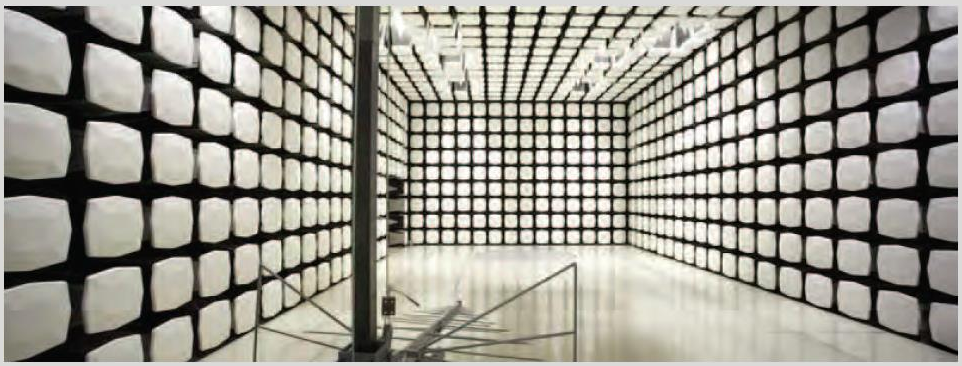
Inspire Medical Systems

Model 2740 Physician Programmer

FCC 15.207:2018
FCC 15.209:2018
Inductive radio

Report # INSP0007



NVLAP LAB CODE: 200881-0

CERTIFICATE OF TEST

Last Date of Test: October 3, 2018
Inspire Medical Systems
Model: 2740 Physician Programmer

Radio Equipment Testing

Standards

Specification	Method
FCC 15.207:2018	ANSI C63.10:2013
FCC 15.209:2018	

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	Yes	Pass	
6.4	Field Strength of Fundamental	Yes	Pass	
6.4, 6.5	Spurious Radiated Emissions	Yes	Pass	

Deviations From Test Standards

None

Approved By:

Matt Nuernberg, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY

Revision Number	Description	Date (yyyy-mm-dd)	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS

United States

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

A2LA - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Element to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

European Union

European Commission – Within Element, we have a EU Notified Body validated for the EMCD and RED Directives.

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

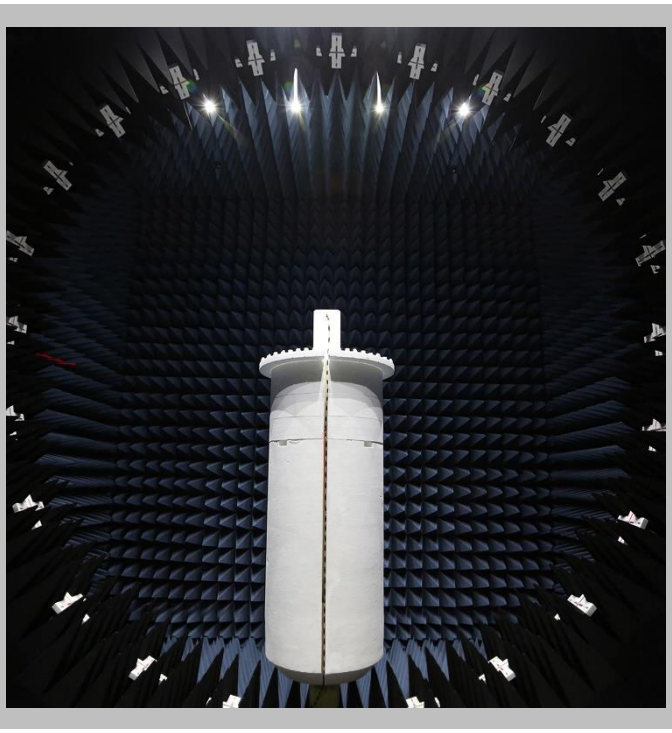
MIC – Recognized by MIC as a CAB for the acceptance of test data.

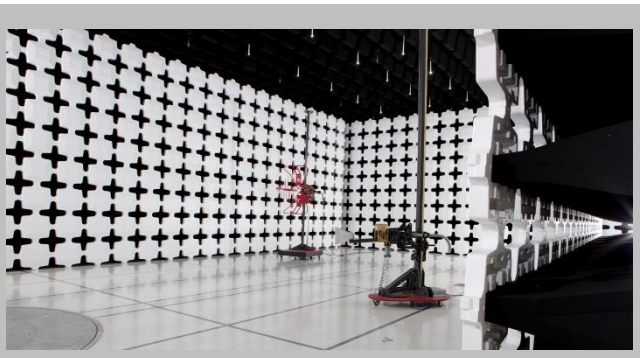
SCOPE

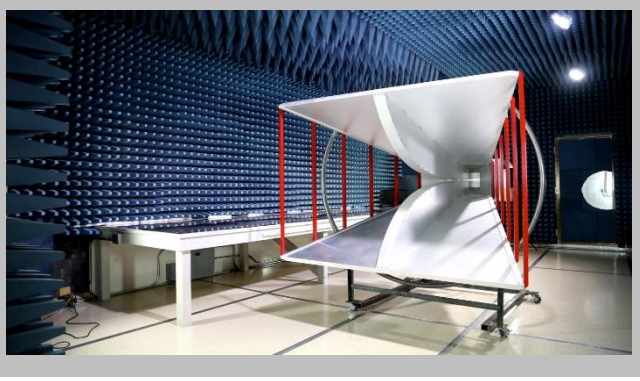
For details on the Scopes of our Accreditations, please visit:
https://www.nwemc.com/emc-testing-accreditations

