Medtronic Inc.

CTM2 Model 8880T2

Report No. MDTR0042.5

Report Prepared By



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

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Certificate of Test Last Date of Test: December 20, 2012 Medtronic Inc. Model: 8880T2

Emissions					
Test Description	Specification	Test Method	Pass/Fail		
Emissions Mask	FCC 95I:2011	ANSI/TIA/EIA-603-C-2004	Pass		
Emissions Mask	RSS-243-2010	RSS-Gen Issue 3:2010 EN 301	Pass		
	100-245.2010	839-1 V1.3.1:2009	1 833		
Field Strength of Fundamental	FCC 95I:2011	ANSI/TIA/EIA-603-C-2004	Pass		
Field Strength of Fundamental	RSS-243-2010	RSS-Gen Issue 3:2010 EN 301	Pass		
	100 240.2010	839-1 V1.3.1:2009	1 435		
Occupied Bandwidth	FCC 95I:2011	ANSI/TIA/EIA-603-C-2004	Pass		
Occupied Bandwidth	RSS-243 [.] 2010	RSS-Gen Issue 3:2010 EN 301	Pass		
	1.00 2 10.20 10	839-1 V1.3.1:2009	1 400		
Output Power	FCC 95I:2011	ANSI/TIA/EIA-603-C-2004	Pass		
Output Power	RSS-243 [.] 2010	RSS-Gen Issue 3:2010 EN 301	Pass		
	1100 2 10:2010	839-1 V1.3.1:2009	1 400		
Spurious Conducted Emissions	FCC 95I:2011	ANSI/TIA/EIA-603-C-2004	Pass		
Spurious Conducted Emissions	RSS-243-2010	RSS-Gen Issue 3:2010 EN 301	Pass		
	1.00 240.2010	839-1 V1.3.1:2009	1 455		
Frequency Stability	FCC 95I:2011	ANSI/TIA/EIA-603-C-2004	Pass		
Frequency Stability	PSS-243-2010	RSS-Gen Issue 3:2010 EN 301	Pass		
Trequency Stability	100-245.2010	839-1 V1.3.1:2009	1 833		
Receiver Spurious Emissions	FCC 15.109:2011 Class B	ANSI C63.10:2009	Pass		
Receiver Spurious Emissions	RSS-243:2010	RSS-Gen:2010	Pass		
Spurious Radiated Emissions	FCC 95I:2011	ANSI/TIA/EIA-603-C-2004	Pass		
Spurious Radiated Emissions	RSS-243:2010	RSS-Gen:2010	Pass		

Modifications made to the product See the Modifications section of this report

Test Facility

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

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

Phone: (763) 425-2281

Fax: (763) 424-3469

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

Approved By: Tim O'Shea, Operations Manager



NVLAP Lab Code: 200881-0

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

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



Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.



Accreditations and Authorizations

FCC

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

NVLAP

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

Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, 2834B-3, Brooklyn Park: 2834E-1*)

CAB

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

Australia/New Zealand

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



Accreditations and Authorizations

VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (*Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, T-1659, and G-548, Sultan: R-871, G-83, C-3265, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).*

BSMI

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

GOST

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

KCC

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

VIETNAM

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

SCOPE

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



Northwest EMC Locations





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









Rev 11/17/06

Party Requesting the Test

Company Name:	Medtronic Inc.
Address:	7000 Central Avenue NE
City, State, Zip:	Minneapolis, MN 55432
Test Requested By:	Paul Wood
Model:	8880T2
First Date of Test:	December 14, 2011
Last Date of Test:	December 20, 2011
Receipt Date of Samples:	December 12, 2011
Equipment Design Stage:	Production equivalent
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

The Clinician Telemetry Module (CTM2) provides a communication link from the Clinician Programmer (CP) to an Implanted Medical Device (IMD). The CTM2 provides a single telemetry module solution for use with the following telemetry types: TEL-M (Medical Implant Communications Service MICS Telemetry) connection to the Intellis IMD, TEL A/N (Proximal wakeup) connection to Intellis IMD and communication with the SM3 pump, Bluetooth connection to CP, and/or USB connection to CP. The CTM2 is a Battery operated device that will be used in a hospital environment by medical professionals.

Testing Objective:

To demonstrate compliance to FCC and IC requirements for the MICS transmitter.

CONFIGURATION 2 MDTR0042

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
CTM2	Medtronic Inc.	8880T2	NKW001518N

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB System Cable, M943457A002 Rev. D	Yes	1.8m	Yes	CTM2	NGCP
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 4 MDTR0042

EUT					
Description	Manufacturer	Model/Part Number	Serial Number		
CTM2	Medtronic Inc.	8880T2	NKW001457N		

Peripherals in test setup boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
Laptop	Dell	Latitude D610	12068016661	
Power Brick (Laptop)	Dell	LA90PS0-00	CN-0DF266-71615-7BE-1D3E	

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	1.8m	No	AC Mains	Power Brick (Laptop)
DC Power	No	1.8m	Yes	Power Brick (Laptop)	Laptop
XTM FTDI Cable, M947422A002 Rev. A	Yes	2.3m	No	Laptop	CTM2
PA = Cable is	permanently	attached to the de	vice. Shield	ling and/or presence of ferrite	may be unknown.



Modifications

	Equipment modifications						
Item	Date	Test	Modification	Note	Disposition of EUT		
1	12/14/2011	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	12/15/2011	Receiver Spurious 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	12/15/2011	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
4	12/19/2011	Emission Mask	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	12/19/2011	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
6	12/19/2011	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
7	12/19/2011	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.		
8	12/20/2011	Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test	Scheduled testing was completed.		

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
Multimeter	Fluke	114	MMU	7/8/2011	24
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	6/2/2011	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/12/2011	12
Signal Generator	Agilent	N5183A	TIA	1/18/2011	12
DC Power Supply	EZ Digital Co	GP-4303D	TPY	NCR	0
Spectrum Analyzer	Agilent	E4440A	AAX	5/23/2011	12

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) (Amplitude Accuracy +/-0.49) 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.

TEST DESCRIPTION

Per 47 CFR 95.635(d)(4-5) the emission mask was measured. Emissions more than 150 kHz away from the center frequency must be attenuated below the transmitter output power by at least 20 dB. This was evaluated by the Occupied Bandwidth measurement according to 47 CFR 95.633(e)(1). In addition, emissions 250 kHz or less above and below the MICS band (402-405 MHz) must be attenuated below the maximum permitted output power by at least 20 dB.

A spectrum analyzer was used to measure the emission mask. A spectrum analyzer using a peak detector with no video filtering was used with a resolution bandwidth equal to approximately 1.0 percent of the emission bandwidth of the EUT. However, various plots were made using different frequency spans and resolution bandwidths in an attempt to not only satisfy the measurement criteria, but to also show that all emissions outside of the occupied band are greatly attenuated.

NORTHWEST EMC			Emissions Mask				XMit 2011.10.26 PsaTx 2011.12.16
EUT:	CTM2				Work Order:	MDTR0042	
Serial Number:	NKW001457N				Date:	12/19/11	
Customer:	Medtronic Inc.				Temperature:	25.23C°C	
Attendees:	None				Humidity:	20%	
Project:	None				Barometric Pres.:	1017.8	
Tested by:	Bryan Weller		Power: 2.75VDC		Job Site:	MN08	
TEST SPECIFICATI	ONS		Test Method				
FCC 95I:2011			ANSI/TIA/EIA-603-C-200	4			
RSS-243:2010			RSS-Gen Issue 3:2010 E	N 301 839-1 V1.3.1:2009			
COMMENTS							
	in configuration o						
DEVIATIONS FROM	TEST STANDARD						
None			-				
Configuration #	4	Signature	Frevor Buls				
					Value	Limit	Result
Antenna Coil							
	Low Channel, 402.15 MHz				-53.82 dBc	≤ -20 dBc	Pass
	High Channel, 404.85 MHz				-55.19 dBc	≤ -20 dBc	Pass
Antenna PCB							_
	Low Channel, 402.15 MHz				-56.51 dBc	≤ -20 dBc	Pass
	High Channel, 404.85 MHz				-54.33 dBc	≤ -20 dBc	Pass

Emissions Mask



Span 400 kHz

Sweep 42.51 ms (2000 pts)



#VBW 9.1 kHz

Center 405.000 00 MHz

#Res BW 3 kHz

Emissions Mask





monorman

#VBW 9.1 kHz

1 MAM

and the second

Man www.white

Sweep 42.51 ms (2000 pts)

Span 400 kHz

#LgAv

£(f): f>50k Swp

Center 405.000 00 MHz

#Res BW 3 kHz

V1 S3 S2 FC 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 MICS CW, Ch 1: 402.15 MHz, Ch 5: 403.35 MHz, Ch 10: 404.85 MHz, PCB, Coil Antenna (See comments)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED MDTR0042: CTM2 - 2

FREQUENCY RANGE INVESTIGATED				
Start Frequency	402 MHz	Stop Frequency	405 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							
Antenna, Biconilog	ETS Lindgren	3142D	AXN	12/30/2009	24 mo							
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	2/2/2011	12 mo							
Spectrum Analyzer	Agilent	E4446A	AAT	2/15/2011	12 mo							

MEASUREMENT BANDWIDTHS										
	Frequency Range	Peak Data	Quasi-Peak Data	Average Data						
	(MHz)	(kHz)	(kHz)	(kHz)						
	0.01 - 0.15	1.0	0.2	0.2						
	0.15 - 30.0	10.0	9.0	9.0						
	30.0 - 1000	100.0	120.0	120.0						
	Above 1000	1000.0	N/A	1000.0						
Moasuromonts w	voro modo using the IE band	widths and datactors, specify	od No video filtor was used	except in the case of the						

FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth was used.

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) (Frequency Strength +/- 4.00) 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.

TEST DESCRIPTION

Per 95.628(g)(3), the maximum EIRP for a MICS transmitter is 25uW. This is equivalent to a radiated field strength 85.2 dBuV/m at 3 meters when measured over a reference ground plane.

The Field Strength of the Fundamental was measured in the far-field at an FCC Listed Semi-anechoic Chamber. Spectrum analyzer and linearly polarized antennas were used to measure the effective radiated power (EIRP) of the fundamental.

The orientation of the EUT and measurement antenna were manipulated to maximize the level of emissions. The turntable azimuth was varied to maximize the level of radiated emissions. The height of the measurement antenna was also varied from 1 to 4 meters. The amplitude and frequency of the emissions were noted.

The height of the transmitter was 1.5-meter above the reference ground plane.



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	10/12/2011	12
DC Power Supply	EZ Digital Co	GP-4303D	TPY	NCR	0
Signal Generator	Agilent	N5183A	TIA	1/18/2011	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	6/2/2011	12
Multimeter	Fluke	114	MMU	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/23/2011	12

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) (Frequency Accuracy: +0.12/-0.01) 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.

TEST DESCRIPTION

The 99% occupied bandwidth was measured with the EUT configured for continuous modulated operation at its lowest, middle, and highest transmit frequency. The spectrum analyzer's resolution bandwidth was set to between 1% and 3% of the 20dB bandwidth and the video bandwidth was at least 3 times the resolution bandwidth. A sample detector was used



58.277 kHz

≤ 300 kHz

Pass

Occupied Bandwidth



Occupied Bandwidth



Occupied Bandwidth





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

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Signal Generator	Agilent	N5183A	TIA	1/18/2011	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/12/2011	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	6/2/2011	12
DC Power Supply	EZ Digital Co	GP-4303D	TPY	NCR	0
Multimeter	Fluke	114	MMU	7/8/2011	24
Spectrum Analyzer	Agilent	E4440A	AAX	5/23/2011	12

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) (Conducted Power: +/- 0.41) 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.

TEST DESCRIPTION

The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was transmitting at it's maximum data rate.

