz	ESCI	ARG	03/22/2012	12 mo
MN03 Cables	ESM Cable Corp.	Conducted Cables	MNC	04/16/2012	12 mo
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	05/30/2012	12 mo

CONFIGURATIONS INVESTIGATED

HNYW0029-2

MODES INVESTIGATED

Receiving, Antenna A, High Channel: 926.4 MHz
Receiving, Antenna A, Low Channel: 903.0 MHz
Receiving, Antenna A, Mid Channel: 914.6 MHz
Receiving, Antenna B, High Channel: 926.4 MHz
Receiving, Antenna B, Low Channel: 903.0 MHz
Receiving, Antenna B, Mid Channel: 914.6 MHz

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	1	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

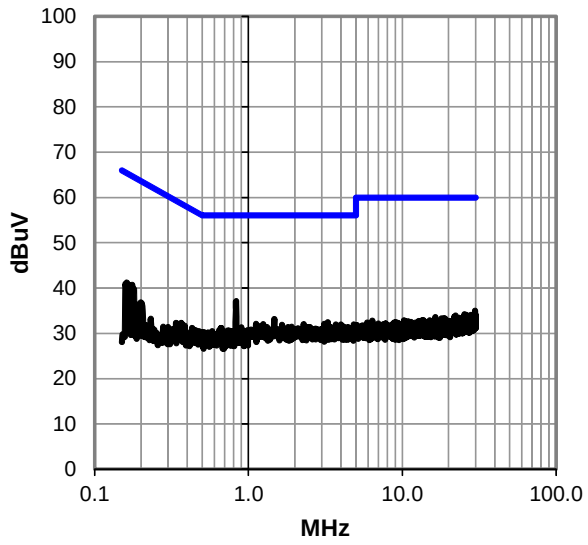
EUT OPERATING MODES

Receiving, Antenna A, Low Channel: 903.0 MHz

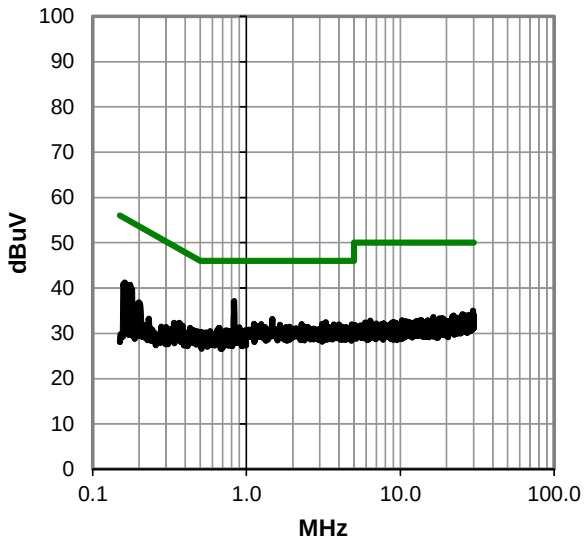
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #1

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	16.9	20.2	37.1	56.0	-18.9
1.472	12.9	20.2	33.1	56.0	-22.9
3.272	12.1	20.3	32.4	56.0	-23.6
1.120	11.9	20.2	32.1	56.0	-23.9
1.248	11.8	20.2	32.0	56.0	-24.0
2.288	11.7	20.3	32.0	56.0	-24.0
0.176	20.5	20.2	40.7	64.7	-24.0
4.840	11.6	20.4	32.0	56.0	-24.0
3.992	11.6	20.4	32.0	56.0	-24.0
1.656	11.6	20.3	31.9	56.0	-24.1
0.162	21.0	20.2	41.2	65.4	-24.2
4.136	11.2	20.4	31.6	56.0	-24.4
2.512	11.1	20.3	31.4	56.0	-24.6
0.900	11.1	20.2	31.3	56.0	-24.7
0.660	11.0	20.2	31.2	56.0	-24.8
0.667	11.0	20.2	31.2	56.0	-24.8
0.855	10.9	20.2	31.1	56.0	-24.9
29.710	12.6	22.4	35.0	60.0	-25.0
0.983	10.5	20.2	30.7	56.0	-25.3
0.169	19.5	20.2	39.7	65.0	-25.3
0.730	10.4	20.2	30.6	56.0	-25.4
0.580	10.3	20.2	30.5	56.0	-25.5
0.769	10.3	20.2	30.5	56.0	-25.5
0.514	10.1	20.2	30.3	56.0	-25.7
0.686	10.1	20.2	30.3	56.0	-25.7
25.370	12.3	21.9	34.2	60.0	-25.8

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	16.9	20.2	37.1	46.0	-8.9
1.472	12.9	20.2	33.1	46.0	-12.9
3.272	12.1	20.3	32.4	46.0	-13.6
1.120	11.9	20.2	32.1	46.0	-13.9
1.248	11.8	20.2	32.0	46.0	-14.0
2.288	11.7	20.3	32.0	46.0	-14.0
0.176	20.5	20.2	40.7	54.7	-14.0
4.840	11.6	20.4	32.0	46.0	-14.0
3.992	11.6	20.4	32.0	46.0	-14.0
1.656	11.6	20.3	31.9	46.0	-14.1
0.162	21.0	20.2	41.2	55.4	-14.2
4.136	11.2	20.4	31.6	46.0	-14.4
2.512	11.1	20.3	31.4	46.0	-14.6
0.900	11.1	20.2	31.3	46.0	-14.7
0.660	11.0	20.2	31.2	46.0	-14.8
0.667	11.0	20.2	31.2	46.0	-14.8
0.855	10.9	20.2	31.1	46.0	-14.9
29.710	12.6	22.4	35.0	50.0	-15.0
0.983	10.5	20.2	30.7	46.0	-15.3
0.169	19.5	20.2	39.7	55.0	-15.3
0.730	10.4	20.2	30.6	46.0	-15.4
0.580	10.3	20.2	30.5	46.0	-15.5
0.769	10.3	20.2	30.5	46.0	-15.5
0.514	10.1	20.2	30.3	46.0	-15.7
0.686	10.1	20.2	30.3	46.0	-15.7
25.370	12.3	21.9	34.2	50.0	-15.8

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	2	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

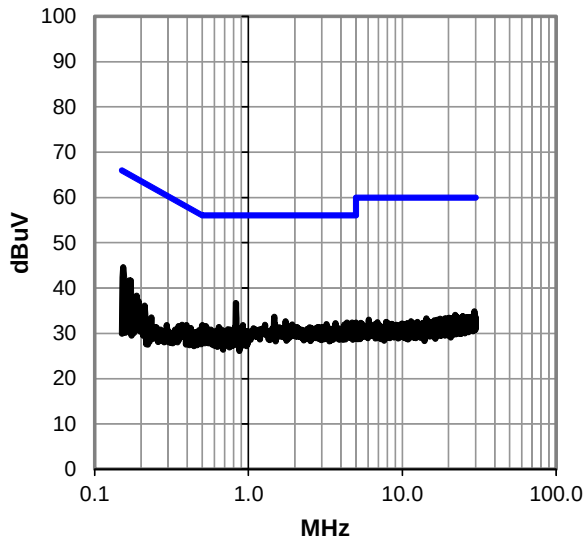
EUT OPERATING MODES

Receiving, Antenna A, Low Channel: 903.0 MHz

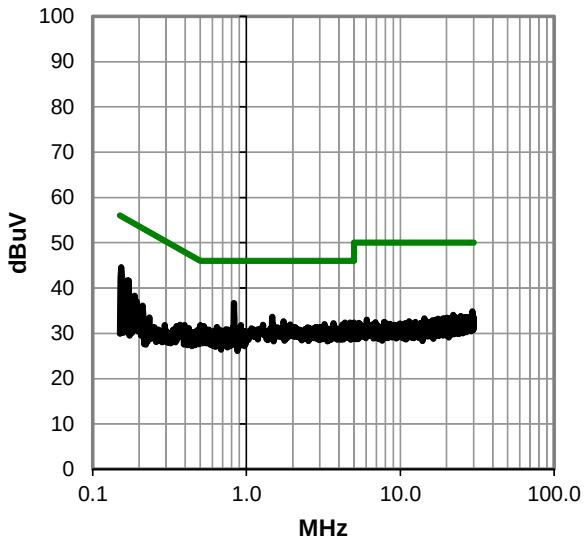
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #2

