

# NORTHWEST EMC

## Medtronic Care Management Services

TC210 LinkView

FCC 15.207:2016

FCC 15.249:2016

2.4 GHz Low Power Radio

Report # CCOM0030.1



NVLAP Lab Code: 200881-0

*This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America. This Report may only be duplicated in its entirety*

# CERTIFICATE OF TEST

Last Date of Test: June 11, 2016  
Medtronic Care Management Services  
Model: TC210 LinkView

## Radio Equipment Testing

### Standards

Specification	Method
FCC 15.207:2016	ANSI C63.10:2013
FCC 15.249:2016	

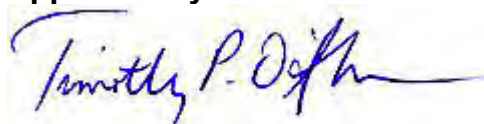
### Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC Powerline Conducted Emissions	Yes	Pass	
6.5, 6.6	Field Strength of Harmonics and Spurious Radiated Emissions	Yes	Pass	
6.6	Field Strength of Fundamental	Yes	Pass	

### Deviations From Test Standards

None

### Approved By:



Tim O'Shea, Operations Manager

*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. 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. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.*

# REVISION HISTORY

Revision Number		Description	Date	Page Number
00		None		

# ACCREDITATIONS AND AUTHORIZATIONS

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## 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 17065 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

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## Canada

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

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## European Union

**European Commission** – Validated by the European Commission as a Notified Body under the R&TTE Directive.

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## 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.

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## Singapore

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

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## Israel

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

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## Hong Kong

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

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## Vietnam

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

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## SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>  
<http://gsi.nist.gov/global/docs/cabs/designations.html>

# 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 QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty ( $K=2$ ) can be found included as part of the applicable test description page. 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 16-4-2 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.

<b>Test</b>	<b>+ MU</b>	<b>- MU</b>
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

# EXPLANATION OF NWEMC PERFORMANCE CRITERIA

## How Important Is It To Understand Performance Criteria?

It is the responsibility of the test laboratory to observe the performance of the equipment under test (EUT) and to accurately report those results. The manufacturer has the obligation to express the performance criteria in terms which relate to the performance of his specific product when used as intended. As the responsible party (manufacturer, importer, etc) one must take those results, compare them against the specifications and standards, then, if appropriate make a declaration of conformity.

Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

- ❖ essential operational modes and states;
- ❖ tests of all peripheral access (hard disks, floppy disks, printers, keyboard, mouse, etc.);
- ❖ quality of software execution;
- ❖ quality of data display and transmission;
- ❖ quality of speech transmission.

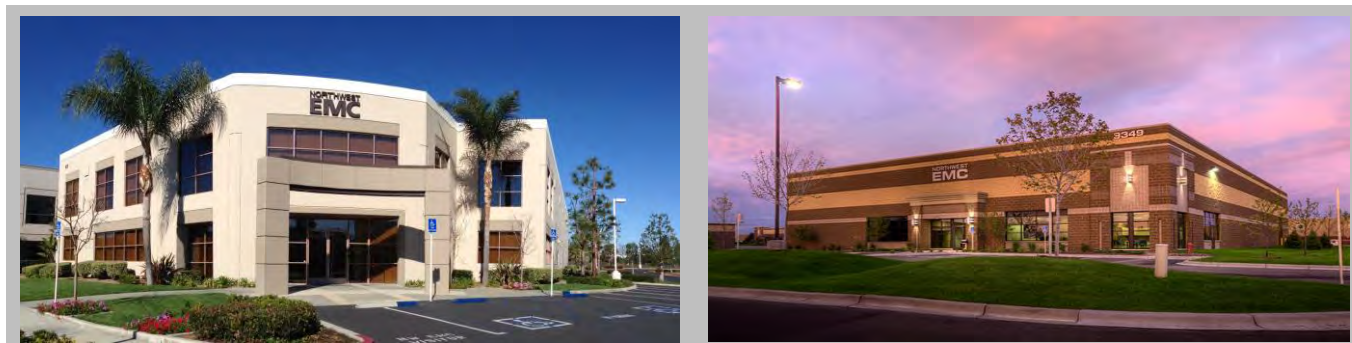
The variety and the diversity of the apparatus within the scope of the EMC Directive make it difficult to define precise criteria for the evaluation of the immunity test results for every product. If we are not provided a test plan documenting the expected performance criteria and acceptable degradation of performance, we will use the following:

- ❖ Performance Criteria A
  - The EUT exhibited no change in performance when operating as specified by the manufacturer. In this case no changes were observed during the test.
- ❖ Performance Criteria B
  - The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment returned to previous operation without any operator intervention, once the test stimulus was removed.
- ❖ Performance Criteria C
  - The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment required some operator intervention in order to return to previous operation.
- ❖ Performance Criteria D
  - The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment appears to have been damaged and would not recover.

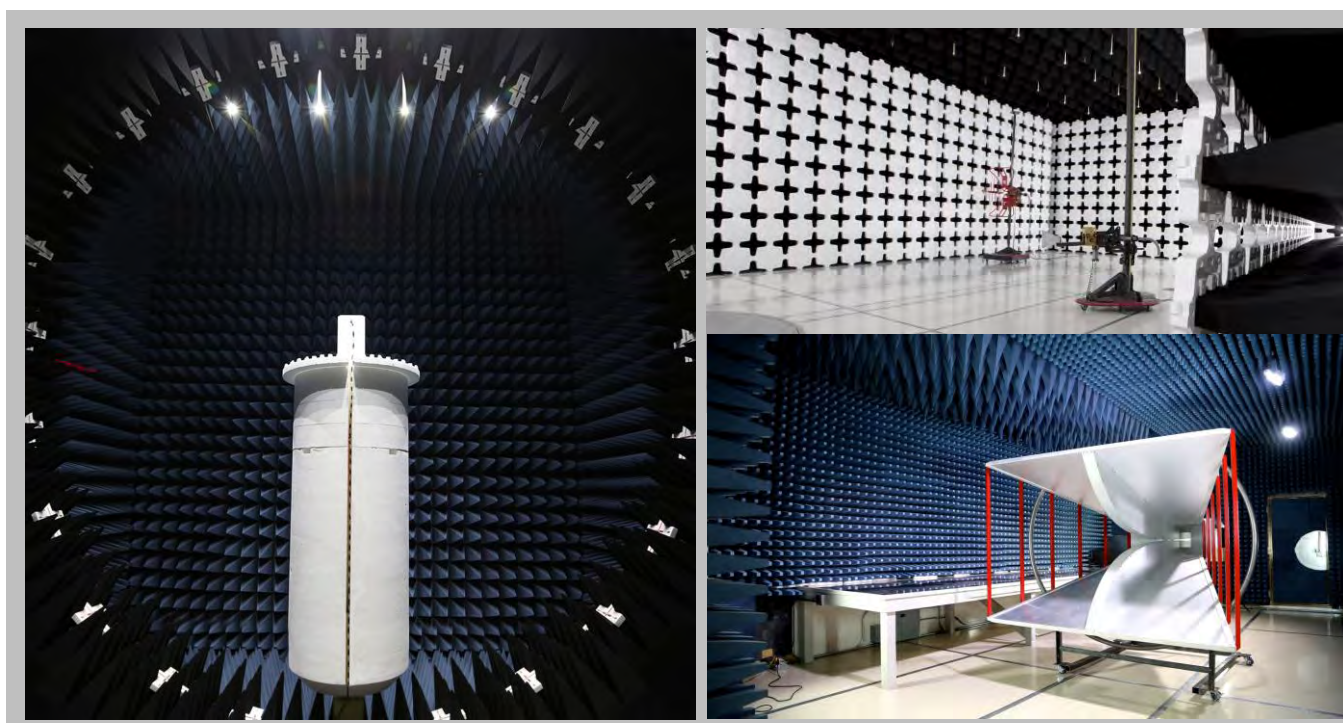
**If we are provided a test plan or information detailing the precise criteria for evaluating the test results, we will use that information and reference it as part of the test data.**



# FACILITIES



<b>California</b> Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>Minnesota</b> Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	<b>New York</b> Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	<b>Oregon</b> Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 98011 (425)984-6600
<b>NVLAP</b>					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
<b>Industry Canada</b>					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
<b>BSMI</b>					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
<b>VCCI</b>					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
<b>Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA</b>					
US0158	US0175	N/A	US0017	US0191	US0157



# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	Medtronic Care Management Services
<b>Address:</b>	7980 Century Blvd
<b>City, State, Zip:</b>	Chanhassen, MN 55317
<b>Test Requested By:</b>	Viet Vuong
<b>Model:</b>	TC210 LinkView
<b>First Date of Test:</b>	June 09, 2016
<b>Last Date of Test:</b>	June 11, 2016
<b>Receipt Date of Samples:</b>	June 07, 2016
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

## Information Provided by the Party Requesting the Test

<b>Functional Description of the EUT:</b>
The TC210 LinkView is a HUB device that collects biometric data and sends it to a centralized server. It also has features for face to face communications via cellular.
<b>Testing Objective:</b>
Seeking to demonstrate compliance under FCC 15.249:2016 for operation in the 2400 - 2483.5 MHz Band.



