

# Boston Scientific Corporation

## Cognis 100-D N119

May 22, 2007

Report No. BSTN0198

Report Prepared By



[www.nwemc.com](http://www.nwemc.com)  
1-888-EMI-CERT

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EMC Test Report

**Certificate of Test**  
**Issue Date: May 22, 2007**  
**Boston Scientific Corporation**  
**Model: Cognis 100-D N119**

Emissions				
Test Description	Specification	Test Method	Pass	Fail
Field Strength of Fundamental	FCC 15.249:2006	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Field Strength of Harmonics and Spurious Radiated Emissions	FCC 15.249:2006	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**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.  
41 Tesla Avenue  
Irvine, CA 92618

Phone: (949) 861-8918    Fax: 861-8923

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada.

**Approved By:**



Dean Ghizzone, President

*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		

**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 United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 89/336/EEC, ANSI C63.4, MIL-STD 461E, DO-160D and SAE J1113. 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.



NVLAP LAB CODE 200629-0  
NVLAP LAB CODE 200630-0  
NVLAP LAB CODE 200676-0  
NVLAP LAB CODE 200761-0

**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 212, Issue 1 (Provisional) 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.



**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.



**TÜV Product Service:** Included in TÜV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TÜV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TÜV's current Listing of CARAT Laboratories, available from TÜV. A certificate was issued to represent that this laboratory continues to meet TÜV's CARAT Program requirements. Certificate No. USA0604C.



**TÜV Rheinland:** Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



**NEMKO:** Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



**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).



**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, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294).



**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. License No.SL2-IN-E-1017.



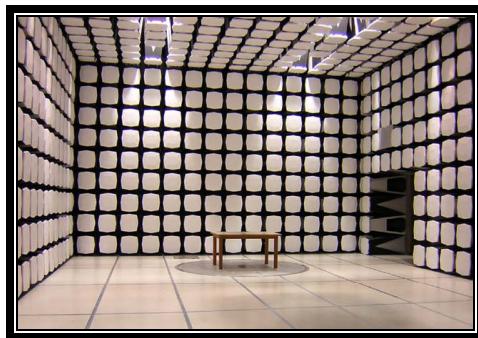
**GOST:** Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results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



## SCOPE

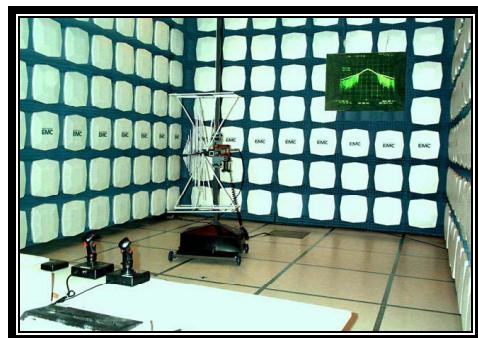
For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/scope.asp>



### California – Orange County Facility Labs OC01 – OC13

41 Tesla Ave. Irvine, CA 92618  
(888) 364-2378 Fax: (503) 844-3826



### Oregon – Evergreen Facility Labs EV01 – EV11

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124  
(503) 844-4066 Fax: (503) 844-3826



### Washington – Sultan Facility Labs SU01 – SU07

14128 339<sup>th</sup> Ave. SE Sultan, WA 98294  
(888) 364-2378

**Party Requesting the Test**

<b>Company Name:</b>	Boston Scientific Corporation
<b>Address:</b>	4100 Hamline Avenue North
<b>City, State, Zip:</b>	St. Paul, MN 55112-5798
<b>Test Requested By:</b>	Jim Kippola
<b>Model:</b>	Cognis 100-D N119
<b>First Date of Test:</b>	May 8, 2007
<b>Last Date of Test:</b>	May 9, 2007
<b>Receipt Date of Samples:</b>	May 8, 2007
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

**Information Provided by the Party Requesting the Test****Functional Description of the EUT (Equipment Under Test):**

Pulse Generator

**Testing Objective:**

These tests were selected to satisfy the EMC requirements for the FCC.

**EUT Photo**

**CONFIGURATION 1 BSTN0198**

<b>EUT</b>					
<b>Description</b>	<b>Manufacturer</b>	<b>Model/Part Number</b>	<b>Serial Number</b>		
PG	Boston Scientific	Cognis 100-D N119 Econo	508205		

<b>Cables</b>					
<b>Cable Type</b>	<b>Shield</b>	<b>Length (m)</b>	<b>Ferrite</b>	<b>Connection 1</b>	<b>Connection 2</b>
Leads	Yes	.6m	No	PG	Unterminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

**CONFIGURATION 2 BSTN0198**

<b>EUT</b>					
<b>Description</b>	<b>Manufacturer</b>	<b>Model/Part Number</b>	<b>Serial Number</b>		
PG	Boston Scientific	Cognis 100-D N119 Econo	508172		

<b>Cables</b>					
<b>Cable Type</b>	<b>Shield</b>	<b>Length (m)</b>	<b>Ferrite</b>	<b>Connection 1</b>	<b>Connection 2</b>
Leads	Yes	.6m	No	PG	Unterminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

**CONFIGURATION 3 BSTN0198**

<b>EUT</b>					
<b>Description</b>	<b>Manufacturer</b>	<b>Model/Part Number</b>	<b>Serial Number</b>		
PG	Boston Scientific	Cognis 100-D N119 Std	507867		

<b>Cables</b>					
<b>Cable Type</b>	<b>Shield</b>	<b>Length (m)</b>	<b>Ferrite</b>	<b>Connection 1</b>	<b>Connection 2</b>
Leads	Yes	.6m	No	PG	Unterminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

<b>Equipment modifications</b>					
Item	Date	Test	Modification	Note	Disposition of EUT
1	5/8/2007	Radiated 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.
2	5/9/2007	Field Strength of Fundamental	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.

#### MODES OF OPERATION

Transmit All 1's

#### MODE USED FOR FINAL DATA

Transmit All 1's

#### POWER SETTINGS INVESTIGATED

Internal Battery

#### POWER SETTINGS USED FOR FINAL DATA

Internal Battery

#### FREQUENCY RANGE INVESTIGATED

Start Frequency	902 MHz	Stop Frequency	928 MHz
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#### SAMPLE CALCULATIONS

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

#### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Low Pass Filter 0-425 MHz	Micro-Tronics	LPM50003	LFA	7/13/2006	13
.5-1GHz Notch Filter	K&L Microwave	3TNF-500/1000-N/N	HFR	7/13/2006	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	10/13/2006	12
Antenna, Horn	ETS	3160-07	AHR	NCR	24
OC10 cables a,b,c,e,f Horn Cables			OCJ	1/14/2007	13
Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	1/14/2007	13
Antenna, Horn	EMCO	3115	AHB	8/1/2005	24
OC 10 Cables a, b, c, I Cables			OCO	1/14/2007	13
Antenna, Biconilog	EMCO	3142	AXJ	3/14/2006	24
OC10 cables a,b,c,d Bilog			OCH	12/17/2006	13
Pre-Amplifier	Miteq	AM-1616-1000	AOM	12/17/2006	13
Spectrum Analyzer	Agilent	E4446A	AAQ	1/18/2007	13

#### 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 bandwidths and detectors specified. No video filter was used.

#### MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

#### TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting and/or receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003).

