

41039 Boyce Road Fremont, CA. 94538

EMC Test Report

Application for FCC Grant of Equipment Authorization Canada Certification

FCC Part 15 Subpart C

Model: ACCRX02

IC CERTIFICATION #: 11508A-ACCRX02 FCC ID: 2AAZF-ACCRX02

APPLICANT:	Intuitive Surgical Inc. 1266 Kifer Road Building 101 Sunnyvale, CA 94086
TEST SITE(S):	National Technical Systems 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-3
PROJECT NUMBER:	PR117602
REPORT DATE:	July 17, 2020
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Project number PR117602 Report Date: July 17, 2020

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REVISION HISTORY

Rev#	Date	Comments	Modified By
-	July 17, 2020	First release	



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SCOPE

An electromagnetic emissions test has been performed on the Intuitive Surgical Inc. model ACCRX02, pursuant to the following rules:

RSS-GEN Issue 5 "General Requirements for Compliance of Radio Apparatus" RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" FCC Part 15 Subpart C

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems test procedures: ANSI C63.10-2013

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

National Technical Systems is accredited by the A2LA, certificate number 0214.26, to perform the test(s) listed in this report, except where noted otherwise.



OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of Intuitive Surgical Inc. model ACCRX02 complied with the requirements of the following regulations:

RSS-GEN Issue 5 "General Requirements for Compliance of Radio Apparatus" RSS 210 Issue 8 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" FCC Part 15 Subpart C

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Intuitive Surgical Inc. model ACCRX02 and therefore apply only to the tested sample. The sample was selected and prepared by Tony Permsombut of Intuitive Surgical Inc..

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.



TEST RESULTS SUMMARY

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.225	RSS 210 B.6	Transmitter Fundamental Signal Emissions, 13.56 MHz	8.80 dBµV/m @ 13.563 MHz (-75.2 dB)	Refer to table in limits section	Complies
15.209	RSS-GEN Table 5 and 6	Transmitter Radiated Spurious Emissions, 10 - 150 MHz	33.5 dBµV/m @ 47.38 MHz (-6.5 dB)	Refer to table in limits section	Complies
15.225	RSS 210 B.6	Frequency Stability	13 ppm	Less than 100 ppm	Complies

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Integral Antenna	Unique or integral antenna required	Complies
15.407 (b) (6)	RSS-Gen Table 4	AC Conducted Emissions	46.8 dBµV @ 0.848 MHz (-9.2 dB)	Refer to page 18	Complies
	RSS 102	RF Exposure Requirements	Refer to RSS 102 exemption declaration.	Refer to RSS 102	Complies
-	RSS-Gen 8.4	User Manual		Statement for all products	Complies
-	RSP-100 RSS-Gen 6.7	Occupied Bandwidth	11 Hz	Information only	N/A

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
Radiated emission (field strength)	dBuV/m	25 to 1000 MHz	± 3.6 dB
	αθμv/m	1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dBµV	0.15 to 30 MHz	± 2.4 dB



EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Intuitive Surgical Inc. model ACCRX02 is a RFID 13.56MHz transceiver module for use in an Endoscopic Instrument Control System, intended to assist in the control of endoscopic instruments. Since the EUT would be installed in an Endoscopic system cart during operation, the EUT was treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the EUT is 3.3 Volts. The electrical rating of the Endoscopic system cart is 100-230V, 50/60Hz, 12A.

The sample was received on June 5, 2020 and tested on June 18, 22 and 23, 2020. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Intuitive Surgical, Inc.	ACCRX02	RFID Module	CT20162141	2AAZF-ACCRX02

ANTENNA SYSTEM

The antenna system consists of an integral loop.

ENCLOSURE

The EUT does not have an enclosure. It is intended to be installed in an Endoscopic system cart.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Dell	Precision5530	Laptop	CGRY5Y2	-
Intuitive Surgical	RPUSBUART-02	USB-UART Adapter	P115310346	-

No remote support equipment was used during testing.



EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

EUT				
Port	Connected To		Cable(s)	
1 OIL	Connected 10	Description	Shielded or Unshielded	Length(m)
Power/Serial	USB-UR Adapter	Flat cable	Unshielded	0.1

Additional on Support Equipment

Port	Connected To		Cable(s)	
1 OIT	Connected 10	Description	Shielded or Unshielded	Length(m)
USB-UR	Laptop	Multiwire	Shielded	1.8

EUT OPERATION

During emissions testing the EUT was commanded to transmit continuously at rated power.



TEST SITE

GENERAL INFORMATION

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 6.2 of RSS-GEN, NTS has been recognized as an accredited test laboratory by the Commission and Innovation, Science and Economic Development Canada. A description of the facilities employed for testing is maintained by NTS.

Site Company / Regis		stration Numbers	Location
Site	FCC	Canada	Location
		2845B	41039 Boyce Road
Chamber 3	US1031	(Wireless Test	Fremont,
		Lab #US0027)	CA 94538-2435

ANSI C63.4 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Results from testing performed in this chamber have been correlated with results from an open area test site. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.10. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4.



MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

Software is used to view and convert receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers. The software used for radiated and conducted emissions measurements is NTS EMI Test Software (rev 2.10)

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.



FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a nonconductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.10 specifies that the test height above ground for table mounted devices shall be 80 centimeters for testing below 1 GHz and 1.5m for testing above 1 GHz. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor as specified in ANSI C63.4. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.



TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.10, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.

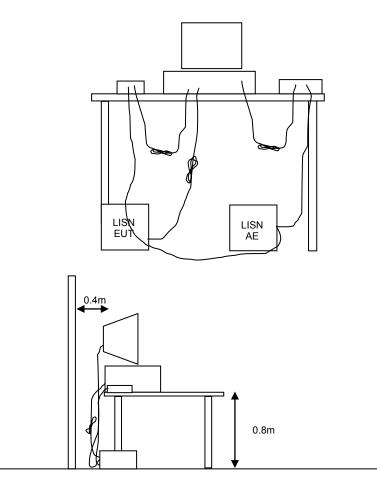


Figure 1 Typical Conducted Emissions Test Configuration



RADIATED EMISSIONS

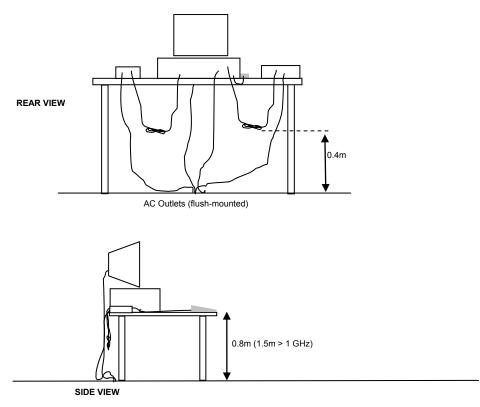
A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