# CONFIGURATIONS

## Configuration CCOM0030- 2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Commander Scale 2	Cardiocom	SC 100/100026-001	SC880497
LinkView	Medtronic Care Management Services	TC210	1000302380

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
LinkView Power Supply	Medtronic Care Management Services	FJ-SW0702000U	20160506
Adult Cuff	Cardiocom	None	None
Pulse Oximeter	Cardiocom	PO100/100027-001A	1P117685
Serial Cradle	Pulmonary Data Services	345030	1F000069
USB Mouse	Dell	DZL-MS111	CN-09RRC7-48729-490-09MF
Commander Scale Cover	Cardiocom	None	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Power Cable	No	2.7m	Yes	LinkView	LinkView Power Supply
Blood pressure cuff cable	No	1.15m	No	Adult Cuff	LinkView
Cable A	Yes	1.8m	No	LinkView	Serial Cradle
Cable B	Yes	3m	No	LinkView	Unterminated
Cable C	No	0.92m	No	LinkView	Unterminated
Cable D	No	1.25m	No	LinkView	Pulse Oximeter
Cable E	No	0.92m	No	LinkView	Unterminated
USB Cable	Unknown	1.6m	No	LinkView	USB Mouse
USB Cable 2	Yes	0.4m	No	LinkView	Unterminated
Scale Cable	Yes	1.5m	No	LinkView	Commander Scale 2

# MODIFICATIONS

## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	6/9/2016	Field Strength of Fundamental	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	6/10/2016	Field Strength of Harmonics and 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.
3	6/11/2016	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

# 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. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. 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 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	3/21/2016	3/21/2017
Cable - Conducted Cable Assembly	Northwest EMC	MNC, HGN, TYK	MNCA	1/29/2016	1/29/2017
Analyzer - Spectrum Analyzer	Agilent	E4443A	AAS	3/8/2016	3/8/2017

## MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

## CONFIGURATIONS INVESTIGATED

CCOM0030-2

## MODES INVESTIGATED

Transmit, Ch. 1 2473.5 MHz  
Transmit, Ch. 2 2475.5 MHz  
Transmit, Ch. 3 2478.5 MHz

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	TC210 LinkView	Work Order:	CCOM0030
Serial Number:	1000302017	Date:	06/11/2016
Customer:	Medtronic Care Management Services	Temperature:	21.9°C
Attendees:	None	Relative Humidity:	55.3%
Customer Project:	None	Bar. Pressure:	1018 mb
Tested By:	Jared Ison	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	CCOM0030-2

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

## TEST PARAMETERS

Run #:	1	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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## COMMENTS

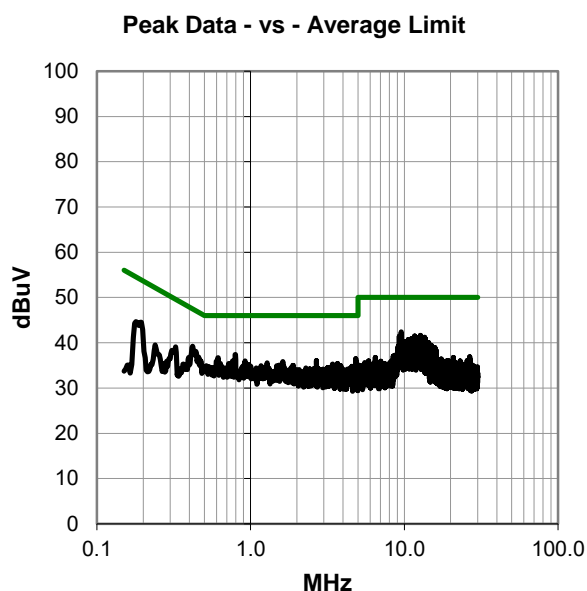
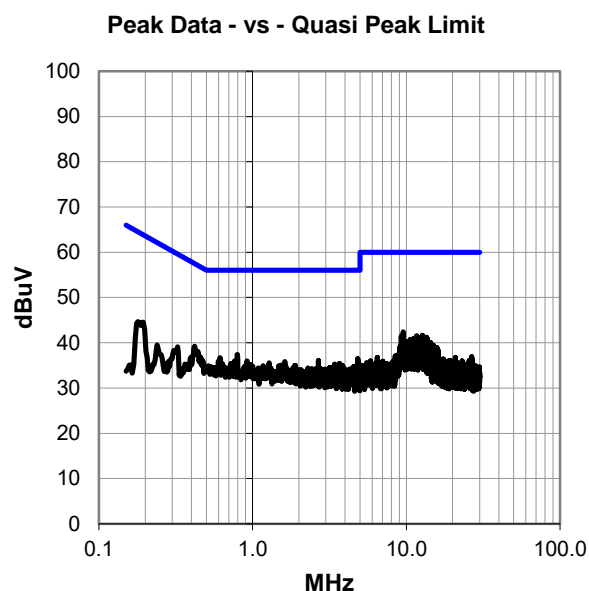
None

## EUT OPERATING MODES

Transmit, Ch 1 2473.5 MHz

## DEVIATIONS FROM TEST STANDARD

None



# 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)
9.529	21.8	20.6	42.4	60.0	-17.6
0.419	19.1	20.1	39.2	57.5	-18.2
12.756	20.8	20.9	41.7	60.0	-18.3
11.693	20.7	20.8	41.5	60.0	-18.5
0.792	17.3	20.1	37.4	56.0	-18.6
9.279	20.8	20.6	41.4	60.0	-18.6
11.928	20.4	20.8	41.2	60.0	-18.8
13.573	20.3	20.9	41.2	60.0	-18.8
12.644	20.3	20.9	41.2	60.0	-18.8
11.812	20.2	20.8	41.0	60.0	-19.0
13.711	20.0	20.9	40.9	60.0	-19.1
13.480	20.0	20.9	40.9	60.0	-19.1
11.074	20.1	20.7	40.8	60.0	-19.2
11.604	20.0	20.8	40.8	60.0	-19.2
12.663	19.9	20.9	40.8	60.0	-19.2
10.615	20.0	20.7	40.7	60.0	-19.3
0.613	16.6	20.1	36.7	56.0	-19.3
11.439	19.9	20.8	40.7	60.0	-19.3
12.297	19.8	20.8	40.6	60.0	-19.4
12.081	19.8	20.8	40.6	60.0	-19.4
12.014	19.8	20.8	40.6	60.0	-19.4
9.570	20.0	20.6	40.6	60.0	-19.4
11.551	19.7	20.8	40.5	60.0	-19.5
4.832	16.1	20.4	36.5	56.0	-19.5
12.424	19.6	20.8	40.4	60.0	-19.6
11.913	19.6	20.8	40.4	60.0	-19.6

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
9.529	21.8	20.6	42.4	50.0	-7.6
0.419	19.1	20.1	39.2	47.5	-8.2
12.756	20.8	20.9	41.7	50.0	-8.3
11.693	20.7	20.8	41.5	50.0	-8.5
0.792	17.3	20.1	37.4	46.0	-8.6
9.279	20.8	20.6	41.4	50.0	-8.6
11.928	20.4	20.8	41.2	50.0	-8.8
13.573	20.3	20.9	41.2	50.0	-8.8
12.644	20.3	20.9	41.2	50.0	-8.8
11.812	20.2	20.8	41.0	50.0	-9.0
13.711	20.0	20.9	40.9	50.0	-9.1
13.480	20.0	20.9	40.9	50.0	-9.1
11.074	20.1	20.7	40.8	50.0	-9.2
11.604	20.0	20.8	40.8	50.0	-9.2
12.663	19.9	20.9	40.8	50.0	-9.2
10.615	20.0	20.7	40.7	50.0	-9.3
0.613	16.6	20.1	36.7	46.0	-9.3
11.439	19.9	20.8	40.7	50.0	-9.3
12.297	19.8	20.8	40.6	50.0	-9.4
12.081	19.8	20.8	40.6	50.0	-9.4
12.014	19.8	20.8	40.6	50.0	-9.4
9.570	20.0	20.6	40.6	50.0	-9.4
11.551	19.7	20.8	40.5	50.0	-9.5
4.832	16.1	20.4	36.5	46.0	-9.5
12.424	19.6	20.8	40.4	50.0	-9.6
11.913	19.6	20.8	40.4	50.0	-9.6

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	TC210 LinkView	Work Order:	CCOM0030
Serial Number:	1000302017	Date:	06/11/2016
Customer:	Medtronic Care Management Services	Temperature:	21.9°C
Attendees:	None	Relative Humidity:	55.3%
Customer Project:	None	Bar. Pressure:	1018 mb
Tested By:	Jared Ison	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	CCOM0030-2