EMC Output Power											
EUT	CTM2			Work Order:	MDTR0042						
Serial Number	: NKW001457N			Date:	12/19/11						
Customer	: Medtronic Inc.			Temperature:	24.40C°C						
Attendees	: None			Humidity:	20%						
Project	:: None			Barometric Pres.:	1017.8						
Tested by	: Bryan Weller		Power: 2.75VDC	Job Site:	MN08						
TEST SPECIFICAT	TIONS		Test Method								
FCC 95I:2011			ANSI/TIA/EIA-603-C-2004			ľ					
RSS-243:2010 RSS-Gen Issue 3:2010 EN 301 839-1 V1.3.1:2009											
COMMENTS											
DEVIATIONS FRO	M TEST STANDARD										
Configuration #	4	Signature	Drevor Buls								
				Value	Limit	Result					
Antenna Coil											
	Low Channel, 402.15 MHz			29.383 uW	N/A	N/A					
	Mid Channel, 403.35 MHz			30.818 uW	N/A	N/A					
	High Channel, 404.85 MHz			29.336 uW	N/A	N/A					
Antenna PCB											
	Low Channel, 402.15 MHz			25.48 uW	N/A	N/A					
	Mid Channel, 403.35 MHz			26.412 uW	N/A	N/A					
	High Channel, 404.85 MHz			26.002 uW	N/A	N/A					

Output Power

				Antenna Co	il, Low Chan	nel, 402.15	MHz				
						v	alue	Limit	Result	ł	
Γ						29.3	383 uW	N/A	N/A		
Nic	Adilant 02.3	27•47 D∧	c 19 20	11				РT			
nar-te Nor-te	west EMC	Inc	ι IJ, 20	11				Mkr1	402 160	39 MHz	
Ref 7	73 µW	Inc	#At	ten 10 d	В			TINT	29	.38 µW	
#Pea	k 🔤						1				
Log						<u> </u>	.				
dB/											
Offst											
20.7 dB											
#LgH	♥										
M1 S	52										
\$3 F	S										
f (f)											
f>50	k 📃										
Swp											
Cent	er 402.150	00 MHz							Span 1	00 kHz	
#Res	BW 100 kH:	Z		#	VBW 300	kHz	5	Sweep 1.06	66 ms (200	00 pts)_	
				Antenna Co	il Mid Chan	nel 403 35	MHz				
					ing which official	101, 100.00			_		
Г						V 30.8	alue 318 uW	Limit N/A	Result N/A	:]	
siz	Authorst GOL	11.10 D	- 10 - 00	11				р т			
·珠· North	Aglient 08:4	+1:10 De Inc	c 19,20	11				K I Mkr1	403 360	84 MH-	
Ref 7	76 µW	me	#At	ten 10 d	В				30	.82 µW	
#Pea	k 📃						1				
Lõg 5							o				
dB/											
Offst											
20.7 dB											
#LaA	v										
-Lai											
M1 3	<u>2</u>										
53 F	-2										
£ (f):											
f>50	k										
Swp											

Center 403.350 00 MHz Span 100 kHz Span 100 kHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.066 ms (2000 pts)

Output Power

		Ante	enna Coil	l, High Char	nel, 404.85	MHz			
· · · · · · · · · · · · · · · · · · ·					Va	alue	Limit	Res	ult
Nic Autoria GO	42-20 D	10 0011			20.0	50 011	D T	14/7	`
Northwest EMC,	:43:36 Dec Inc	19,2011					K I Mkr1	404.84	1 16 MHz
Ref 73 µ W #Peak		#Atten	10 df	3	1	1		2	29.34 µ ₩
				1 �					
5 dB/									
Offst									
dB									
*LYNV									
M1 S2 S3 FS									
6 (f):									
f>50k									
Swp									
L Center 404.850	 00 MHz							Span	100 kHz
#Res BW 100 kH	lz		#	VBW 300	kHz		Sweep 1.0	66 ms (20	000 pts)_
		Ante	nna PCE	3, Low Char	inel, 402.15	MHz			
					Va		Limit	Res	ult
NK	40-E1 D	10.0011			23.4	+o uvv	D T	IN/F	1
Agilent 08: Northwest EMC,	:46:51 Dec Inc	19,2011					K I Mkr1	402.13	7 05 MHz
Ref 62.99 µ W #Peak		#Atten	10 df	3				2	25.48 µ W
Log									
5 dB/									
Offst 20.7									
dB									
#LaAv									
M1 S2 S3 FS									
f (f):									
f>50k									

Center 402.150 00 MHz Span 100 kHz Span 100 kHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.066 ms (2000 pts)

Output Power

EMC

#LgAv

M1 S2 S3 FS

£(f): f>50k Swp

Center 404.850 00 MHz #Res BW 100 kHz

			Antenna PC	B, Mid Chan	nel, 403.35	MHz			
					V	alue	Limit	Result	t
					26.4	12 uW	N/A	N/A	
🔆 🔆 🔆	ilent 08:49:39	Dec 19, 20)11				RT		
Northwe	st EMC, Inc						Mkr1	403.361	19 MHz
Ref 65.9	99 µ W	#At	ten 10 d	B				26	6.41 µ ₩
#Peak									
5 -		<u></u>							
dB/									
20.7									
dB –									
#LgAv									
M1 52									
S3 FS									
A (1):									
£(†): f>50k									
Swp									
L Center	403.350 00 MHz	,						Span 1	00 kHz
#Res BW	100 kHz		#	VBW 300	kHz		Sweep 1.0	66 ms (200	00 pts)_
			Antenna PCI	B. High Char	nel 404.85	MHz			
				s, mgn onai					
					26.0	02 uW	N/A	N/A	
siz	3	Dec 10 - 20	111				р т		
Northwe	st FMC. Inc	Det 13, 20	11				Mkr1	404.837	60 MHz
Ref 65	РМ	#At	ten 10 d	В				26	6.00 µW
#Peak			1						
5			···· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·				·····		
dB/									
0ffst 20.7									
dB									

#VBW 300 kHz

Span 100 kHz Sweep 1.066 ms (2000 pts) Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Signal Generator	Agilent	N5183A	TIA	1/18/2011	12
DC Power Supply	EZ Digital Co	GP-4303D	TPY	NCR	0
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/12/2011	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	6/2/2011	12
Spectrum Analyzer	Agilent	E4440A	AAX	5/23/2011	12
Multimeter	Fluke	114	MMU	7/8/2011	24

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) (Amplitude Accuracy +/-0.49) 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.

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency.

NORTHWEST					XMit 2011.10.26
EMC		Spurious Conducted Emissions			PsaTx 2011.12.16
EU.	T: CTM2		Work Order:	MDTR0042	
Serial Numbe	er: NKW001457N		Date:	12/19/11	
Custome	er: Medtronic Inc.		Temperature:	24.40C°C	
Attendee	es: None		Humidity:	20%	
Projec	ct: None		Barometric Pres.:	1017.8	
Tested b	by: Bryan Weller	Power: 2.75VDC	Job Site:	MN08	
TEST SPECIFICA	ATIONS	Test Method			
FCC 15.247:2011		ANSI C63.10:2009			
RSS-243:2010		RSS-Gen Issue 3:2010 EN 301 839-1 V1.3.1:20	09		
COMMENTS					
MDTR0012 Test F	Plan Configuration 6				
DEVIATIONS ER	OM TEST STANDARD				
None	OW TEST STANDARD				
Configuration #	4	Jung Buls			
		Signature			
		Frequency	Value	Limit	Result
DH5, GFSK			Value	Linit	Result
	Low Channel	30 MHz - 12.5 GHz	-49.06 dBc	≤ -20 dBc	Pass
	Low Channel	12.5 GHz - 25 GHz	-55.4 dBc	≤ -20 dBc	Pass
	Mid Channel	30 MHz - 12.5 GHz	-46.92 dBc	≤ -20 dBc	Pass
	Mid Channel	12.5 GHz - 25 GHz	-55.03 dBc	≤ -20 dBc	Pass
	High Channel	30 MHz - 12.5 GHz	-46.43 dBc	≤ -20 dBc	Pass
	High Channel	12.5 GHz - 25 GHz	-55.43 dBc	≤ -20 dBc	Pass
2DH5, 4-DQPSK					
	Low Channel	30 MHz - 12.5 GHz	-47.27 dBc	≤ -20 dBc	Pass
	Level Observed		50.05 JD.	< 00 dDa	Pass
	Low Channel	12.5 GHz - 25 GHz	-50.65 dBC	≤ -20 abc	
	Mid Channel	12.5 GHz - 25 GHz 30 MHz - 12.5 GHz	-50.65 dBc -49.62 dBc	≤ -20 dBc ≤ -20 dBc	Pass
	Mid Channel Mid Channel Mid Channel	30 MHz - 12.5 GHz 12.5 GHz 12.5 GHz - 25 GHz	-50.65 dBc -49.62 dBc -52.52 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass
	Low Channel Mid Channel Mid Channel High Channel	30 MHz - 12.5 GHz 12.5 GHz 30 MHz - 12.5 GHz 30 MHz - 12.5 GHz	-50.65 dBc -49.62 dBc -52.52 dBc -56.58 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass Pass
	Low Channel Mid Channel High Channel High Channel High Channel	12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz	-50.65 dBc -49.62 dBc -52.52 dBc -56.58 dBc -52.58 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass Pass Pass
3DH5, 8-DPSK	Low Channel Mid Channel Mid Channel High Channel High Channel	12.5 GH2 - 25 GH2 30 MH2 - 12.5 GHz 12.5 GHz - 25 GHz 30 MH2 - 12.5 GHz 12.5 GHz - 25 GHz	-50.65 dBc -49.62 dBc -52.52 dBc -56.58 dBc -52.58 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass Pass Pass
3DH5, 8-DPSK	Low Channel Mid Channel High Channel High Channel Low Channel	12.5 GH2 - 25 GH2 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 12.5 GHz - 25 GHz 30 MHz - 12.5 GHz	-30.65 dBC -49.62 dBc -52.52 dBc -56.58 dBc -52.58 dBc -42.33 dBc	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass Pass Pass Pass
3DH5, 8-DPSK	Low Channel Mid Channel High Channel High Channel Low Channel Low Channel	30 MHz - 12.5 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 30 MHz - 12.5 GHz 30 MHz - 12.5 GHz	-30.65 GBC -49.62 GBC -52.52 GBC -56.58 GBC -52.58 GBC -42.33 GBC -46.05 GBC	≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc ≤ -20 dBc	Pass Pass Pass Pass Pass Pass
3DH5, 8-DPSK	Low Channel Mid Channel High Channel High Channel Low Channel Low Channel Mid Channel	12.5 GH2 - 25 GH2 30 MH2 - 12.5 GHz 12.5 GHz - 25 GHz 30 MH2 - 12.5 GHz 12.5 GHz - 12.5 GHz 30 MH2 - 12.5 GHz 30 MH2 - 12.5 GHz 30 MH2 - 12.5 GHz 30 MH2 - 12.5 GHz	-50.65 dBC -49.62 dBc -52.52 dBc -56.58 dBc -52.58 dBc -42.33 dBc -46.05 dBc -50.7 dBc	≤ -20 dBc ≤ -20 dBc	Pass Pass Pass Pass Pass Pass Pass
3DH5, 8-DPSK	Low Channel Mid Channel High Channel High Channel Low Channel Low Channel Mid Channel Mid Channel	12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 30 MHz - 25 GHz	-50.65 dBC -49.62 dBc -52.52 dBc -56.58 dBc -52.58 dBc -42.33 dBc -46.05 dBc -50.7 dBc -52.21 dBc	≤ -20 dBc ≤ -20 dBc	Pass Pass Pass Pass Pass Pass Pass Pass
3DH5, 8-DPSK	Low Channel Mid Channel High Channel High Channel Low Channel Low Channel Mid Channel Mid Channel High Channel	12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz 30 MHz - 12.5 GHz	-50.65 dBC -49.62 dBc -52.52 dBc -56.58 dBc -52.58 dBc -46.05 dBc -46.05 dBc -50.7 dBc -51.35 dBc	≤ -20 dBc ≤ -20 dBc	Pass Pass Pass Pass Pass Pass Pass Pass



DH5, GFSK, Low Channel								
	Frequency							
	Range		Value	Limit	Result			
	12.5 GHz - 25 GHz		-55.4 dBc	≤ -20 dBc	Pass			

🔆 А	gilent 09:	54:03 De	ec 19, 200	11			RT		
Northwe	est EMC,	Inc					М	kr1 24.8	88 6 GHz
Ref 10	dBm		#At	ten 10 di	3			-52	.29 dBm
#Peak									
Log									
10									
dB7									
UffSt 22									
22 dB									
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-0									
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FTun									
Swp									
Start 1	2.500 0	GHz					S	itop 25.00)0 0 GHzî
#Res B	W 100 kH	Z		#	VBW 300	kHz	Sweep 1.	195 s (81	.92 pts)_



DH5, GFSK, Mid Channel								
Frequency								
Range		Value	Limit	Result				
12.5 GHz - 25 GHz		-55.03 dBc	≤ -20 dBc	Pass				