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.5	20.2	36.7	56.0	-19.3
0.153	24.4	20.2	44.6	65.8	-21.2
1.472	13.4	20.2	33.6	56.0	-22.4
0.169	21.5	20.2	41.7	65.0	-23.3
1.744	12.4	20.3	32.7	56.0	-23.3
4.712	12.0	20.4	32.4	56.0	-23.6
4.368	12.0	20.4	32.4	56.0	-23.6
3.680	11.9	20.4	32.3	56.0	-23.7
3.216	11.7	20.3	32.0	56.0	-24.0
1.928	11.7	20.3	32.0	56.0	-24.0
4.200	11.6	20.4	32.0	56.0	-24.0
1.280	11.7	20.2	31.9	56.0	-24.1
0.500	11.6	20.2	31.8	56.0	-24.2
0.918	11.6	20.2	31.8	56.0	-24.2
0.529	11.4	20.2	31.6	56.0	-24.4
0.641	11.2	20.2	31.4	56.0	-24.6
0.888	11.0	20.2	31.2	56.0	-24.8
0.735	10.7	20.2	30.9	56.0	-25.1
29.490	12.5	22.3	34.8	60.0	-25.2
0.760	10.6	20.2	30.8	56.0	-25.2
0.609	10.3	20.2	30.5	56.0	-25.5
0.687	10.3	20.2	30.5	56.0	-25.5
0.476	10.5	20.2	30.7	56.4	-25.7
0.187	18.1	20.2	38.3	64.2	-25.9
22.060	12.5	21.6	34.1	60.0	-25.9
28.860	11.6	22.3	33.9	60.0	-26.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.5	20.2	36.7	46.0	-9.3
0.153	24.4	20.2	44.6	55.8	-11.2
1.472	13.4	20.2	33.6	46.0	-12.4
0.169	21.5	20.2	41.7	55.0	-13.3
1.744	12.4	20.3	32.7	46.0	-13.3
4.712	12.0	20.4	32.4	46.0	-13.6
4.368	12.0	20.4	32.4	46.0	-13.6
3.680	11.9	20.4	32.3	46.0	-13.7
3.216	11.7	20.3	32.0	46.0	-14.0
1.928	11.7	20.3	32.0	46.0	-14.0
4.200	11.6	20.4	32.0	46.0	-14.0
1.280	11.7	20.2	31.9	46.0	-14.1
0.500	11.6	20.2	31.8	46.0	-14.2
0.918	11.6	20.2	31.8	46.0	-14.2
0.529	11.4	20.2	31.6	46.0	-14.4
0.641	11.2	20.2	31.4	46.0	-14.6
0.888	11.0	20.2	31.2	46.0	-14.8
0.735	10.7	20.2	30.9	46.0	-15.1
29.490	12.5	22.3	34.8	50.0	-15.2
0.760	10.6	20.2	30.8	46.0	-15.2
0.609	10.3	20.2	30.5	46.0	-15.5
0.687	10.3	20.2	30.5	46.0	-15.5
0.476	10.5	20.2	30.7	46.4	-15.7
0.187	18.1	20.2	38.3	54.2	-15.9
22.060	12.5	21.6	34.1	50.0	-15.9
28.860	11.6	22.3	33.9	50.0	-16.1

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	3	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

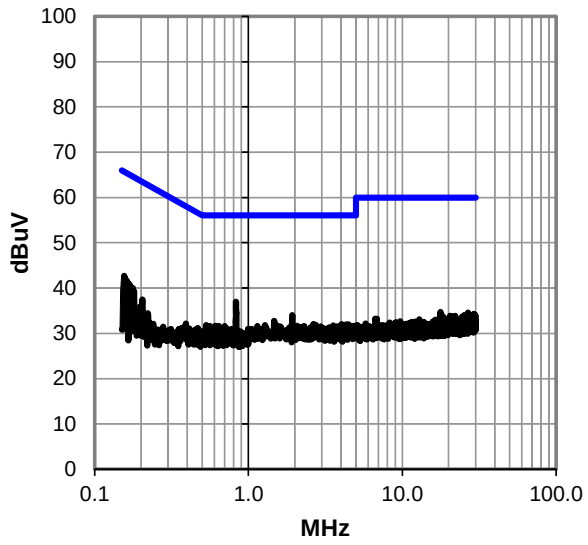
EUT OPERATING MODES

Receiving, Antenna A, Mid Channel: 914.6 MHz

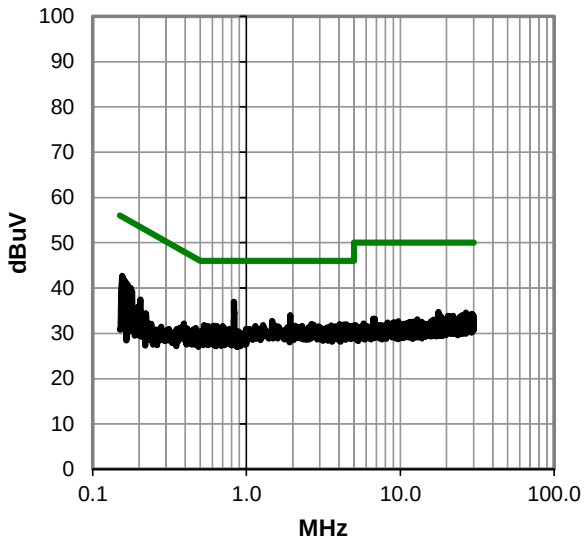
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #3

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.8	20.2	37.0	56.0	-19.0
1.928	13.7	20.3	34.0	56.0	-22.0
0.155	22.5	20.2	42.7	65.7	-23.0
1.464	12.5	20.2	32.7	56.0	-23.3
4.024	11.7	20.4	32.1	56.0	-23.9
2.640	11.7	20.3	32.0	56.0	-24.0
4.488	11.6	20.4	32.0	56.0	-24.0
4.352	11.6	20.4	32.0	56.0	-24.0
2.728	11.6	20.3	31.9	56.0	-24.1
0.531	11.6	20.2	31.8	56.0	-24.2
0.169	20.6	20.2	40.8	65.0	-24.2
3.560	11.4	20.4	31.8	56.0	-24.2
2.072	11.4	20.3	31.7	56.0	-24.3
0.611	11.5	20.2	31.7	56.0	-24.3
1.144	11.4	20.2	31.6	56.0	-24.4
0.561	11.4	20.2	31.6	56.0	-24.4
0.643	11.4	20.2	31.6	56.0	-24.4
0.699	11.4	20.2	31.6	56.0	-24.4
3.784	11.2	20.4	31.6	56.0	-24.4
0.177	19.8	20.2	40.0	64.6	-24.6
0.718	11.0	20.2	31.2	56.0	-24.8
0.592	10.9	20.2	31.1	56.0	-24.9
0.660	10.9	20.2	31.1	56.0	-24.9
0.774	10.8	20.2	31.0	56.0	-25.0
0.995	10.8	20.2	31.0	56.0	-25.0
0.181	19.1	20.2	39.3	64.5	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	16.8	20.2	37.0	46.0	-9.0
1.928	13.7	20.3	34.0	46.0	-12.0
0.155	22.5	20.2	42.7	55.7	-13.0
1.464	12.5	20.2	32.7	46.0	-13.3
4.024	11.7	20.4	32.1	46.0	-13.9
2.640	11.7	20.3	32.0	46.0	-14.0
4.488	11.6	20.4	32.0	46.0	-14.0
4.352	11.6	20.4	32.0	46.0	-14.0
2.728	11.6	20.3	31.9	46.0	-14.1
0.531	11.6	20.2	31.8	46.0	-14.2
0.169	20.6	20.2	40.8	55.0	-14.2
3.560	11.4	20.4	31.8	46.0	-14.2
2.072	11.4	20.3	31.7	46.0	-14.3
0.611	11.5	20.2	31.7	46.0	-14.3
1.144	11.4	20.2	31.6	46.0	-14.4
0.561	11.4	20.2	31.6	46.0	-14.4
0.643	11.4	20.2	31.6	46.0	-14.4
0.699	11.4	20.2	31.6	46.0	-14.4
3.784	11.2	20.4	31.6	46.0	-14.4
0.177	19.8	20.2	40.0	54.6	-14.6
0.718	11.0	20.2	31.2	46.0	-14.8
0.592	10.9	20.2	31.1	46.0	-14.9
0.660	10.9	20.2	31.1	46.0	-14.9
0.774	10.8	20.2	31.0	46.0	-15.0
0.995	10.8	20.2	31.0	46.0	-15.0
0.181	19.1	20.2	39.3	54.5	-15.2