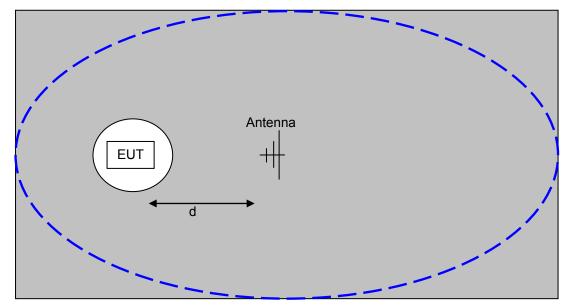
When testing above 18 GHz, the receive antenna is located at 1 meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.



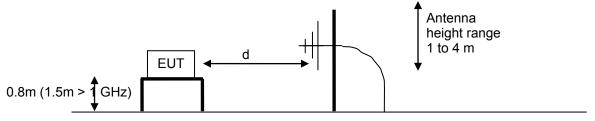


Typical Test Configuration for Radiated Field Strength Measurements



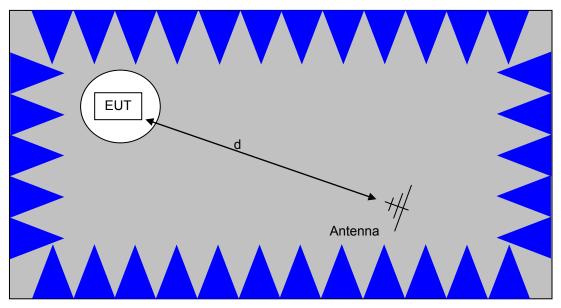


The ground plane extends beyond the ellipse defined in CISPR 16 / CISPR 22 / ANSI C63.4 and is large enough to accommodate test distances (d) of 3m and 10m. Refer to the test data tables for the actual measurement distance.



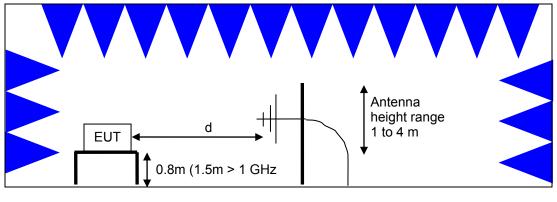
<u>Test Configuration for Radiated Field Strength Measurements</u> <u>OATS- Plan and Side Views</u>





The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used.

Floor-standing equipment is placed on the floor with insulating supports between the unit and the ground plane.



<u>Test Configuration for Radiated Field Strength Measurements</u> <u>Semi-Anechoic Chamber, Plan and Side Views</u>

BANDWIDTH MEASUREMENTS

The 6dB, 20dB, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and RSS GEN.



SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands¹.

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	2400/F _{KHz} @ 300m	67.6-20*log ₁₀ (F _{KHz}) @ 300m
0.490-1.705	24000/F _{KHz} @ 30m	87.6-20*log ₁₀ (F _{KHz}) @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

¹ The restricted bands are detailed in FCC 15.205 and RSS-Gen Table 7



SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

 $R_r - S = M$ where: $R_r =$ Receiver Reading in dBuV S = Specification Limit in dBuV M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

 $F_{d} = 20*LOG_{10} (D_{m}/D_{s})$ where: $F_{d} = Distance Factor in dB$ $D_{m} = Measurement Distance in meters$ $D_{s} = Specification Distance in meters$

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

 $F_d = 40*LOG_{10} (D_m/D_s)$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$\begin{array}{rcl} R_c &=& R_r \,+\, F_d \\ & \text{and} \\ & M &=& R_c \,-\, L_S \\ & \text{where:} \\ & R_r &=& \text{Receiver Reading in dBuV/m} \\ & F_d &=& \text{Distance Factor in dB} \\ & R_c &=& \text{Corrected Reading in dBuV/m} \\ & L_S &=& \text{Specification Limit in dBuV/m} \end{array}$$

M = Margin in dB Relative to Spec



SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of d (meters) from the equipment under test:

 $E = \frac{1000000 \sqrt{30 P}}{d}$ microvolts per meter

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.



Appendix A Test Equipment Calibration Data

Manufacturer Description Model Asset # Calibrated Ca Conducted Emissions - AC Power Ports, 18-Jun-20 Calibrated Calibrated	al Due
EMCO LISN, 10 kHz-100 MHz 3825/2 WC064399 7/24/2019 7/2 Rohde & Schwarz Pulse Limiter ESH3 Z2 WC064445 12/2/2019 12	24/2020 2/2/2020 11/2021
	23/2022 11/2021
Radiated Emissions, 30 - 150 MHz, 18-Jun-20 Rohde & Schwarz EMI Test Receiver, 20 Hz- ESIB7 WC064455 2/11/2020 2/ 7 GHz	11/2021
Sunol Sciences Biconilog, 30-3000 MHz JB3 WC064536 10/24/2018 1/5	9/2021)/25/2020
Bandwidth, 22-Jun-20National TechnicalNTS Capture AnalyzerN/AWC022706N/ASystemsSoftware (rev 4.0)	
Rhode & Schwarz Loop Antenna HFH2-Z2 WC062457 1/23/2020 1/2	23/2022 11/2021
Radio Antenna Port (Power and Spurious Emissions), 23-Jun-20	
Agilent PSA Spectrum Analyzer E4446A WC055650 7/18/2019 7/ Technologies	18/2020
•	24/2020
Watlow Limit Controller Limit 97 WC071533 N/A	5/2021
Frequency Stability, 23-Jun-20 Agilent PSA Spectrum Analyzer E4446A WC055650 7/18/2019 7/ Technologies	18/2020
Watlow Environmental Chamber F4DH-CCCC- WC066185 5/8/2019 6/2	24/2020
Controller21RGWatlowLimit ControllerLimit 97WC071533N/A	



Appendix B Test Data

TL117602-RANA Pages 23 – 39



EMC Test Data

Client:	Intuitive Surgical, Inc.	PR Number:	PR117602
Product	ACCRX02	T-Log Number:	TL117602-RANA
System Configuration:	IS4000	Project Manager:	Deepa Shetty
Contact:	Tony Permsonbut	Project Engineer:	David Bare
Emissions Standard(s):	FCC Part 15.225, RSS-210 B.6	Class:	-
Immunity Standard(s):	-	Environment:	Radio