🔆 А	gilent 10:0	04:47 De	ec 19, 200	11				RT		
Northwe	est EMC,	Inc						М	kr1 24.2	27 8 GHz
Ref 10	dBm		#At	ten 10 di	3				-51	.97 dBm
#Peak										
Log										
10										
dB/										
Offst										
22 JD										
aБ										
#LgHV										
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VI 32 92 EC										-\$
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Swn										
οπþ										
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Start 1	2.500 0	GHZ						~ ~	top 25.00	00 0 GHz
#Res B	W 100 kH	Z		#	ARM 300	kHz		Sweep 1.	.195 s (81	.92 pts)_



DH5, GFSK, High Channel									
Frequency									
Range		Value	Limit	Result					
12.5 GHz - 25 GHz		-55.43 dBc	≤ -20 dBc	Pass					

🔆 А	gilent 10:	13 : 17 De	ec 19, 200	11			RT		
Northwe	əst EMC,	Inc					М	kr1 24 . 7	55 8 GHz
Ref 10	dBm		#At	ten 10 di	3			-52	.21 dBm
#Peak									
Log									
10									
dB7									
UffSt 22									
ZZ dB									
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#laAv									
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Swp									
Start 1	2.500 0	GHz					S	itop 25.00)0 0 GHzî
#Res B	W 100 kH	z		#	VBW 300	kHz	Sweep 1.	195 s (81	192 pts)_



2DH5, 4-DQPSK, Low Channel									
	Frequency								
	Range		Value	Limit	Result				
	12.5 GHz - 25 GHz		-50.65 dBc	≤ -20 dBc	Pass				

Ж А	gilent 10:	22 : 53 De	ec 19, 20	11			RT		
Northwe	est EMC,	Inc					М	kr1 24.2	85 8 GHz
Ref 10	dBm		#At	ten 10 di	3			-52	2.45 dBm
#Peak									
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Swp									
Start 1	2.500 0	GHz					<	: Stop 25.00	ай и GH-2
#Res B	W 100 kH	Z		#	VBW 300	kHz	Sweep 1.	.195 s (8	192 nts)
start 1 #Res B	W 100 kH	6нz z		#	VBW 300	kHz	Sweep 1.	.195 s (8	00 0 GHZ 192 pts)_



2DH5, 4-DQPSK, Mid Channel									
Frequency									
Range Value Limit Resu									
12.5 GHz - 25 GHz -52.52 dBc ≤ -20 dBc Pas									

ж А	gilent 10:3	32 : 25 De	c 19,20	11			RT		
Northwe	əst EMC,	Inc					М	kr1 24.8	901 GHz
Ref 10	dBm		#Ati	ten 10 dE	3			-52	.75 dBm
#Peak									
Log									
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dB7									
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Start 1	2.500 0 1	GHz					S	top 25.00)0 0 GHzî
#Res B	W 100 kH	z		#!	VBW 300	kHz	Sweep 1.	195 s (81	192 pts)_



Frequency
Range Value Limit Result
12.5 GHz - 25 GHz -52.58 dBc ≤ -20 dBc Pass

🔆 Agile	nt 10:41	L:09 De	c 19,20	11			RT		
Northwest	EMC, Ir	nc					М	kr1 24.8	56 5 GHz
Ref 10 dB	m		#Ati	ten 10 dE	3			-52	.30 dBm
#Peak									
LOG									
dB/									
Offst 📙									
22 dB									
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Swp									
Start 12.5	i00 0 GI	Hz					S	top 25.00)0 0 GHzî
#Res BW 1	00 kHz			#	VBW 300	kHz	Sweep 1.	195 s (81	.92 pts)_



Frequency		3DH5, 8-DPSK, Low Channel									
	Frequence	су									
Range Value Limit Result	Range		Value	Limit	Result						
12.5 GHz - 25 GHz 25 GHz - 46.05 dBc ≤ -20 dBc Pass	12.5 GHz - 25	5 GHz	-46.05 dBc	≤ -20 dBc	Pass						

🔆 Agilent 1	0:51:00 De	ec 19, 20	11				RT		
Northwest EM	C, Inc						М	kr1 24.2	98 0 GHz
Ref 10 dBm		#At	ten 10 di	3				-52	.41 dBm
#Peak									
L0g									
dB/									
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#LgHv									
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Swp									
Start 12.500	0 GHz						S	top 25.00)0 0 GHzî
#Res BW 100	kHz		#	VBW 300	kHz		Sweep 1.	.195 s (81	.92 pts)_



3DH5,	, 8-DPSK, Mid Ch	nannel		
Frequency				
Range		Value	Limit	Result
12.5 GHz - 25 GHz		-52.21 dBc	≤ -20 dBc	Pass

🔆 А	gilent 10:	59 : 45 De	ec 19, 200	11				RT		
Northwe	əst EMC,	Inc						М	kr1 24.8	65 7 GHz
Ref 10	dBm		#At	ten 10 di	3				-52	.03 dBm
#Peak										
Log										
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V1 S2										1
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FTun										
Swp										
Start 1	2.500 0 1	GHz						S	itop 25.00)0 0 GHzî
#Res B	W 100 kH	z		#	VBW 300	kHz		Sweep 1.	195 s (81	.92 pts)_



3DH5, 8-DPSK, High Channel										
Frequency										
Range		Value	Limit	Result						
12.5 GHz - 25 GHz		-51.9 dBc	≤ -20 dBc	Pass						

ж А	gilent 11:0	08:22 De	ec 19, 200	11			RT		
Northwe	əst EMC,	Inc					М	kr1 24.8	64 2 GHz
Ref 10	dBm		#At	ten 10 di	3			-52	.16 dBm
#Peak									
Log									
10									
dB7									
Uffst 22									
dB									
4.D									
#laAv									
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	tellas na								
£ (f):									
FTun									
Swp									
Start 1	2.500 0 1	GHz					S	top 25.00)0 0 GHz^
#Res B	W 100 kH	z		#	VBW 300	kHz	Sweep 1.	195 s (81	192 pts)_

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	6/2/2011	12
Chamber, Temp./Humidity	Cincinnati Sub Zero (CSZ)	ZPH-32-3.5-SCT/AC	TBF	NCR	0
Chamber					
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/12/2011	12
Multimeter	Fluke	114	MMU	7/8/2011	24
DC Power Supply	EZ Digital Co	GP-4303D	TPY	NCR	0
Spectrum Analyzer	Agilent	E4440A	AAX	5/23/2011	12

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) (Frequency Accuracy: +0.12/-0.01) 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.

TEST DESCRIPTION

Variation of Supply Voltage

The primary supply voltage was varied over the range specified by the client.

Variation of Ambient Temperature

Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range as declared by the manufacturer (+10°, +22°C and +40° C).

The Frequency Stability was measured using a spectrum analyzer. The spectrum analyzer is configured with a precision frequency reference that exceeds the stability requirement of the transmitter. The EUT was placed inside a temperature / humidity chamber. A low-loss coaxial cable connected the EUT to the spectrum analyzer outside of the chamber.

NORTHWEST			Frequency Stability				XMit 2011.10.26 PsaTx 2011.12.16
EUT	CTM2				Work Order	MDTR0042	
Customer	r: Medtronic Inc.				Date Temperature	: 12/20/11 : 24.09°C	
Attendees	s: None				Humidity Barometric Bres	17%	
Tested by	/: Trevor Buls		Power: 2.75VDC		Job Site	MN08	
EST SPECIFICA	TIONS		ANSI/TIA/EIA-603-C-2004				
RSS-243:2010			RSS-Gen Issue 3:2010 EN 301 839-	1 V1.3.1:2009			
IDTR0012 Test P	lan Configuration 6						
EVIATIONS FRO	M TEST STANDARD						
lone			T Pli				
Configuration #	4	Signature	Jorevor Duls	Assigned	Error	Limit	
ormal Temperatu	re		(MHz)	(MHz)	(ppm)	(ppm)	Result
	Normal Voltage +2.75 V Antenna Co	bil					
		Low Channel, 402.15 MHz Mid Channel, 403.35 MHz	402.149617 403.349702	N/A N/A	N/A N/A	N/A N/A	N/A N/A
		High Channel, 404.85 MHz	403.349702 404.849669	N/A	N/A	N/A	N/A
	Antenna PC	Low Channel, 402.15 MHz	402.149617	N/A	N/A	N/A	N/A
		Mid Channel, 403.35 MHz	403.349685	N/A	N/A	N/A	N/A
	Extreme Voltage +3.2 V	nigh Ghaillei, 404.65 MHZ	404.649669	IN/A	IN/A	IN/A	IN/A
	Antenna Co	Low Channel, 402 15 MHz	402 140617	402.149617	0.0	100	Pass
		Mid Channel, 403.35 MHz	403.349702	403.349702	0.0	100	Pass
	Antenna PC	nign Unannel, 404.85 MHz	404.849669	404.849669	0.0	100	Pass
		Low Channel, 402.15 MHz Mid Channel, 403.35 MHz	402.149601	402.149617	0.0	100	Pass
		High Channel, 404.85 MHz	403.349701 404.849669	404.849669	0.0	100	Pass
	Extreme Voltage +2.2 V Antenna Co	pil					
	/ #10/#14 00	Low Channel, 402.15 MHz	402.149618	402.149617	0.0	100	Pass
		Mid Channel, 403.35 MHz High Channel, 404.85 MHz	403.349702 404.849669	403.349702 404.849669	0.0 0.0	100 100	Pass Pass
	Antenna PC	B	402.4.400.04	400 440047	0.0	400	Deee
		Mid Channel, 403.35 MHz	402.149601 403.349685	403.349685	0.0	100	Pass
tromo Tomporat	110 ±40°C	High Channel, 404.85 MHz	404.849668	404.849669	0.0	100	Pass
arenne remperar	Normal Voltage +2.75 V						
	Antenna Co	bil Low Channel, 402,15 MHz	402.149584	402,149617	0.1	100	Pass
		Mid Channel, 403.35 MHz	403.349668	403.349702	0.1	100	Pass
	Antenna PC	High Channel, 404.85 MHz	404.849636	404.849669	0.1	100	Pass
		Low Channel, 402.15 MHz	402.149567	402.149617	0.1	100	Pass
		High Channel, 403.35 MHz	403.349668 404.849636	403.349685 404.849669	0.0	100	Pass Pass
	Extreme Voltage +3.2 V	- sil					
	Antenna Co	Low Channel, 402.15 MHz	402.149584	402.149617	0.1	100	Pass
		Mid Channel, 403.35 MHz High Channel, 404.85 MHz	403.349668 404.849636	403.349702 404.849669	0.1	100 100	Pass Pass
	Antenna PC	CB		10 110 10000	0.11	100	1 466
		Low Channel, 402.15 MHz Mid Channel, 403.35 MHz	402.149585 403.349668	402.149617 403.349685	0.1 0.0	100 100	Pass Pass
		High Channel, 404.85 MHz	404.849637	404.849669	0.1	100	Pass
	Extreme voltage +2.2 V Antenna Co	pil					
		Low Channel, 402.15 MHz Mid Channel, 403.35 MHz	402.149585	402.149617	0.1	100	Pass
		High Channel, 404.85 MHz	403.349668 404.849636	404.849669	0.1	100	Pass
	Antenna PC	Low Channel, 402.15 MHz	402.149584	402.149617	0.1	100	Pass
		Mid Channel, 403.35 MHz	403.349668	403.349685	0.0	100	Pass
treme Temperat	ure +10°C	riign Unannei, 404.85 MHz	404.849636	404.849669	U.1	100	Pass
	Normal Voltage +2.75 V	sil					
	Antenna Cu	Low Channel, 402.15 MHz	402.149401	402.149617	0.5	100	Pass
		Mid Channel, 403.35 MHz High Channel, 404.85 MHz	403.349469 404 849452	403.349702 404.849669	0.6 0.5	100 100	Pass Pass
	Antenna PC	CB		400 / 100/0	0.0		Dec
		Low Channel, 402.15 MHz Mid Channel, 403.35 MHz	402.149385 403.349469	402.149617 403.349685	0.6	100	Pass Pass
	Extreme Voltace +3.2.V	High Channel, 404.85 MHz	404.849436	404.849669	0.6	100	Pass
	Antenna Co	bil					
		Low Channel, 402.15 MHz Mid Channel, 403.35 MHz	402.149401 403.349486	402.149617 403.349702	0.5	100 100	Pass
		High Channel, 404.85 MHz	404.849452	404.849669	0.5	100	Pass
	Antenna PC	Low Channel, 402.15 MHz	402.149401	402.149617	0.5	100	Pass
		Mid Channel, 403.35 MHz	403.349486	403.349685	0.5	100	Pass
	Extreme Voltage +2.2 V	nign Unannel, 404.85 MHz	404.849452	404.849669	0.5	100	Pass
	Antenna Co	low Chappel 402 15 ML	100 440404	402 140617	0.5	100	Pasa
		Mid Channel, 403.35 MHz	402.149401 403.349486	403.349702	0.5	100	Pass
	Antenno DC	High Channel, 404.85 MHz	404.849452	404.849669	0.5	100	Pass
	/ income i C	Low Channel, 402.15 MHz	402.149385	402.149617	0.6	100	Pass
		Mid Channel, 403.35 MHz High Channel, 404.85 MHz	403.349469 404.849451	403.349685 404.849669	0.5 0.5	100 100	Pass Pass
					-		-

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

Receiving MICS, mode 1, Ch 1, 5, 10: 402.15 MHz, 403.35 MHz, 404.85 MHz with PCB/Coil Antenna (See Comments)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

MDTR0042 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	5 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
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	7/1/2011	12 mo
		Double Ridge Guide Horn			
MN05 Cables	ESM Cable Corp.	Cables	MNI	10/18/2011	12 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	6/29/2011	24 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	2/2/2011	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/1/2011	12 mo
Antenna, Biconilog	ETS Lindgren	3142D	AXN	12/30/2009	24 mo
Spectrum Analyzer	Agilent	E4446A	AAT	2/15/2011	12 mo

MEASUREMENT BANDWIDTHS

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

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

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) (Radiated Power via Substitution: +0.69, -0.68) 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.