## FIELD STRENGTH OF FUNDAMENTAL

EUT: Cognis 100-D N119	Work Order: BSTN0198
Serial Number: 508205	Date: 05/08/07
Customer: Boston Scientific Corporation	Temperature: 23C
Attendees: Jim Kippola	Humidity: 27%
Project: None	Barometric Pres.: 30
Tested by: Jeremiah Darden	Job Site: OC10

## TEST SPECIFICATIONS

FCC 15.249:2006 | ANSI C63.4:2003

## TEST PARAMETERS

Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3

## COMMENTS

None

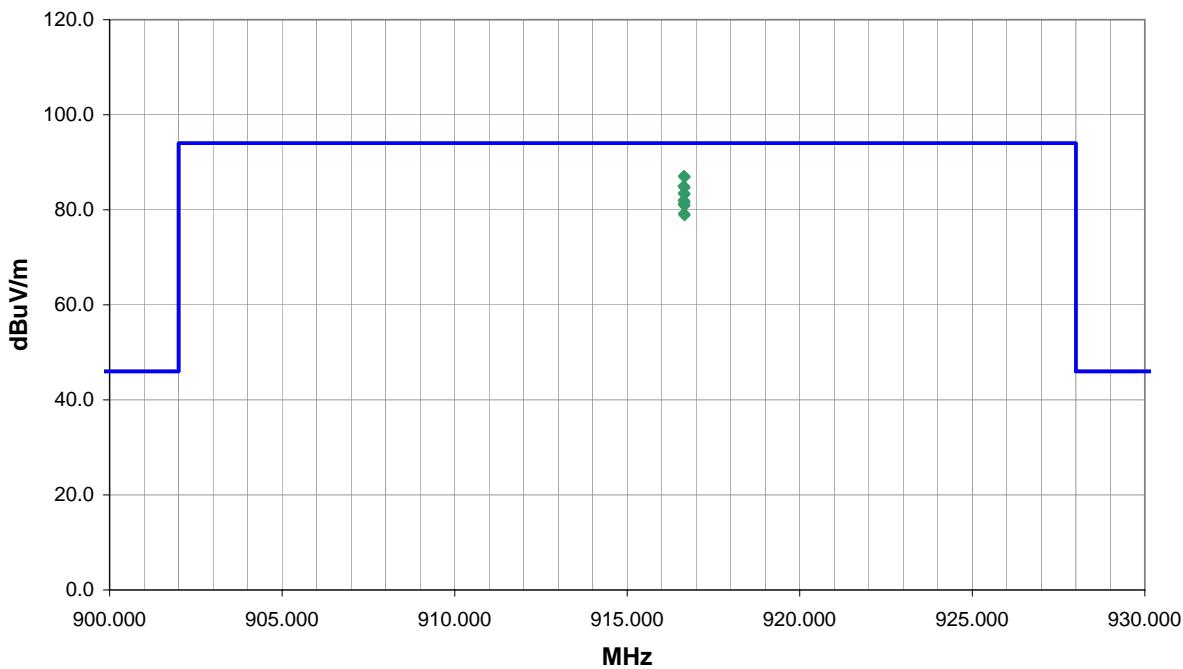
## EUT OPERATING MODES

Transmit All 1's

## DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	1	NVLAP Lab Code 200629-0	Signature 
Configuration #	1		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
916.645	54.8	32.3	226.0	1.0	3.0	0.0	H-Bilog	PK	0.0	87.1	94.0	-6.9
916.662	54.6	32.3	226.0	1.0	3.0	0.0	H-Bilog	QP	0.0	86.9	94.0	-7.1
916.639	52.7	32.3	251.0	1.0	3.0	0.0	H-Bilog	PK	0.0	85.0	94.0	-9.0
916.661	52.4	32.3	251.0	1.0	3.0	0.0	H-Bilog	QP	0.0	84.7	94.0	-9.3
916.643	51.2	32.3	137.0	2.6	3.0	0.0	V-Bilog	PK	0.0	83.5	94.0	-10.5
916.662	51.0	32.3	137.0	2.6	3.0	0.0	V-Bilog	QP	0.0	83.3	94.0	-10.7
916.636	49.7	32.3	315.0	1.0	3.0	0.0	H-Bilog	PK	0.0	82.0	94.0	-12.0
916.660	49.4	32.3	315.0	1.0	3.0	0.0	H-Bilog	QP	0.0	81.7	94.0	-12.3
916.643	48.9	32.3	74.0	2.6	3.0	0.0	V-Bilog	PK	0.0	81.2	94.0	-12.8
916.660	48.6	32.3	74.0	2.6	3.0	0.0	V-Bilog	QP	0.0	80.9	94.0	-13.1
916.644	46.9	32.3	335.0	2.5	3.0	0.0	V-Bilog	PK	0.0	79.2	94.0	-14.8
916.661	46.6	32.3	335.0	2.5	3.0	0.0	V-Bilog	QP	0.0	78.9	94.0	-15.1

## FIELD STRENGTH OF FUNDAMENTAL

EUT: Cognis 100-D N119 Econo	Work Order: BSTN0198
Serial Number: 508172	Date: 05/08/07
Customer: Boston Scientific Corporation	Temperature: 23C
Attendees: Jim Kippola	Humidity: 27%
Project: None	Barometric Pres.: 30
Tested by: Jeremiah Darden	Job Site: OC10