EMC Test Data

For The

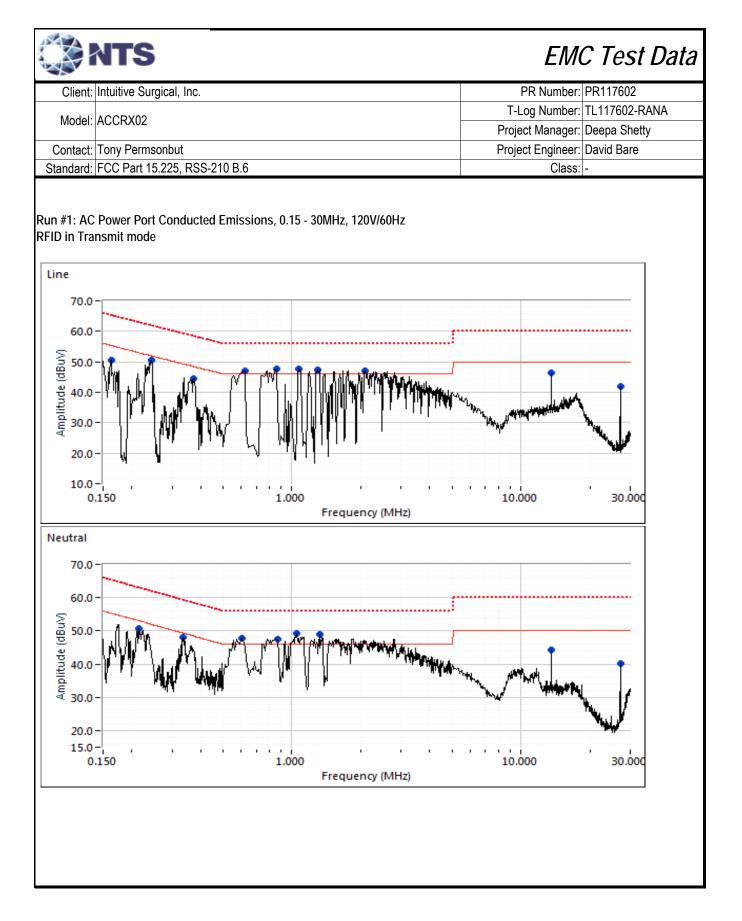
Intuitive Surgical, Inc.

Product

ACCRX02

Date of Last Test: 6/23/2020

	NTS				EMC Test Data
Client:	Intuitive Surg	gical, Inc.			PR Number: PR117602
Madal	ACCRX02	-		T-	-Log Number: TL117602-RANA
	ACCRAUZ			-	ject Manager: Deepa Shetty
	Tony Perms			Proj	ject Engineer: David Bare
Standard:	FCC Part 15	.225, RSS-210 B.6			Class: -
		Conduc (NTS Silicon Valley, Fremo	cted Emissions nt Facility, Semi-Anec.	hoic Chaml	ber)
Test Spec	•	S The objective of this test session is to specification listed above.	perform final qualificatio	n testing of t	the EUT with respect to the
Te		6/18/2020 Rafael Varelas Fremont Chamber #3	Config. Used: Config Change: Host Voltage:	None	<u>z</u>
For tabletor plane and outside of possible p	80cm from t the semi-and	t, the EUT was located on a wooden ta he LISN. A second LISN was used for echoic chamber. Any cables running to h a ferrite clamp upon exiting the char	or all local support equip o remote support equipn	ment. Rem	
Summarv	of Result				
	n #	Test Performed	Limit	Result	Margin
1		CE, AC Power,120V/60Hz	15.207	Pass	46.8 dBµV @ 0.848 MHz (-9.2 dB)
No modified Deviation	cations were s From Th	e During Testing made to the EUT during testing the Standard ide from the requirements of the stands	ard.		