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, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp was used for this test in order to provide sufficient measurement



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
810.953	17.0	9.8	2.2	243.0	3.0	0.0	Horz	QP	0.0	26.8	40.4	-13.6	Ch 10, Coil, EUT Vertical
810.760	17.0	9.8	1.0	169.0	3.0	0.0	Horz	QP	0.0	26.8	40.4	-13.6	Ch 10, PCB, EUT Vertical
808.798	17.0	9.7	1.0	178.0	3.0	0.0	Vert	QP	0.0	26.7	40.4	-13.7	Ch 10, Coil, EUT Vertical
805.034	17.0	9.7	2.4	231.0	3.0	0.0	Vert	QP	0.0	26.7	40.4	-13.7	Ch 5, PCB, EUT Vertical
803.817	17.0	9.7	1.0	128.0	3.0	0.0	Vert	QP	0.0	26.7	40.4	-13.7	Ch 1, PCB, EUT Vertical
810.614	16.9	9.7	1.0	173.0	3.0	0.0	Vert	QP	0.0	26.6	40.4	-13.8	Ch 10, PCB, EUT Vertical
802.593	17.0	9.6	1.9	121.0	3.0	0.0	Horz	QP	0.0	26.6	40.4	-13.8	Ch 1, PCB, EUT Vertical
806.910	16.9	9.7	1.0	321.0	3.0	0.0	Vert	QP	0.0	26.6	40.4	-13.8	Ch 5, Coil, EUT Vertical
806.628	16.9	9.7	1.0	72.0	3.0	0.0	Horz	QP	0.0	26.6	40.4	-13.8	Ch 5, Coil, EUT Vertical
806.501	16.9	9.7	1.0	268.0	3.0	0.0	Horz	QP	0.0	26.6	40.4	-13.8	Ch 5, PCB, EUT Vertical
805.834	16.9	9.7	1.0	164.0	3.0	0.0	Vert	QP	0.0	26.6	40.4	-13.8	Ch 1, Coil, EUT Vertical
803.522	16.9	9.6	3.9	55.0	3.0	0.0	Horz	QP	0.0	26.5	40.4	-13.9	Ch 1, Coil, EUT Vertical
406.007	22.3	0.2	1.8	179.0	3.0	0.0	Vert	QP	0.0	22.5	40.4	-17.9	Ch 10, Coil, EUT Vertical
406.004	22.0	0.2	1.0	112.0	3.0	0.0	Vert	QP	0.0	22.2	40.4	-18.2	Ch 10, PCB, EUT Vertical
406.003	20.0	0.2	1.0	84.0	3.0	0.0	Horz	QP	0.0	20.2	40.4	-20.2	Ch 10, PCB, EUT Vertical
406.002	19.2	0.2	1.0	46.0	3.0	0.0	Horz	QP	0.0	19.4	40.4	-21.0	Ch 10, Coil, EUT Vertical
401.638	18.7	0.0	1.6	291.0	3.0	0.0	Vert	QP	0.0	18.7	40.4	-21.7	Ch 1, PCB, EUT Vertical
401.666	18.3	0.0	1.0	220.0	3.0	0.0	Vert	QP	0.0	18.3	40.4	-22.1	Ch 1, Coil, EUT Vertical
403.560	18.0	0.1	1.0	334.0	3.0	0.0	Vert	QP	0.0	18.1	40.4	-22.3	Ch 5, Coil, EUT Vertical
401.876	17.7	0.0	1.0	119.0	3.0	0.0	Horz	QP	0.0	17.7	40.4	-22.7	Ch 5, PCB, EUT Vertical
401.633	17.7	0.0	3.0	59.0	3.0	0.0	Vert	QP	0.0	17.7	40.4	-22.7	Ch 5, PCB, EUT Vertical
401.896	17.5	0.0	1.3	343.0	3.0	0.0	Horz	QP	0.0	17.5	40.4	-22.9	Ch 1, PCB, EUT Vertical