FACILITIES

California	Minnesota	New York	Oregon	Texas	Washington
Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Labs MN01-10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Labs NC01-05 19201 120th Ave NE Bothell, WA 98011 (425)984-6600
NVLAP					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
Innovation, Science and Economic Development Canada					
2834B-1, 2834B-3	2834E-1, 2834E-3	N/A	2834D-1, 2834D-*2*	2834G-1	2834F-1
BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157







MEASUREMENT UNCERTAINTY

element
TMU.2015.07.10

Measurement Uncertainty

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

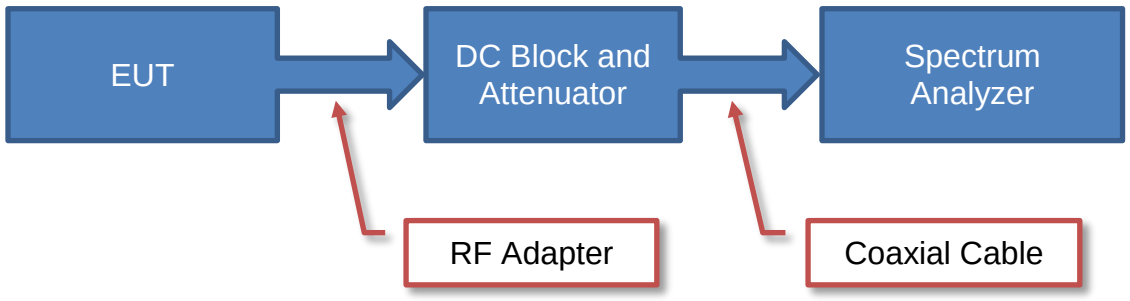
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

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

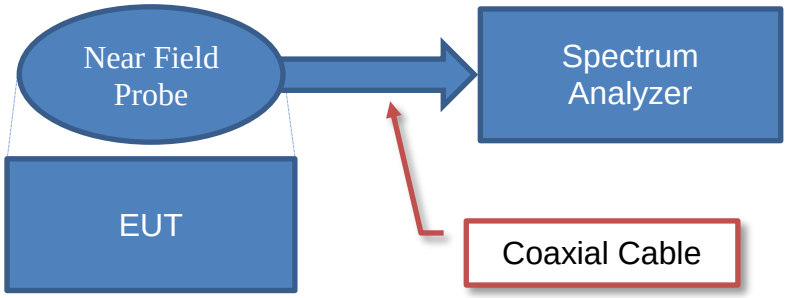
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

Test Setup Block Diagrams

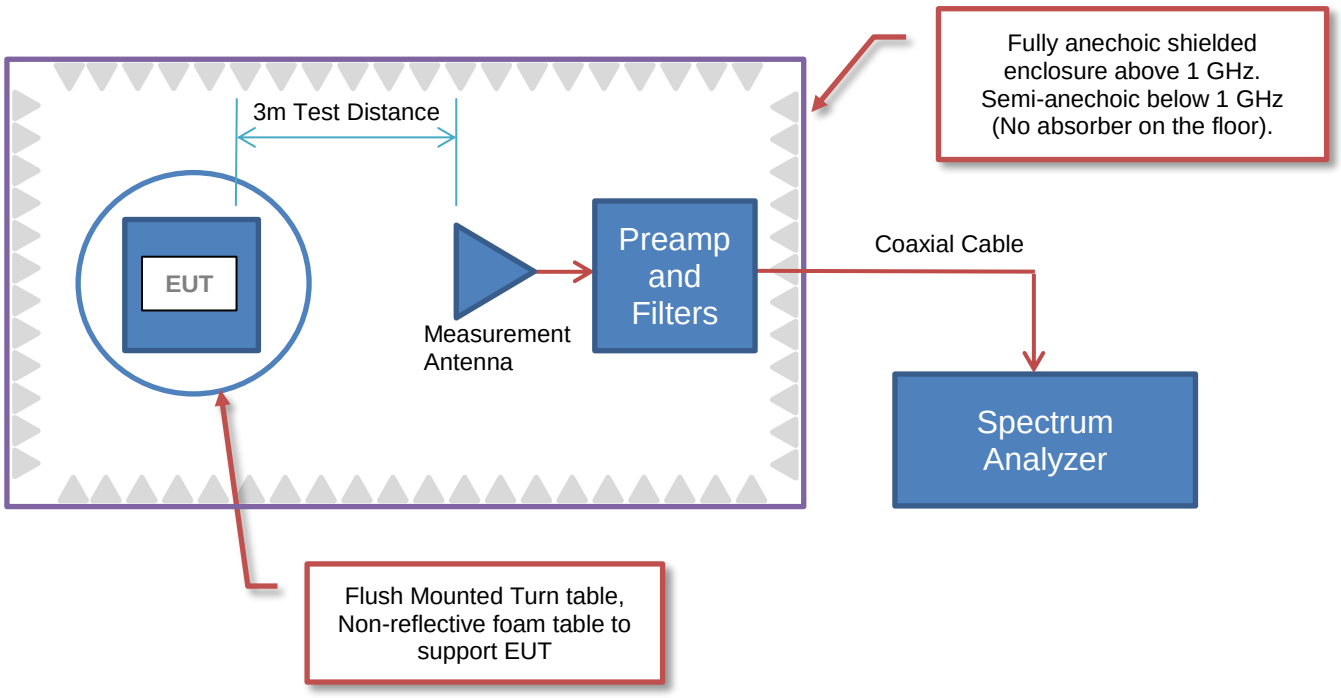
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Inspire Medical Systems
Address:	9700 63rd Ave N, Suite 200
City, State, Zip:	Maple Grove, MN 55369
Test Requested By:	Jordan McIver
Model:	Model 2740 Physician Programmer
First Date of Test:	October 3, 2018
Last Date of Test:	October 3, 2018
Receipt Date of Samples:	October 3, 2018
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
Programmer system containing a 175 kHz telemetry head connected to a pre-approved Bluetooth module. The system also includes a pre-approved tablet.