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	4	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

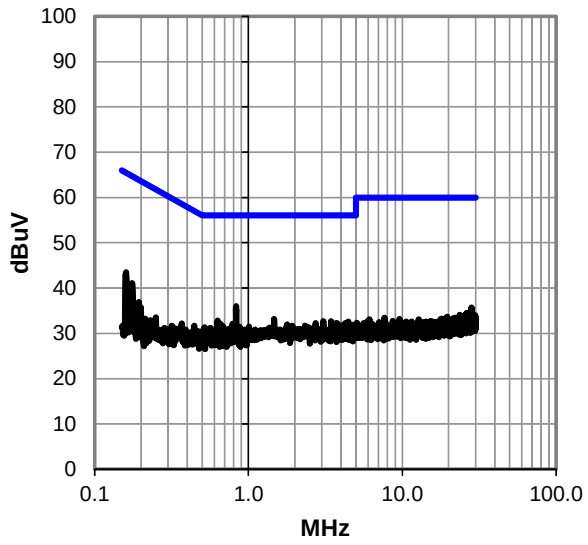
EUT OPERATING MODES

Receiving, Antenna A, Mid Channel: 914.6 MHz

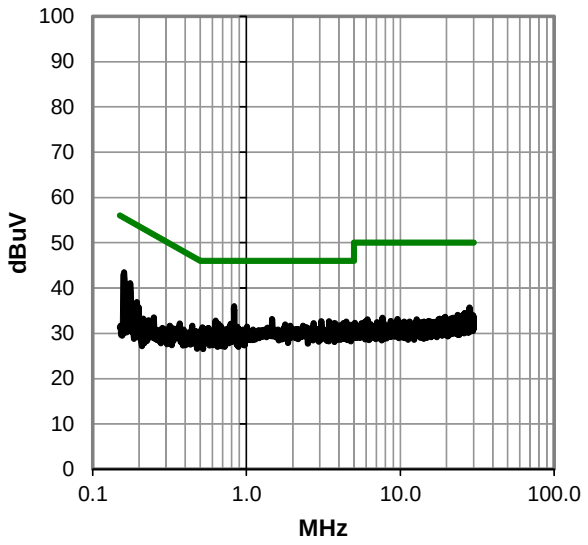
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #4

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.8	20.2	36.0	56.0	-20.0
0.160	23.3	20.2	43.5	65.5	-22.0
1.464	12.9	20.2	33.1	56.0	-22.9
0.629	12.6	20.2	32.8	56.0	-23.2
3.448	12.3	20.3	32.6	56.0	-23.4
3.064	12.3	20.3	32.6	56.0	-23.4
4.456	12.2	20.4	32.6	56.0	-23.4
0.176	20.9	20.2	41.1	64.7	-23.6
4.264	11.9	20.4	32.3	56.0	-23.7
3.776	11.9	20.4	32.3	56.0	-23.7
2.728	11.9	20.3	32.2	56.0	-23.8
3.664	11.8	20.4	32.2	56.0	-23.8
0.658	11.9	20.2	32.1	56.0	-23.9
0.791	11.9	20.2	32.1	56.0	-23.9
1.784	11.7	20.3	32.0	56.0	-24.0
0.643	11.7	20.2	31.9	56.0	-24.1
4.016	11.4	20.4	31.8	56.0	-24.2
28.230	13.5	22.2	35.7	60.0	-24.3
2.328	11.4	20.3	31.7	56.0	-24.3
0.682	11.4	20.2	31.6	56.0	-24.4
0.872	11.3	20.2	31.5	56.0	-24.5
0.519	11.1	20.2	31.3	56.0	-24.7
0.568	11.0	20.2	31.2	56.0	-24.8
0.677	11.0	20.2	31.2	56.0	-24.8
0.893	10.8	20.2	31.0	56.0	-25.0
0.730	10.7	20.2	30.9	56.0	-25.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.8	20.2	36.0	46.0	-10.0
0.160	23.3	20.2	43.5	55.5	-12.0
1.464	12.9	20.2	33.1	46.0	-12.9
0.629	12.6	20.2	32.8	46.0	-13.2
3.448	12.3	20.3	32.6	46.0	-13.4
3.064	12.3	20.3	32.6	46.0	-13.4
4.456	12.2	20.4	32.6	46.0	-13.4
0.176	20.9	20.2	41.1	54.7	-13.6
4.264	11.9	20.4	32.3	46.0	-13.7
3.776	11.9	20.4	32.3	46.0	-13.7
2.728	11.9	20.3	32.2	46.0	-13.8
3.664	11.8	20.4	32.2	46.0	-13.8
0.658	11.9	20.2	32.1	46.0	-13.9
0.791	11.9	20.2	32.1	46.0	-13.9
1.784	11.7	20.3	32.0	46.0	-14.0
0.643	11.7	20.2	31.9	46.0	-14.1
4.016	11.4	20.4	31.8	46.0	-14.2
28.230	13.5	22.2	35.7	50.0	-14.3
2.328	11.4	20.3	31.7	46.0	-14.3
0.682	11.4	20.2	31.6	46.0	-14.4
0.872	11.3	20.2	31.5	46.0	-14.5
0.519	11.1	20.2	31.3	46.0	-14.7
0.568	11.0	20.2	31.2	46.0	-14.8
0.677	11.0	20.2	31.2	46.0	-14.8
0.893	10.8	20.2	31.0	46.0	-15.0
0.730	10.7	20.2	30.9	46.0	-15.1

CONCLUSION

Pass

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	5	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

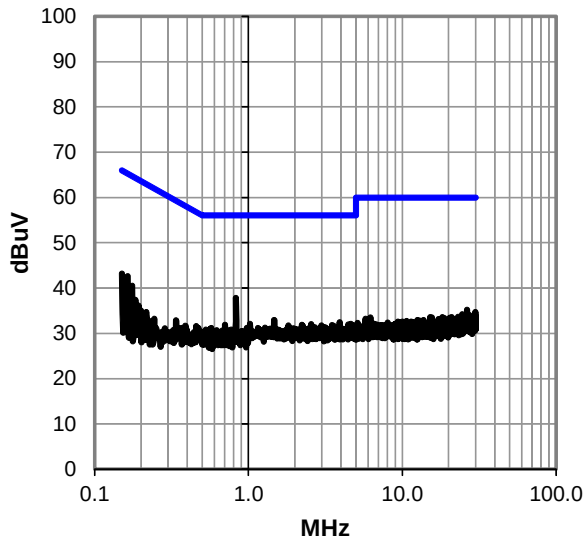
EUT OPERATING MODES

Receiving, Antenna A, High Channel: 926.4 MHz

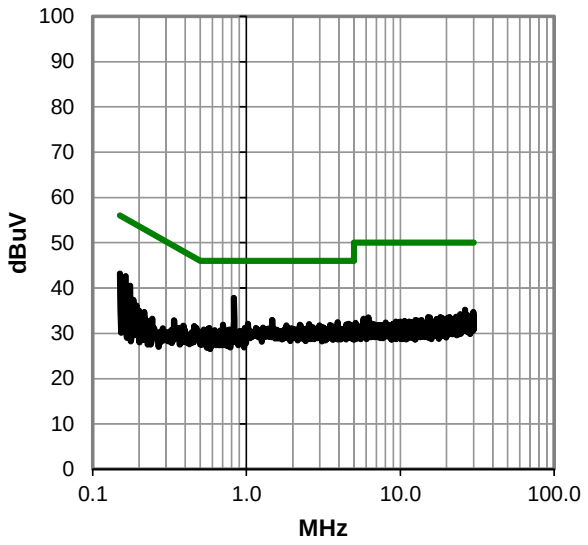
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #5