404.723 17.1 0.2 1.0 230.0 3.0 0.0 Horz OP 0.0 17.3 40.4 23.1 Ch 5, Col, EUT Vertical 1204.000 30.9 -7.3 1.0 61.0 3.0 0.0 Vert AV 0.0 23.6 54.0 -30.4 Ch 1, Col, EUT Vertical 1204.000 30.4 -7.3 1.0 192.0 3.0 0.0 Vert AV 0.0 22.4 54.0 -31.6 Ch 1, PCB, EUT Vertical 1204.000 23.7 -7.3 1.0 192.0 3.0 0.0 Vert AV 0.0 22.1 54.0 -31.6 Ch 1, PCB, EUT Vertical 1617.757 27.7 -5.7 1.0 280.0 3.0 0.0 Vert AV 0.0 22.0 56.0 -32.0 Ch 5, Col, EUT Vertical 1613.567 27.7 -5.7 1.0 380.0 3.0 0.0 Vert AV 0.0 22.0 56.0 -32.0 Ch 5, Col, EUT Vertical 1613.57 27.7 -5.7 1.0 380.0 0.0	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
402.300 17.2 0.0 17.2 40.4 22.2 Ch 1, coli, EUT Vertical 1204.000 30.9 -7.3 1.0 04.0 30.0 0.0 Vert AV 0.0 23.1 54.0 -30.9 Ch 1, coli, EUT Vertical 1204.000 30.4 -7.3 1.0 192.0 30.0 0.0 Vert AV 0.0 23.1 54.0 -33.7 Ch 1, Coli, EUT Vertical 1609.982 28.0 -5.7 1.0 192.0 30.0 0.0 Vert AV 0.0 22.3 54.0 -3.17 Ch 1, Coli, EUT Vertical 1617.175 27.7 -5.7 1.0 28.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 10, PGE, EUT Vertical 1610.375 27.7 -5.7 1.0 28.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 1, PGE, EUT Vertical 1610.377 -5.7 1.0 38.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 1, PGE, EUT Vertical	404.723	17.1	0.2	1.0	230.0	3.0	0.0	Horz	QP	0.0	17.3	40.4	-23.1	Ch 5, Coil, EUT Vertical
1204.000 3.0.9 -7.3 1.0 61.0 3.0 0.0 Vert AV 0.0 23.6 54.0 -3.0.9 Ch 1, PCB, EUT Vertica 1204.000 29.7 -7.3 1.0 192.0 3.0 0.0 Horz AV 0.0 22.4 54.0 -31.6 Ch 1, PCB, EUT Vertica 1613.252 27.8 -5.7 1.0 190.0 3.0 0.0 Vert AV 0.0 22.1 54.0 -31.9 Ch 2, PCB, EUT Vertica 1613.257 27.7 -5.7 1.0 190.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 5, Col, EUT Vertica 1613.357 27.7 -5.7 1.0 380.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 5, Col, EUT Vertica 1610.317 27.7 -5.7 1.0 380.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertica 1610.317 27.7 -5.7 1.0 106.0 3.0	402.300	17.2	0.0	1.0	321.0	3.0	0.0	Horz	QP	0.0	17.2	40.4	-23.2	Ch 1, Coil, EUT Vertical
1204.000 30.4 -7.3 1.0 20.4 3.0 0.0 Vert AV 0.0 22.1 54.0 -3.0 Ch. 1, PCB, EUT vertice 1609.982 28.0 -5.7 1.0 190.0 3.0 0.0 Vert AV 0.0 22.4 54.0 -3.17 Ch. 1, PCB, EUT Vertice 1617.157 27.7 -5.7 1.0 190.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -3.20 Ch. 10, PCB, EUT Vertice 1617.157 27.7 -5.7 1.0 28.00 3.0 0.0 Vert AV 0.0 22.0 54.0 -3.20 Ch. 5, CpB, EUT Vertice 1610.967 27.7 -5.7 1.0 180.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -3.20 Ch. 15, CpB, EUT Vertice 1610.967 27.7 -5.7 1.0 196.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -3.20 Ch. 15, CpB, EUT Vertice 1610.017 27.7 -5.7 1.0 196.0 3.	1204.000	30.9	-7.3	1.0	61.0	3.0	0.0	Vert	AV	0.0	23.6	54.0	-30.4	Ch 1, Coil, EUT Vertical
1204.000 29.7 -7.3 1.0 192.0 3.0 0.0 Horz AV 0.0 22.4 54.0 -31.6 Ch 1, PCB, EUT Vertical 1613.252 27.8 -5.7 1.0 190.0 3.0 0.0 Vert AV 0.0 22.1 54.0 -31.9 Ch 5, PCB, EUT Vertical 1617.056 27.7 -5.7 1.0 280.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 10, PCB, EUT Vertical 1613.575 27.7 -5.7 1.0 280.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 5, Col, EUT Vertical 1613.57 27.7 -5.7 1.0 380.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertical 1610.217 27.7 -5.7 1.0 380.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertical 1610.217 27.7 -5.7 1.0 180.0 3.0	1204.000	30.4	-7.3	1.0	204.0	3.0	0.0	Vert	AV	0.0	23.1	54.0	-30.9	Ch 1, PCB, EUT Vertical
1609.992 28.0 -5.7 1.0 190.0 3.0 0.0 Vert AV 0.0 22.1 54.0 -31.7 Ch1, Col, EUT Vertica 1617.175 27.7 -5.7 3.5 21.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch10, PCB, EUT Vertica 1617.557 27.7 -5.7 1.0 28.00 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch10, PCB, EUT Vertica 1619.575 27.7 -5.7 1.0 105.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 5, Col, EUT Vertica 1610.317 27.7 -5.7 1.0 105.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertica 1610.17 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 21.0 54.0 -32.0 Ch 1, Col, EUT Vertica 120.4000 28.5 -7.2 1.0 72.0 3.0	1204.000	29.7	-7.3	1.0	192.0	3.0	0.0	Horz	AV	0.0	22.4	54.0	-31.6	Ch 1, PCB, EUT Vertical
1613.252 27.8 -5.7 1.0 1500 3.0 0.0 Vert AV 0.0 22.1 54.0 -31.9 Ch5, PCB, EUT Vertic 1617.175 27.7 -5.7 1.0 28.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch10, PCB, EUT Vertic 1613.553 27.7 -5.7 1.0 105.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch5, Coli, EUT Vertical 1613.573 27.7 -5.7 1.0 366.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch1, FCB, EUT Vertical 1610.217 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch1, FCB, EUT Vertical 1204.000 28.5 -7.3 1.0 17.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch10, Coli, EUT Vertical 1271.100 28.2 -7.2 1.0 15.0 3.0	1609.992	28.0	-5.7	1.0	190.0	3.0	0.0	Vert	AV	0.0	22.3	54.0	-31.7	Ch 1, Coil, EUT Vertical
1617.175 27.7 -5.7 3.5 217.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 10, PCB, EUT Vertici 1613.557 27.7 -5.7 1.0 284.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 10, PCB, EUT Vertici 1613.667 27.7 -5.7 1.0 360.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertici 1610.217 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertici 1610.017 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertici 1204.000 28.5 -7.3 1.0 120.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch 10, Col, EUT Vertici 1217.100 28.1 -7.2 1.0 15.0 3.0 <td>1613.225</td> <td>27.8</td> <td>-5.7</td> <td>1.0</td> <td>150.0</td> <td>3.0</td> <td>0.0</td> <td>Vert</td> <td>AV</td> <td>0.0</td> <td>22.1</td> <td>54.0</td> <td>-31.9</td> <td>Ch 5, PCB, EUT Vertical</td>	1613.225	27.8	-5.7	1.0	150.0	3.0	0.0	Vert	AV	0.0	22.1	54.0	-31.9	Ch 5, PCB, EUT Vertical
1617.060 27.7 -5.7 1.0 280.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 10, PCB, EUT Vertical 1613.356 27.7 -5.7 1.0 105.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 5, Coli, EUT Vertical 1610.367 27.7 -5.7 1.0 386.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, PCB, EUT Vertical 1610.217 27.7 -5.7 1.0 196.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, PCB, EUT Vertical 1204.000 28.5 -7.3 1.0 170.0 3.0 0.0 Horz AV 0.0 21.0 54.0 -33.0 Ch 10, Coli, EUT Vertical 1217.100 28.2 -7.2 1.0 176.0 3.0 0.0 Vert AV 0.0 20.9 54.0 -33.1 Ch 10, Coli, EUT Vertical 1217.100 28.0 -7.2 1.0 15.0 <t< td=""><td>1617.175</td><td>27.7</td><td>-5.7</td><td>3.5</td><td>217.0</td><td>3.0</td><td>0.0</td><td>Horz</td><td>AV</td><td>0.0</td><td>22.0</td><td>54.0</td><td>-32.0</td><td>Ch 10, PCB, EUT Vertical</td></t<>	1617.175	27.7	-5.7	3.5	217.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 10, PCB, EUT Vertical
1613.567 27.7 -5.7 1.0 224.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 5, Coll, EUT Vertical 1613.560 27.7 -5.7 1.0 380.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 5, Coll, EUT Vertical 1610.217 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Coll, EUT Vertical 1610.017 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Coll, EUT Vertical 1217.100 28.2 -7.2 1.0 156.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch 10, Coll, EUT Vertical 1217.100 28.1 -7.2 1.0 15.0 3.0 0.0 Vert AV 0.0 20.9 54.0 -33.1 Ch 10, Coll, EUT Vertical 1217.100 28.1 -7.2 1.0 15.0 <	1617.050	27.7	-5.7	1.0	280.0	3.0	0.0	Vert	AV	0.0	22.0	54.0	-32.0	Ch 10, PCB, EUT Vertical
1613.350 27.7 -5.7 1.0 105.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 5, Col, EUT Vertica 1610.367 27.7 -5.7 1.0 326.0 3.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertica 1610.017 27.7 -5.7 1.0 197.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Col, EUT Vertica 1204.000 28.5 -7.3 1.0 176.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -32.0 Ch 1, Col, EUT Vertica 1217.100 28.2 -7.2 1.0 166.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch 10, Col, EUT Vertica 1217.100 28.1 -7.2 1.0 176.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Col, EUT Vertica 1217.100 28.0 -7.2 1.2 11.0 3.0	1613.575	27.7	-5.7	1.0	284.0	3.0	0.0	Vert	AV	0.0	22.0	54.0	-32.0	Ch 5, Coil, EUT Vertical
1610.367 27.7 -5.7 1.0 360.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch.5, PCB, EUT Vertica 1610.317 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch.1, PCB, EUT Vertica 1204.000 28.5 -7.3 1.0 172.0 3.0 0.0 Horz AV 0.0 21.2 54.0 -32.0 Ch.1, PCB, EUT Vertica 1217.100 28.2 -7.2 1.0 126.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch.10, Coll, EUT Vertica 1217.100 28.1 -7.2 1.0 176.0 3.0 0.0 Horz AV 0.0 20.9 54.0 -33.1 Ch.10, Coll, EUT Vertica 1217.100 28.1 -7.2 1.0 175.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch.10, Coll, EUT Vertica 1217.100 28.0 -7.2 1.0 23.0 3.0<	1613.350	27.7	-5.7	1.0	105.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 5, Coil, EUT Vertical
1610.217 27.7 -5.7 1.0 326.0 0.0 Vert AV 0.0 22.0 54.0 -32.0 Ch 1, PCB, EUI Vertice 1610.217 27.7 -5.7 1.0 197.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, PCB, EUI Vertice 1247.100 28.5 -7.3 1.0 196.0 3.0 0.0 Vert AV 0.0 21.2 54.0 -32.8 Ch 1, Col, EUI Vertice 1217.100 28.2 -7.2 1.0 156.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch 10, Col, EUI Vertice 1217.100 28.1 -7.2 1.0 156.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.1 Ch 10, Col, EUI Vertice 1217.100 28.0 -7.2 1.2 110.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Col, EUI Vertice 1207.680 28.0 -7.2 1.8 150.0 3.0 0.0 <td>1610.967</td> <td>27.7</td> <td>-5.7</td> <td>1.0</td> <td>360.0</td> <td>3.0</td> <td>0.0</td> <td>Horz</td> <td>AV</td> <td>0.0</td> <td>22.0</td> <td>54.0</td> <td>-32.0</td> <td>Ch 5, PCB, EUT Vertical</td>	1610.967	27.7	-5.7	1.0	360.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 5, PCB, EUT Vertical
1610.217 27.7 -5.7 1.0 106.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, Coli, EUT Vertical 1204.000 28.5 -7.3 1.0 72.0 3.0 0.0 Horz AV 0.0 21.0 54.0 -32.0 Ch 1, Coli, EUT Vertical 1217.100 28.2 -7.2 1.0 252.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch 10, Coli, EUT Vertical 1217.100 28.1 -7.2 1.0 156.0 3.0 0.0 Vert AV 0.0 20.9 54.0 -33.1 Ch 10, Coli, EUT Vertical 1217.100 28.1 -7.2 1.0 15.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Coli, EUT Vertical 1216.417 28.0 -7.2 1.2 110.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertical 1207.890 28.0 -7.2 1.8 150.0 <	1610.317	27.7	-5.7	1.0	326.0	3.0	0.0	Vert	AV	0.0	22.0	54.0	-32.0	Ch 1, PCB, EUT Vertical
1610.017 27.7 -5.7 1.0 197.0 3.0 0.0 Horz AV 0.0 22.0 54.0 -32.0 Ch 1, PCB, EUT Vertical 1217.100 28.2 -7.2 1.0 166.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch 10, Coil, EUT Vertical 1217.100 28.2 -7.2 1.0 176.0 3.0 0.0 Vert AV 0.0 20.9 54.0 -33.1 Ch 10, Coil, EUT Vertical 1217.100 28.1 -7.2 1.0 176.0 3.0 0.0 Horz AV 0.0 20.9 54.0 -33.1 Ch 10, Coil, EUT Vertical 1216.417 28.0 -7.2 1.2 110.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Coil, EUT Vertical 1207.860 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, Coil, EUT Vertical 1207.860 28.0 -7.2 1.8 32.6	1610.217	27.7	-5.7	1.0	106.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 1, Coil, EUT Vertical