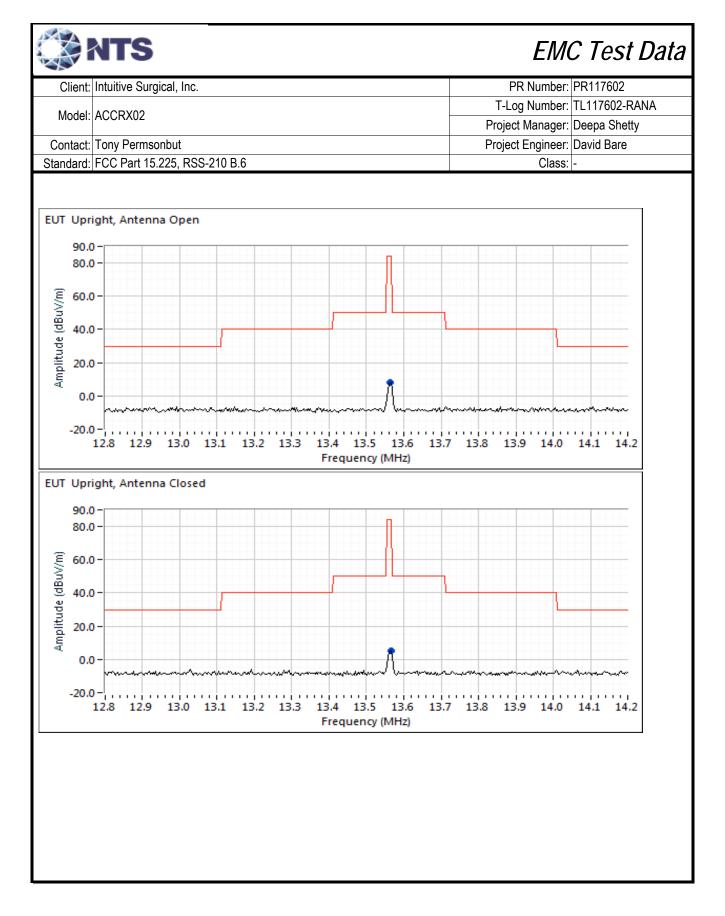


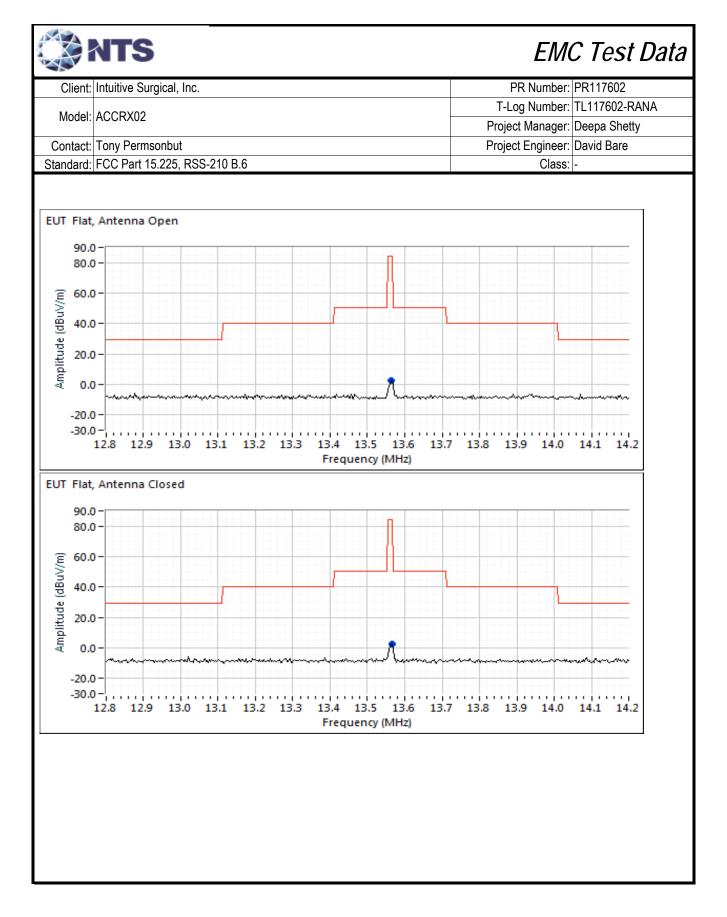
	Model:ACCRX02T-Log Number:TL11Project Manager:DeepContact:Tony PermsonbutProject Engineer:DavidStandard:FCC Part 15.225, RSS-210 B.6Class:-Preliminary peak readings captured during pre-scan (peak readings vs. average limit)Class:-Preliminary peak readings captured during pre-scan (peak readings vs. average limit)FrequencyLevelACFCC 15.207DetectorCommentsMHzdBµVLineLimitMarginQP/Ave0.16350.4Line55.3-4.9Peak0.24450.6Line52.0-1.4Peak0.37244.5Line48.5-4.0Peak	602-RANA Shetty
Model: ACCRX02 Project Manager: Deepa Shetty Contact: Tony Permsonbut Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Class: - Prequency Level AC FCC 15.207 Detector Comments MHz dBµV Line Line Margin QP/Ave Comments 0.163 50.4 Line 55.3 -4.9 Peak	Model: ACCRX02 Project Manager: Deep Contact: Tony Permsonbut Project Engineer: David Standard: FCC Part 15.225, RSS-210 B.6 Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) - - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) - - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) - - Project Manager: David - - Project Engineer: David Class: - Project Manager: David - - Project Manager: David Class: - Project Margin Project Manager: - - MHz dBµV Line 55.3 -4.9 0.163 50.4 Line 52.0 -1.4 Peak 0.372 44.5 Line 48.5 -4.0 Peak - <td>a Shetty</td>	a Shetty
Contact: Tony Permsonbut Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Class: - Frequency Level AC FCC 15.207 Detector Comments MHz dBµV Line Linit Margin QP/Ave Comments - 0.163 50.4 Line 55.3 -4.9 Peak - - 0.372 44.5 Line 48.5 -4.0 Peak - - - 0.620 47.0 Line 46.0 1.6 Peak - - - - 0.867 47.6 Line 46.0 1.6 Peak - <td< td=""><td>Contact: Tony Permsonbut Project Engineer: David Standard: FCC Part 15.225, RSS-210 B.6 Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Frequency Level AC FCC 15.207 Detector Comments MHz dBμV Line Limit Margin QP/Ave - - 0.163 50.4 Line 55.3 -4.9 Peak - - 0.244 50.6 Line 52.0 -1.4 Peak - - 0.372 44.5 Line 48.5 -4.0 Peak - -</td><td></td></td<>	Contact: Tony Permsonbut Project Engineer: David Standard: FCC Part 15.225, RSS-210 B.6 Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Frequency Level AC FCC 15.207 Detector Comments MHz dBμV Line Limit Margin QP/Ave - - 0.163 50.4 Line 55.3 -4.9 Peak - - 0.244 50.6 Line 52.0 -1.4 Peak - - 0.372 44.5 Line 48.5 -4.0 Peak - -	
Standard: FCC Part 15.225, RSS-210 B.6 Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Frequency Level AC FCC 15.207 Detector Comments MHz dBµV Line Limit Margin QP/Ave Comments 0.163 50.4 Line 55.3 -4.9 Peak Comments 0.244 50.6 Line 52.0 -1.4 Peak Comments 0.372 44.5 Line 48.5 -4.0 Peak Comments 0.620 47.0 Line 46.0 1.0 Peak Comments 0.867 47.6 Line 46.0 1.6 Peak Comments 1.107 47.6 Line 46.0 1.6 Peak Comments 1.330 47.5 Line 46.0 1.6 Peak Comments 2.102 47.0 Line 50.0 -3.6 Peak Comments	Standard: FCC Part 15.225, RSS-210 B.6 Class: - Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Frequency Level AC FCC 15.207 Detector Comments MHz dBµV Line Limit Margin QP/Ave Peak 0.163 50.4 Line 55.3 -4.9 Peak 0.244 50.6 Line 52.0 -1.4 Peak 0.372 44.5 Line 48.5 -4.0 Peak	Dale
Preliminary peak readings captured during pre-scan (peak readings vs. average limit) Frequency Level AC FCC 15.207 Detector Comments MHz dB _L V Line Linit Margin QP/Ave Comments 0.163 50.4 Line 55.3 -4.9 Peak Comments 0.244 50.6 Line 52.0 -1.4 Peak Comments 0.372 44.5 Line 48.5 -4.0 Peak Comments 0.620 47.0 Line 46.0 1.0 Peak Comments 0.867 47.6 Line 46.0 1.6 Peak Comments 1.107 47.6 Line 46.0 1.6 Peak Comments 2.102 47.0 Line 46.0 1.0 Peak Comments 2.102 47.0 Line 50.0 -3.6 Peak Comments 2.112 41.9 Line 50.0 -8.1 Peak </td <td>Preliminary peak readings captured during pre-scan (peak readings vs. average limit)FrequencyLevelACFCC 15.207DetectorCommentsMHzdBµVLineLimitMarginQP/Ave0.16350.4Line55.3-4.9Peak0.24450.6Line52.0-1.4Peak0.37244.5Line48.5-4.0Peak</td> <td></td>	Preliminary peak readings captured during pre-scan (peak readings vs. average limit)FrequencyLevelACFCC 15.207DetectorCommentsMHzdBµVLineLimitMarginQP/Ave0.16350.4Line55.3-4.9Peak0.24450.6Line52.0-1.4Peak0.37244.5Line48.5-4.0Peak	