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	17.6	20.2	37.8	56.0	-18.2
0.164	22.4	20.2	42.6	65.3	-22.7
0.150	23.0	20.2	43.2	66.0	-22.8
1.472	12.7	20.2	32.9	56.0	-23.1
3.920	12.1	20.4	32.5	56.0	-23.5
1.024	11.9	20.2	32.1	56.0	-23.9
4.624	11.7	20.4	32.1	56.0	-23.9
0.157	21.5	20.2	41.7	65.6	-23.9
2.560	11.7	20.3	32.0	56.0	-24.0
2.224	11.6	20.3	31.9	56.0	-24.1
0.704	11.7	20.2	31.9	56.0	-24.1
3.496	11.5	20.3	31.8	56.0	-24.2
0.176	20.3	20.2	40.5	64.7	-24.2
1.816	11.5	20.3	31.8	56.0	-24.2
2.984	11.4	20.3	31.7	56.0	-24.3
26.390	13.2	22.0	35.2	60.0	-24.8
0.573	11.0	20.2	31.2	56.0	-24.8
0.973	11.0	20.2	31.2	56.0	-24.8
0.458	11.4	20.2	31.6	56.7	-25.1
0.527	10.6	20.2	30.8	56.0	-25.2
0.772	10.6	20.2	30.8	56.0	-25.2
0.621	10.5	20.2	30.7	56.0	-25.3
29.880	12.3	22.4	34.7	60.0	-25.3
0.674	10.4	20.2	30.6	56.0	-25.4
0.736	10.4	20.2	30.6	56.0	-25.4
0.898	10.3	20.2	30.5	56.0	-25.5

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	17.6	20.2	37.8	46.0	-8.2
0.164	22.4	20.2	42.6	55.3	-12.7
0.150	23.0	20.2	43.2	56.0	-12.8
1.472	12.7	20.2	32.9	46.0	-13.1
3.920	12.1	20.4	32.5	46.0	-13.5
1.024	11.9	20.2	32.1	46.0	-13.9
4.624	11.7	20.4	32.1	46.0	-13.9
0.157	21.5	20.2	41.7	55.6	-13.9
2.560	11.7	20.3	32.0	46.0	-14.0
2.224	11.6	20.3	31.9	46.0	-14.1
0.704	11.7	20.2	31.9	46.0	-14.1
3.496	11.5	20.3	31.8	46.0	-14.2
0.176	20.3	20.2	40.5	54.7	-14.2
1.816	11.5	20.3	31.8	46.0	-14.2
2.984	11.4	20.3	31.7	46.0	-14.3
26.390	13.2	22.0	35.2	50.0	-14.8
0.573	11.0	20.2	31.2	46.0	-14.8
0.973	11.0	20.2	31.2	46.0	-14.8
0.458	11.4	20.2	31.6	46.7	-15.1
0.527	10.6	20.2	30.8	46.0	-15.2
0.772	10.6	20.2	30.8	46.0	-15.2
0.621	10.5	20.2	30.7	46.0	-15.3
29.880	12.3	22.4	34.7	50.0	-15.3
0.674	10.4	20.2	30.6	46.0	-15.4
0.736	10.4	20.2	30.6	46.0	-15.4
0.898	10.3	20.2	30.5	46.0	-15.5

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	6	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

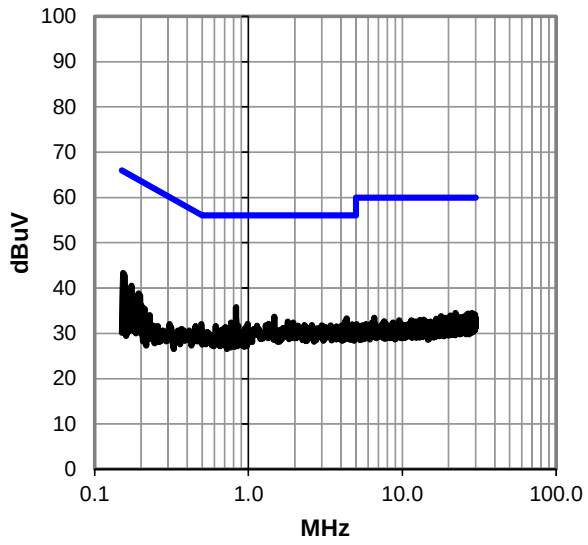
EUT OPERATING MODES

Receiving, Antenna A, High Channel: 926.4 MHz

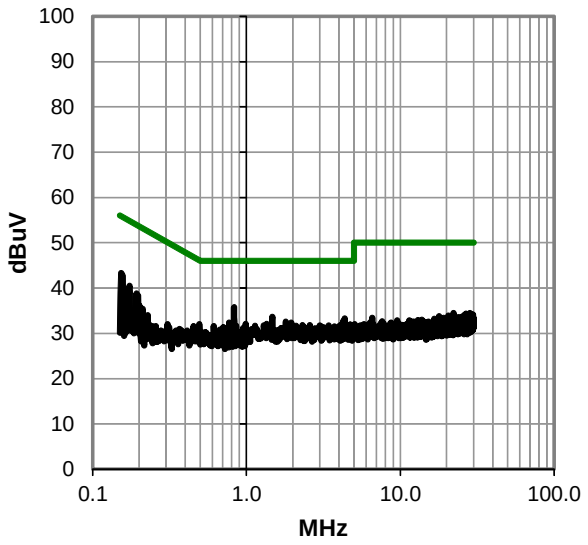
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #6

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.6	20.2	35.8	56.0	-20.2
1.472	13.4	20.2	33.6	56.0	-22.4
0.153	23.1	20.2	43.3	65.8	-22.5
4.352	12.9	20.4	33.3	56.0	-22.7
4.256	12.3	20.4	32.7	56.0	-23.3
1.800	12.3	20.3	32.6	56.0	-23.4
0.772	12.2	20.2	32.4	56.0	-23.6
1.952	12.1	20.3	32.4	56.0	-23.6
4.208	11.8	20.4	32.2	56.0	-23.8
1.352	11.9	20.2	32.1	56.0	-23.9
0.990	11.9	20.2	32.1	56.0	-23.9
4.728	11.6	20.4	32.0	56.0	-24.0
0.493	11.8	20.2	32.0	56.1	-24.1
2.584	11.5	20.3	31.8	56.0	-24.2
2.312	11.5	20.3	31.8	56.0	-24.2
4.040	11.4	20.4	31.8	56.0	-24.2
3.424	11.4	20.3	31.7	56.0	-24.3
3.000	11.4	20.3	31.7	56.0	-24.3
0.174	20.3	20.2	40.5	64.8	-24.3
0.857	11.5	20.2	31.7	56.0	-24.3
0.612	11.4	20.2	31.6	56.0	-24.4
0.703	11.1	20.2	31.3	56.0	-24.7
0.952	11.0	20.2	31.2	56.0	-24.8
0.193	18.6	20.2	38.8	63.9	-25.1
0.672	10.6	20.2	30.8	56.0	-25.2
0.983	10.6	20.2	30.8	56.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.6	20.2	35.8	46.0	-10.2
1.472	13.4	20.2	33.6	46.0	-12.4
0.153	23.1	20.2	43.3	55.8	-12.5
4.352	12.9	20.4	33.3	46.0	-12.7
4.256	12.3	20.4	32.7	46.0	-13.3
1.800	12.3	20.3	32.6	46.0	-13.4
0.772	12.2	20.2	32.4	46.0	-13.6
1.952	12.1	20.3	32.4	46.0	-13.6
4.208	11.8	20.4	32.2	46.0	-13.8
1.352	11.9	20.2	32.1	46.0	-13.9
0.990	11.9	20.2	32.1	46.0	-13.9
4.728	11.6	20.4	32.0	46.0	-14.0
0.493	11.8	20.2	32.0	46.1	-14.1
2.584	11.5	20.3	31.8	46.0	-14.2
2.312	11.5	20.3	31.8	46.0	-14.2
4.040	11.4	20.4	31.8	46.0	-14.2
3.424	11.4	20.3	31.7	46.0	-14.3
3.000	11.4	20.3	31.7	46.0	-14.3
0.174	20.3	20.2	40.5	54.8	-14.3
0.857	11.5	20.2	31.7	46.0	-14.3
0.612	11.4	20.2	31.6	46.0	-14.4
0.703	11.1	20.2	31.3	46.0	-14.7
0.952	11.0	20.2	31.2	46.0	-14.8
0.193	18.6	20.2	38.8	53.9	-15.1
0.672	10.6	20.2	30.8	46.0	-15.2
0.983	10.6	20.2	30.8	46.0	-15.2

CONCLUSION

Pass

Trevor Bulls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	7	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