1204.000 28.5 -7.3 1.0 72.0 3.0 0.0 Horz AV 0.0 21.2 54.0 -3.28 Ch 1, Coli, EUT Vertica 1217.100 28.2 -7.2 1.0 252.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -3.30 Ch 10, Coli, EUT Vertica 1217.100 28.1 -7.2 1.0 15.0 3.0 0.0 Vert AV 0.0 20.9 54.0 -3.31 Ch 10, PCB, EUT Vertica 1217.100 28.0 -7.2 1.0 15.0 3.0 0.0 Horz AV 0.0 20.9 54.0 -3.32 Ch 10, PCB, EUT Vertica 1207.690 28.0 -7.2 1.8 15.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -3.32 Ch 5, PCB, EUT Vertica 1207.650 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -3.32 Ch 5, PCB, EUT Vertica 1207.650 28.0 -7.2 1.8 32.0 0.0	1610.017	27.7	-5.7	1.0	197.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 1, PCB, EUT Vertical
1217.100 28.2 -7.2 1.0 166.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.0 Ch 10, Coil, EUT Vertica 1217.100 28.1 -7.2 1.0 176.0 3.0 0.0 Vert AV 0.0 20.9 54.0 -33.1 Ch 10, Coil, EUT Vertica 1217.100 28.1 -7.2 1.0 175.0 3.0 0.0 Horz AV 0.0 20.9 54.0 -33.1 Ch 10, Coil, EUT Vertica 1217.100 28.0 -7.2 1.0 23.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Coil, EUT Vertica 1207.680 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertica 1207.650 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertica 1207.650 28.0 -7.2 1.0 225.0 3.0<	1204.000	28.5	-7.3	1.0	72.0	3.0	0.0	Horz	AV	0.0	21.2	54.0	-32.8	Ch 1, Coil, EUT Vertical
1217,100 28.1 -7.2 1.0 126.0 3.0 0.0 Vert AV 0.0 21.0 54.0 -33.1 Ch 10, Coli, EUT Vertic 1217,102 28.1 -7.2 1.0 15.0 3.0 0.0 Horz AV 0.0 20.9 54.0 -33.1 Ch 10, Coli, EUT Vertic 1217,100 28.0 -7.2 1.0 23.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Coli, EUT Vertic 1216,417 28.0 -7.2 1.2 110.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Coli, EUT Vertica 1207,802 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, Coli, EUT Vertica 1207,650 28.0 -7.2 1.8 32.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, Coli, EUT Vertica 1207,650 28.0 -7.2 1.0 28.0 3.0 0.0 <td>1217.100</td> <td>28.2</td> <td>-7.2</td> <td>1.0</td> <td>166.0</td> <td>3.0</td> <td>0.0</td> <td>Vert</td> <td>AV</td> <td>0.0</td> <td>21.0</td> <td>54.0</td> <td>-33.0</td> <td>Ch 10, Coil, EUT Vertical</td>	1217.100	28.2	-7.2	1.0	166.0	3.0	0.0	Vert	AV	0.0	21.0	54.0	-33.0	Ch 10, Coil, EUT Vertical
1217.100 28.1 -7.2 1.0 176.0 3.0 0.0 Vert AV 0.0 20.9 54.0 -3.3.1 Ch10, PCB, EUT Vertic 1217.100 28.0 -7.2 1.0 23.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch10, PCB, EUT Vertic 1216.417 28.0 -7.2 1.2 110.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch10, PCB, EUT Vertic 1207.680 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertica 1207.680 28.0 -7.2 1.0 225.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 5, CoB, EUT Vertica 1611.050 41.8 -5.7 1.0 326.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, CoB, EUT Vertica 1611.050 41.2 -5.7 1.0 284.0 3.0	1217.100	28.2	-7.2	1.0	252.0	3.0	0.0	Vert	AV	0.0	21.0	54.0	-33.0	Ch 10, Coil, EUT Vertical
1217.100 28.1 -7.2 1.0 15.0 3.0 0.0 Horz AV 0.0 20.9 54.0 -3.3.1 Ch 10, Coll, EUT Vertica 1217.100 28.0 -7.2 3.2 Ch 10, Coll, EUT Vertica AV 0.0 20.8 54.0 -3.3.2 Ch 10, Coll, EUT Vertica 1208.092 28.0 -7.2 1.2 110.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -3.3.2 Ch 5, PCB, EUT Vertica 1207.650 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -3.3.2 Ch 5, PCB, EUT Vertica 1207.650 28.0 -7.2 2.8 326.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -3.3.2 Ch 5, Coil, EUT Vertica 1207.650 28.0 -7.2 1.0 360.0 3.0 0.0 Vert PK 0.0 35.1 74.0 -38.2 Ch 5, Coil, EUT Vertica 1613.733 41.4 -5.7 1.0 190.0 3.0 0.0 V	1217.092	28.1	-7.2	1.0	176.0	3.0	0.0	vert	AV	0.0	20.9	54.0	-33.1	Ch 10, PCB, EUT Vertical
1217,100 28.0 -7.2 1.0 23.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, PCB, EDI Vertica 1206,8092 28.0 -7.2 1.2 110.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Coil, EUT Vertica 1207,650 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertica 1207,650 28.0 -7.2 1.0 225.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 5, Coil, EUT Vertica 1207,650 28.0 -7.2 1.0 225.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 5, Coil, EUT Vertica 1201,133 41.8 -5.7 1.0 150.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, Coil, EUT Vertica 1613.250 41.2 -5.7 1.0 190.0 3.0<	1217.100	28.1	-7.2	1.0	15.0	3.0	0.0	Horz	AV	0.0	20.9	54.0	-33.1	Ch 10, Coll, EUT Vertical
1216.417 28.0 -7.2 314.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 10, Coll, EUT Vertica 1207.650 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertica 1207.650 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertical 1207.650 28.0 -7.2 1.0 326.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertical 1613.733 41.4 -5.7 1.0 360.0 3.0 0.0 Horz PK 0.0 35.5 74.0 -38.5 Ch 5, PCB, EUT Vertical 1613.733 41.4 -5.7 1.0 180.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, Coi, EUT Vertical 1613.250 41.2 -5.7 1.0 190.0 3.0 0.0 </td <td>1217.100</td> <td>28.0</td> <td>-7.2</td> <td>1.0</td> <td>233.0</td> <td>3.0</td> <td>0.0</td> <td>Horz</td> <td>AV</td> <td>0.0</td> <td>20.8</td> <td>54.0</td> <td>-33.2</td> <td>Ch 10, PCB, EUT Vertical</td>	1217.100	28.0	-7.2	1.0	233.0	3.0	0.0	Horz	AV	0.0	20.8	54.0	-33.2	Ch 10, PCB, EUT Vertical
1207.892 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -3.2 Ch 5, PCB, EUT Vertical 1207.892 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertical 1207.650 28.0 -7.2 1.0 225.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, EUT Vertical 1611.050 41.8 -5.7 1.0 150.0 3.0 0.0 Herz PK 0.0 36.1 74.0 -38.3 Ch 5, PCB, EUT Vertical 1613.250 41.2 -5.7 1.0 150.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, Coil, EUT Vertical 1610.300 41.1 -5.7 1.0 190.0 3.0 0.0 Vert PK 0.0 35.1 74.0 -38.6 Ch 1, Col, EUT Vertical 1611.030 40.1 -5.7 3.5 217.0 3.0 </td <td>1216.417</td> <td>28.0</td> <td>-7.2</td> <td>3.2</td> <td>314.0</td> <td>3.0</td> <td>0.0</td> <td>Horz</td> <td>AV</td> <td>0.0</td> <td>20.8</td> <td>54.0</td> <td>-33.2</td> <td>Ch 10, Coll, EUT Vertical</td>	1216.417	28.0	-7.2	3.2	314.0	3.0	0.0	Horz	AV	0.0	20.8	54.0	-33.2	Ch 10, Coll, EUT Vertical
1207.692 28.0 -7.2 1.8 15.0 3.0 0.0 Vert AV 0.0 20.8 54.0 -33.2 Ch 5, PCB, E01 Vertical 1207.650 28.0 -7.2 1.0 225.0 3.0 0.0 Horz AV 0.0 20.8 54.0 -33.2 Ch 5, Coil, EUT Vertical 1611.050 41.8 -5.7 1.0 360.0 3.0 0.0 Horz PK 0.0 36.1 74.0 -33.3 Ch 5, PCB, EUT Vertical 1204.133 42.8 -7.3 1.0 61.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, Coil, EUT Vertical 1613.250 41.1 -5.7 1.0 284.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.6 Ch 1, Coil, EUT Vertical 1610.300 41.1 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.6 Ch 1, Coil, EUT Vertical 1617.158 40.8 -5.7 1.0 105.0 3	1208.092	28.0	-7.2	1.2	110.0	3.0	0.0	Horz	AV	0.0	20.8	54.0	-33.2	Ch 5, PCB, EUT Vertical
1207.630 28.0 -7.2 1.0 225.0 3.0 0.0 Verit AV 0.0 20.8 34.0 -33.2 Ch3, Cu1, EUT Vertical 1611.050 41.8 -5.7 1.0 360.0 3.0 0.0 Horz PK 0.0 36.1 74.0 -33.2 Ch5, Coli, EUT Vertical 1613.733 41.4 -5.7 1.0 150.0 3.0 0.0 Vert PK 0.0 35.7 74.0 -38.5 Ch 5, PCB, EUT Vertical 1613.250 41.2 -5.7 1.0 284.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, Coli, EUT Vertical 1610.300 41.1 -5.7 1.0 284.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, Coli, EUT Vertical 1609.867 40.9 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 1, Coli, EUT Vertical 1611.008 40.7 -5.7 1.0 105.0	1207.892	28.0	-7.2	1.8	15.0	3.0	0.0	Vert	AV	0.0	20.8	54.0	-33.2	Ch 5, PCB, EUT Vertical
120.030 26.0 -7.2 1.0 223.0 3.0 0.0 Hoiz AV 0.0 20.6 34.0 -33.2 Ch 3, Coll, EUT Venica 1611.050 41.8 -5.7 1.0 150.0 3.0 0.0 Vent PK 0.0 35.7 74.0 -38.3 Ch 5, PCB, EUT Venica 1204.133 42.8 -7.3 1.0 61.0 3.0 0.0 Vent PK 0.0 35.5 74.0 -38.5 Ch 1, Coil, EUT Venical 1613.250 41.1 -5.7 1.0 190.0 3.0 0.0 Vent PK 0.0 35.5 74.0 -38.6 Ch 1, Coil, EUT Venical 160.300 41.1 -5.7 1.0 190.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.8 Ch 1, Coll, EUT Venical 1617.158 40.8 -5.7 1.0 105.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 5, Coil, EUT Venical 1614.100 40.8 -5.7 1.0 106.0 3.0	1207.030	20.0	-7.2	2.0	326.0	3.0	0.0	Ven	AV	0.0	20.0	54.0	-33.2	Ch 5, Coll, EUT Vertical
1611.030 41.8 -5.7 1.0 300.0 3.0 0.0 Vert PK 0.0 35.7 74.0 -38.3 Ch 5, PCB, EUT Vertical 1204.133 42.8 -7.3 1.0 61.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 1, Coll, EUT Vertical 1613.250 41.2 -5.7 1.0 284.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch 5, Coll, EUT Vertical 1609.867 40.9 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.8 Ch 1, PCB, EUT Vertical 1617.158 40.8 -5.7 3.5 217.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 10, PCB, EUT Vertical 1611.008 40.7 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.0 74.0 -38.9 Ch 1, PCB, EUT Vertical 1681.088 40.7 -5.7 1.0 106.0 3	1207.030	20.0	-7.2	1.0	225.0	3.0	0.0	Horz		0.0	20.0	54.0	-33.2	Ch 5, Coll, EUT Vertical
1013.733 41.4 -3.7 1.0 130.0 3.0 0.0 Vent PK 0.0 35.7 74.0 -38.5 Ch 3, PC6, PC6, EUT Ventical 1204.133 41.2 -5.7 1.0 284.0 3.0 0.0 Vent PK 0.0 35.5 74.0 -38.5 Ch 1, Coil, EUT Ventical 1613.250 41.1 -5.7 1.0 190.0 3.0 0.0 Vent PK 0.0 35.5 74.0 -38.5 Ch 1, Coil, EUT Ventical 1609.867 40.9 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.6 Ch 1, PCB, EUT Ventical 1617.158 40.8 -5.7 3.5 217.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 10, PCB, EUT Ventical 1611.004 40.8 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.0 74.0 -38.9 Ch 10, PCB, EUT Ventical 1608.808 40.7 -5.7 1.0 326.0	1612 722	41.0	-3.7	1.0	150.0	3.0	0.0	Vort		0.0	30.1	74.0	-37.9	Ch 5, FCB, EUT Vertical
120.103 42.0 47.3 1.0 01.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.5 Ch S, Coil, EUT Vertical 1610.300 41.1 -5.7 1.0 190.0 3.0 0.0 Vert PK 0.0 35.5 74.0 -38.6 Ch S, Coil, EUT Vertical 1609.867 40.9 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.6 Ch S, Coil, EUT Vertical 1617.158 40.8 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.8 Ch S, Coil, EUT Vertical 1614.100 40.8 -5.7 1.0 105.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch S, Coil, EUT Vertical 1614.100 40.7 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.0 74.0 -39.0 Ch S, Coil, EUT Vertical 1618.567 40.6 -5.7 1.0 230.0 <td< td=""><td>1204 122</td><td>41.4</td><td>-3.7</td><td>1.0</td><td>61.0</td><td>3.0</td><td>0.0</td><td>Vert</td><td></td><td>0.0</td><td>35.7</td><td>74.0</td><td>-30.3</td><td>Ch 1 Coil ELIT Vertical</td></td<>	1204 122	41.4	-3.7	1.0	61.0	3.0	0.0	Vert		0.0	35.7	74.0	-30.3	Ch 1 Coil ELIT Vertical
1610.32.00 41.1 -5.7 1.0 264.0 3.0 0.0 Vert PK 0.0 35.3 74.0 -38.3 Ch1, 20i, EUT Vertical 1609.867 40.9 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.8 Ch1, 20i, EUT Vertical 1617.158 40.8 -5.7 3.5 217.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch1, PCB, EUT Vertical 1611.008 40.7 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch1, PCB, EUT Vertical 1611.008 40.7 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.0 74.0 -39.0 Ch1, PCB, EUT Vertical 1216.825 42.1 -7.2 1.0 232.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertical 1216.825 42.1 -7.2 1.0 232.0 3.0 </td <td>1612 250</td> <td>42.0</td> <td>-7.3</td> <td>1.0</td> <td>284.0</td> <td>3.0</td> <td>0.0</td> <td>Vert</td> <td></td> <td>0.0</td> <td>35.5</td> <td>74.0</td> <td>-30.5</td> <td>Ch 5 Coil EUT Vertical</td>	1612 250	42.0	-7.3	1.0	284.0	3.0	0.0	Vert		0.0	35.5	74.0	-30.5	Ch 5 Coil EUT Vertical