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Frequency MHz Level dBµV AC Line FCC 15.207 Limit Detector QP/Ave Comments 0.163 50.4 Line 55.3 -4.9 Peak 0.244 50.6 Line 52.0 -1.4 Peak 0.372 44.5 Line 48.5 -4.0 Peak 0.620 47.0 Line 46.0 1.0 Peak 0.867 47.6 Line 46.0 1.6 Peak 1.107 47.6 Line 46.0 1.6 Peak 1.300 47.5 Line 46.0 1.5 Peak 2.102 47.0 Line 50.0 -3.6 Peak 13.560 46.4 Line 50.0 -8.1 Peak 0.217 50.6 Neutral 49.3 -1.2 Peak </td <td>Frequency MHz Level dBμV AC FCC 15.207 Detector QP/Ave Comments 0.163 50.4 Line 55.3 -4.9 Peak 0.244 50.6 Line 52.0 -1.4 Peak 0.372 44.5 Line 48.5 -4.0 Peak</td> <td></td>	Frequency MHz Level dBμV AC FCC 15.207 Detector QP/Ave Comments 0.163 50.4 Line 55.3 -4.9 Peak 0.244 50.6 Line 52.0 -1.4 Peak 0.372 44.5 Line 48.5 -4.0 Peak	
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1.330 47.5 Line 46.0 1.5 Peak 2.102 47.0 Line 46.0 1.0 Peak 13.560 46.4 Line 50.0 -3.6 Peak RFID 27.121 41.9 Line 50.0 -8.1 Peak RFID 0.217 50.6 Neutral 53.0 -2.4 Peak 0.336 48.1 Neutral 49.3 -1.2 Peak 0.605 47.9 Neutral 46.0 1.9 Peak 0.848 47.5 Neutral 46.0 1.5 Peak 1.024 49.3 Neutral 46.0 3.3 Peak 1.342 48.8 Neutral 46.0 2.8 Peak 1.342 48.8 Neutral 46.0 2.8 Peak 13.560 44.2 Neutral 50.0 -5.8 Peak RFID	0.867 47.6 Line 46.0 1.6 Peak	
2.102 47.0 Line 46.0 1.0 Peak 13.560 46.4 Line 50.0 -3.6 Peak RFID 27.121 41.9 Line 50.0 -8.1 Peak RFID 0.217 50.6 Neutral 53.0 -2.4 Peak 0.336 48.1 Neutral 49.3 -1.2 Peak 0.605 47.9 Neutral 46.0 1.9 Peak 0.848 47.5 Neutral 46.0 1.5 Peak 1.024 49.3 Neutral 46.0 3.3 Peak 1.342 48.8 Neutral 46.0 2.8 Peak 1.3560 44.2 Neutral 50.0 -5.8 Peak	1.107 47.6 Line 46.0 1.6 Peak	
13.560 46.4 Line 50.0 -3.6 Peak RFID 27.121 41.9 Line 50.0 -8.1 Peak RFID 0.217 50.6 Neutral 53.0 -2.4 Peak 0.336 48.1 Neutral 49.3 -1.2 Peak 0.605 47.9 Neutral 46.0 1.9 Peak 0.848 47.5 Neutral 46.0 1.5 Peak 1.024 49.3 Neutral 46.0 3.3 Peak 1.342 48.8 Neutral 46.0 2.8 Peak 13.560 44.2 Neutral 50.0 -5.8 Peak		
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27.121 40.3 Neutral 50.0 -9.7 Peak RFID		
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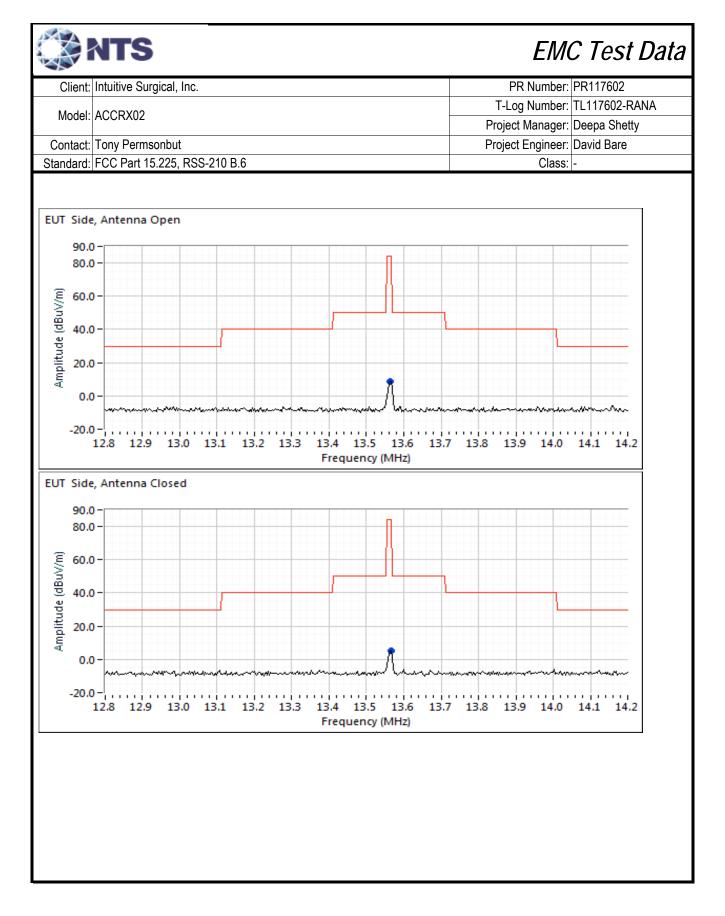
	NTS	1					EM	C Test Data
Client:	Intuitive Sur	gical, Inc.					PR Number:	PR117602
		-					T-Log Number:	TL117602-RANA
Model:	ACCRX02						Project Manager:	
Contact:	Tony Perms	onbut					Project Engineer:	
	-	5.225, RSS-2	10 B 6				Class:	
Otaridara.		<i></i>	10 0.0				01000.	
F in el autori								
Final quasi Frequency	-peak and a Level	verage readi AC		15.207	Detector	Comments		
MHz	dBµV	Line	Limit	Margin	QP/Ave	Commenta		
0.848	46.8	Neutral	56.0	-9.2	QP	QP (1.00s)		
1.107	46.5	Line	56.0	-9.5	QP	QP (1.00s)		
0.605	46.4	Neutral	56.0	-9.6	QP	QP (1.00s)		
0.867	46.3	Line	56.0	-9.7	QP	QP (1.00s)		
1.024	46.0	Neutral	56.0	-10.0	QP	QP (1.00s)		
1.342	45.8	Neutral	56.0	-10.2	QP	QP (1.00s)		
0.620	45.5	Line	56.0	-10.5	QP	QP (1.00s)		
0.605	35.4	Neutral	46.0	-10.6	AVG	AVG (0.10s)		
1.330	45.2	Line	56.0	-10.8	QP	QP (1.00s)		
2.102	45.0	Line	56.0	-11.0	QP	QP (1.00s)		
0.848	34.6	Neutral	46.0	-11.4	AVG	AVG (0.10s)		
2.102	32.0	Line	46.0	-14.0	AVG	AVG (0.10s)		
1.107	31.4	Line	46.0	-14.6	AVG	AVG (0.10s)		
1.024	31.3	Neutral	46.0	-14.7	AVG	AVG (0.10s)		
0.336	44.6	Neutral	59.3	-14.7	QP	QP (1.00s)		
0.867	30.6	Line	46.0	-15.4	AVG	AVG (0.10s)		
0.620	29.9	Line	46.0	-16.1	AVG	AVG (0.10s)		
0.336	32.8	Neutral	49.3	-16.5	AVG	AVG (0.10s)		
1.342	27.3	Neutral	46.0	-18.7	AVG	AVG (0.10s)		
1.330	27.0	Line	46.0	-19.0	AVG	AVG (0.10s)		
0.244	42.5	Line	61.9	-19.4	QP	QP (1.00s)		
0.244	29.4	Line	51.9	-22.5	AVG	AVG (0.10s)		