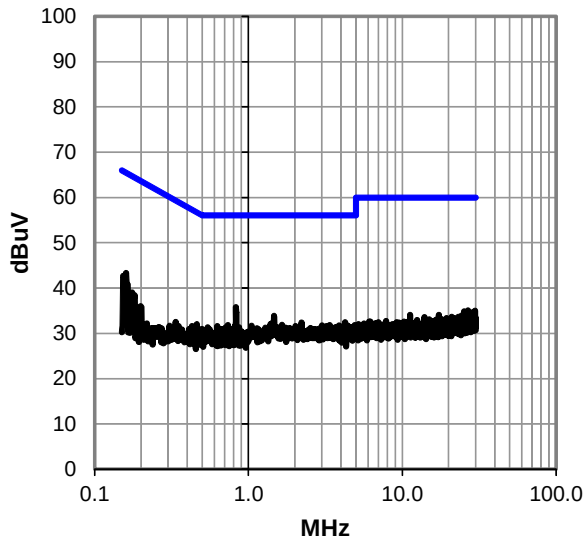
EUT OPERATING MODES

Receiving, Antenna B, High Channel: 926.4 MHz

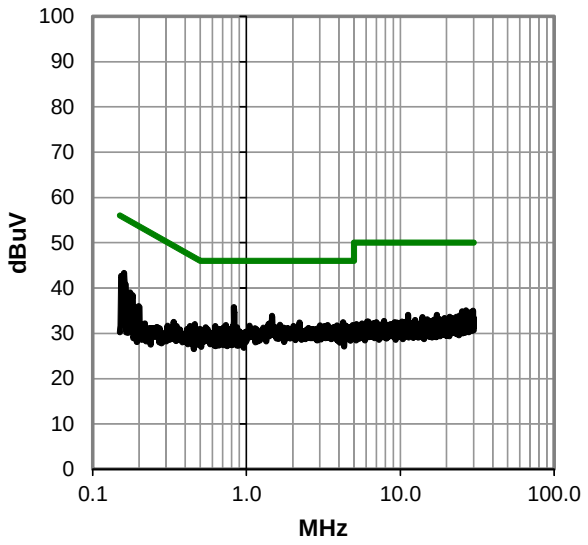
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #7

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.6	20.2	35.8	56.0	-20.2
0.160	23.1	20.2	43.3	65.5	-22.2
1.464	13.6	20.2	33.8	56.0	-22.2
4.256	12.1	20.4	32.5	56.0	-23.5
2.208	12.1	20.3	32.4	56.0	-23.6
1.656	11.6	20.3	31.9	56.0	-24.1
3.368	11.5	20.3	31.8	56.0	-24.2
0.736	11.6	20.2	31.8	56.0	-24.2
4.904	11.4	20.4	31.8	56.0	-24.2
3.872	11.4	20.4	31.8	56.0	-24.2
3.008	11.4	20.3	31.7	56.0	-24.3
1.048	11.5	20.2	31.7	56.0	-24.3
4.432	11.3	20.4	31.7	56.0	-24.3
2.024	11.3	20.3	31.6	56.0	-24.4
0.628	11.4	20.2	31.6	56.0	-24.4
4.000	11.1	20.4	31.5	56.0	-24.5
0.461	11.8	20.2	32.0	56.7	-24.7
0.543	11.1	20.2	31.3	56.0	-24.7
0.711	11.1	20.2	31.3	56.0	-24.7
0.871	11.1	20.2	31.3	56.0	-24.7
0.799	11.0	20.2	31.2	56.0	-24.8
0.726	10.9	20.2	31.1	56.0	-24.9
26.800	13.0	22.1	35.1	60.0	-24.9
0.650	10.8	20.2	31.0	56.0	-25.0
0.499	10.8	20.2	31.0	56.0	-25.0
29.760	12.6	22.4	35.0	60.0	-25.0

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.6	20.2	35.8	46.0	-10.2
0.160	23.1	20.2	43.3	55.5	-12.2
1.464	13.6	20.2	33.8	46.0	-12.2
4.256	12.1	20.4	32.5	46.0	-13.5
2.208	12.1	20.3	32.4	46.0	-13.6
1.656	11.6	20.3	31.9	46.0	-14.1
3.368	11.5	20.3	31.8	46.0	-14.2
0.736	11.6	20.2	31.8	46.0	-14.2
4.904	11.4	20.4	31.8	46.0	-14.2
3.872	11.4	20.4	31.8	46.0	-14.2
3.008	11.4	20.3	31.7	46.0	-14.3
1.048	11.5	20.2	31.7	46.0	-14.3
4.432	11.3	20.4	31.7	46.0	-14.3
2.024	11.3	20.3	31.6	46.0	-14.4
0.628	11.4	20.2	31.6	46.0	-14.4
4.000	11.1	20.4	31.5	46.0	-14.5
0.461	11.8	20.2	32.0	46.7	-14.7
0.543	11.1	20.2	31.3	46.0	-14.7
0.711	11.1	20.2	31.3	46.0	-14.7
0.871	11.1	20.2	31.3	46.0	-14.7
0.799	11.0	20.2	31.2	46.0	-14.8
0.726	10.9	20.2	31.1	46.0	-14.9
26.800	13.0	22.1	35.1	50.0	-14.9
0.650	10.8	20.2	31.0	46.0	-15.0
0.499	10.8	20.2	31.0	46.0	-15.0
29.760	12.6	22.4	35.0	50.0	-15.0

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	8	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

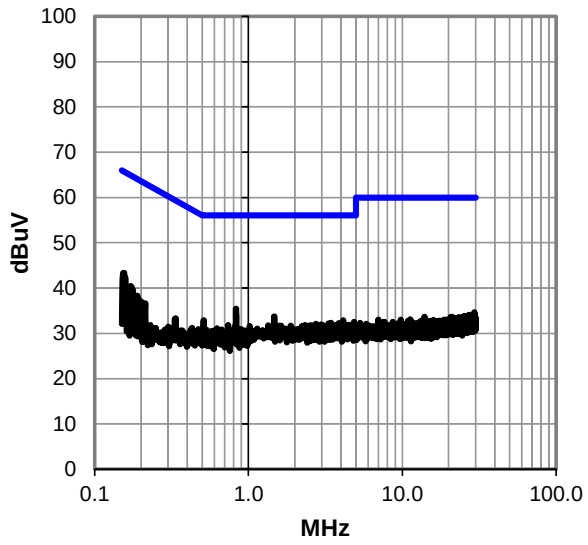
EUT OPERATING MODES

Receiving, Antenna B, High Channel: 926.4 MHz

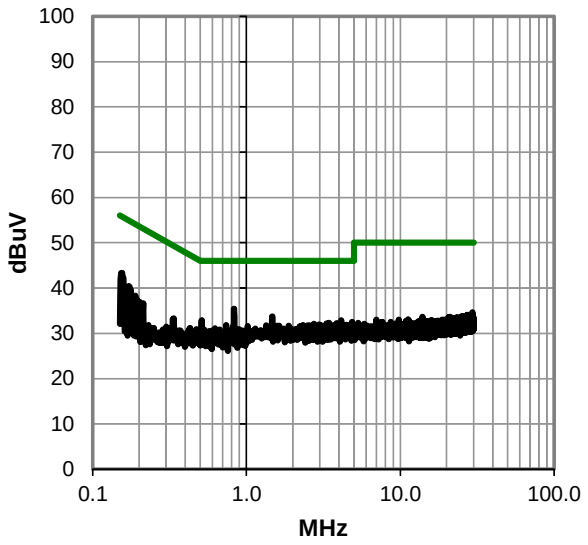
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #8