## TEST SPECIFICATIONS

FCC 15.249:2006 | ANSI C63.4:2003

## TEST PARAMETERS

Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3

## COMMENTS

None

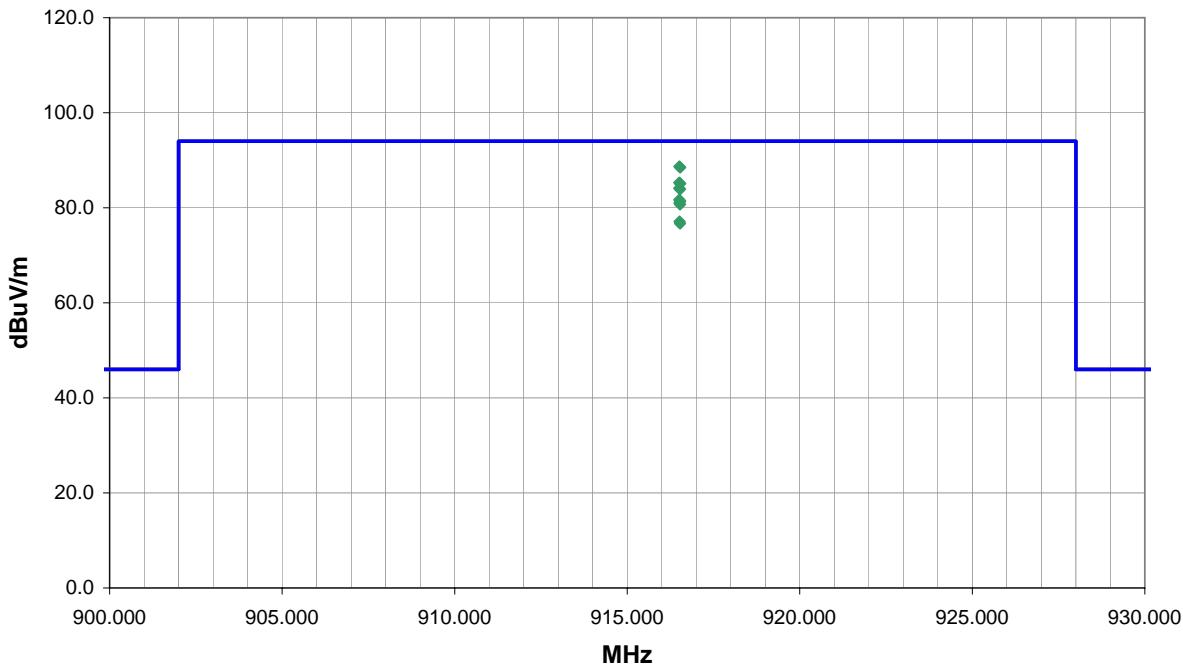
## EUT OPERATING MODES

Transmit All 1's

## DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3	NVLAP Lab Code 200629-0	Signature 
Configuration #	2		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
916.512	56.4	32.3	220.0	1.0	3.0	0.0	H-Bilog	PK	0.0	88.7	94.0	-5.3
916.534	56.2	32.3	220.0	1.0	3.0	0.0	H-Bilog	QP	0.0	88.5	94.0	-5.5
916.506	53.0	32.3	169.0	1.5	3.0	0.0	H-Bilog	PK	0.0	85.3	94.0	-8.7
916.533	52.8	32.3	169.0	1.5	3.0	0.0	H-Bilog	QP	0.0	85.1	94.0	-8.9
916.509	51.8	32.3	168.0	1.6	3.0	0.0	V-Bilog	PK	0.0	84.1	94.0	-9.9
916.531	51.6	32.3	168.0	1.6	3.0	0.0	V-Bilog	QP	0.0	83.9	94.0	-10.1
916.506	49.4	32.3	184.0	1.6	3.0	0.0	V-Bilog	PK	0.0	81.7	94.0	-12.3
916.533	49.1	32.3	184.0	1.6	3.0	0.0	V-Bilog	QP	0.0	81.4	94.0	-12.6
916.510	48.7	32.3	321.0	1.5	3.0	0.0	H-Bilog	PK	0.0	81.0	94.0	-13.0
916.531	48.4	32.3	321.0	1.5	3.0	0.0	H-Bilog	QP	0.0	80.7	94.0	-13.3
916.518	44.8	32.3	150.0	1.5	3.0	0.0	V-Bilog	PK	0.0	77.1	94.0	-16.9
916.532	44.4	32.3	150.0	1.5	3.0	0.0	V-Bilog	QP	0.0	76.7	94.0	-17.3

## FIELD STRENGTH OF FUNDAMENTAL

EUT: Cognis 100-D N119 STD	Work Order: BSTN0198
Serial Number: 507867	Date: 05/09/07
Customer: Boston Scientific Corporation	Temperature: 23C
Attendees: Jim Kippola	Humidity: 27%
Project: None	Barometric Pres.: 30
Tested by: Luis Flores	Job Site: OC10

## TEST SPECIFICATIONS

FCC 15.249	ANSI C63.4:2003
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## TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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## COMMENTS