Model: ACCRX02 T-Log Number: TL117602-RAI Project Manager: Depa Shetty Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: -	Model: ACCRX02 T-Log Number: TL117602-RANA Project Manager: Deepa Shetty Contact: Tony Permsonbut Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions est Specific Details Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above. General Test Configuration The EUT and any local support equipment were located on the turntable for radiated emissions testing. Remote support equipme was located outside the chamber. The test distance and extrapolation factor (if used) are detailed under each run description. Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT, elevation of the measureme antenna. Maximized testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measureme antenna, and manipulation of the EUT's interface cables. Imbient Conditions: Temperature: 23.8 °C Rel. Humidity: 37 % Immary of Results Rel. Humidity: 37 % Run # Test Performed Limit Result Margin 1 Fundamental Signal Field Strength FCC 15.255 & Pas	Model: ACCRX02 T-Log Number: TL117602-RANA Project Manager: Deepa Shetty Contact: Tony Permsonbut Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Class: - Radiated Emissions Brest Specific Details Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above. Seneral Test Configuration The EUT and any local support equipment were located on the turntable for radiated emissions testing. Remote support equipment was located outside the chamber. The test distance and extrapolation factor (if used) are detailed under each run description. Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measuren antenna. Maximized testing indicates that the emissions were maximized by orientation of the EUT, elevation of the measuren antenna, and manipulation of the EUT's interface cables. Ambient Conditions: Test Performed Limit Result Margin 1 Fundamental Signal Field Strength FCC 15.255 & Pass 8.80 dBµV/m @ 13.563 h 2 10 - 30 MHz FCC 15.209/RSS-GEN Pass (-7.52 dB)	Client: Intuitive Su	urgical. Inc.			PR Number:	PR117602
Model: ACCRX02 Project Manager: Deepa Shetty Contact: Tony Permsonbut Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Class: - Standard: FCC Part 15.209(RSS-GEN Part Part Part Part Part Part Part Part	Model: ACCRX02 Project Manager: Deepa Shetty Contact: Tony Permsonbut Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions est Specific Details Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above. General Test Configuration The test distance and extrapolation factor (if used) are detailed under each run description. Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT, elevation of the measureme antenna. Maximized testing indicates that the emissions were maximized by orientation of the EUT, elevation of the measureme antenna, and manipulation of the EUT's interface cables. mbient Conditions: Temperature: 23.8 °C Rel. Humidity: Ren # 1 1 1 Margin 1 Temperature: 23.8 °C Rel. Humidity: 3 Ren # 1 1	Model: ACCRX02 Project Manager Deepa Shetty Contact: Tony Permsonbut Project Engineer. David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions Standard: FCC Part 15.225, RSS-210 B.6 Class: - Cla				T-		
Standard: FCC Part 15.225, RSS-210 B.6 Class: Radiated Emissions Radiated Emissions Class:	Standard: FCC Part 15.225, RSS-210 B.6 Class: - Radiated Emissions est Specific Details Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above. General Test Configuration The EUT and any local support equipment were located on the turntable for radiated emissions testing. Remote support equipme was located outside the chamber. The test distance and extrapolation factor (if used) are detailed under each run description. Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT, elevation of the measureme antenna. Maximized testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measureme antenna, and manipulation of the EUT's interface cables. Imbient Conditions: Temperature: 23.8 °C Rel. Humidity: 37 % Ummary of Results 2.0.2 dBµV/m @ 13.563 MH 2.0.2 dBµV/m @ 13.563 MH 1 2.0.2 dBµV/m @ 30.00 MH:	Standard: FCC Part 15.225, RSS-210 B.6 Radiated Emissions Radiated Emissions Class: I- Class: Interface Mathematics Interface Interface Class: Interface Intereface Intereface Interface Interface Interface Interf	Model: ACCRX02				•	
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1 / Spectral Mask RSS 210 B.6 Pass (-75.2 dB) 2 10 - 30 MHz ECC 15 209/BSS-GEN Pass 20.2 dBµV/m @ 30.00	I / Spectral Mask RSS 210 B.6 Pass (-75.2 dB) 2 10 - 30 MHz FCC 15.209/RSS-GEN Pass 20.2 dBµV/m @ 30.00 MHz 3 Transmitter Radiated Spurious FCC 15.209/RSS GEN Pass 33.5 dBµV/m @ 47.38 MHz	1 / Spectral Mask RSS 210 B.6 Pass (-75.2 dB) 2 10 - 30 MHz FCC 15.209/RSS-GEN Pass 20.2 dBµV/m @ 30.00 M (-9.3 dB) 3 Transmitter Radiated Spurious Emissions, 30 - 150 MHz FCC 15.209/RSS GEN Pass 33.5 dBµV/m @ 47.38 M (-6.5 dB) Modifications Made During Testing No modifications were made to the EUT during testing Deviations From The Standard	Summary of Resu	Rel. Humidity:	37 %		Marcia	
7 I 10 - 30 MHZ I FCC 15 209/RSS-GENT Page	2 10 - 30 MHz FCC 15.209/RSS-GEN Pass (-9.3 dB) 3 Transmitter Radiated Spurious ECC 15.209/RSS GEN Pass 33.5 dBµV/m @ 47.38 MHz	2 10 - 30 MHZ FCC 15.209/RSS-GEN Pass (-9.3 dB) 3 Transmitter Radiated Spurious Emissions, 30 - 150 MHz FCC 15.209/RSS GEN Pass 33.5 dBµV/m @ 47.38 M (-6.5 dB) Modifications Made During Testing No modifications were made to the EUT during testing No modifications From The Standard Pass Pass	Summary of Resu Run #	Rel. Humidity: Its Test Performed	37 %	Result		uV/m @ 13 563 MH
	Transmitter Radiated Spurious ECC 15 209/RSS GEN Pass 33.5 dBµV/m @ 47.38 MHz	3 Transmitter Radiated Spurious Emissions, 30 - 150 MHz FCC 15.209/RSS GEN Pass 33.5 dBµV/m @ 47.38 M (-6.5 dB) Add (-9.3 dB) 3 Transmitter Radiated Spurious Emissions, 30 - 150 MHz FCC 15.209/RSS GEN Pass 33.5 dBµV/m @ 47.38 M (-6.5 dB) Modifications Made During Testing No modifications were made to the EUT during testing Deviations From The Standard	Summary of Resu Run #	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength	37 % Limit FCC 15.255 &			
(-9.3 dB)		3 Emissions, 30 - 150 MHz FCC 15.209/RSS GEN Pass (-6.5 dB) Addifications Made During Testing No modifications were made to the EUT during testing Deviations From The Standard	Summary of Resu Run # 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask	37 % Limit FCC 15.255 & RSS 210 B.6	Pass	8.80 dB	
		Nodifications Made During Testing No modifications were made to the EUT during testing Deviations From The Standard	Summary of Resu Run # 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz	37 % Limit FCC 15.255 & RSS 210 B.6	Pass	8.80 dB 20.2 dE	(-75.2 dB) 3µV/m @ 30.00 MHz (-9.3 dB)
		No modifications were made to the EUT during testing Deviations From The Standard	Summary of Resu Run # 1 2	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
	Iodifications Made During Testing	Deviations From The Standard	Summary of Resu Run # 1 2	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
			Summary of Resu Run # 1 2 3 Modifications Mac	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
Iodifications Made During Testing			Summary of Resu Run # 1 2 3	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
			Summary of Resu Run # 1 2 3 Modifications Mac	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
No modifications were made to the EUT during testing	No modifications were made to the EUT during testing	No deviations were made from the requirements of the standard.	Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MH; (-9.3 dB) 8µV/m @ 47.38 MH;
No modifications were made to the EUT during testing	No modifications were made to the EUT during testing		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
No modifications were made to the EUT during testing Deviations From The Standard	No modifications were made to the EUT during testing Deviations From The Standard		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer Deviations From 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing The Standard	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN FCC 15.209/RSS GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
No modifications were made to the EUT during testing Deviations From The Standard	No modifications were made to the EUT during testing Deviations From The Standard		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer Deviations From 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing The Standard	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN FCC 15.209/RSS GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
No modifications were made to the EUT during testing Deviations From The Standard	No modifications were made to the EUT during testing Deviations From The Standard		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer Deviations From 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing The Standard	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN FCC 15.209/RSS GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
No modifications were made to the EUT during testing Deviations From The Standard	No modifications were made to the EUT during testing Deviations From The Standard		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer Deviations From 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing The Standard	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN FCC 15.209/RSS GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
No modifications were made to the EUT during testing Deviations From The Standard	No modifications were made to the EUT during testing Deviations From The Standard		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer Deviations From 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing The Standard	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN FCC 15.209/RSS GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz
No modifications were made to the EUT during testing Deviations From The Standard	No modifications were made to the EUT during testing Deviations From The Standard		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer Deviations From 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing The Standard	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN FCC 15.209/RSS GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MH (-9.3 dB) 8µV/m @ 47.38 MH
No modifications were made to the EUT during testing Deviations From The Standard	No modifications were made to the EUT during testing Deviations From The Standard		Summary of Resu Run # 1 2 3 Modifications Mac No modifications wer Deviations From 1	Rel. Humidity: Its Test Performed Fundamental Signal Field Strength / Spectral Mask 10 - 30 MHz Transmitter Radiated Spurious Emissions, 30 - 150 MHz de During Testing re made to the EUT during testing The Standard	37 % Limit FCC 15.255 & RSS 210 B.6 FCC 15.209/RSS-GEN FCC 15.209/RSS GEN	Pass Pass	8.80 dB 20.2 dE	(-75.2 dB) 8µV/m @ 30.00 MHz (-9.3 dB) 8µV/m @ 47.38 MHz