1609.867 40.9 -5.7 1.0 197.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.8 Ch 1, PCB, EUT Vertical 1617.158 40.8 -5.7 3.5 217.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 10, PCB, EUT Vertical 1617.158 40.8 -5.7 1.0 105.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 5, Coil, EUT Vertical 1611.008 40.7 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 5, Coil, EUT Vertical 1608.808 40.7 -5.7 1.0 226.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertical 1216.825 42.1 -7.2 1.0 233.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertical 1216.825 42.1 -7.2 1.0 282.0 <t< td=""><td>1610 300</td><td>41.2</td><td>-5.7</td><td>1.0</td><td>100.0</td><td>3.0</td><td>0.0</td><td>Vert</td><td>PK</td><td>0.0</td><td>35.4</td><td>74.0</td><td>-38.6</td><td>Ch 1 Coil EUT Vertical</td></t<>	1610 300	41.2	-5.7	1.0	100.0	3.0	0.0	Vert	PK	0.0	35.4	74.0	-38.6	Ch 1 Coil EUT Vertical
1010 101	1609 867	40.9	-5.7	1.0	197.0	3.0	0.0	Horz	PK	0.0	35.2	74.0	-38.8	Ch 1 PCB ELIT Vertical
1614.100 40.8 -5.7 1.0 105.0 3.0 0.0 Horz PK 0.0 35.1 74.0 -38.9 Ch 5, Coil, EUT Vertical 1614.1008 40.7 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.0 74.0 -38.9 Ch 5, Coil, EUT Vertical 1608.808 40.7 -5.7 1.0 326.0 3.0 0.0 Horz PK 0.0 35.0 74.0 -39.0 Ch 1, Coil, EUT Vertical 1216.825 42.1 -7.2 1.0 233.0 3.0 0.0 Horz PK 0.0 34.9 74.0 -39.1 Ch 10, Coil, EUT Vertica 1216.825 42.1 -7.2 1.0 252.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, Coil, EUT Vertica 1216.856 41.9 -7.3 1.0 280.0 3.0 0.0 Vert PK 0.0 34.6 74.0 -39.1 Ch 10, Coil, EUT Vertica 1206.158 41.9 -7.2 3.2 314.0	1617 158	40.8	-5.7	3.5	217.0	3.0	0.0	Horz	PK	0.0	35.1	74.0	-38.9	Ch 10 PCB ELIT Vertical
1611.08 40.7 -5.7 1.0 106.0 3.0 0.0 Horz PK 0.0 35.0 74.0 -39.0 Ch 1, Coil, EUT Vertical 1608.808 40.7 -5.7 1.0 326.0 3.0 0.0 Vert PK 0.0 35.0 74.0 -39.0 Ch 1, Coil, EUT Vertical 1216.825 42.1 -7.2 1.0 233.0 3.0 0.0 Horz PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertical 1215.600 42.1 -7.2 1.0 252.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertical 1215.600 42.1 -7.2 1.0 252.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertical 1206.158 41.9 -7.2 3.2 314.0 3.0 0.0 Horz PK 0.0 34.6 74.0 -39.7 Ch 10, PCB, EUT Vertical 1207.342 41.5 -7.2 3.2 314.0 <t< td=""><td>1614 100</td><td>40.8</td><td>-5.7</td><td>1.0</td><td>105.0</td><td>3.0</td><td>0.0</td><td>Horz</td><td>PK</td><td>0.0</td><td>35.1</td><td>74.0</td><td>-38.9</td><td>Ch 5 Coil EUT Vertical</td></t<>	1614 100	40.8	-5.7	1.0	105.0	3.0	0.0	Horz	PK	0.0	35.1	74.0	-38.9	Ch 5 Coil EUT Vertical
1608.80 40.7 -5.7 1.0 326.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.0 Ch 1, PCB, EUT Vertice 1216.825 42.1 -7.2 1.0 233.0 3.0 0.0 Horz PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertice 1216.825 42.1 -7.2 1.0 252.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertice 1618.567 40.6 -5.7 1.0 280.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertice 1206.158 41.9 -7.3 1.0 204.0 3.0 0.0 Vert PK 0.0 34.3 74.0 -39.7 Ch 10, PCB, EUT Vertica 1207.342 41.5 -7.2 3.2 314.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coil, EUT Vertica 1209.500 41.4 -7.2 1.0 122.0 3.0<	1611.008	40.7	-5.7	1.0	106.0	3.0	0.0	Horz	PK	0.0	35.0	74.0	-39.0	Ch 1 Coil EUT Vertical
1216.825 42.1 -7.2 1.0 233.0 3.0 0.0 Horz PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Ventice 1215.600 42.1 -7.2 1.0 252.0 3.0 0.0 Vent PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Ventice 1618.567 40.6 -5.7 1.0 280.0 3.0 0.0 Vent PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Ventice 1206.158 41.9 -7.3 1.0 204.0 3.0 0.0 Vent PK 0.0 34.3 74.0 -39.1 Ch 10, PCB, EUT Ventice 1213.483 41.5 -7.2 3.2 314.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coil, EUT Ventice 1207.342 41.5 -7.2 1.0 192.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coil, EUT Ventica 1204.533 41.4 -7.3 1.0 72.0 3.	1608.808	40.7	-5.7	1.0	326.0	3.0	0.0	Vert	PK	0.0	35.0	74.0	-39.0	Ch 1, PCB, EUT Vertical
1215.600 42.1 -7.2 1.0 252.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, Coil, EUT Vertica 1618.567 40.6 -5.7 1.0 280.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, Coil, EUT Vertica 1206.158 41.9 -7.3 1.0 204.0 3.0 0.0 Vert PK 0.0 34.6 74.0 -39.4 Ch 10, PCB, EUT Vertica 1206.158 41.5 -7.2 3.2 314.0 3.0 0.0 Horz PK 0.0 34.6 74.0 -39.7 Ch 10, Coil, EUT Vertica 1207.342 41.5 -7.2 1.0 192.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 1, PCB, EUT Vertica 1204.533 41.4 -7.2 1.0 225.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.8 Ch 5, Coil, EUT Vertica 1204.533 41.4 -7.3 1.0 72.0 3.	1216.825	42.1	-7.2	1.0	233.0	3.0	0.0	Horz	PK	0.0	34.9	74.0	-39.1	Ch 10, PCB, EUT Vertical
1618.567 40.6 -5.7 1.0 280.0 3.0 0.0 Vert PK 0.0 34.9 74.0 -39.1 Ch 10, PCB, EUT Vertica 1206.158 41.9 -7.3 1.0 204.0 3.0 0.0 Vert PK 0.0 34.6 74.0 -39.4 Ch 10, PCB, EUT Vertica 1213.483 41.5 -7.2 3.2 314.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coll, EUT Vertica 1207.342 41.5 -7.2 1.0 192.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coll, EUT Vertica 1209.500 41.4 -7.2 1.0 225.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.7 Ch 10, Coll, EUT Vertica 1204.533 41.4 -7.3 1.0 72.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.9 Ch 1, Coll, EUT Vertica 1208.175 41.3 -7.2 1.8 15.0 3.	1215.600	42.1	-7.2	1.0	252.0	3.0	0.0	Vert	PK	0.0	34.9	74.0	-39.1	Ch 10, Coil, EUT Vertical
1206.158 41.9 -7.3 1.0 204.0 3.0 0.0 Vert PK 0.0 34.6 74.0 -39.4 Ch 1, PCB, EUT Vertica 1213.483 41.5 -7.2 3.2 314.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coil, EUT Vertica 1207.342 41.5 -7.2 1.0 192.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coil, EUT Vertica 1209.500 41.4 -7.2 1.0 1220.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coil, EUT Vertica 1204.533 41.4 -7.3 1.0 72.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.9 Ch 1, Coil, EUT Vertica 1208.175 41.3 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 34.1 74.0 -39.9 Ch 5, PCB, EUT Vertica 1215.925 41.1 -7.2 1.8 15.0 3.0<	1618.567	40.6	-5.7	1.0	280.0	3.0	0.0	Vert	PK	0.0	34.9	74.0	-39.1	Ch 10, PCB, EUT Vertical
1213.483 41.5 -7.2 3.2 314.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coll, EUT Vertica 1207.342 41.5 -7.2 1.0 192.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coll, EUT Vertica 1209.500 41.4 -7.2 1.0 122.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 10, Coll, EUT Vertica 1204.533 41.4 -7.3 1.0 72.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.9 Ch 1, Coll, EUT Vertical 1208.175 41.3 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 34.1 74.0 -39.9 Ch 5, PCB, EUT Vertica 1215.925 41.1 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 10, Coll, EUT Vertica 1215.925 41.1 -7.2 1.2 110.0 3.	1206.158	41.9	-7.3	1.0	204.0	3.0	0.0	Vert	PK	0.0	34.6	74.0	-39.4	Ch 1, PCB, EUT Vertical
1207.342 41.5 -7.2 1.0 192.0 3.0 0.0 Horz PK 0.0 34.3 74.0 -39.7 Ch 1, PCB, EUT Vertical 1209.500 41.4 -7.2 1.0 225.0 3.0 0.0 Horz PK 0.0 34.2 74.0 -39.7 Ch 1, PCB, EUT Vertical 1204.533 41.4 -7.2 1.0 225.0 3.0 0.0 Horz PK 0.0 34.2 74.0 -39.8 Ch 5, Coil, EUT Vertical 1204.533 41.4 -7.2 1.8 15.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.9 Ch 5, PCB, EUT Vertical 1208.175 41.3 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 34.1 74.0 -39.9 Ch 5, PCB, EUT Vertical 1215.925 41.1 -7.2 1.0 166.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 10, Coil, EUT Vertical 1212.250 41.1 -7.2 1.2 110.0 3.	1213.483	41.5	-7.2	3.2	314.0	3.0	0.0	Horz	PK	0.0	34.3	74.0	-39.7	Ch 10, Coil, EUT Vertical
1209.500 41.4 -7.2 1.0 225.0 3.0 0.0 Horz PK 0.0 34.2 74.0 -39.8 Ch 5, Coil, EUT Vertical 1204.533 41.4 -7.3 1.0 72.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.9 Ch 1, Coil, EUT Vertical 1208.175 41.3 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 34.1 74.0 -39.9 Ch 5, PCB, EUT Vertical 1215.925 41.1 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 34.1 74.0 -39.9 Ch 5, PCB, EUT Vertical 1215.925 41.1 -7.2 1.0 166.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertical 1212.250 41.1 -7.2 1.2 110.0 3.0 0.0 Horz PK 0.0 33.9 74.0 -40.1 Ch 5, PC	1207.342	41.5	-7.2	1.0	192.0	3.0	0.0	Horz	PK	0.0	34.3	74.0	-39.7	Ch 1, PCB, EUT Vertical
1204.533 41.4 -7.3 1.0 72.0 3.0 0.0 Horz PK 0.0 34.1 74.0 -39.9 Ch 1, Coil, EUT Vertical 1208.175 41.3 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 34.1 74.0 -39.9 Ch 1, Coil, EUT Vertical 1215.925 41.1 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 10, Coil, EUT Vertical 1212.250 41.1 -7.2 1.2 110.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertical 1212.250 41.1 -7.2 1.2 110.0 3.0 0.0 Horz PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertical 1211.392 41.1 -7.2 2.8 326.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertical	1209.500	41.4	-7.2	1.0	225.0	3.0	0.0	Horz	PK	0.0	34.2	74.0	-39.8	Ch 5, Coil, EUT Vertical
1208.175 41.3 -7.2 1.8 15.0 3.0 0.0 Vert PK 0.0 34.1 74.0 -39.9 Ch 5, PCB, EUT Vertica 1215.925 41.1 -7.2 1.0 166.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 10, Coil, EUT Vertica 1212.250 41.1 -7.2 1.2 110.0 3.0 0.0 Horz PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertica 1211.392 41.1 -7.2 2.8 326.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertica 1211.392 41.1 -7.2 2.8 326.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertica	1204.533	41.4	-7.3	1.0	72.0	3.0	0.0	Horz	PK	0.0	34.1	74.0	-39.9	Ch 1, Coil, EUT Vertical
1215.925 41.1 -7.2 1.0 166.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 10, Coil, EUT Vertica 1212.250 41.1 -7.2 1.2 110.0 3.0 0.0 Horz PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertica 1211.392 41.1 -7.2 2.8 326.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertica	1208.175	41.3	-7.2	1.8	15.0	3.0	0.0	Vert	PK	0.0	34.1	74.0	-39.9	Ch 5, PCB, EUT Vertical
1212.250 41.1 -7.2 1.2 110.0 3.0 0.0 Horz PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertical 1211.392 41.1 -7.2 2.8 326.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5, PCB, EUT Vertical	1215.925	41.1	-7.2	1.0	166.0	3.0	0.0	Vert	PK	0.0	33.9	74.0	-40.1	Ch 10, Coil, EUT Vertical
1211.392 41.1 -7.2 2.8 326.0 3.0 0.0 Vert PK 0.0 33.9 74.0 -40.1 Ch 5. Coil. EUT Vertical	1212.250	41.1	-7.2	1.2	110.0	3.0	0.0	Horz	PK	0.0	33.9	74.0	-40.1	Ch 5, PCB, EUT Vertical
	1211.392	41.1	-7.2	2.8	326.0	3.0	0.0	Vert	PK	0.0	33.9	74.0	-40.1	Ch 5, Coil, EUT Vertical
1213.342 40.7 -7.2 1.0 15.0 3.0 0.0 Horz PK 0.0 33.5 74.0 -40.5 Ch 10, Coil, EUT Vertica	1213.342	40.7	-7.2	1.0	15.0	3.0	0.0	Horz	PK	0.0	33.5	74.0	-40.5	Ch 10, Coil, EUT Vertical
1216.192 40.6 -7.2 1.0 176.0 3.0 0.0 Vert PK 0.0 33.4 74.0 -40.6 Ch 10, PCB, EUT Vertic	1216.192	40.6	-7.2	1.0	176.0	3.0	0.0	Vert	PK	0.0	33.4	74.0	-40.6	Ch 10, PCB, EUT Vertical