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

## TEST PARAMETERS

Run #:	2	Line:	High Line	Add. Ext. Attenuation (dB):	0
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## COMMENTS

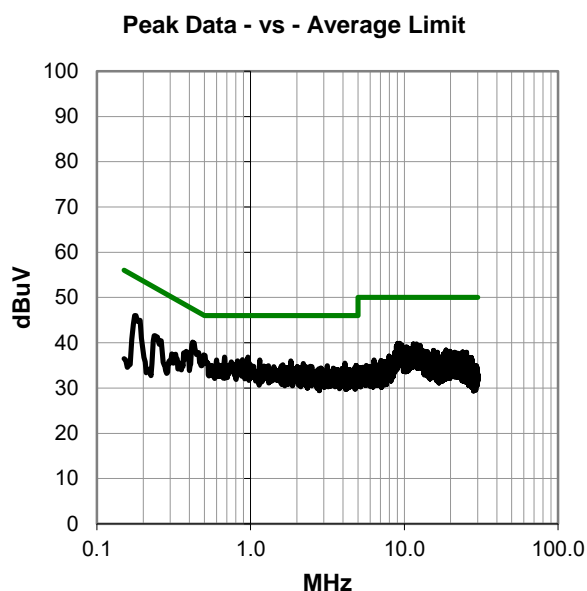
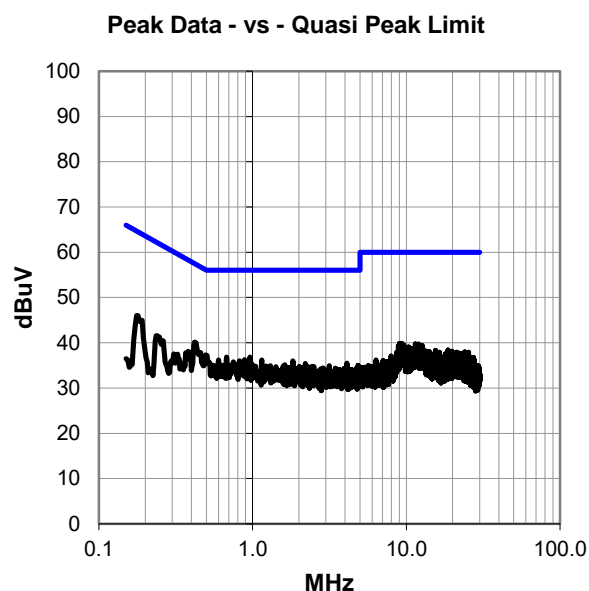
None

## EUT OPERATING MODES

Transmit, Ch 1 2473.5 MHz

## DEVIATIONS FROM TEST STANDARD

None



# 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)
0.419	20.0	20.1	40.1	57.5	-17.3
0.176	25.6	20.4	46.0	64.7	-18.7
0.676	16.7	20.1	36.8	56.0	-19.2
0.960	16.7	20.1	36.8	56.0	-19.2
0.885	16.2	20.1	36.3	56.0	-19.7
1.146	16.1	20.1	36.2	56.0	-19.8
0.601	16.1	20.1	36.2	56.0	-19.8
0.822	15.9	20.1	36.0	56.0	-20.0
1.829	15.8	20.2	36.0	56.0	-20.0
9.313	19.3	20.6	39.9	60.0	-20.1
9.059	19.3	20.6	39.9	60.0	-20.1
0.381	17.9	20.2	38.1	58.3	-20.2
0.751	15.7	20.1	35.8	56.0	-20.2
11.462	19.0	20.8	39.8	60.0	-20.2
11.995	18.9	20.8	39.7	60.0	-20.3
9.242	19.0	20.6	39.6	60.0	-20.4
9.596	18.9	20.6	39.5	60.0	-20.5
9.272	18.9	20.6	39.5	60.0	-20.5
4.116	15.2	20.3	35.5	56.0	-20.5
2.206	15.2	20.2	35.4	56.0	-20.6
11.868	18.6	20.8	39.4	60.0	-20.6
0.986	15.3	20.1	35.4	56.0	-20.6
9.152	18.8	20.6	39.4	60.0	-20.6
12.671	18.5	20.9	39.4	60.0	-20.6
0.236	21.3	20.3	41.6	62.2	-20.7
8.880	18.7	20.6	39.3	60.0	-20.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.419	20.0	20.1	40.1	47.5	-7.3
0.176	25.6	20.4	46.0	54.7	-8.7
0.676	16.7	20.1	36.8	46.0	-9.2
0.960	16.7	20.1	36.8	46.0	-9.2
0.885	16.2	20.1	36.3	46.0	-9.7
1.146	16.1	20.1	36.2	46.0	-9.8
0.601	16.1	20.1	36.2	46.0	-9.8
0.822	15.9	20.1	36.0	46.0	-10.0
1.829	15.8	20.2	36.0	46.0	-10.0
9.313	19.3	20.6	39.9	50.0	-10.1
9.059	19.3	20.6	39.9	50.0	-10.1
0.381	17.9	20.2	38.1	48.3	-10.2
0.751	15.7	20.1	35.8	46.0	-10.2
11.462	19.0	20.8	39.8	50.0	-10.2
11.995	18.9	20.8	39.7	50.0	-10.3
9.242	19.0	20.6	39.6	50.0	-10.4
9.596	18.9	20.6	39.5	50.0	-10.5
9.272	18.9	20.6	39.5	50.0	-10.5
4.116	15.2	20.3	35.5	46.0	-10.5
2.206	15.2	20.2	35.4	46.0	-10.6
11.868	18.6	20.8	39.4	50.0	-10.6
0.986	15.3	20.1	35.4	46.0	-10.6
9.152	18.8	20.6	39.4	50.0	-10.6
12.671	18.5	20.9	39.4	50.0	-10.6
0.236	21.3	20.3	41.6	52.2	-10.7
8.880	18.7	20.6	39.3	50.0	-10.7

## CONCLUSION

Pass



Tested By



# AC POWERLINE CONDUCTED EMISSIONS

EUT:	TC210 LinkView	Work Order:	CCOM0030
Serial Number:	1000302017	Date:	06/11/2016
Customer:	Medtronic Care Management Services	Temperature:	21.9°C
Attendees:	None	Relative Humidity:	55.3%
Customer Project:	None	Bar. Pressure:	1018 mb
Tested By:	Jared Ison	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	CCOM0030-2

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

## TEST PARAMETERS

Run #:	3	Line:	High Line	Add. Ext. Attenuation (dB):	0
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## COMMENTS

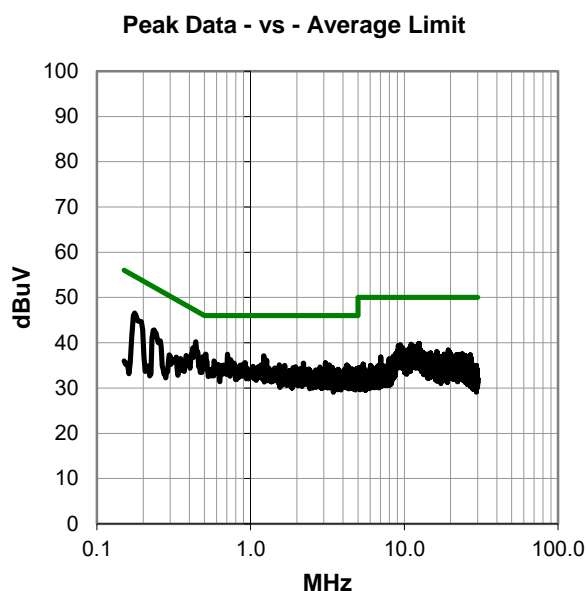
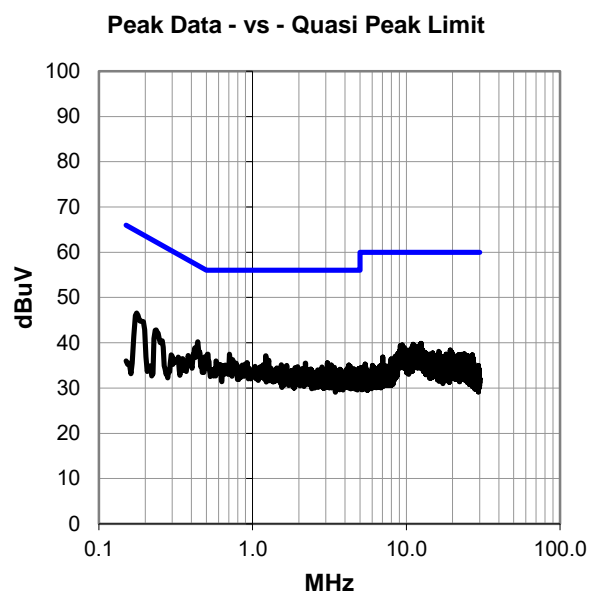
None