Testing Objective:
To demonstrate compliance of the inductive portion of the device to FCC Part 15.209 specifications.

CONFIGURATIONS

element
2018-07-17

Configuration INSP0007- 1

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Physician Programmer	Inspire Medical Systems	2740	9996

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
IPG	Inspire Medical Systems	3028	AIR300161C
AC Adapter (Telemetry Cable)	Cincon Electronics Co., LTD.	TR30M090	30090-0001853
AC Adapter (Tablet)	Sinpro	HPU32A-105	10957869 1648

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power (Telemetry Cable)	No	2.0 m	No	AC Mains	AC Adapter (Telemetry Cable)
DC Power (Telemetry Cable)	No	1.6 m	Yes	AC Adapter (Telemetry Cable)	Physician Programmer
Telemetry Cable	No	0.2 m	No	DC Power Cable (Telemetry Cable)	Physician Programmer
Telemetry Cable	No	1 m	No	Physician Programmer	Physician Programmer
AC Power (Tablet)	No	1.8 m	No	AC Mains	AC Adapter (Tablet)
DC Power (Tablet)	No	1.2 m	No	AC Adapter (Tablet)	Physician Programmer

MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2018-10-03	Field Strength of Fundamental	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	2018-10-03	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2018-10-03	Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

POWERLINE CONDUCTED EMISSIONS

element
WTD.2017.11.22.1

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Per the standard, an insulating material was also added to ground plane between the EUT's power and remote I/O cables. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Receiver	Rohde & Schwarz	ESR7	ARI	6/26/2018	6/26/2019
Cable - Conducted Cable Assembly	Northwest EMC	MNC, HGN, TYK	MNCA	3/14/2018	3/14/2019
LISN	Solar Electronics	9252-50-R-24-BNC	LIY	3/15/2018	3/15/2019
LISN	Solar Electronics	9252-50-R-24-BNC	LIQ	10/11/2017	10/11/2018

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

CONFIGURATIONS INVESTIGATED

INSP0007-1

MODES INVESTIGATED

Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.

POWERLINE CONDUCTED EMISSIONS

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WTD.2017.11.22.1

EUT:	Model 2740 Physician Programmer	Work Order:	INSP0007
Serial Number:	9996	Date:	10/03/2018
Customer:	Inspire Medical Systems	Temperature:	23.1°C
Attendees:	Jordan McIver	Relative Humidity:	48.1%
Customer Project:	None	Bar. Pressure:	1002 mb
Tested By:	Kyle McMullan	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	INSP0007-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2018	ANSI C63.10:2013

TEST PARAMETERS

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

COMMENTS

None

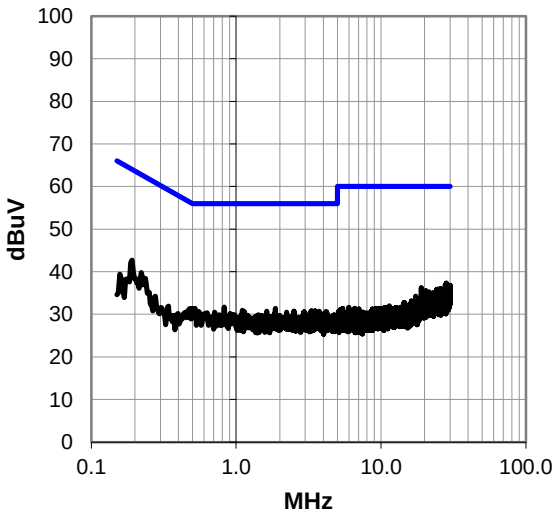
EUT OPERATING MODES

Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.