None

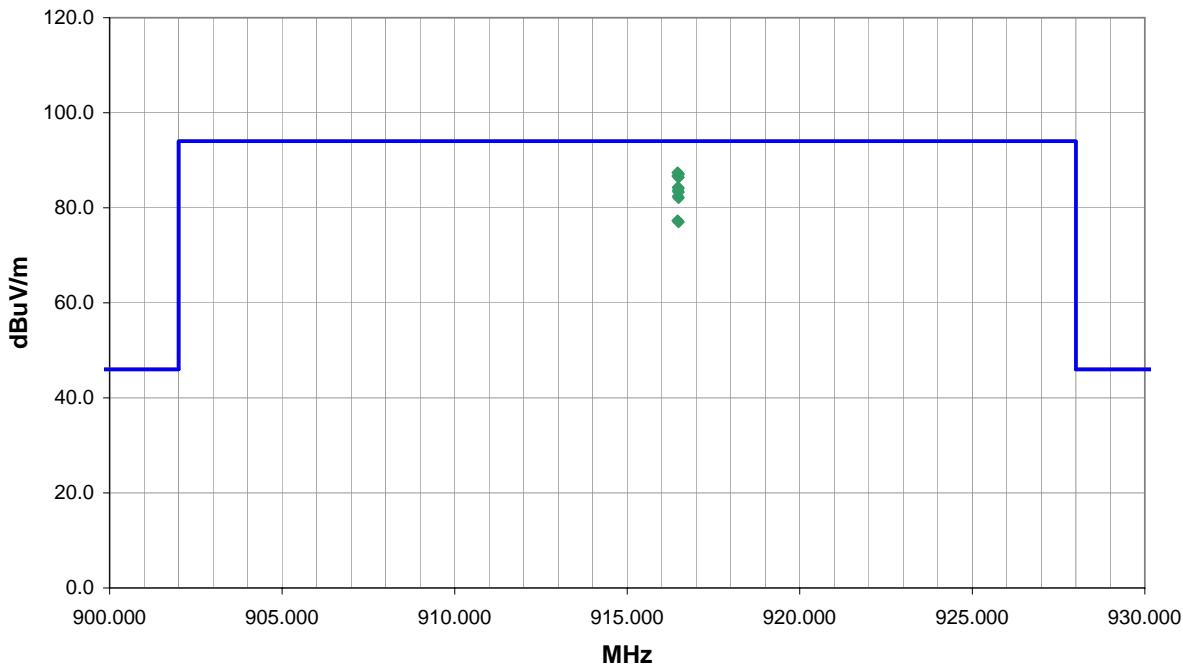
## EUT OPERATING MODES

Transmit All 1's

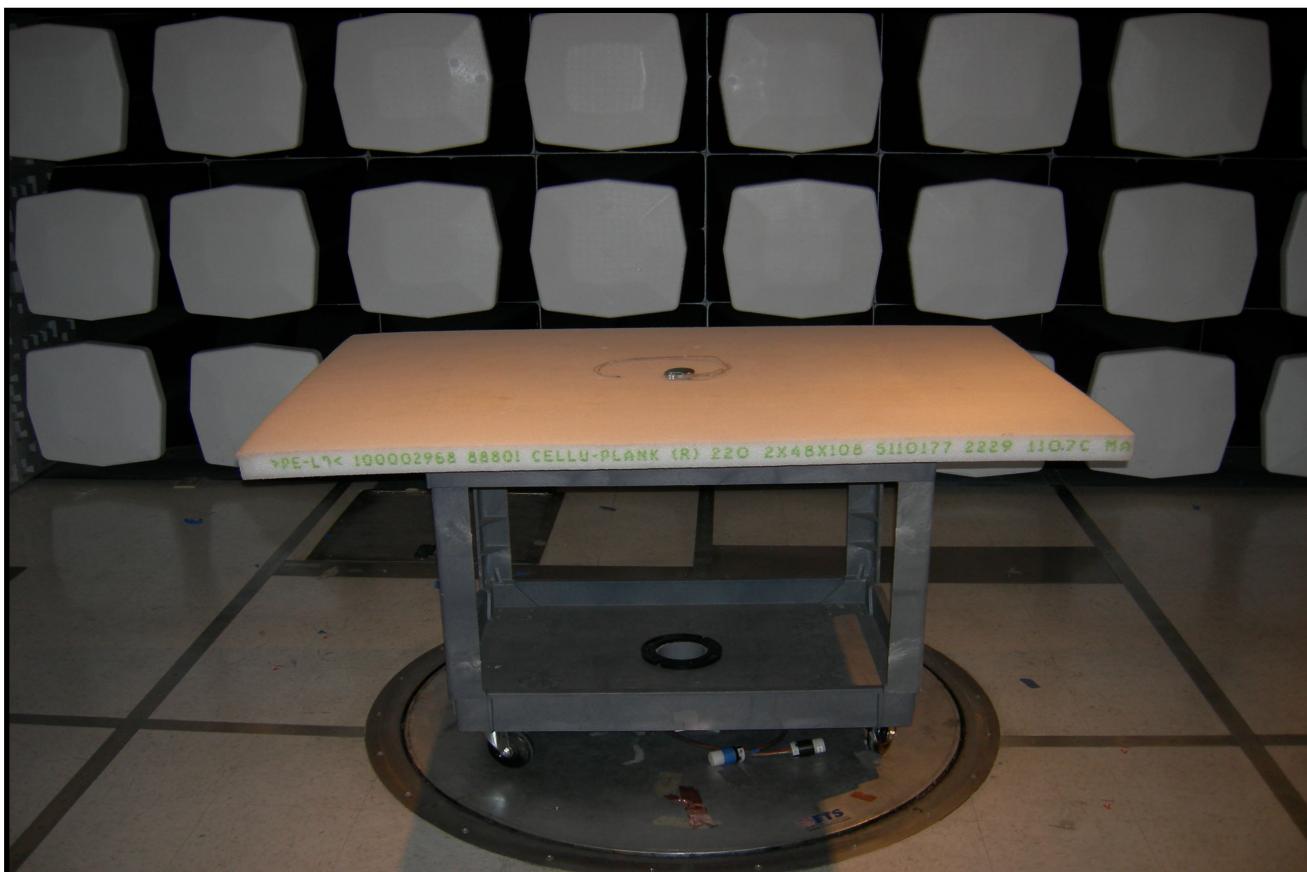
## DEVIATIONS FROM TEST STANDARD

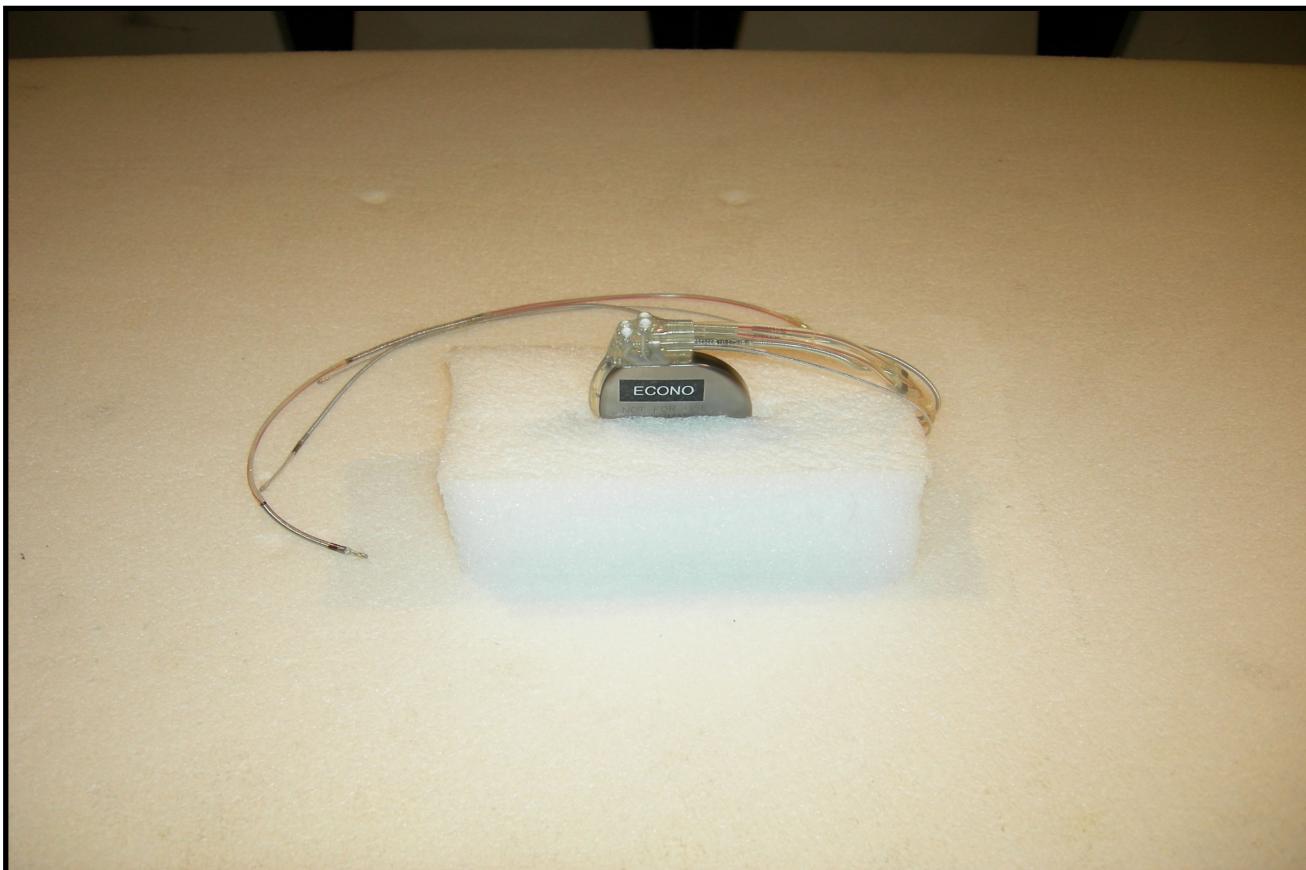
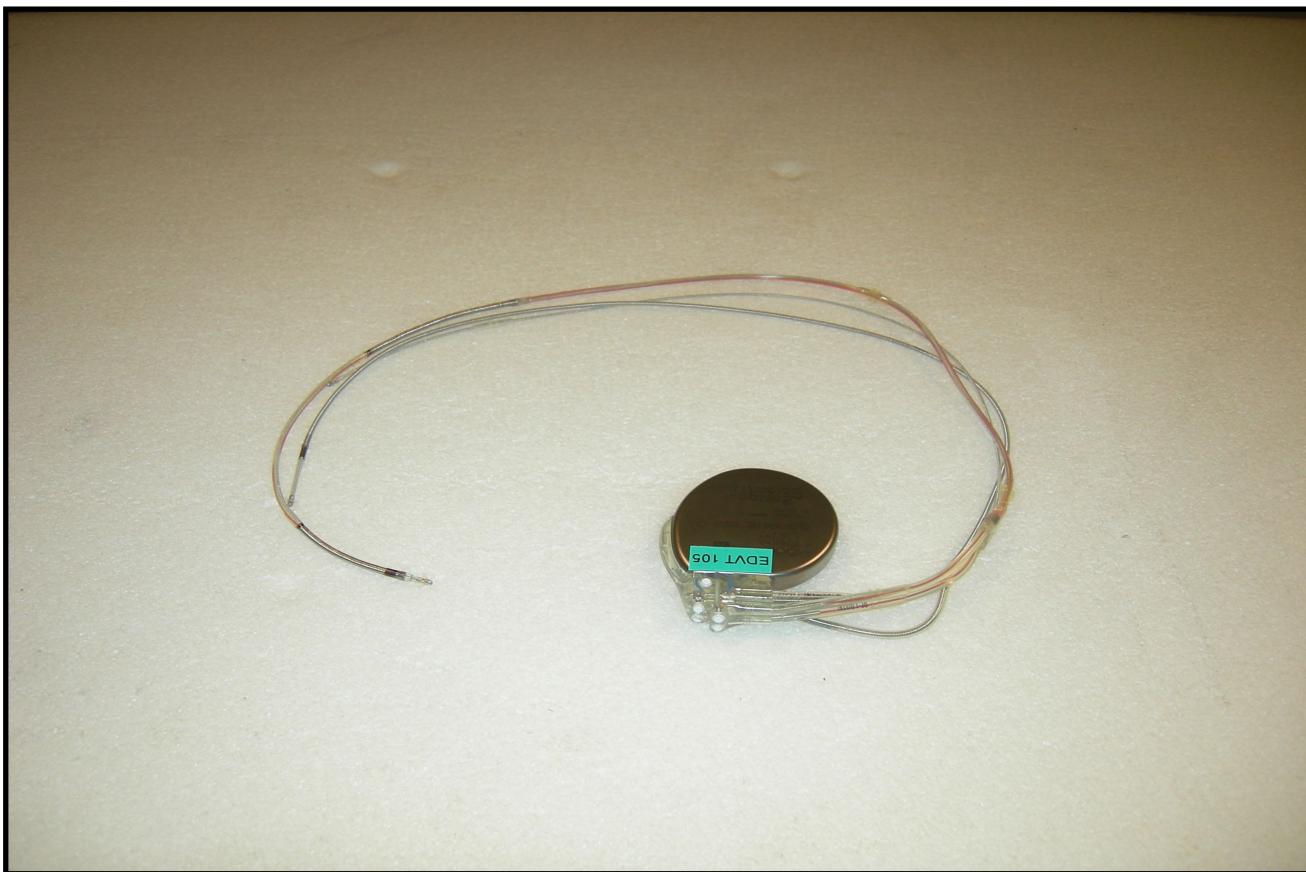
No deviations.