## EUT OPERATING MODES

Transmit, Ch 2 2475.5 MHz

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #3

Peak Data - vs - Quasi Peak Limit

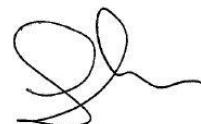
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.441	20.1	20.1	40.2	57.0	-16.8
0.176	26.2	20.4	46.6	64.7	-18.1
0.508	17.4	20.1	37.5	56.0	-18.5
0.706	17.4	20.1	37.5	56.0	-18.5
1.221	17.0	20.1	37.1	56.0	-18.9
0.236	22.6	20.3	42.9	62.2	-19.4
0.743	16.2	20.1	36.3	56.0	-19.7
1.273	16.0	20.1	36.1	56.0	-19.9
0.579	15.9	20.1	36.0	56.0	-20.0
12.510	19.0	20.9	39.9	60.0	-20.1
12.316	18.8	20.8	39.6	60.0	-20.4
11.063	18.9	20.7	39.6	60.0	-20.4
0.922	15.5	20.1	35.6	56.0	-20.4
12.394	18.7	20.8	39.5	60.0	-20.5
3.067	15.3	20.2	35.5	56.0	-20.5
2.209	15.3	20.2	35.5	56.0	-20.5
9.410	18.9	20.6	39.5	60.0	-20.5
9.145	18.8	20.6	39.4	60.0	-20.6
11.492	18.5	20.8	39.3	60.0	-20.7
12.417	18.4	20.8	39.2	60.0	-20.8
1.534	15.0	20.2	35.2	56.0	-20.8
10.936	18.4	20.7	39.1	60.0	-20.9
1.169	15.0	20.1	35.1	56.0	-20.9
4.224	14.8	20.3	35.1	56.0	-20.9
3.250	14.8	20.2	35.0	56.0	-21.0
11.104	18.3	20.7	39.0	60.0	-21.0

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.441	20.1	20.1	40.2	47.0	-6.8
0.176	26.2	20.4	46.6	54.7	-8.1
0.508	17.4	20.1	37.5	46.0	-8.5
0.706	17.4	20.1	37.5	46.0	-8.5
1.221	17.0	20.1	37.1	46.0	-8.9
0.236	22.6	20.3	42.9	52.2	-9.4
0.743	16.2	20.1	36.3	46.0	-9.7
1.273	16.0	20.1	36.1	46.0	-9.9
0.579	15.9	20.1	36.0	46.0	-10.0
12.510	19.0	20.9	39.9	50.0	-10.1
12.316	18.8	20.8	39.6	50.0	-10.4
11.063	18.9	20.7	39.6	50.0	-10.4
0.922	15.5	20.1	35.6	46.0	-10.4
12.394	18.7	20.8	39.5	50.0	-10.5
3.067	15.3	20.2	35.5	46.0	-10.5
2.209	15.3	20.2	35.5	46.0	-10.5
9.410	18.9	20.6	39.5	50.0	-10.5
9.145	18.8	20.6	39.4	50.0	-10.6
11.492	18.5	20.8	39.3	50.0	-10.7
12.417	18.4	20.8	39.2	50.0	-10.8
1.534	15.0	20.2	35.2	46.0	-10.8
10.936	18.4	20.7	39.1	50.0	-10.9
1.169	15.0	20.1	35.1	46.0	-10.9
4.224	14.8	20.3	35.1	46.0	-10.9
3.250	14.8	20.2	35.0	46.0	-11.0
11.104	18.3	20.7	39.0	50.0	-11.0

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	TC210 LinkView	Work Order:	CCOM0030
Serial Number:	1000302017	Date:	06/11/2016
Customer:	Medtronic Care Management Services	Temperature:	21.9°C
Attendees:	None	Relative Humidity:	55.3%
Customer Project:	None	Bar. Pressure:	1018 mb
Tested By:	Jared Ison	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	CCOM0030-2

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

## TEST PARAMETERS

Run #:	4	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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## COMMENTS

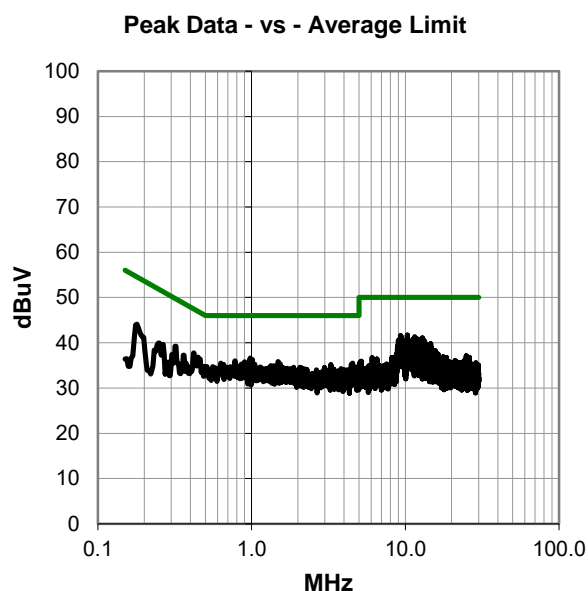
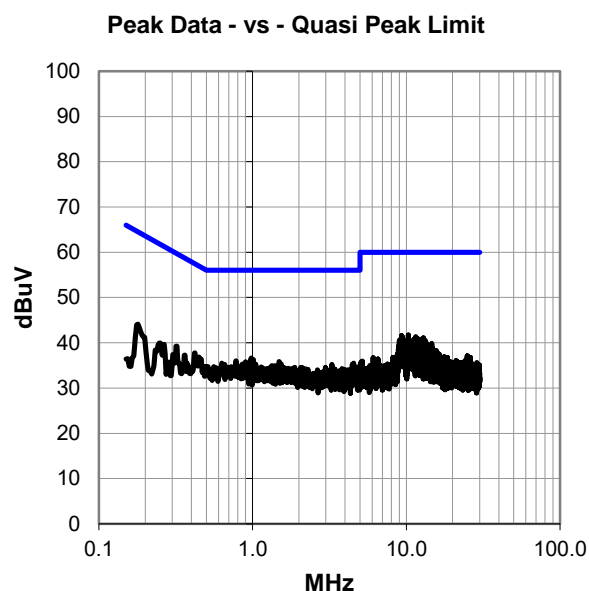
None

## EUT OPERATING MODES

Transmit, Ch 2 2475.5 MHz

## DEVIATIONS FROM TEST STANDARD

None



# 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)
10.328	21.0	20.7	41.7	60.0	-18.3
9.335	21.0	20.6	41.6	60.0	-18.4
11.488	20.6	20.8	41.4	60.0	-18.6
9.414	20.7	20.6	41.3	60.0	-18.7
12.902	20.2	20.9	41.1	60.0	-18.9
11.853	20.1	20.8	40.9	60.0	-19.1
11.615	20.1	20.8	40.9	60.0	-19.1
9.190	20.2	20.6	40.8	60.0	-19.2
11.201	20.0	20.7	40.7	60.0	-19.3
12.014	19.9	20.8	40.7	60.0	-19.3
11.820	19.9	20.8	40.7	60.0	-19.3
13.096	19.8	20.9	40.7	60.0	-19.3
12.309	19.8	20.8	40.6	60.0	-19.4
12.133	19.8	20.8	40.6	60.0	-19.4
0.978	16.5	20.1	36.6	56.0	-19.4
9.593	20.0	20.6	40.6	60.0	-19.4
11.559	19.8	20.8	40.6	60.0	-19.4
12.708	19.7	20.9	40.6	60.0	-19.4
9.018	19.9	20.6	40.5	60.0	-19.5
11.600	19.7	20.8	40.5	60.0	-19.5
11.383	19.7	20.7	40.4	60.0	-19.6
12.212	19.5	20.8	40.3	60.0	-19.7
1.012	16.2	20.1	36.3	56.0	-19.7
13.383	19.4	20.9	40.3	60.0	-19.7
0.419	17.6	20.1	37.7	57.5	-19.7
13.267	19.4	20.9	40.3	60.0	-19.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
10.328	21.0	20.7	41.7	50.0	-8.3
9.335	21.0	20.6	41.6	50.0	-8.4
11.488	20.6	20.8	41.4	50.0	-8.6
9.414	20.7	20.6	41.3	50.0	-8.7
12.902	20.2	20.9	41.1	50.0	-8.9
11.853	20.1	20.8	40.9	50.0	-9.1
11.615	20.1	20.8	40.9	50.0	-9.1
9.190	20.2	20.6	40.8	50.0	-9.2
11.201	20.0	20.7	40.7	50.0	-9.3
12.014	19.9	20.8	40.7	50.0	-9.3
11.820	19.9	20.8	40.7	50.0	-9.3
13.096	19.8	20.9	40.7	50.0	-9.3
12.309	19.8	20.8	40.6	50.0	-9.4
12.133	19.8	20.8	40.6	50.0	-9.4
0.978	16.5	20.1	36.6	46.0	-9.4
9.593	20.0	20.6	40.6	50.0	-9.4
11.559	19.8	20.8	40.6	50.0	-9.4
12.708	19.7	20.9	40.6	50.0	-9.4
9.018	19.9	20.6	40.5	50.0	-9.5
11.600	19.7	20.8	40.5	50.0	-9.5
11.383	19.7	20.7	40.4	50.0	-9.6
12.212	19.5	20.8	40.3	50.0	-9.7
1.012	16.2	20.1	36.3	46.0	-9.7
13.383	19.4	20.9	40.3	50.0	-9.7
0.419	17.6	20.1	37.7	47.5	-9.7
13.267	19.4	20.9	40.3	50.0	-9.7