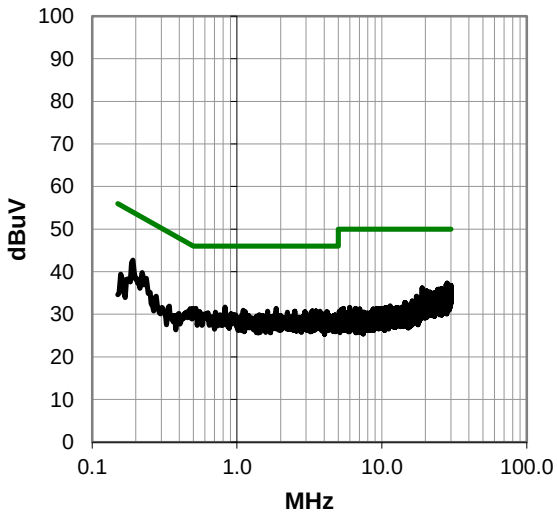
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2017.11.22.1

RESULTS - Run #3

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.191	22.1	20.6	42.7	64.0	-21.3
28.273	13.6	23.7	37.3	60.0	-22.7
0.221	19.2	20.6	39.8	62.8	-23.0
27.795	13.2	23.7	36.9	60.0	-23.1
29.642	12.9	23.9	36.8	60.0	-23.2
29.989	12.9	23.9	36.8	60.0	-23.2
29.694	12.7	23.9	36.6	60.0	-23.4
29.489	12.6	23.9	36.5	60.0	-23.5
29.929	12.4	23.9	36.3	60.0	-23.7
19.017	13.8	22.4	36.2	60.0	-23.8
25.747	12.7	23.3	36.0	60.0	-24.0
28.519	12.2	23.8	36.0	60.0	-24.0
28.802	12.2	23.8	36.0	60.0	-24.0
24.598	12.7	23.2	35.9	60.0	-24.1
25.598	12.6	23.3	35.9	60.0	-24.1
29.034	12.1	23.8	35.9	60.0	-24.1
29.526	12.0	23.9	35.9	60.0	-24.1
24.266	12.7	23.1	35.8	60.0	-24.2
28.377	12.1	23.7	35.8	60.0	-24.2
28.627	12.0	23.8	35.8	60.0	-24.2
26.803	12.2	23.5	35.7	60.0	-24.3
26.956	12.2	23.5	35.7	60.0	-24.3
28.235	12.0	23.7	35.7	60.0	-24.3
0.825	11.2	20.5	31.7	56.0	-24.3
28.008	11.9	23.7	35.6	60.0	-24.4
29.358	11.8	23.8	35.6	60.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.191	22.1	20.6	42.7	54.0	-11.3
28.273	13.6	23.7	37.3	50.0	-12.7
0.221	19.2	20.6	39.8	52.8	-13.0
27.795	13.2	23.7	36.9	50.0	-13.1
29.642	12.9	23.9	36.8	50.0	-13.2
29.989	12.9	23.9	36.8	50.0	-13.2
29.694	12.7	23.9	36.6	50.0	-13.4
29.489	12.6	23.9	36.5	50.0	-13.5
29.929	12.4	23.9	36.3	50.0	-13.7
19.017	13.8	22.4	36.2	50.0	-13.8
25.747	12.7	23.3	36.0	50.0	-14.0
28.519	12.2	23.8	36.0	50.0	-14.0
28.802	12.2	23.8	36.0	50.0	-14.0
24.598	12.7	23.2	35.9	50.0	-14.1
25.598	12.6	23.3	35.9	50.0	-14.1
29.034	12.1	23.8	35.9	50.0	-14.1
29.526	12.0	23.9	35.9	50.0	-14.1
24.266	12.7	23.1	35.8	50.0	-14.2
28.377	12.1	23.7	35.8	50.0	-14.2
28.627	12.0	23.8	35.8	50.0	-14.2
26.803	12.2	23.5	35.7	50.0	-14.3
26.956	12.2	23.5	35.7	50.0	-14.3
28.235	12.0	23.7	35.7	50.0	-14.3
0.825	11.2	20.5	31.7	46.0	-14.3
28.008	11.9	23.7	35.6	50.0	-14.4
29.358	11.8	23.8	35.6	50.0	-14.4

CONCLUSION

Pass

Tested By

POWERLINE CONDUCTED EMISSIONS

EUT:	Model 2740 Physician Programmer	Work Order:	INSP0007
Serial Number:	9996	Date:	10/03/2018
Customer:	Inspire Medical Systems	Temperature:	23.1°C
Attendees:	Jordan McIver	Relative Humidity:	48.1%
Customer Project:	None	Bar. Pressure:	1002 mb
Tested By:	Kyle McMullan	Job Site:	MN03
Power:	110VAC/60Hz	Configuration:	INSP0007-1

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2018	ANSI C63.10:2013

TEST PARAMETERS

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

COMMENTS

None

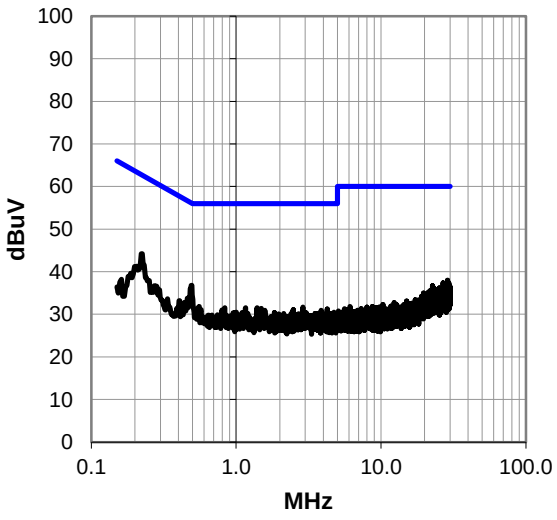
EUT OPERATING MODES

Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.