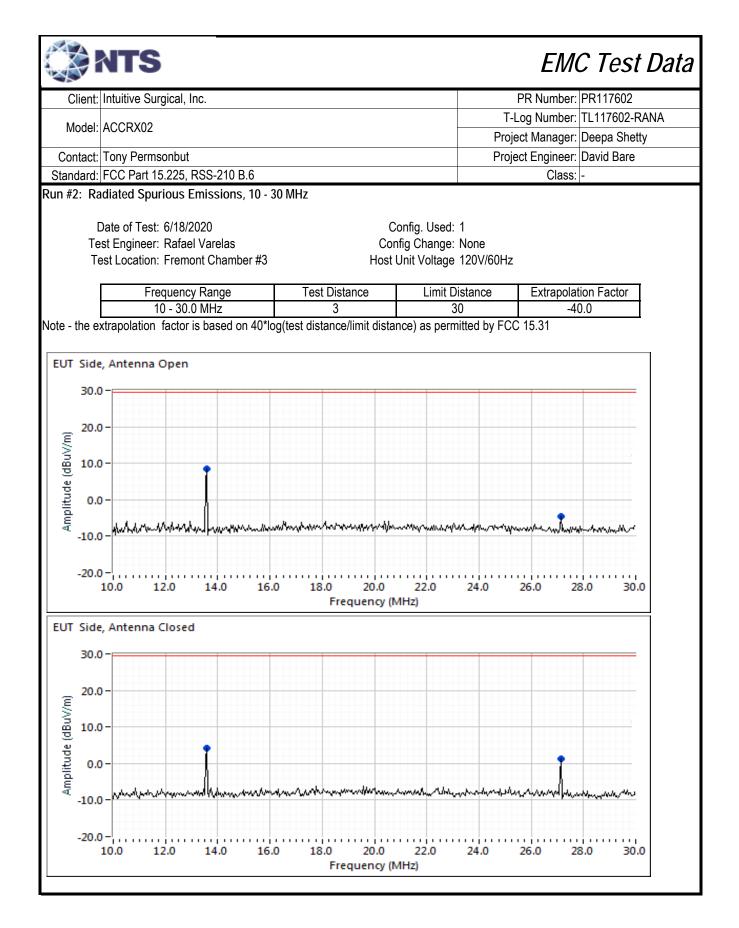
Onorit.	Intuitive Sure	gical, Inc.						PR Number:	PR117602
Model.	ACCRX02						T-	Log Number:	TL117602-RANA
woder.	A0017/02						Proj	ect Manager:	Deepa Shetty
Contact:	Tony Perms	onbut					Proj	ect Engineer:	David Bare
tandard:	FCC Part 15	5.225, RSS	S-210 B.6					Class:	-
	ndamental S Date of Test:	-	d Strength /	Spectral Ma		onfig. Used:	1		
	st Engineer:					fig Change:			
	st Location:					Jnit Voltage			
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		quency Ra			istance	Limit D		Extrapolat	
	13.0)6 - 14.06	MHz		3	3	0	-40	0.0
damont	al Eiald Stra	nath							
equency	al Field Stre Level	Pol	FCC 15 25	5/RSS-210	Detector	Azimuth	Height	Comments	
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	Johnnenta	
3.563	8.2	0	84.0	-75.8	Peak	254	1.25	EUT upright	
3.566	5.3	C	84.0	-78.7	Peak	165	1.25	EUT upright	
3.563	2.8	0	84.0	-81.2	Peak	29	1.25	EUT flat	
3.566	2.3	С	84.0	-81.7	Peak	93	1.25	EUT flat	
3.563	8.8	0	84.0	-75.2	Peak	255	1.25	EUT side	
3.566	5.4	С	84.0	-78.6	Peak	179	1.25	EUT side	