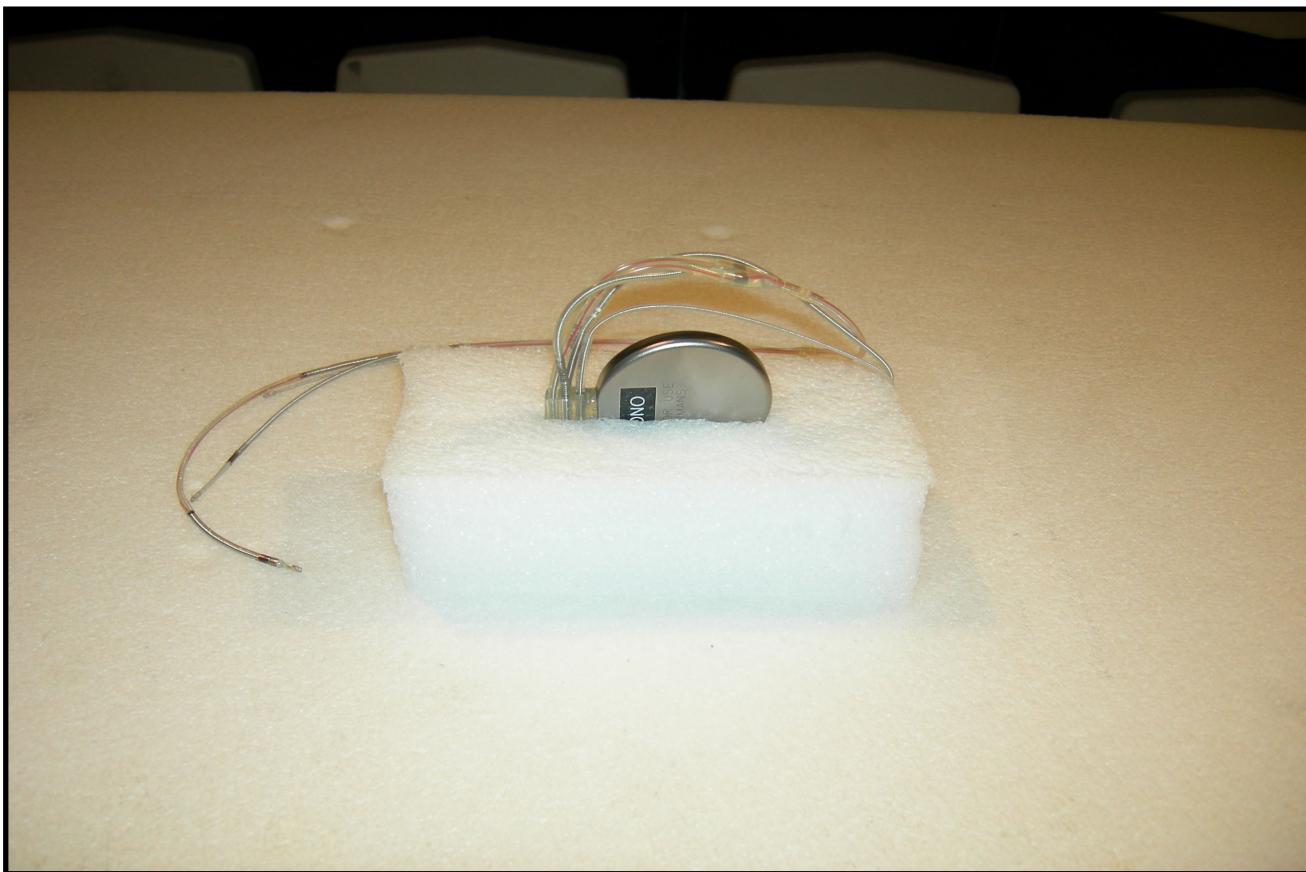
Run #	5	NVLAP Lab Code 200629-0	Signature
Configuration #	3		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
916.462	55.1	32.3	206.0	1.0	3.0	0.0	V-Bilog	PK	0.0	87.4	94.0	-6.6
916.491	54.8	32.3	206.0	1.0	3.0	0.0	V-Bilog	QP	0.0	87.1	94.0	-6.9
916.460	54.4	32.3	148.0	1.5	3.0	0.0	H-Bilog	PK	0.0	86.7	94.0	-7.3
916.488	54.1	32.3	148.0	1.5	3.0	0.0	H-Bilog	QP	0.0	86.4	94.0	-7.6
916.471	52.0	32.3	40.0	1.3	3.0	0.0	H-Bilog	PK	0.0	84.3	94.0	-9.7
916.489	51.8	32.3	40.0	1.3	3.0	0.0	H-Bilog	QP	0.0	84.1	94.0	-9.9
916.468	51.3	32.3	253.0	1.0	3.0	0.0	V-Bilog	PK	0.0	83.6	94.0	-10.4
916.490	51.0	32.3	253.0	1.0	3.0	0.0	V-Bilog	QP	0.0	83.3	94.0	-10.7
916.469	50.1	32.3	114.0	1.5	3.0	0.0	V-Bilog	PK	0.0	82.4	94.0	-11.6
916.487	49.8	32.3	114.0	1.5	3.0	0.0	V-Bilog	QP	0.0	82.1	94.0	-11.9
916.460	45.0	32.3	46.0	1.4	3.0	0.0	H-Bilog	PK	0.0	77.3	94.0	-16.7
916.490	44.7	32.3	46.0	1.4	3.0	0.0	H-Bilog	QP	0.0	77.0	94.0	-17.0