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	TC210 LinkView	Work Order:	CCOM0030
Serial Number:	1000302017	Date:	06/11/2016
Customer:	Medtronic Care Management Services	Temperature:	21.9°C
Attendees:	None	Relative Humidity:	55.3%
Customer Project:	None	Bar. Pressure:	1018 mb
Tested By:	Jared Ison	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	CCOM0030-2

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

## TEST PARAMETERS

Run #:	5	Line:	Neutral	Add. Ext. Attenuation (dB):	0
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## COMMENTS

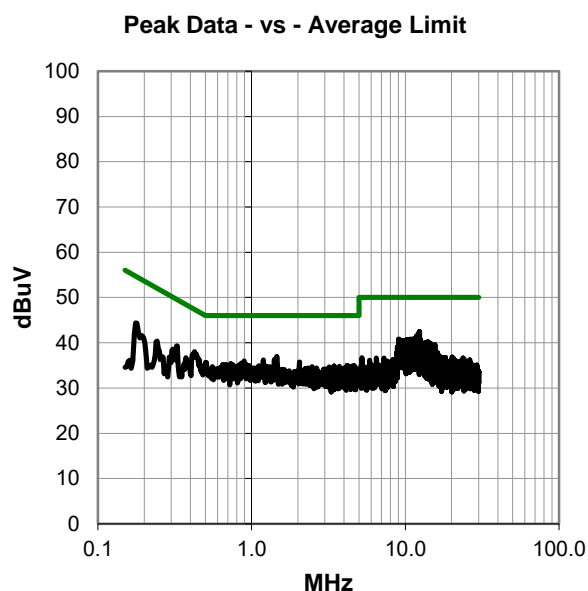
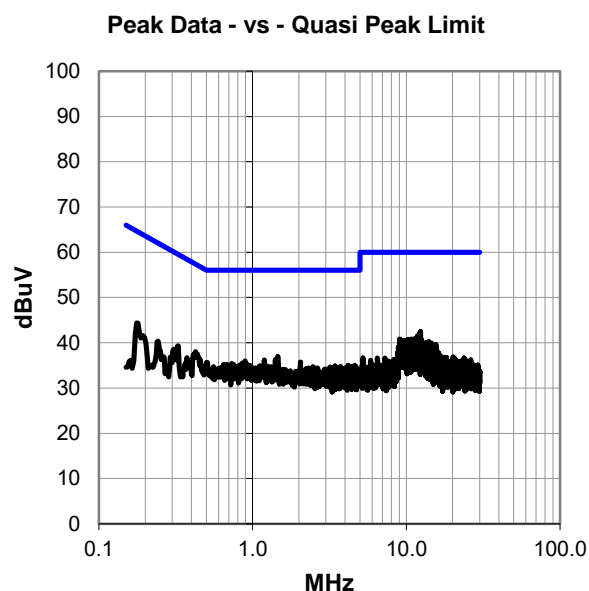
None

## EUT OPERATING MODES

Transmit, Ch 3 2478.5 MHz

## DEVIATIONS FROM TEST STANDARD

None



# 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)
12.368	21.6	20.8	42.4	60.0	-17.6
12.111	21.2	20.8	42.0	60.0	-18.0
11.775	20.6	20.8	41.4	60.0	-18.6
12.264	20.3	20.8	41.1	60.0	-18.9
1.460	16.8	20.1	36.9	56.0	-19.1
12.036	20.1	20.8	40.9	60.0	-19.1
12.171	20.0	20.8	40.8	60.0	-19.2
11.219	20.1	20.7	40.8	60.0	-19.2
10.801	20.1	20.7	40.8	60.0	-19.2
9.048	20.2	20.6	40.8	60.0	-19.2
0.426	17.9	20.1	38.0	57.3	-19.3
11.928	19.9	20.8	40.7	60.0	-19.3
10.257	20.0	20.7	40.7	60.0	-19.3
11.712	19.9	20.8	40.7	60.0	-19.3
11.615	19.9	20.8	40.7	60.0	-19.3
12.574	19.8	20.9	40.7	60.0	-19.3
9.208	20.0	20.6	40.6	60.0	-19.4
11.398	19.8	20.7	40.5	60.0	-19.5
9.682	19.9	20.6	40.5	60.0	-19.5
11.753	19.7	20.8	40.5	60.0	-19.5
1.407	16.2	20.1	36.3	56.0	-19.7
11.357	19.6	20.7	40.3	60.0	-19.7
11.238	19.6	20.7	40.3	60.0	-19.7
10.495	19.6	20.7	40.3	60.0	-19.7
9.626	19.7	20.6	40.3	60.0	-19.7
9.593	19.7	20.6	40.3	60.0	-19.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
12.368	21.6	20.8	42.4	50.0	-7.6
12.111	21.2	20.8	42.0	50.0	-8.0
11.775	20.6	20.8	41.4	50.0	-8.6
12.264	20.3	20.8	41.1	50.0	-8.9
1.460	16.8	20.1	36.9	46.0	-9.1
12.036	20.1	20.8	40.9	50.0	-9.1
12.171	20.0	20.8	40.8	50.0	-9.2
11.219	20.1	20.7	40.8	50.0	-9.2
10.801	20.1	20.7	40.8	50.0	-9.2
9.048	20.2	20.6	40.8	50.0	-9.2
0.426	17.9	20.1	38.0	47.3	-9.3
11.928	19.9	20.8	40.7	50.0	-9.3
10.257	20.0	20.7	40.7	50.0	-9.3
11.712	19.9	20.8	40.7	50.0	-9.3
11.615	19.9	20.8	40.7	50.0	-9.3
12.574	19.8	20.9	40.7	50.0	-9.3
9.208	20.0	20.6	40.6	50.0	-9.4
11.398	19.8	20.7	40.5	50.0	-9.5
9.682	19.9	20.6	40.5	50.0	-9.5
11.753	19.7	20.8	40.5	50.0	-9.5
1.407	16.2	20.1	36.3	46.0	-9.7
11.357	19.6	20.7	40.3	50.0	-9.7
11.238	19.6	20.7	40.3	50.0	-9.7
10.495	19.6	20.7	40.3	50.0	-9.7
9.626	19.7	20.6	40.3	50.0	-9.7
9.593	19.7	20.6	40.3	50.0	-9.7

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	TC210 LinkView	Work Order:	CCOM0030
Serial Number:	1000302017	Date:	06/11/2016
Customer:	Medtronic Care Management Services	Temperature:	21.9°C
Attendees:	None	Relative Humidity:	55.3%
Customer Project:	None	Bar. Pressure:	1018 mb
Tested By:	Jared Ison	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	CCOM0030-2

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2016	ANSI C63.10:2013

## TEST PARAMETERS

Run #:	6	Line:	High Line	Add. Ext. Attenuation (dB):	0
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## COMMENTS

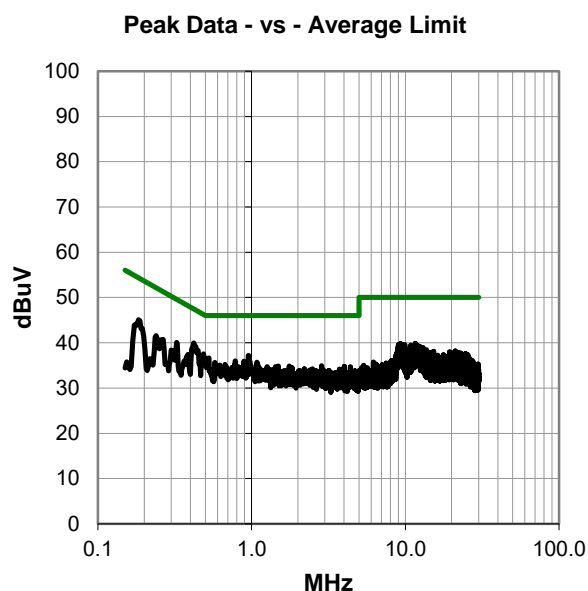
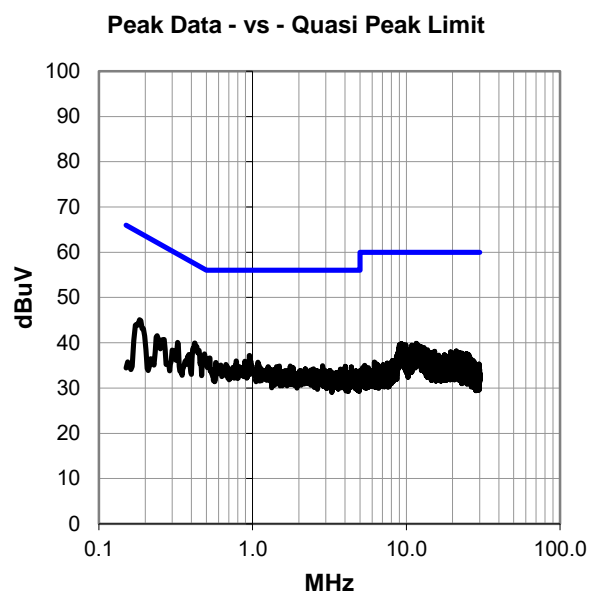
None