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.2	20.2	35.4	56.0	-20.6
1.472	13.5	20.2	33.7	56.0	-22.3
0.153	23.1	20.2	43.3	65.8	-22.5
0.512	12.7	20.2	32.9	56.0	-23.1
4.136	12.5	20.4	32.9	56.0	-23.1
4.864	12.1	20.4	32.5	56.0	-23.5
3.432	12.0	20.3	32.3	56.0	-23.7
3.864	11.9	20.4	32.3	56.0	-23.7
3.312	11.8	20.3	32.1	56.0	-23.9
2.744	11.8	20.3	32.1	56.0	-23.9
2.968	11.6	20.3	31.9	56.0	-24.1
4.464	11.5	20.4	31.9	56.0	-24.1
3.032	11.5	20.3	31.8	56.0	-24.2
2.328	11.5	20.3	31.8	56.0	-24.2
0.740	11.6	20.2	31.8	56.0	-24.2
2.584	11.4	20.3	31.7	56.0	-24.3
2.496	11.4	20.3	31.7	56.0	-24.3
1.880	11.4	20.3	31.7	56.0	-24.3
1.632	11.4	20.3	31.7	56.0	-24.3
1.584	11.4	20.3	31.7	56.0	-24.3
2.912	11.3	20.3	31.6	56.0	-24.4
1.016	11.4	20.2	31.6	56.0	-24.4
0.172	20.2	20.2	40.4	64.9	-24.5
0.844	11.0	20.2	31.2	56.0	-24.8
0.624	10.9	20.2	31.1	56.0	-24.9
0.896	10.7	20.2	30.9	56.0	-25.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.2	20.2	35.4	46.0	-10.6
1.472	13.5	20.2	33.7	46.0	-12.3
0.153	23.1	20.2	43.3	55.8	-12.5
0.512	12.7	20.2	32.9	46.0	-13.1
4.136	12.5	20.4	32.9	46.0	-13.1
4.864	12.1	20.4	32.5	46.0	-13.5
3.432	12.0	20.3	32.3	46.0	-13.7
3.864	11.9	20.4	32.3	46.0	-13.7
3.312	11.8	20.3	32.1	46.0	-13.9
2.744	11.8	20.3	32.1	46.0	-13.9
2.968	11.6	20.3	31.9	46.0	-14.1
4.464	11.5	20.4	31.9	46.0	-14.1
3.032	11.5	20.3	31.8	46.0	-14.2
2.328	11.5	20.3	31.8	46.0	-14.2
0.740	11.6	20.2	31.8	46.0	-14.2
2.584	11.4	20.3	31.7	46.0	-14.3
2.496	11.4	20.3	31.7	46.0	-14.3
1.880	11.4	20.3	31.7	46.0	-14.3
1.632	11.4	20.3	31.7	46.0	-14.3
1.584	11.4	20.3	31.7	46.0	-14.3
2.912	11.3	20.3	31.6	46.0	-14.4
1.016	11.4	20.2	31.6	46.0	-14.4
0.172	20.2	20.2	40.4	54.9	-14.5
0.844	11.0	20.2	31.2	46.0	-14.8
0.624	10.9	20.2	31.1	46.0	-14.9
0.896	10.7	20.2	30.9	46.0	-15.1

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	9	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

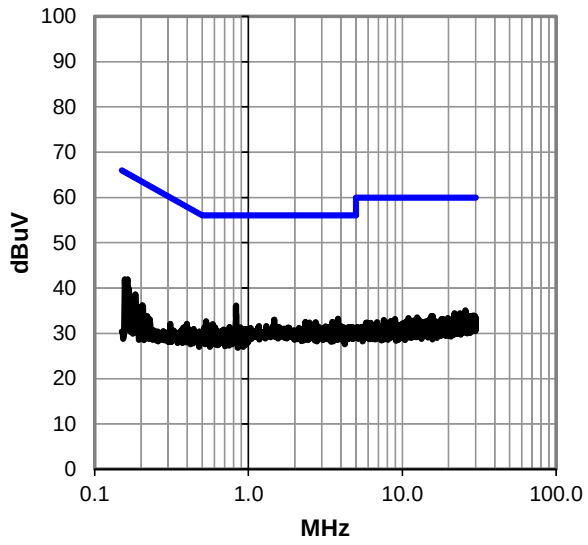
EUT OPERATING MODES

Receiving, Antenna B, Mid Channel: 914.6 MHz

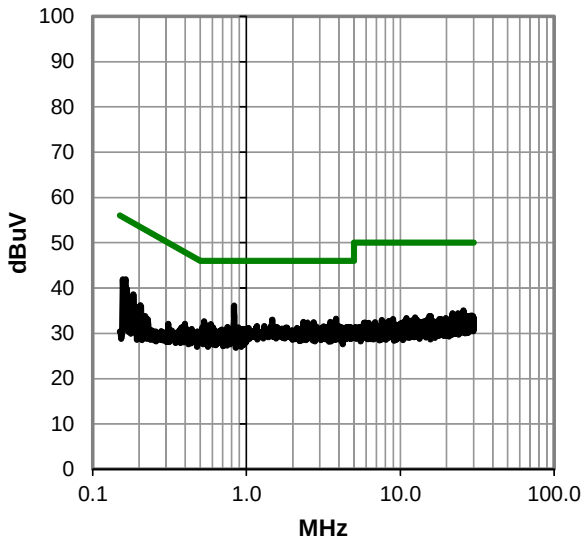
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #9

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.9	20.2	36.1	56.0	-19.9
3.816	12.9	20.4	33.3	56.0	-22.7
1.472	12.8	20.2	33.0	56.0	-23.0
0.531	12.5	20.2	32.7	56.0	-23.3
0.164	21.7	20.2	41.9	65.3	-23.4
3.512	12.2	20.4	32.6	56.0	-23.4
2.344	12.2	20.3	32.5	56.0	-23.5
3.688	12.1	20.4	32.5	56.0	-23.5
2.736	12.1	20.3	32.4	56.0	-23.6
2.496	12.1	20.3	32.4	56.0	-23.6
0.157	21.7	20.2	41.9	65.6	-23.7
0.587	11.8	20.2	32.0	56.0	-24.0
3.176	11.2	20.3	31.5	56.0	-24.5
0.519	11.2	20.2	31.4	56.0	-24.6
0.556	11.2	20.2	31.4	56.0	-24.6
0.753	11.2	20.2	31.4	56.0	-24.6
0.606	11.1	20.2	31.3	56.0	-24.7
0.886	11.1	20.2	31.3	56.0	-24.7
25.820	13.1	21.9	35.0	60.0	-25.0
0.940	10.8	20.2	31.0	56.0	-25.0
0.689	10.6	20.2	30.8	56.0	-25.2
0.621	10.5	20.2	30.7	56.0	-25.3
0.167	19.6	20.2	39.8	65.1	-25.3
0.716	10.3	20.2	30.5	56.0	-25.5
21.910	12.9	21.6	34.5	60.0	-25.5
23.720	12.7	21.7	34.4	60.0	-25.6

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.832	15.9	20.2	36.1	46.0	-9.9
3.816	12.9	20.4	33.3	46.0	-12.7
1.472	12.8	20.2	33.0	46.0	-13.0
0.531	12.5	20.2	32.7	46.0	-13.3
0.164	21.7	20.2	41.9	55.3	-13.4
3.512	12.2	20.4	32.6	46.0	-13.4
2.344	12.2	20.3	32.5	46.0	-13.5
3.688	12.1	20.4	32.5	46.0	-13.5
2.736	12.1	20.3	32.4	46.0	-13.6
2.496	12.1	20.3	32.4	46.0	-13.6
0.157	21.7	20.2	41.9	55.6	-13.7
0.587	11.8	20.2	32.0	46.0	-14.0
3.176	11.2	20.3	31.5	46.0	-14.5
0.519	11.2	20.2	31.4	46.0	-14.6
0.556	11.2	20.2	31.4	46.0	-14.6
0.753	11.2	20.2	31.4	46.0	-14.6
0.606	11.1	20.2	31.3	46.0	-14.7
0.886	11.1	20.2	31.3	46.0	-14.7
25.820	13.1	21.9	35.0	50.0	-15.0
0.940	10.8	20.2	31.0	46.0	-15.0
0.689	10.6	20.2	30.8	46.0	-15.2
0.621	10.5	20.2	30.7	46.0	-15.3
0.167	19.6	20.2	39.8	55.1	-15.3
0.716	10.3	20.2	30.5	46.0	-15.5
21.910	12.9	21.6	34.5	50.0	-15.5
23.720	12.7	21.7	34.4	50.0	-15.6

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	10	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