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

#### MODES OF OPERATION

Transmit All 1's

Receive

#### MODE USED FOR FINAL DATA

Transmit All 1's

Receive

#### POWER SETTINGS INVESTIGATED

Internal Battery

#### POWER SETTINGS USED FOR FINAL DATA

Internal Battery

#### FREQUENCY RANGE INVESTIGATED

Start Frequency

30MHz

Stop Frequency

12.4GHz

#### 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
High Pass Filter 1.2-18 GHz	Micro-Tronics	HPM50108	HFW	12/17/2006	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	10/13/2006	12
Antenna, Horn	ETS	3160-07	AHR	NCR	24
OC10 cables a,b,c,e,f Horn Cables			OCJ	1/14/2007	13
Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	1/14/2007	13
Antenna, Horn	EMCO	3115	AHB	8/1/2005	24
OC 10 Cables a, b, c, I Cables			OCO	1/14/2007	13
Antenna, Biconilog	EMCO	3142	AXJ	3/14/2006	24
OC10 cables a,b,c,d Bilog			OCH	12/17/2006	13
Pre-Amplifier	Miteq	AM-1616-1000	AOM	12/17/2006	13
Spectrum Analyzer	Agilent	E4446A	AAQ	1/18/2007	13

#### 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	0.2
0.15 - 30.0	10.0	9.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0	120.0
Above 1000	1000.0	N/A	N/A	1000.0

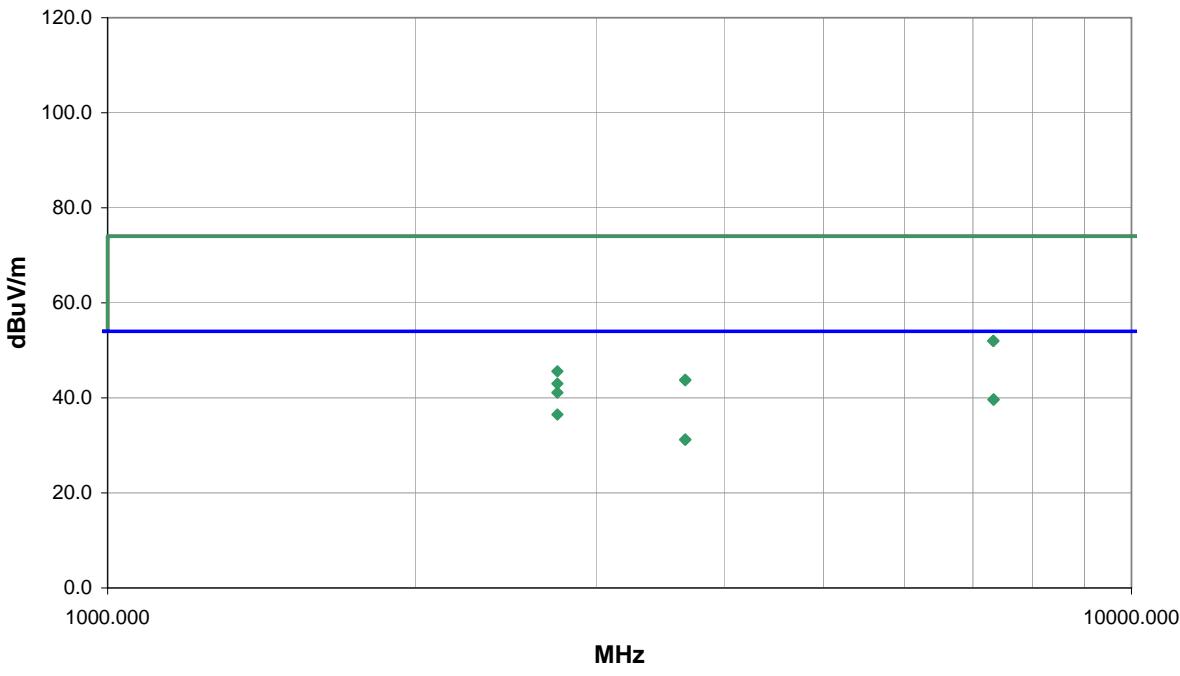
Measurements were made using the bandwidths and detectors specified. No video filter was used.