## EUT OPERATING MODES

Transmit, Ch 3 2478.5 MHz

## DEVIATIONS FROM TEST STANDARD

None





# 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)
0.419	19.8	20.1	39.9	57.5	-17.5
0.486	17.4	20.1	37.5	56.2	-18.7
0.952	17.1	20.1	37.2	56.0	-18.8
0.184	24.7	20.4	45.1	64.3	-19.3
0.325	19.9	20.2	40.1	59.6	-19.5
0.781	15.9	20.1	36.0	56.0	-20.0
0.889	15.8	20.1	35.9	56.0	-20.1
11.633	19.1	20.8	39.9	60.0	-20.1
9.275	19.2	20.6	39.8	60.0	-20.2
1.083	15.6	20.1	35.7	56.0	-20.3
9.458	19.1	20.6	39.7	60.0	-20.3
0.575	15.5	20.1	35.6	56.0	-20.4
9.141	19.0	20.6	39.6	60.0	-20.4
9.947	18.9	20.6	39.5	60.0	-20.5
9.022	18.9	20.6	39.5	60.0	-20.5
0.240	21.3	20.2	41.5	62.1	-20.6
10.887	18.7	20.7	39.4	60.0	-20.6
11.943	18.6	20.8	39.4	60.0	-20.6
9.246	18.8	20.6	39.4	60.0	-20.6
9.678	18.6	20.6	39.2	60.0	-20.8
0.385	17.2	20.2	37.4	58.2	-20.8
12.428	18.3	20.8	39.1	60.0	-20.9
12.051	18.2	20.8	39.0	60.0	-21.0
8.962	18.4	20.6	39.0	60.0	-21.0
13.014	18.1	20.9	39.0	60.0	-21.0
2.859	14.7	20.2	34.9	56.0	-21.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.419	19.8	20.1	39.9	47.5	-7.5
0.486	17.4	20.1	37.5	46.2	-8.7
0.952	17.1	20.1	37.2	46.0	-8.8
0.184	24.7	20.4	45.1	54.3	-9.3
0.325	19.9	20.2	40.1	49.6	-9.5
0.781	15.9	20.1	36.0	46.0	-10.0
0.889	15.8	20.1	35.9	46.0	-10.1
11.633	19.1	20.8	39.9	50.0	-10.1
9.275	19.2	20.6	39.8	50.0	-10.2
1.083	15.6	20.1	35.7	46.0	-10.3
9.458	19.1	20.6	39.7	50.0	-10.3
0.575	15.5	20.1	35.6	46.0	-10.4
9.141	19.0	20.6	39.6	50.0	-10.4
9.947	18.9	20.6	39.5	50.0	-10.5
9.022	18.9	20.6	39.5	50.0	-10.5
0.240	21.3	20.2	41.5	52.1	-10.6
10.887	18.7	20.7	39.4	50.0	-10.6
11.943	18.6	20.8	39.4	50.0	-10.6
9.246	18.8	20.6	39.4	50.0	-10.6
9.678	18.6	20.6	39.2	50.0	-10.8
0.385	17.2	20.2	37.4	48.2	-10.8
12.428	18.3	20.8	39.1	50.0	-10.9
12.051	18.2	20.8	39.0	50.0	-11.0
8.962	18.4	20.6	39.0	50.0	-11.0
13.014	18.1	20.9	39.0	50.0	-11.0
2.859	14.7	20.2	34.9	46.0	-11.1

## CONCLUSION

Pass



Tested By

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

Channel 1, 2473.5 MHz

Channel 2, 2475.5 MHz

Channel 3, 2478.5 MHz

## POWER SETTINGS INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

CCOM0030 - 2

## FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 26000 MHz

## 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
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	9/18/2015	12 mo
Cable	Northwest EMC	18-26GHz Standard Gain Horn Cable	MNP	9/18/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	3/1/2016	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	0 mo
Attenuator	Fairview Microwave	SA18E-20	TWZ	9/23/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	3/1/2016	12 mo
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	12/7/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	3/1/2016	12 mo
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	12/7/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIB	8/12/2014	24 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIP	6/26/2014	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	12/10/2015	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	12/7/2015	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	1/6/2016	24 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2016	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

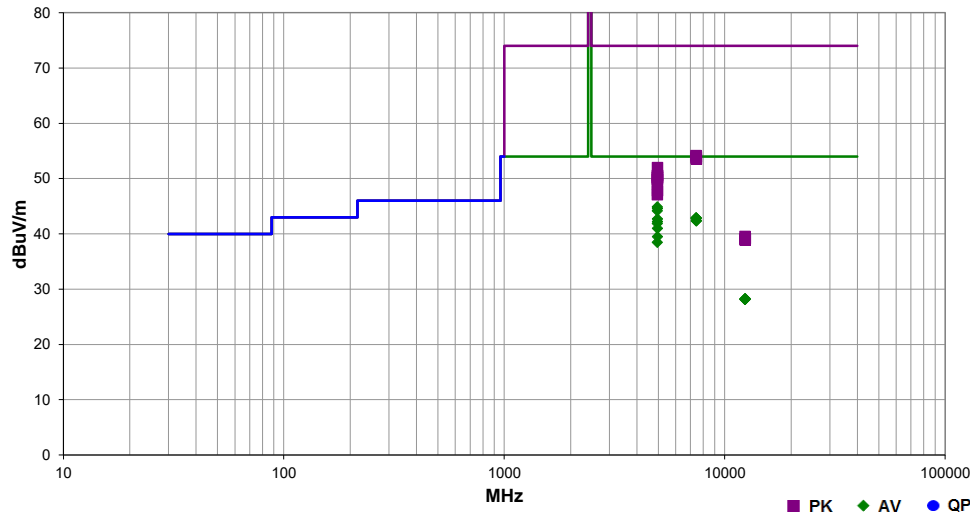
## TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting and receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal plane. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.


Work Order:	CCOM0030	Date:	06/10/16	
Project:	None	Temperature:	23.2 °C	
Job Site:	MN05	Humidity:	65.9% RH	
Serial Number:	1000302017	Barometric Pres.:	1010 mbar	
EUT:	TC210 LinkView			Tested by: Jared Ison
Configuration:	2			
Customer:	Medtronic Care Management Services			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmit			
Deviations:	None			
Comments:	None			

Test Specifications	FCC 15.249:2016	Test Method	ANSI C63.10:2013
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Run #	12	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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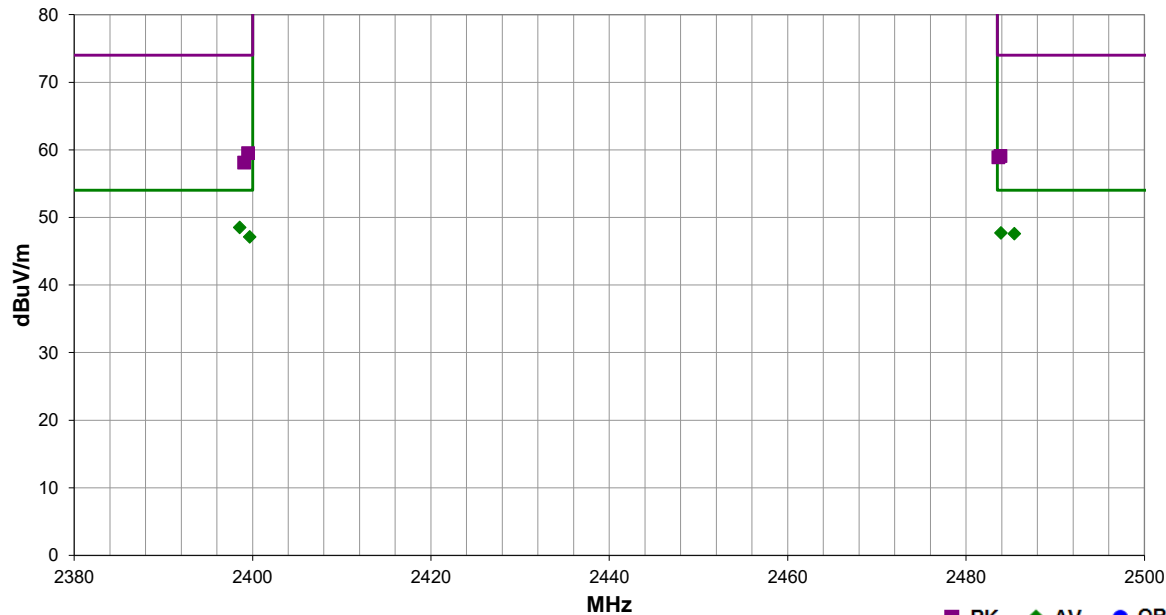