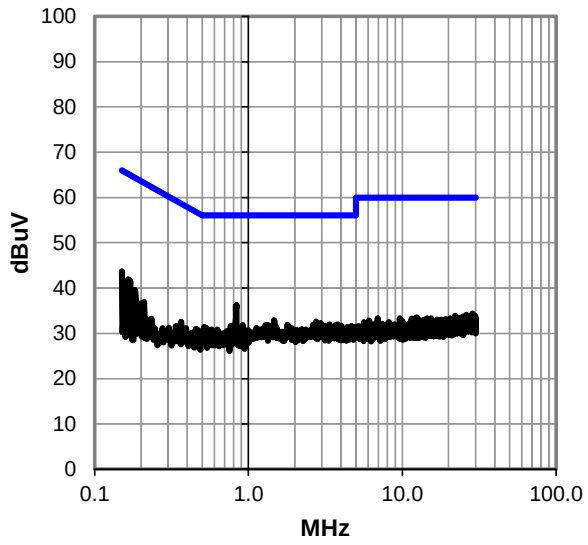
EUT OPERATING MODES

Receiving, Antenna B, Mid Channel: 914.6 MHz

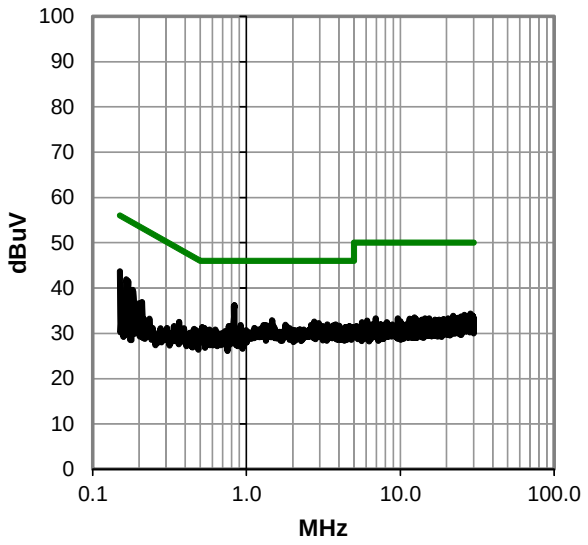
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #10

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.835	16.0	20.2	36.2	56.0	-19.8
0.150	23.5	20.2	43.7	66.0	-22.3
1.464	12.6	20.2	32.8	56.0	-23.2
0.165	21.7	20.2	41.9	65.2	-23.3
2.760	12.3	20.3	32.6	56.0	-23.4
2.952	11.9	20.3	32.2	56.0	-23.8
3.800	11.6	20.4	32.0	56.0	-24.0
1.792	11.6	20.3	31.9	56.0	-24.1
1.296	11.6	20.2	31.8	56.0	-24.2
0.917	11.6	20.2	31.8	56.0	-24.2
0.804	11.5	20.2	31.7	56.0	-24.3
4.016	11.3	20.4	31.7	56.0	-24.3
0.765	11.4	20.2	31.6	56.0	-24.4
0.516	11.2	20.2	31.4	56.0	-24.6
0.182	19.4	20.2	39.6	64.4	-24.8
0.534	11.0	20.2	31.2	56.0	-24.8
0.906	10.8	20.2	31.0	56.0	-25.0
0.867	10.7	20.2	30.9	56.0	-25.1
0.575	10.6	20.2	30.8	56.0	-25.2
0.628	10.6	20.2	30.8	56.0	-25.2
0.723	10.3	20.2	30.5	56.0	-25.5
28.620	12.1	22.3	34.4	60.0	-25.6
0.458	10.8	20.2	31.0	56.7	-25.7
26.160	12.1	22.0	34.1	60.0	-25.9
29.490	11.6	22.3	33.9	60.0	-26.1
28.210	11.7	22.2	33.9	60.0	-26.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.835	16.0	20.2	36.2	46.0	-9.8
0.150	23.5	20.2	43.7	56.0	-12.3
1.464	12.6	20.2	32.8	46.0	-13.2
0.165	21.7	20.2	41.9	55.2	-13.3
2.760	12.3	20.3	32.6	46.0	-13.4
2.952	11.9	20.3	32.2	46.0	-13.8
3.800	11.6	20.4	32.0	46.0	-14.0
1.792	11.6	20.3	31.9	46.0	-14.1
1.296	11.6	20.2	31.8	46.0	-14.2
0.917	11.6	20.2	31.8	46.0	-14.2
0.804	11.5	20.2	31.7	46.0	-14.3
4.016	11.3	20.4	31.7	46.0	-14.3
0.765	11.4	20.2	31.6	46.0	-14.4
0.516	11.2	20.2	31.4	46.0	-14.6
0.182	19.4	20.2	39.6	54.4	-14.8
0.534	11.0	20.2	31.2	46.0	-14.8
0.906	10.8	20.2	31.0	46.0	-15.0
0.867	10.7	20.2	30.9	46.0	-15.1
0.575	10.6	20.2	30.8	46.0	-15.2
0.628	10.6	20.2	30.8	46.0	-15.2
0.723	10.3	20.2	30.5	46.0	-15.5
28.620	12.1	22.3	34.4	50.0	-15.6
0.458	10.8	20.2	31.0	46.7	-15.7
26.160	12.1	22.0	34.1	50.0	-15.9
29.490	11.6	22.3	33.9	50.0	-16.1
28.210	11.7	22.2	33.9	50.0	-16.1

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	11	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

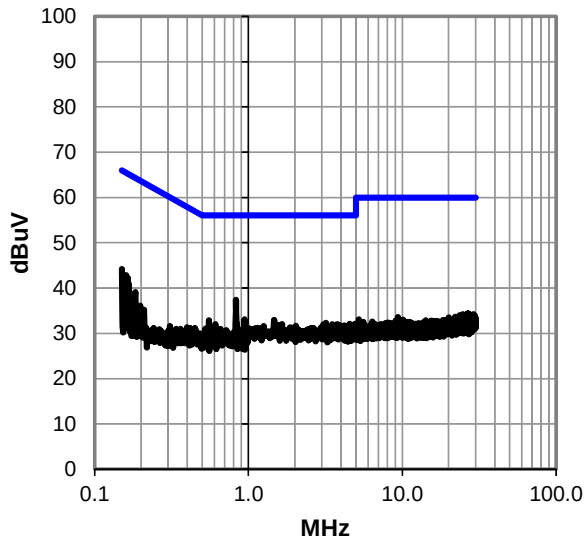
EUT OPERATING MODES

Receiving, Antenna B, Low Channel: 903.0 MHz

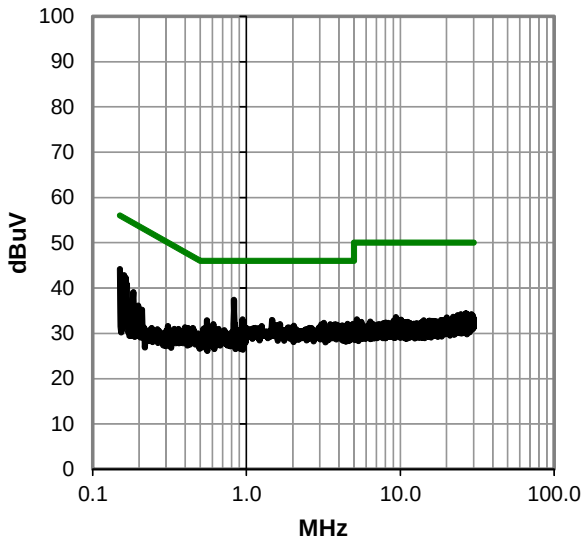
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #11