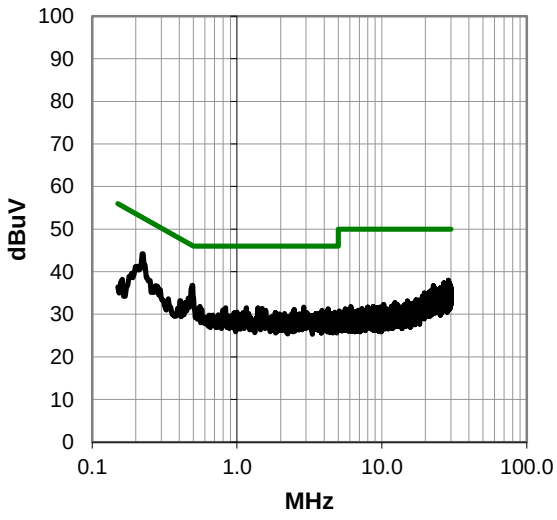
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



POWERLINE CONDUCTED EMISSIONS

element
WTD.2017.11.22.1

RESULTS - Run #4

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.221	23.6	20.6	44.2	62.8	-18.6
0.490	16.4	20.4	36.8	56.2	-19.4
28.784	14.2	23.8	38.0	60.0	-22.0
28.888	13.7	23.8	37.5	60.0	-22.5
26.810	13.9	23.5	37.4	60.0	-22.6
28.392	13.6	23.7	37.3	60.0	-22.7
29.396	13.5	23.8	37.3	60.0	-22.7
28.355	13.4	23.7	37.1	60.0	-22.9
29.295	13.2	23.8	37.0	60.0	-23.0
27.788	13.1	23.7	36.8	60.0	-23.2
22.647	13.9	22.8	36.7	60.0	-23.3
28.515	12.9	23.8	36.7	60.0	-23.3
28.616	12.9	23.8	36.7	60.0	-23.3
29.239	12.9	23.8	36.7	60.0	-23.3
29.828	12.7	23.9	36.6	60.0	-23.4
29.187	12.6	23.8	36.4	60.0	-23.6
29.791	12.5	23.9	36.4	60.0	-23.6
27.135	12.7	23.6	36.3	60.0	-23.7
29.489	12.4	23.9	36.3	60.0	-23.7
23.191	13.3	22.9	36.2	60.0	-23.8
25.198	12.9	23.3	36.2	60.0	-23.8
27.273	12.4	23.6	36.0	60.0	-24.0
27.844	12.3	23.7	36.0	60.0	-24.0
25.751	12.6	23.3	35.9	60.0	-24.1
26.560	12.5	23.4	35.9	60.0	-24.1
29.649	12.0	23.9	35.9	60.0	-24.1

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.221	23.6	20.6	44.2	52.8	-8.6
0.490	16.4	20.4	36.8	46.2	-9.4
28.784	14.2	23.8	38.0	50.0	-12.0
28.888	13.7	23.8	37.5	50.0	-12.5
26.810	13.9	23.5	37.4	50.0	-12.6
28.392	13.6	23.7	37.3	50.0	-12.7
29.396	13.5	23.8	37.3	50.0	-12.7
28.355	13.4	23.7	37.1	50.0	-12.9
29.295	13.2	23.8	37.0	50.0	-13.0
27.788	13.1	23.7	36.8	50.0	-13.2
22.647	13.9	22.8	36.7	50.0	-13.3
28.515	12.9	23.8	36.7	50.0	-13.3
28.616	12.9	23.8	36.7	50.0	-13.3
29.239	12.9	23.8	36.7	50.0	-13.3
29.828	12.7	23.9	36.6	50.0	-13.4
29.187	12.6	23.8	36.4	50.0	-13.6
29.791	12.5	23.9	36.4	50.0	-13.6
27.135	12.7	23.6	36.3	50.0	-13.7
29.489	12.4	23.9	36.3	50.0	-13.7
23.191	13.3	22.9	36.2	50.0	-13.8
25.198	12.9	23.3	36.2	50.0	-13.8
27.273	12.4	23.6	36.0	50.0	-14.0
27.844	12.3	23.7	36.0	50.0	-14.0
25.751	12.6	23.3	35.9	50.0	-14.1
26.560	12.5	23.4	35.9	50.0	-14.1
29.649	12.0	23.9	35.9	50.0	-14.1

CONCLUSION

Pass

Tested By

FIELD STRENGTH OF FUNDAMENTAL

PSA-ESCI 2018.07.27

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

Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INSP0007 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	160 kHz	Stop Frequency	190 kHz

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
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	27-Apr-2018	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	9-Nov-2017	12 mo
Antenna - Loop	ETS Lindgren	6502	AOB	16-May-2017	24 mo

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was continuously transmitting while set to the channel specified.