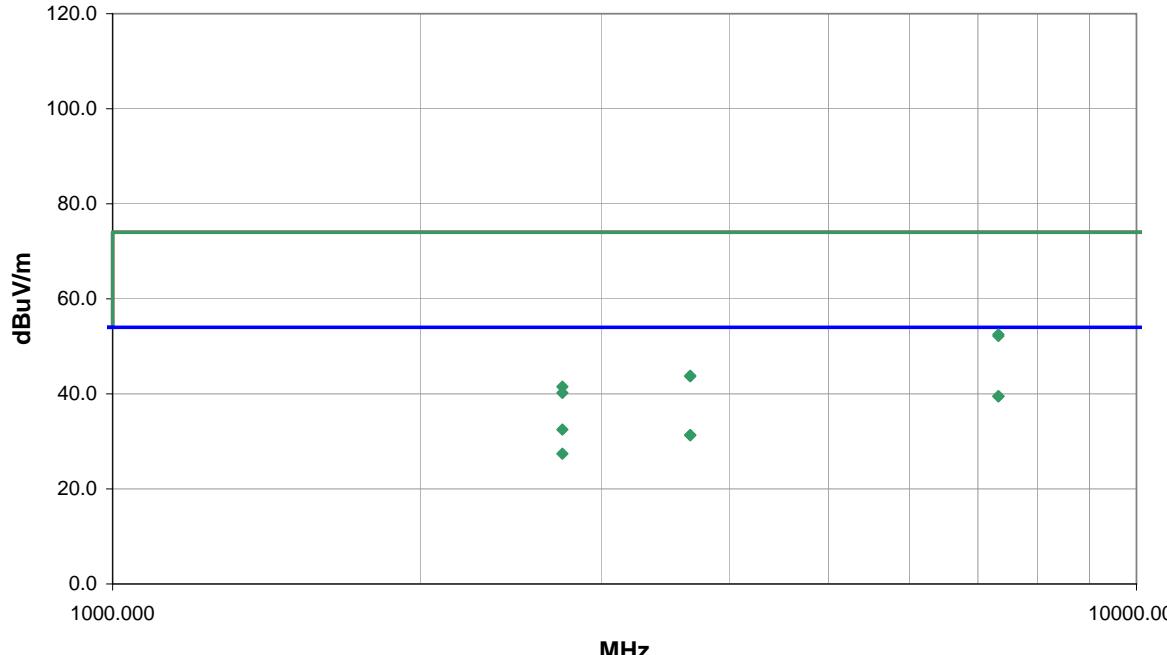
#### MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

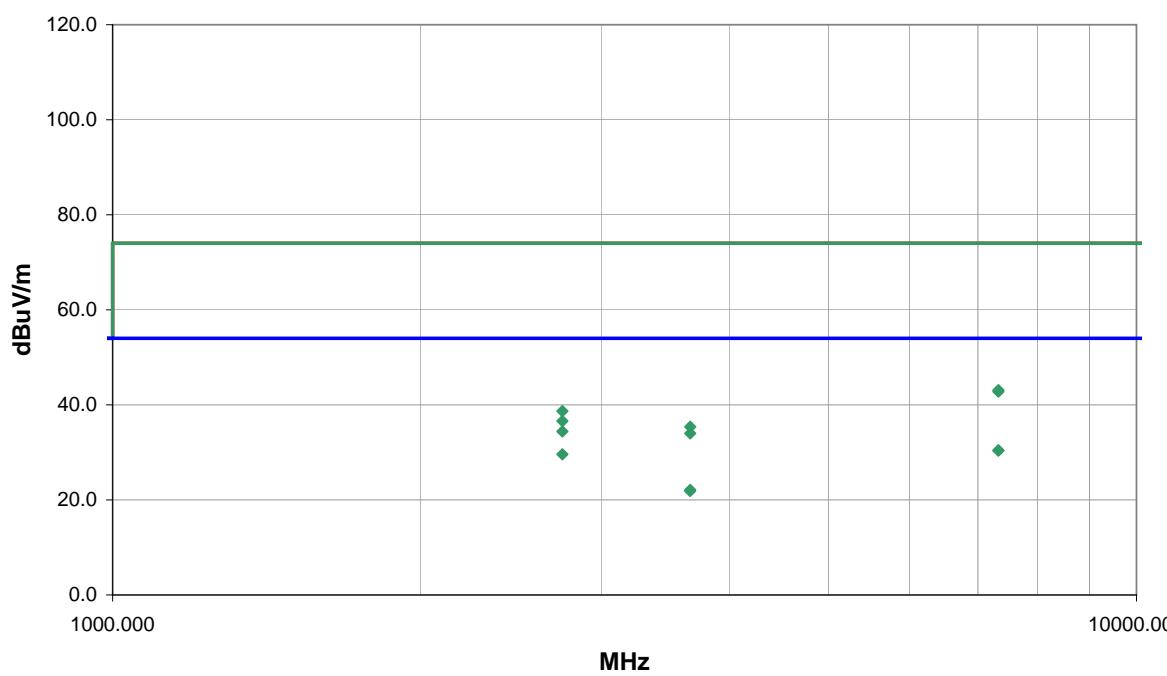
#### TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting and receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

FIELD STRENGTH OF HARMONICS AND SPURIOUS RADIATED EMISSIONS										PSA 2007.01.31	EMI 2006.4.26		
EMC					EUT: Cognis 100-D N119 Econo					Work Order:	BSTM0198		
Serial Number: 508205										Date:	05/08/07		
Customer: Boston Scientific Corporation										Temperature:	23C		
Attendees: Jim Kippola										Humidity:	27%		
Project: None										Barometric Pres.:	30		
Tested by: Jeremiah Darden					Power: Internal Battery					Job Site:	OC10		
TEST SPECIFICATIONS										Test Method			
FCC 15.249:2006										ANSI C63.4:2003			
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4			Test Distance (m)			3					
COMMENTS													
None													
EUT OPERATING MODES													
Transmit All 1's													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #	2												
Configuration #	1												
Results	Pass												
NVLAP Lab Code 200629-0													
 <p>The graph plots Field Strength (dBuV/m) on the y-axis (0.0 to 120.0) against Frequency (MHz) on the x-axis (1000.000 to 10000.000). A horizontal blue line at 54.0 dBuV/m represents the specification limit. Data points are shown as green diamonds, with most falling below the limit except for one point at approximately 10.5 MHz which is slightly above.</p>													
<b>Freq (MHz)</b>	<b>Amplitude (dBuV)</b>	<b>Factor (dB)</b>	<b>Azimuth (degrees)</b>	<b>Height (meters)</b>	<b>Distance (meters)</b>	<b>External Attenuation (dB)</b>	<b>Polarity</b>	<b>Detector</b>	<b>Distance Adjustment (dB)</b>	<b>Adjusted dBuV/m</b>	<b>Spec. Limit dBuV/m</b>	<b>Compared to Spec. (dB)</b>	
2749.960	38.5	2.6	140.0	1.0	3.0	0.0	V-Horn	AV	0.0	41.1	54.0	-12.9	
2749.943	34.1	2.4	111.0	1.0	3.0	0.0	H-Horn	AV	0.0	36.5	54.0	-17.5	
3665.403	24.4	6.8	331.0	1.0	3.0	0.0	H-Horn	AV	0.0	31.2	54.0	-22.8	
3665.419	24.4	6.8	328.0	3.1	3.0	0.0	V-Horn	AV	0.0	31.2	54.0	-22.8	
2750.032	43.2	2.4	140.0	1.0	3.0	0.0	V-Horn	PK	0.0	45.6	74.0	-28.4	
3665.303	37.0	6.8	331.0	1.0	3.0	0.0	H-Horn	PK	0.0	43.8	74.0	-30.2	
3665.338	36.9	6.8	328.0	3.1	3.0	0.0	V-Horn	PK	0.0	43.7	74.0	-30.3	
2749.931	40.6	2.4	111.0	1.0	3.0	0.0	H-Horn	PK	0.0	43.0	74.0	-31.0	
7334.199	24.5	15.2	63.0	1.0	3.0	0.0	H-Horn	AV	0.0	39.7	54.0	-14.3	
7332.140	24.4	15.2	98.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.6	54.0	-14.4	
7329.113	36.8	15.2	63.0	1.0	3.0	0.0	H-Horn	PK	0.0	52.0	74.0	-22.0	
7331.698	36.8	15.2	98.0	1.0	3.0	0.0	V-Horn	PK	0.0	52.0	74.0	-22.0	