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	17.2	20.2	37.4	56.0	-18.6
0.150	24.0	20.2	44.2	66.0	-21.8
0.160	22.6	20.2	42.8	65.5	-22.7
0.942	12.9	20.2	33.1	56.0	-22.9
0.164	22.1	20.2	42.3	65.3	-23.0
1.464	12.7	20.2	32.9	56.0	-23.1
0.555	12.7	20.2	32.9	56.0	-23.1
3.192	12.0	20.3	32.3	56.0	-23.7
0.842	11.9	20.2	32.1	56.0	-23.9
4.928	11.7	20.4	32.1	56.0	-23.9
4.552	11.7	20.4	32.1	56.0	-23.9
1.656	11.8	20.3	32.1	56.0	-23.9
0.609	11.8	20.2	32.0	56.0	-24.0
3.832	11.6	20.4	32.0	56.0	-24.0
4.744	11.4	20.4	31.8	56.0	-24.2
4.192	11.4	20.4	31.8	56.0	-24.2
3.928	11.4	20.4	31.8	56.0	-24.2
2.032	11.4	20.3	31.7	56.0	-24.3
4.416	11.3	20.4	31.7	56.0	-24.3
0.959	11.2	20.2	31.4	56.0	-24.6
0.973	11.2	20.2	31.4	56.0	-24.6
4.376	11.0	20.4	31.4	56.0	-24.6
0.531	10.9	20.2	31.1	56.0	-24.9
0.658	10.8	20.2	31.0	56.0	-25.0
0.524	10.7	20.2	30.9	56.0	-25.1
0.913	10.6	20.2	30.8	56.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	17.2	20.2	37.4	46.0	-8.6
0.150	24.0	20.2	44.2	56.0	-11.8
0.160	22.6	20.2	42.8	55.5	-12.7
0.942	12.9	20.2	33.1	46.0	-12.9
0.164	22.1	20.2	42.3	55.3	-13.0
1.464	12.7	20.2	32.9	46.0	-13.1
0.555	12.7	20.2	32.9	46.0	-13.1
3.192	12.0	20.3	32.3	46.0	-13.7
0.842	11.9	20.2	32.1	46.0	-13.9
4.928	11.7	20.4	32.1	46.0	-13.9
4.552	11.7	20.4	32.1	46.0	-13.9
1.656	11.8	20.3	32.1	46.0	-13.9
0.609	11.8	20.2	32.0	46.0	-14.0
3.832	11.6	20.4	32.0	46.0	-14.0
4.744	11.4	20.4	31.8	46.0	-14.2
4.192	11.4	20.4	31.8	46.0	-14.2
3.928	11.4	20.4	31.8	46.0	-14.2
2.032	11.4	20.3	31.7	46.0	-14.3
4.416	11.3	20.4	31.7	46.0	-14.3
0.959	11.2	20.2	31.4	46.0	-14.6
0.973	11.2	20.2	31.4	46.0	-14.6
4.376	11.0	20.4	31.4	46.0	-14.6
0.531	10.9	20.2	31.1	46.0	-14.9
0.658	10.8	20.2	31.0	46.0	-15.0
0.524	10.7	20.2	30.9	46.0	-15.1
0.913	10.6	20.2	30.8	46.0	-15.2

CONCLUSION

Pass

Trevor Buls

Tested By

AC POWERLINE CONDUCTED EMISSIONS

EUT:	THM5421R02	Work Order:	HNYW0029
Serial Number:	77758015000431	Date:	01/03/2013
Customer:	Honeywell, Automation and Control Solutions	Temperature:	24.44°C
Attendees:	None	Relative Humidity:	10.82%
Customer Project:	None	Bar. Pressure:	1024.9 mb
Tested By:	Trevor Buls	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	HNYW0029-2

TEST SPECIFICATIONS

Specification: Equipment Class B	Method:
FCC 15.107:2013	ANSI C63.4:2009

TEST PARAMETERS

Run #:	12	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

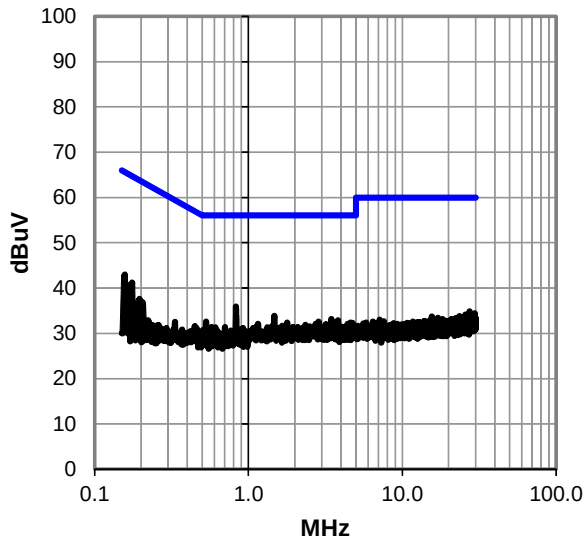
EUT OPERATING MODES

Receiving, Antenna B, Low Channel: 903.0 MHz

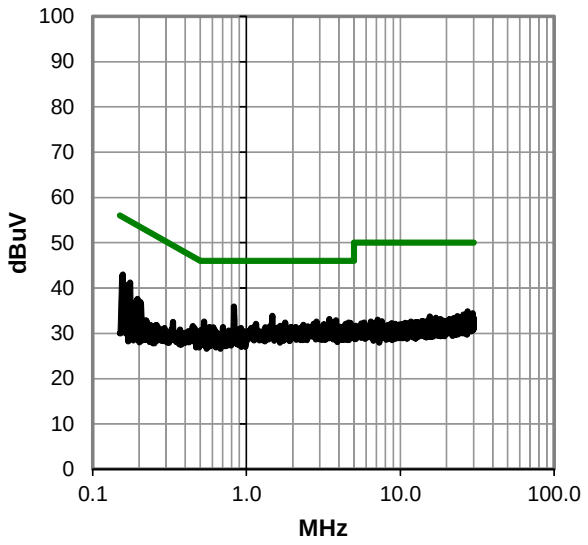
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

RESULTS - Run #12

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.7	20.2	35.9	56.0	-20.1
1.472	13.6	20.2	33.8	56.0	-22.2
0.157	22.8	20.2	43.0	65.6	-22.6
3.464	12.8	20.3	33.1	56.0	-22.9
3.816	12.5	20.4	32.9	56.0	-23.1
2.856	12.3	20.3	32.6	56.0	-23.4
0.531	12.4	20.2	32.6	56.0	-23.4
0.176	21.0	20.2	41.2	64.7	-23.5
4.608	12.0	20.4	32.4	56.0	-23.6
1.784	12.1	20.3	32.4	56.0	-23.6
3.648	12.0	20.4	32.4	56.0	-23.6
4.744	11.9	20.4	32.3	56.0	-23.7
2.736	11.8	20.3	32.1	56.0	-23.9
1.152	11.9	20.2	32.1	56.0	-23.9
4.416	11.7	20.4	32.1	56.0	-23.9
3.216	11.6	20.3	31.9	56.0	-24.1
3.168	11.6	20.3	31.9	56.0	-24.1
2.344	11.6	20.3	31.9	56.0	-24.1
1.664	11.4	20.3	31.7	56.0	-24.3
0.162	20.6	20.2	40.8	65.4	-24.6
0.577	11.2	20.2	31.4	56.0	-24.6
0.703	11.2	20.2	31.4	56.0	-24.6
0.609	11.1	20.2	31.3	56.0	-24.7
0.922	11.0	20.2	31.2	56.0	-24.8
0.558	10.7	20.2	30.9	56.0	-25.1
27.380	12.7	22.1	34.8	60.0	-25.2

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.830	15.7	20.2	35.9	46.0	-10.1
1.472	13.6	20.2	33.8	46.0	-12.2
0.157	22.8	20.2	43.0	55.6	-12.6
3.464	12.8	20.3	33.1	46.0	-12.9
3.816	12.5	20.4	32.9	46.0	-13.1
2.856	12.3	20.3	32.6	46.0	-13.4
0.531	12.4	20.2	32.6	46.0	-13.4
0.176	21.0	20.2	41.2	54.7	-13.5
4.608	12.0	20.4	32.4	46.0	-13.6
1.784	12.1	20.3	32.4	46.0	-13.6
3.648	12.0	20.4	32.4	46.0	-13.6
4.744	11.9	20.4	32.3	46.0	-13.7
2.736	11.8	20.3	32.1	46.0	-13.9
1.152	11.9	20.2	32.1	46.0	-13.9
4.416	11.7	20.4	32.1	46.0	-13.9
3.216	11.6	20.3	31.9	46.0	-14.1
3.168	11.6	20.3	31.9	46.0	-14.1
2.344	11.6	20.3	31.9	46.0	-14.1
1.664	11.4	20.3	31.7	46.0	-14.3
0.162	20.6	20.2	40.8	55.4	-14.6
0.577	11.2	20.2	31.4	46.0	-14.6
0.703	11.2	20.2	31.4	46.0	-14.6
0.609	11.1	20.2	31.3	46.0	-14.7
0.922	11.0	20.2	31.2	46.0	-14.8
0.558	10.7	20.2	30.9	46.0	-15.1
27.380	12.7	22.1	34.8	50.0	-15.2

CONCLUSION

Pass

Tested By