The fundamental carrier of the EUT was maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A calibrated active loop antenna was used for this test in order to provide sufficient measurement sensitivity. The center of the loop antenna was maintained at 1m above the ground plane during the testing.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = Average Detector

As outlined in 15.209(e), 15.31(f)(2), and RSS-GEN, 6.4, measurements may be performed at a distance closer than what is specified with the limit. The limit at the specified distance is shown on the data sheet. Measurements are made at a closer distance and the data is adjusted using a distance correction factor of 40dB/decade for comparison to the limit.

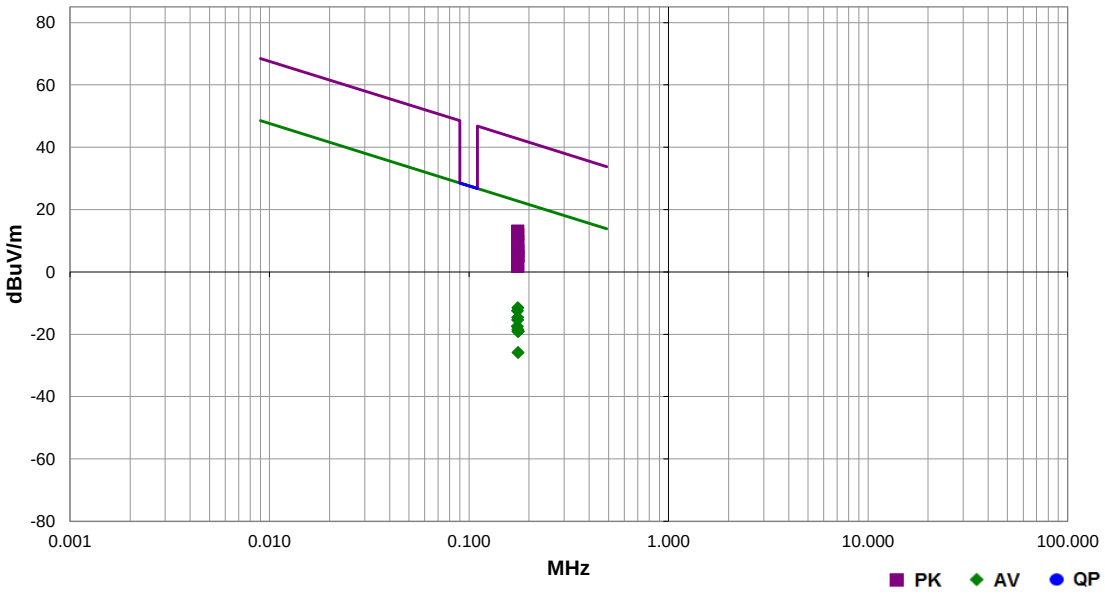
FIELD STRENGTH OF FUNDAMENTAL

EmiR5 2018.09.26 PSA-ESCI 2018.07.27

Work Order:	INSP0007	**Date:**	3-Oct-2018		
Project:	None	**Temperature:**	21.6 °C		
Job Site:	MN05	**Humidity:**	48.5% RH		
Serial Number:	9996	**Barometric Pres.:**	1004 mbar	**Tested by:**	Kyle McMullan
EUT:	Model 2740 Physician Programmer				
Configuration:	1				
Customer:	Inspire Medical Systems				
Attendees:	Jordan McIver				
EUT Power:	110VAC/60Hz				
Operating Mode:	Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.209:2018	ANSI C63.10:2013

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



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments	
0.176	81.5	11.6	1.0	270.0	3.0	0.0	Par to EUT	PK	-80.0	13.1	42.7	-29.6	EUT On Side	
0.176	80.5	11.6	1.0	90.0	3.0	0.0	Par to EUT	PK	-80.0	12.1	42.7	-30.6	EUT Vert	
0.176	78.1	11.6	1.0	360.0	3.0	0.0	Perp to GND	PK	-80.0	9.7	42.7	-33.0	EUT On Side	
0.176	77.2	11.6	1.0	0.0	3.0	0.0	Perp to GND	PK	-80.0	8.8	42.7	-33.9	EUT Vert	
0.176	56.9	11.6	1.0	270.0	3.0	0.0	Par to EUT	AV	-80.0	-11.5	22.7	-34.2	EUT On Side	AV - CISPR Average
0.175	55.9	11.6	1.0	90.0	3.0	0.0	Par to EUT	AV	-80.0	-12.5	22.7	-35.2	EUT Vert	AV - CISPR Average
0.176	75.2	11.6	1.0	315.0	3.0	0.0	Par to EUT	PK	-80.0	6.8	42.7	-35.9	EUT Horz	
0.176	53.8	11.6	1.0	360.0	3.0	0.0	Perp to GND	AV	-80.0	-14.6	22.7	-37.3	EUT On Side	AV - CISPR Average
0.176	73.8	11.6	1.0	90.1	3.0	0.0	Par to GND	PK	-80.0	5.4	42.7	-37.3	EUT Vert	
0.176	73.6	11.6	1.0	270.0	3.0	0.0	Par to GND	PK	-80.0	5.2	42.7	-37.5	EUT Horz	
0.176	73.2	11.6	1.0	270.0	3.0	0.0	Par to GND	PK	-80.0	4.8	42.7	-37.9	EUT On Side	
0.175	53.0	11.6	1.0	0.0	3.0	0.0	Perp to GND	AV	-80.0	-15.4	22.7	-38.1	EUT Vert	AV - CISPR Average
0.175	50.9	11.6	1.0	315.0	3.0	0.0	Par to EUT	AV	-80.0	-17.5	22.8	-40.3	EUT Horz	AV - CISPR Average
0.176	70.3	11.6	1.0	360.0	3.0	0.0	Perp to GND	PK	-80.0	1.9	42.7	-40.8	EUT Horz	
0.176	49.9	11.6	1.0	90.1	3.0	0.0	Par to GND	AV	-80.0	-18.5	22.7	-41.2	EUT Vert	AV - CISPR Average
0.177	49.3	11.6	1.0	270.0	3.0	0.0	Par to GND	AV	-80.0	-19.1	22.7	-41.8	EUT Horz	AV - CISPR Average
0.176	49.3	11.6	1.0	270.0	3.0	0.0	Par to GND	AV	-80.0	-19.1	22.7	-41.8	EUT On Side	AV - CISPR Average
0.176	42.5	11.6	1.0	360.0	3.0	0.0	Perp to GND	AV	-80.0	-25.9	22.7	-48.6	EUT Horz	AV - CISPR Average