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4956.955	42.0	5.4	1.8	9.0	3.0	0.0	Horz	AV	0.0	47.4	54.0	-6.6	Ch 3 2478.5 MHz, EUT Horz
4946.940	39.5	5.4	1.0	40.1	3.0	0.0	Horz	AV	0.0	44.9	54.0	-9.1	Ch 1 2473.5 MHz, EUT Horz
4956.945	39.2	5.4	1.0	261.9	3.0	0.0	Vert	AV	0.0	44.6	54.0	-9.4	Ch 3 2478.5 MHz, EUT On Side
4946.945	38.8	5.4	1.0	90.0	3.0	0.0	Vert	AV	0.0	44.2	54.0	-9.8	Ch 1 2473.5 MHz, EUT On Side
7425.590	29.7	13.2	1.0	184.1	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	Ch 2 2475.5 MHz, EUT Horz
7422.165	29.7	13.2	1.2	63.0	3.0	0.0	Vert	AV	0.0	42.9	54.0	-11.1	Ch 1 2473.5 MHz, EUT On Side
7421.815	29.7	13.2	1.0	206.1	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	Ch 1 2473.5 MHz, EUT Horz
7426.870	29.6	13.2	1.0	286.0	3.0	0.0	Vert	AV	0.0	42.8	54.0	-11.2	Ch 2 2475.5 MHz, EUT On Side
4956.892	37.3	5.4	4.0	37.2	3.0	0.0	Horz	AV	0.0	42.7	54.0	-11.3	Ch 3 2478.5 MHz, EUT Vert
7435.895	29.1	13.2	3.2	358.0	3.0	0.0	Vert	AV	0.0	42.3	54.0	-11.7	Ch 3 2478.5 MHz, EUT On Side
7435.880	29.1	13.2	1.0	8.1	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	Ch 3 2478.5 MHz, EUT Horz
4956.915	36.8	5.4	3.6	242.0	3.0	0.0	Horz	AV	0.0	42.2	54.0	-11.8	Ch 3 2478.5 MHz, EUT On Side
4950.910	36.5	5.4	3.9	58.1	3.0	0.0	Horz	AV	0.0	41.9	54.0	-12.1	Ch 2 2475.5 MHz, EUT Horz
4956.858	35.6	5.4	1.0	315.0	3.0	0.0	Vert	AV	0.0	41.0	54.0	-13.0	Ch 3 2478.5 MHz, EUT Vert
4956.955	34.1	5.4	1.0	225.0	3.0	0.0	Vert	AV	0.0	39.5	54.0	-14.5	Ch 3 2478.5 MHz, EUT Horz
4951.020	33.1	5.4	1.0	220.1	3.0	0.0	Vert	AV	0.0	38.5	54.0	-15.5	Ch 2 2475.5 MHz, EUT On Side
7421.180	41.0	13.1	1.2	63.0	3.0	0.0	Vert	PK	0.0	54.1	74.0	-19.9	Ch 1 2473.5 MHz, EUT On Side
7420.515	41.0	13.1	1.0	206.1	3.0	0.0	Horz	PK	0.0	54.1	74.0	-19.9	Ch 1 2473.5 MHz, EUT Horz
7436.160	40.7	13.2	1.0	8.1	3.0	0.0	Horz	PK	0.0	53.9	74.0	-20.1	Ch 3 2478.5 MHz, EUT Horz
7426.045	40.6	13.2	1.0	286.0	3.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	Ch 2 2475.5 MHz, EUT On Side
7427.580	40.5	13.2	1.0	184.1	3.0	0.0	Horz	PK	0.0	53.7	74.0	-20.3	Ch 2 2475.5 MHz, EUT Horz
7434.815	40.3	13.2	3.2	358.0	3.0	0.0	Vert	PK	0.0	53.5	74.0	-20.5	Ch 3 2478.5 MHz, EUT On Side
4957.030	46.6	5.4	1.8	9.0	3.0	0.0	Horz	PK	0.0	52.0	74.0	-22.0	Ch 3 2478.5 MHz, EUT Horz
4956.760	45.2	5.4	3.6	243.0	3.0	0.0	Horz	PK	0.0	50.6	74.0	-23.4	Ch 3 2478.5 MHz, EUT On Side
4956.785	45.1	5.4	1.0	261.9	3.0	0.0	Vert	PK	0.0	50.5	74.0	-23.5	Ch 3 2478.5 MHz, EUT On Side
4957.175	44.8	5.4	4.0	37.2	3.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	Ch 3 2478.5 MHz, EUT Vert
4946.825	44.8	5.4	1.0	90.0	3.0	0.0	Vert	PK	0.0	50.2	74.0	-23.8	Ch 1 2473.5 MHz, EUT On Side
4956.692	44.5	5.4	1.0	315.0	3.0	0.0	Vert	PK	0.0	49.9	74.0	-24.1	Ch 3 2478.5 MHz, EUT Vert
4946.995	44.5	5.4	1.0	40.1	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	Ch 1 2473.5 MHz, EUT Horz
4950.660	43.6	5.4	3.9	58.1	3.0	0.0	Horz	PK	0.0	49.0	74.0	-25.0	Ch 2 2475.5 MHz, EUT Horz
12392.010	28.3	0.0	1.0	80.1	3.0	0.0	Horz	AV	0.0	28.3	54.0	-25.7	Ch 3 2478.5 MHz, EUT Horz
12367.000	28.4	-0.2	1.0	242.0	3.0	0.0	Vert	AV	0.0	28.2	54.0	-25.8	Ch 1 2473.5 MHz, EUT On Side
12378.650	28.3	-0.1	1.0	110.0	3.0	0.0	Horz	AV	0.0	28.2	54.0	-25.8	Ch 2 2475.5 MHz, EUT Horz
12377.510	28.3	-0.1	1.0	65.1	3.0	0.0	Vert	AV	0.0	28.2	54.0	-25.8	Ch 2 2475.5 MHz, EUT On Side
12391.560	28.2	0.0	1.0	29.1	3.0	0.0	Vert	AV	0.0	28.2	54.0	-25.8	Ch 3 2478.5 MHz, EUT On Side
12369.490	28.3	-0.2	1.0	342.0	3.0	0.0	Horz	AV	0.0	28.1	54.0	-25.9	Ch 1 2473.5 MHz, EUT Horz
4956.740	42.4	5.4	1.0	225.0	3.0	0.0	Vert	PK	0.0	47.8	74.0	-26.2	Ch 3 2478.5 MHz, EUT Horz
4950.200	41.7	5.4	1.0	220.1	3.0	0.0	Vert	PK	0.0	47.1	74.0	-26.9	Ch 2 2475.5 MHz, EUT On Side
12367.770	39.7	-0.2	1.0	342.0	3.0	0.0	Horz	PK	0.0	39.5	74.0	-34.5	Ch 1 2473.5 MHz, EUT Horz
12392.570	39.2	0.0	1.0	29.1	3.0	0.0	Vert	PK	0.0	39.2	74.0	-34.8	Ch 3 2478.5 MHz, EUT On Side
12377.280	39.2	-0.1	1.0	65.1	3.0	0.0	Vert	PK	0.0	39.1	74.0	-34.9	Ch 2 2475.5 MHz, EUT On Side
12393.290	39.1	0.0	1.0	80.1	3.0	0.0	Horz	PK	0.0	39.1	74.0	-34.9	Ch 3 2478.5 MHz, EUT Horz
12368.010	39.2	-0.2	1.0	242.0	3.0	0.0	Vert	PK	0.0	39.0	74.0	-35.0	Ch 1 2473.5 MHz, EUT On Side
12378.990	39.0	-0.1	1.0	110.0	3.0	0.0	Horz	PK	0.0	38.9	74.0	-35.1	Ch 2 2475.5 MHz, EUT Horz