FIELD STRENGTH OF HARMONICS AND SPURIOUS RADIATED EMISSIONS										PSA 2007.01.31	EMI 2006.4.26	
EMC EUT: Cognis 100-D N119 Econo Serial Number: 508172 Customer: Boston Scientific Corporation Attendees: Jim Kippola Project: None Tested by: Jeremiah Darden										Work Order: BSTN0198	Date: 05/09/07	
										Temperature: 23C	Humidity: 34%	
										Barometric Pres.: 30	Job Site: OC10	
TEST SPECIFICATIONS										Test Method		
FCC 15.249:2006										ANSI C63.4:2003		
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m)		3						
COMMENTS												
None												
EUT OPERATING MODES												
Transmit All 1's												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	4											
Configuration #	2											
Results	Pass											
NVLAP Lab Code 200629-0												
												

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
7331.292	24.3	15.2	192.0	1.0	3.0	0.0	H-Horn	AV	0.0	39.5	54.0	-14.5
7331.375	24.3	15.2	188.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.5	54.0	-14.5
2749.550	30.1	2.4	249.0	1.0	3.0	0.0	V-Horn	AV	0.0	32.5	54.0	-21.5
7331.394	37.3	15.2	188.0	1.0	3.0	0.0	V-Horn	PK	0.0	52.5	74.0	-21.5
7331.400	37.0	15.2	192.0	1.0	3.0	0.0	H-Horn	PK	0.0	52.2	74.0	-21.8
3665.302	24.5	6.8	121.0	1.0	3.0	0.0	H-Horn	AV	0.0	31.3	54.0	-22.7
3665.303	24.5	6.8	102.0	2.6	3.0	0.0	V-Horn	AV	0.0	31.3	54.0	-22.7
2749.824	25.0	2.4	59.0	2.4	3.0	0.0	H-Horn	AV	0.0	27.4	54.0	-26.6
3665.353	37.0	6.8	121.0	1.0	3.0	0.0	H-Horn	PK	0.0	43.8	74.0	-30.2
3665.324	36.9	6.8	102.0	2.6	3.0	0.0	V-Horn	PK	0.0	43.7	74.0	-30.3
2749.723	39.1	2.4	249.0	1.0	3.0	0.0	V-Horn	PK	0.0	41.5	74.0	-32.5
2749.652	37.8	2.4	59.0	2.4	3.0	0.0	H-Horn	PK	0.0	40.2	74.0	-33.8

FIELD STRENGTH OF HARMONICS AND SPURIOUS RADIATED EMISSIONS										PSA 2007.01.31 EMI 2006.4.26		
EUT: Cognis 100-D N119 STD Serial Number: 507867 Customer: Boston Scientific Corporation Attendees: Jim Kippola Project: None Tested by: Luis Flores										Work Order: BSTN0198	Date: 05/09/07	
										Temperature: 23C	Humidity: 34%	
										Barometric Pres.: 30	Job Site: OC10	
TEST SPECIFICATIONS												
FCC 15.249:2006										ANSI C63.4:2003		
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m)		3						
COMMENTS												
None												
EUT OPERATING MODES												
Transmit All 1's												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	6											
Configuration #	3											
Results	Pass				NVLAP Lab Code 200629-0							
 <p>The graph plots dBuV/m on the y-axis (0.0 to 120.0) against MHz on the x-axis (1000.000 to 10000.000). A horizontal blue line at 54.0 dB represents the specification limit. Test data points are shown as green diamonds. Most points are clustered between 20 and 40 dBuV/m, with one notable outlier at approximately 42 dBuV/m at 1450 MHz.</p>												
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2749.426	34.2	2.4	75.0	1.0	3.0	0.0	H-Horn	AV	0.0	36.6	54.0	-17.4
7331.364	15.2	15.2	138.0	2.7	3.0	0.0	H-Horn	AV	0.0	30.4	54.0	-23.6
7331.385	15.2	15.2	312.0	1.0	3.0	0.0	V-Horn	AV	0.0	30.4	54.0	-23.6
2749.421	27.2	2.4	145.0	1.0	3.0	0.0	V-Horn	AV	0.0	29.6	54.0	-24.4
7331.325	27.9	15.2	138.0	2.7	3.0	0.0	H-Horn	PK	0.0	43.1	74.0	-30.9
7331.685	27.6	15.2	312.0	1.0	3.0	0.0	V-Horn	PK	0.0	42.8	74.0	-31.2
3665.880	15.3	6.8	114.0	3.4	3.0	0.0	V-Horn	AV	0.0	22.1	54.0	-31.9
3664.807	15.1	6.8	359.0	1.9	3.0	0.0	H-Horn	AV	0.0	21.9	54.0	-32.1
2749.382	36.3	2.4	75.0	1.0	3.0	0.0	H-Horn	PK	0.0	38.7	74.0	-35.3
3665.201	28.6	6.8	359.0	1.9	3.0	0.0	H-Horn	PK	0.0	35.4	74.0	-38.6
2749.388	32.0	2.4	145.0	1.0	3.0	0.0	V-Horn	PK	0.0	34.4	74.0	-39.6
3665.683	27.2	6.8	114.0	3.4	3.0	0.0	V-Horn	PK	0.0	34.0	74.0	-40.0

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2749.426	34.2	2.4	75.0	1.0	3.0	0.0	H-Horn	AV	0.0	36.6	54.0	-17.4
7331.364	15.2	15.2	138.0	2.7	3.0	0.0	H-Horn	AV	0.0	30.4	54.0	-23.6
7331.385	15.2	15.2	312.0	1.0	3.0	0.0	V-Horn	AV	0.0	30.4	54.0	-23.6
2749.421	27.2	2.4	145.0	1.0	3.0	0.0	V-Horn	AV	0.0	29.6	54.0	-24.4
7331.325	27.9	15.2	138.0	2.7	3.0	0.0	H-Horn	PK	0.0	43.1	74.0	-30.9
7331.685	27.6	15.2	312.0	1.0	3.0	0.0	V-Horn	PK	0.0	42.8	74.0	-31.2
3665.880	15.3	6.8	114.0	3.4	3.0	0.0	V-Horn	AV	0.0	22.1	54.0	-31.9
3664.807	15.1	6.8	359.0	1.9	3.0	0.0	H-Horn	AV	0.0	21.9	54.0	-32.1
2749.382	36.3	2.4	75.0	1.0	3.0	0.0	H-Horn	PK	0.0	38.7	74.0	-35.3
3665.201	28.6	6.8	359.0	1.9	3.0	0.0	H-Horn	PK	0.0	35.4	74.0	-38.6
2749.388	32.0	2.4	145.0	1.0	3.0	0.0	V-Horn	PK	0.0	34.4	74.0	-39.6
3665.683	27.2	6.8	114.0	3.4	3.0	0.0	V-Horn	PK	0.0	34.0	74.0	-40.0