SPURIOUS RADIATED EMISSIONS

element

PSA-ESCI 2018.07.27

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

Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

INSP0007 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	9 kHz	Stop Frequency	1 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
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	AVO	9-Nov-2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	25-Jan-2018	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	27-Apr-2018	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	9-Nov-2017	12 mo
Antenna - Loop	ETS Lindgren	6502	AOB	16-May-2017	24 mo

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A calibrated active loop antenna was used for this test in order to provide sufficient measurement sensitivity. The center of the loop antenna was maintained at 1m above the ground plane during the testing.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

As outlined in 15.209(e), 15.31(f)(2), and RSS-GEN, 6.4, measurements may be performed at a distance closer than what is specified with the limit. The limit at the specified distance is shown on the data sheet. Measurements are made at a closer distance and the data is adjusted using a distance correction factor of 40dB/decade for comparison to the limit.

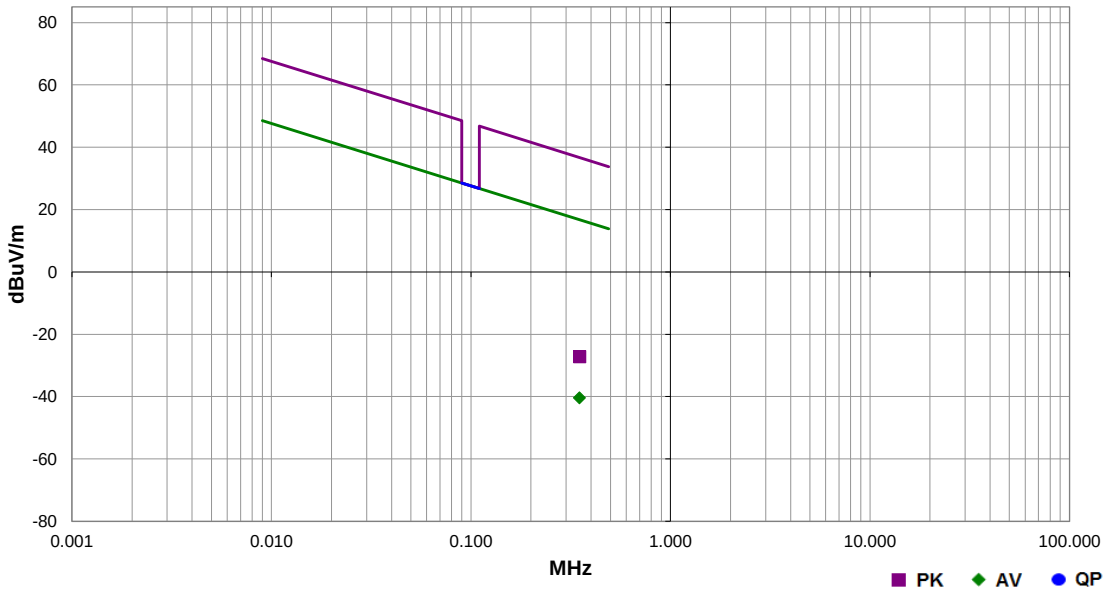
SPURIOUS RADIATED EMISSIONS

EmiR5 2018.09.26 PSA-ESCI 2018.07.27

Work Order:	INSP0007	**Date:**	3-Oct-2018		
Project:	None	**Temperature:**	21.6 °C		
Job Site:	MN05	**Humidity:**	48.5% RH		
Serial Number:	9996	**Barometric Pres.:**	1004 mbar	**Tested by:**	Kyle McMullan
EUT:	Model 2740 Physician Programmer				
Configuration:	1				
Customer:	Inspire Medical Systems				
Attendees:	Jordan McIver				
EUT Power:	110VAC/60Hz				
Operating Mode:	Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.209:2018	ANSI C63.10:2013

Run #	6	**Test Distance (m)**	3	**Antenna Height(s)**	1(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
0.350	28.1	11.5	1.0	117.0	3.0	0.0	Par to EUT	AV	-80.0	-40.4	16.7	-57.1	EUT On Side AV - CISPR Average
0.351	41.3	11.5	1.0	117.0	3.0	0.0	Par to EUT	PK	-80.0	-27.2	36.7	-63.9	EUT On Side