<b>Work Order:</b>	CCOM0030	<b>Date:</b>	06/10/16	
<b>Project:</b>	None	<b>Temperature:</b>	23.2 °C	
<b>Job Site:</b>	MN05	<b>Humidity:</b>	65.9% RH	
<b>Serial Number:</b>	1000302017	<b>Barometric Pres.:</b>	1010 mbar	
<b>EUT:</b>	TC210 LinkView			<b>Tested by:</b> Jared Ison
<b>Configuration:</b>	2			
<b>Customer:</b>	Medtronic Care Management Services			
<b>Attendees:</b>	None			
<b>EUT Power:</b>	110VAC/60Hz			
<b>Operating Mode:</b>	Transmit			
<b>Deviations:</b>	None			
<b>Comments:</b>	None			

Test Specifications	Test Method
FCC 15.249:2016	ANSI C63.10:2013

Run #	19	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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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
2398.577	32.4	-3.9	1.0	234.0	3.0	20.0	Horz	AV	0.0	48.5	54.0	-5.5	Ch 1 2473.5 MHz, EUT Vert
2483.907	31.3	-3.6	1.0	319.9	3.0	20.0	Vert	AV	0.0	47.7	54.0	-6.3	Ch 3 2478.5 MHz, EUT Vert
2485.413	31.2	-3.6	1.0	17.0	3.0	20.0	Horz	AV	0.0	47.6	54.0	-6.4	Ch 3 2478.5 MHz, EUT Vert
2399.680	31.0	-3.9	3.6	103.0	3.0	20.0	Vert	AV	0.0	47.1	54.0	-6.9	Ch 1 2473.5 MHz, EUT Vert
2399.490	43.4	-3.9	1.0	234.0	3.0	20.0	Horz	PK	0.0	59.5	74.0	-14.5	Ch 1 2473.5 MHz, EUT Vert
2483.853	42.7	-3.6	1.0	319.9	3.0	20.0	Vert	PK	0.0	59.1	74.0	-14.9	Ch 3 2478.5 MHz, EUT Vert
2483.620	42.5	-3.6	1.0	17.0	3.0	20.0	Horz	PK	0.0	58.9	74.0	-15.1	Ch 3 2478.5 MHz, EUT Vert
2399.060	42.0	-3.9	3.6	103.0	3.0	20.0	Vert	PK	0.0	58.1	74.0	-15.9	Ch 1 2473.5 MHz, EUT Vert

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 channel 1 (2473.5 MHz), channel 2 (2475.5 MHz), and channel 3 (2478.5 MHz)

## POWER SETTINGS INVESTIGATED

110VAC/60Hz

## CONFIGURATIONS INVESTIGATED

CCOM0030 - 2

## FREQUENCY RANGE INVESTIGATED

Start Frequency	2400 MHz	Stop Frequency	2483.5 MHz
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## 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	Fairview Microwave	SA18E-20	TWZ	10/21/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	3/1/2016	12 mo
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	12/7/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIB	8/12/2014	24 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2016	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 antennas to be used with the EUT were tested. The EUT was transmitting and while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT and EUT antenna in 3 orthogonal planes.



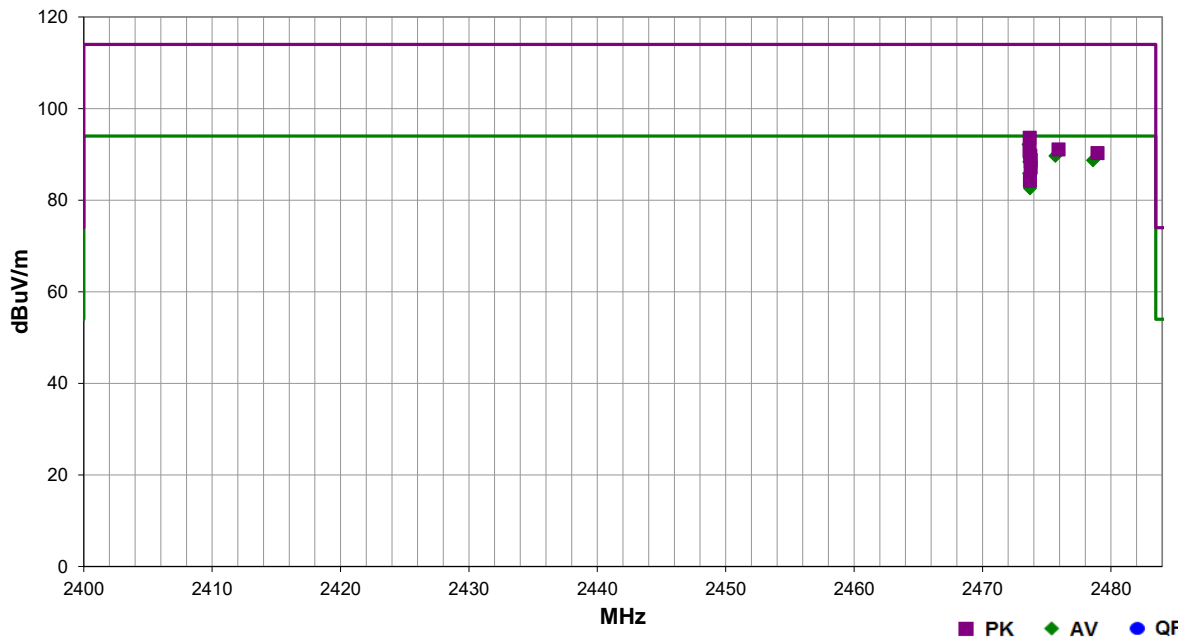
# FIELD STRENGTH OF FUNDAMENTAL

PSA-ESCI 2016.03.11  
EmiR5 2016.03.11

Work Order:	CCOM0030	Date:	06/09/16	
Project:	None	Temperature:	22.8 °C	
Job Site:	MN05	Humidity:	51% RH	
Serial Number:	1000302380	Barometric Pres.:	1014 mbar	
EUT:	TC210 LinkView			
Configuration:	2			
Customer:	Medtronic Care Management Services			
Attendees:	None			
EUT Power:	110VAC/60Hz			
Operating Mode:	Transmitting channel 1 (2473.5 MHz), channel 2 (2475.5 MHz), and channel 3 (2478.5 MHz)			
Deviations:	None			
Comments:	None			

Test Specifications	Test Method
FCC 15.249:2016	ANSI C63.10:2013

Run #	0	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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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
2473.592	75.8	-3.6	1.0	180.0	3.0	20.0	Vert	AV	0.0	92.2	94.0	-1.8	Ch 1, EUT vertical
2475.683	73.3	-3.6	1.0	135.0	3.0	20.0	Vert	AV	0.0	89.7	94.0	-4.3	Ch 2, EUT vertical
2473.675	72.7	-3.6	4.0	360.0	3.0	20.0	Horz	AV	0.0	89.1	94.0	-4.9	Ch 1, EUT vertical
2478.608	72.3	-3.6	1.0	135.0	3.0	20.0	Vert	AV	0.0	88.7	94.0	-5.3	Ch 3, EUT vertical
2473.642	72.0	-3.6	3.0	315.0	3.0	20.0	Horz	AV	0.0	88.4	94.0	-5.6	Ch 1, EUT on side
2473.733	70.8	-3.6	1.0	45.0	3.0	20.0	Vert	AV	0.0	87.2	94.0	-6.8	Ch 1, EUT on side
2473.633	69.5	-3.6	1.0	315.0	3.0	20.0	Vert	AV	0.0	85.9	94.0	-8.1	Ch 1, EUT horizontal
2473.708	66.2	-3.6	1.0	41.1	3.0	20.0	Horz	AV	0.0	82.6	94.0	-11.4	Ch 1, EUT horizontal
2473.675	77.3	-3.6	1.0	180.0	3.0	20.0	Vert	PK	0.0	93.7	114.0	-20.3	Ch 1, EUT vertical
2475.917	74.7	-3.6	1.0	135.0	3.0	20.0	Vert	PK	0.0	91.1	114.0	-22.9	Ch 2, EUT vertical
2473.667	74.4	-3.6	4.0	360.0	3.0	20.0	Horz	PK	0.0	90.8	114.0	-23.2	Ch 1, EUT vertical
2478.958	73.9	-3.6	1.0	135.0	3.0	20.0	Vert	PK	0.0	90.3	114.0	-23.7	Ch 3, EUT vertical
2473.717	73.4	-3.6	3.0	315.0	3.0	20.0	Horz	PK	0.0	89.8	114.0	-24.2	Ch 1, EUT on side
2473.750	72.4	-3.6	1.0	45.0	3.0	20.0	Vert	PK	0.0	88.8	114.0	-25.2	Ch 1, EUT on side
2473.750	70.8	-3.6	1.0	315.0	3.0	20.0	Vert	PK	0.0	87.2	114.0	-26.8	Ch 1, EUT horizontal
2473.692	67.9	-3.6	1.0	41.1	3.0	20.0	Horz	PK	0.0	84.3	114.0	-29.7	Ch 1, EUT horizontal