EMC

Spurious Radiated Emissions

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

MODES OF OPERATION

Transmitting MICS Mode 1, Ch 1, 5, 10: 402.15 MHz, 403.35 MHz, 404.85 MHz, PCB/Coil Antenna (See Comments)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

MDTR0042: CTM2 - 2

 FREQUENCY RANGE INVESTIGATED

 Start Frequency
 30 MHz
 Stop Frequency

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
		Double Ridge Guide Horn			
MN05 Cables	ESM Cable Corp.	Cables	MNI	10/18/2011	12 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	7/1/2011	12 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	6/29/2011	24 mo
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/1/2011	12 mo
Antenna, Biconilog	ETS Lindgren	3142D	AXN	12/30/2009	24 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	2/2/2011	12 mo
Spectrum Analyzer	Agilent	E4446A	AAT	2/15/2011	12 mo

MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data					
	(MHz)	(kHz)	(kHz)	(kHz)					
	0.01 - 0.15	1.0	0.2	0.2					
	0.15 - 30.0	10.0	9.0	9.0					
	30.0 - 1000	100.0	120.0	120.0					
	Above 1000	1000.0	N/A	1000.0					
Measurements were made using the IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC									

Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth was used.

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) (Radiated Power via Substitution: +0.69, -0.68) 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.

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. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes. A preamp was used for this test in order to provide sufficient measurement sensitivity.

5 GHz



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)	Commonte
911.064	17.0	0.9	1.0	125.0	2.0	0.0	Hora		0.0	26.9	46.0	10.2	Comments
810 104	17.0	9.0	1.0	103.0	3.0	0.0	Vort		0.0	20.0	40.0	-19.2	Ch 10, PCB, EUT Vertical
800 FE4	17.0	9.7	1.0	61.0	3.0	0.0	Vert		0.0	20.7	40.0	-19.3	Ch 10, Coil EUT Vertical
809.334	17.0	9.7	1.0	241.0	3.0	0.0	Ven		0.0	20.7	46.0	-19.3	Ch 10, Coll, EUT Vertical
804.742	17.0	9.7	1.0	241.0	3.0	0.0	Horz		0.0	20.7	46.0	-19.3	Ch 1 DCP ELIT on Side
804.742	17.0	9.7	1.0	269.0	3.0	0.0	HOIZ	QP	0.0	20.7	46.0	-19.3	Ch 1, PCB, EUT on Side
804.732	17.0	9.7	2.5	42.0	3.0	0.0	vert	QP	0.0	26.7	46.0	-19.3	Ch 1, PCB, EUT Horizontal
804.528	17.0	9.7	3.4	344.0	3.0	0.0	Horz	QP	0.0	26.7	46.0	-19.3	Ch 1, Coll, EUT Horizontal
804.471	17.0	9.7	1.0	95.0	3.0	0.0	Vert	QP	0.0	26.7	46.0	-19.3	Ch 1, PCB, EUT Vertical
804.471	17.0	9.7	1.0	10.0	3.0	0.0	Horz	QP	0.0	26.7	46.0	-19.3	Ch 5, PCB, EUT Vertical
804.256	17.0	9.7	1.0	293.0	3.0	0.0	Horz	QP	0.0	26.7	46.0	-19.3	Ch 1, PCB, EUT Horizontal
804.117	17.0	9.7	1.0	31.0	3.0	0.0	Horz	QP	0.0	26.7	46.0	-19.3	Ch 1, PCB, EUT Vertical
803.994	17.0	9.7	1.0	95.0	3.0	0.0	Vert	QP	0.0	26.7	46.0	-19.3	Ch 1, Coil, EUT on Side
803.962	17.0	9.7	1.0	296.0	3.0	0.0	Vert	QP	0.0	26.7	46.0	-19.3	Ch 1, PCB, EUT on Side
808.501	16.9	9.7	1.0	194.0	3.0	0.0	Vert	QP	0.0	26.6	46.0	-19.4	Ch 5, PCB, EUT Vertical
806.272	16.9	9.7	3.4	184.0	3.0	0.0	Vert	QP	0.0	26.6	46.0	-19.4	Ch 5, Coil, EUT Vertical
806.195	16.9	9.7	1.0	82.0	3.0	0.0	Horz	QP	0.0	26.6	46.0	-19.4	Ch 5, Coil, EUT Vertical
804.216	16.9	9.7	1.0	129.0	3.0	0.0	Horz	QP	0.0	26.6	46.0	-19.4	Ch 1, Coil, EUT Vertical
804.100	16.9	9.7	1.0	254.0	3.0	0.0	Vert	QP	0.0	26.6	46.0	-19.4	Ch 1, Coil, EUT Vertical
804.070	16.9	9.7	1.0	90.0	3.0	0.0	Vert	QP	0.0	26.6	46.0	-19.4	Ch 1, Coil, EUT Horizontal
803 813	16.9	97	1.0	198.0	3.0	0.0	Horz	OP	0.0	26.6	46.0	-19.4	Ch 1 Coil EUT on Side
1204 000	30.0	-73	1.0	147.0	3.0	0.0	Vert		0.0	22.7	54.0	-31 3	Ch 1 PCB ELIT Vertical
1610.000	28.3	-5.7	1.0	107.0	3.0	0.0	Vert	AV	0.0	22.6	54.0	-31.4	Ch 1, Coil, EUT Vertical

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
1204.008	29.6	-7.3	1.0	345.0	3.0	0.0	Vert	AV	0.0	22.3	54.0	-31.7	Ch 1, Coil, EUT Vertical
1204.000	29.4	-7.3	1.0	21.0	3.0	0.0	Horz	AV	0.0	22.1	54.0	-31.9	Ch 1, Coil, EUT Vertical
1613.525	27.8	-5.7	4.0	350.0	3.0	0.0	Vert	AV	0.0	22.1	54.0	-31.9	Ch 5, PCB, EUT Vertical
1610.058	27.8	-5.7	1.0	292.0	3.0	0.0	Vert	AV	0.0	22.1	54.0	-31.9	Ch 1, PCB, EUT Vertical
1619.125	27.7	-5.7	2.8	92.0	3.0	0.0	Vert	AV	0.0	22.0	54.0	-32.0	Ch 10, PCB, EUT Vertical
1617.317	27.7	-5.7	1.0	210.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 10, Coil, EUT Vertical
1617.217	27.7	-5.7	1.0	99.0	3.0	0.0	Vert	AV	0.0	22.0	54.0	-32.0	Ch 10, Coil, EUT Vertical
1616.908	27.7	-5.7	1.0	349.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 10, PCB, EUT Vertical
1615.117	27.7	-5.7	3.7	277.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 5, PCB, EUT Vertical
1613,783	27.7	-5.7	3.6	305.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 5, Coil, EUT Vertical
1613.333	27.7	-5.7	1.0	15.0	3.0	0.0	Vert	AV	0.0	22.0	54.0	-32.0	Ch 5, Coil, EUT Vertical
1610.317	27.7	-5.7	2.5	188.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 1, Coil, EUT Vertical
1609.800	27.7	-5.7	3.5	211.0	3.0	0.0	Horz	AV	0.0	22.0	54.0	-32.0	Ch 1, PCB, EUT Vertical
1204 000	29.0	-7.3	1.9	22.0	3.0	0.0	Horz	AV	0.0	21.7	54.0	-32.3	Ch 1 PCB EUT Vertical
1216 200	28.0	-7.2	2.9	183.0	3.0	0.0	Vert	AV	0.0	20.8	54.0	-33.2	Ch 10 PCB FUT Vertical
1215 558	28.0	-7.2	1.0	105.0	3.0	0.0	Horz	AV	0.0	20.8	54.0	-33.2	Ch 10 Coil EUT Vertical
1215 533	28.0	-7.2	1.0	230.0	3.0	0.0	Horz	AV	0.0	20.0	54.0	-33.2	Ch 10, PCB, EUT Vertical
1213 883	28.0	-7.2	22	346.0	3.0	0.0	Vert	AV	0.0	20.0	54.0	-33.2	Ch 10, Coil ELIT Vertical
1207 967	28.0	-7.2	1.0	251.0	3.0	0.0	Horz		0.0	20.0	54.0	-33.2	Ch 5 PCB ELIT Vertical
1207.967	28.0	-7.2	1.0	263.0	3.0	0.0	Vert	AV	0.0	20.0	54.0	-33.2	Ch 5 Coil ELIT Vertical
1207.007	28.0	-7.2	1.0	88.0	3.0	0.0	Vort	AV/	0.0	20.8	54.0	-33.2	Ch 5 PCB ELIT Vertical
1207.942	20.0	-7.2	1.4	127.0	3.0	0.0	Horz		0.0	20.0	54.0	-33.2	Ch 5 Coil ELIT Vortical
1619 200	20.0	-7.2	1.0	00.0	3.0	0.0	Vort		0.0	20.0	74.0	-33.2	Ch 10 Coil EUT Vertical
1621.017	41.4	-5.7	1.0	340.0	3.0	0.0	Hora		0.0	35.7	74.0	-30.3	Ch 10, COII, EOT Ventical
1615 792	41.3	-5.7	1.0	15.0	3.0	0.0	Vort		0.0	35.6	74.0	-30.4	Ch 5 Coil ELIT Vortical
1609.000	41.3	-5.7	2.5	211.0	3.0	0.0	Horz	PK	0.0	35.6	74.0	-30.4	Ch 1 PCR ELIT Vortical
1612 242	41.3	-5.7	3.5	277.0	3.0	0.0	Horz		0.0	35.0	74.0	-30.4	Ch F DCB EUT Vertical
1013.242	41.2	-5.7	1.0	277.0	3.0	0.0	Vort		0.0	35.5	74.0	-30.5	Ch 1 Coil EUT Vertical
1619.067	41.2	-3.7	1.0	107.0	3.0	0.0	Vert		0.0	33.3	74.0	-30.3	Ch 10 DCR ELIT Vertical
1018.007	41.1	-5.7	2.8	92.0	3.0	0.0	vert	PK	0.0	35.4	74.0	-38.0	Ch 10, PCB, EUT Vertical
1617.083	40.9	-5.7	1.0	210.0	3.0	0.0	Horz	PK	0.0	35.2	74.0	-38.8	Ch 1 Coil, EUT Vertical
1610.492	40.9	-3.7	2.5	250.0	3.0	0.0	Vort		0.0	35.2	74.0	-30.0	Ch F, DCR, EUT Vertical
1013.030	40.8	-3.7	3.9	350.0	3.0	0.0	Vert		0.0	35.1	74.0	-36.9	Ch 1 DCB EUT Vertical
1000.042	40.7	-3.7	1.0	292.0	3.0	0.0	Vert		0.0	33.0	74.0	-39.0	Ch F, Coil EUT Vertical
1012.492	40.6	-3.7	3.0	305.0	3.0	0.0	HUIZ		0.0	34.9	74.0	-39.1	Ch 1 Coil EUT Vertical
1204.342	41.9	-7.3	1.0	345.0	3.0	0.0	vert	PK	0.0	34.0	74.0	-39.4	Ch 1, Coll, EUT Vertical
1204.017	41.9	-7.3	1.9	22.0	3.0	0.0	Horz	PK	0.0	34.6	74.0	-39.4	Ch 1, PCB, EUT Vertical
1207.742	41.7	-7.2	1.0	21.0	3.0	0.0	Horz	PK	0.0	34.5	74.0	-39.5	Ch 1, Coll, EUT Vertical
1212.317	41.5	-7.2	2.2	346.0	3.0	0.0	Vert	PK	0.0	34.3	74.0	-39.7	Ch TO, COII, EUT Vertical
1210.900	41.3	-7.2	1.4	88.0	3.0	0.0	vert	PK	0.0	34.1	74.0	-39.9	Ch 5, PCB, EUT Vertical
1208.842	41.3	-7.2	1.0	137.0	3.0	0.0	Horz	PK	0.0	34.1	74.0	-39.9	Ch 5, Coll, EUT Vertical
1215.517	41.2	-7.2	1.0	230.0	3.0	0.0	Horz	PK	0.0	34.0	74.0	-40.0	Ch 10, PCB, EUT Vertical
1209.142	41.2	-7.2	1.0	251.0	3.0	0.0	Horz	PK	0.0	34.0	74.0	-40.0	Ch 5, PCB, EUT Vertical
1204.400	41.2	-7.3	1.0	147.0	3.0	0.0	Vert	PK	0.0	33.9	74.0	-40.1	Ch 1, PCB, EUT Vertical
1207.992	41.0	-7.2	1.0	263.0	3.0	0.0	Vert	PK	0.0	33.8	74.0	-40.2	UN 5, COII, EUT Vertical
1212.592	40.9	-7.2	2.9	183.0	3.0	0.0	Vert	PK	0.0	33.7	74.0	-40.3	Ch 10, PCB, EUT Vertical
1212.792	40.4	-7.2	1.0	105.0	3.0	0.0	Horz	PK	0.0	33.2	74.0	-40.8	Ch 10, Coil, EUT Vertical