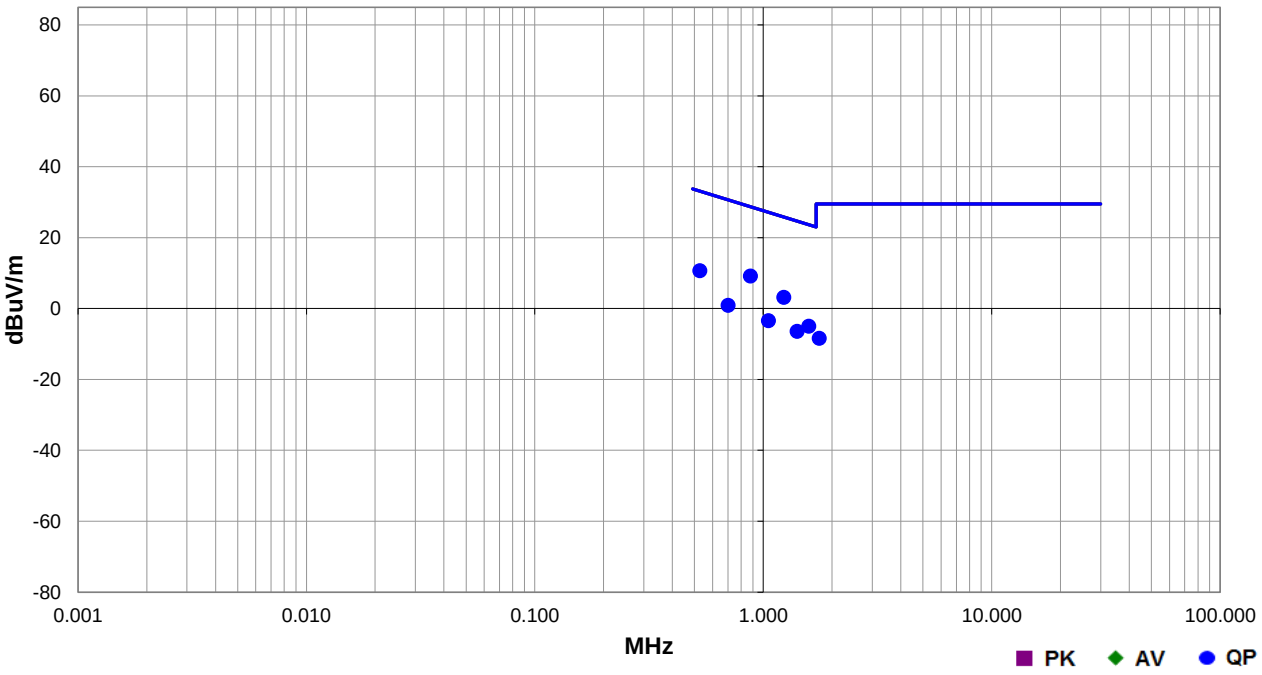
SPURIOUS RADIATED EMISSIONS

EmiR5 2018.09.26 PSA-ESCI 2018.07.27

Work Order:	INSP0007	**Date:**	3-Oct-2018		
Project:	None	**Temperature:**	21.6 °C		
Job Site:	MN05	**Humidity:**	48.5% RH		
Serial Number:	9996	**Barometric Pres.:**	1004 mbar	**Tested by:**	Kyle McMullan
EUT:	Model 2740 Physician Programmer				
Configuration:	1				
Customer:	Inspire Medical Systems				
Attendees:	Jordan McIver				
EUT Power:	110VAC/60Hz				
Operating Mode:	Tx Inductive test telemetry mode at 175 kHz with model 3028 Inspire IPG.				
Deviations:	None				
Comments:	None				

Test Specifications	**Test Method**
FCC 15.209:2018	ANSI C63.10:2013

Run #	7	**Test Distance (m)**	3	**Antenna Height(s)**	1(m)	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
0.878	37.3	11.9	1.0	279.0	3.0	0.0	Par to EUT	QP	-40.0	9.2	28.7	-19.5	EUT On Side
0.527	38.9	11.8	1.0	242.0	3.0	0.0	Par to EUT	QP	-40.0	10.7	33.2	-22.5	EUT On Side
1.229	31.1	12.1	1.0	306.0	3.0	0.0	Par to EUT	QP	-40.0	3.2	25.8	-22.6	EUT On Side
1.580	22.9	12.1	1.0	271.0	3.0	0.0	Par to EUT	QP	-40.0	-5.0	23.7	-28.7	EUT On Side
0.702	29.1	11.8	1.0	296.0	3.0	0.0	Par to EUT	QP	-40.0	0.9	30.7	-29.8	EUT On Side
1.053	24.5	12.1	1.0	242.0	3.0	0.0	Par to EUT	QP	-40.0	-3.4	27.2	-30.6	EUT On Side
1.405	21.5	12.1	1.0	59.1	3.0	0.0	Par to EUT	QP	-40.0	-6.4	24.7	-31.1	EUT On Side
1.756	19.5	12.1	1.0	253.0	3.0	0.0	Par to EUT	QP	-40.0	-8.4	29.5	-37.9	EUT On Side