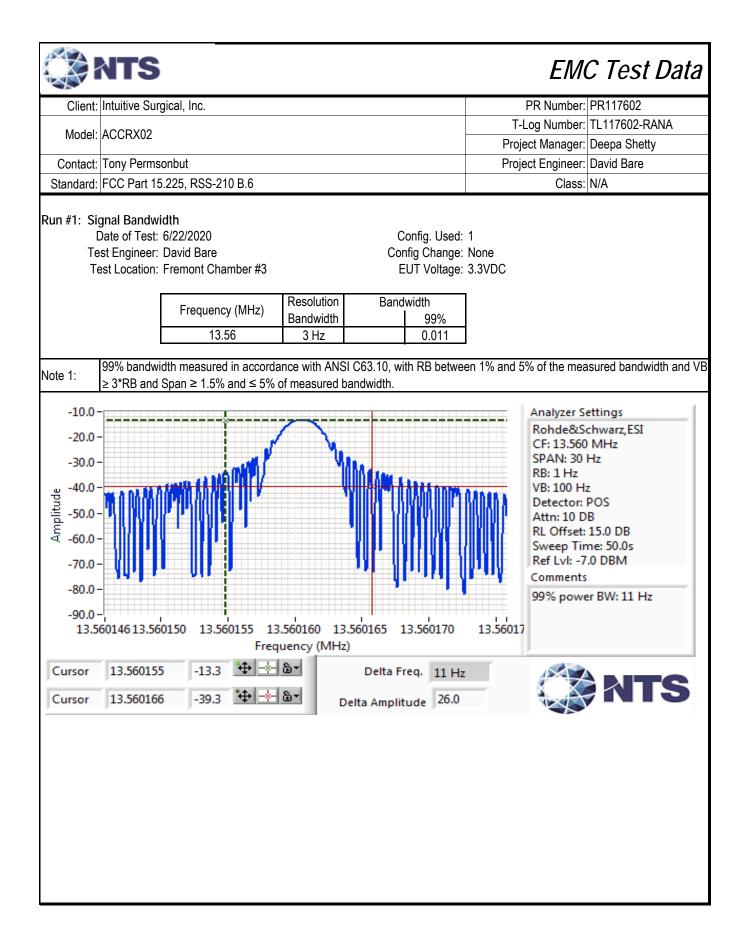
Client:	Intuitive Surg	gical, Inc.			PR Number: PR117602
					T-Log Number: TL117602-RANA
	ACCRX02				Project Manager: Deepa Shetty
	: Tony Perms				Project Engineer: David Bare
tandard:	FCC Part 15	.225, RSS-	-210 B.6		Class: -
			Limits for Fundame	ental	
	Freq (N		RBW (kHz)	Limit (dBuV/m) @ 30m	
	< 13.1		9	29.5	
	13.110 13.410	13.410 13.553	<u>9</u> 9	40.5 50.5	
	13.553	13.567	9	84.0	
	13.567	13.710	9	50.5	
	13.710	14.010	9	40.5	
			0	29.5	
e 1:	> 14.(9 ne radio were less tha	n the spurious emisisons limits	, the EUT met the mask limits.
e 1:	> 14.(-	, the EUT met the mask limits.
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e 1:	> 14.(-	, the EUT met the mask limits.
e 1:	> 14.(-	, the EUT met the mask limits.
e 1:	> 14.(-	, the EUT met the mask limits.



Model: ACCRX02 T-Log Number: TL117602-RANA Project Manager: Deepa Shefty Project Manager: Deepa Shefty Contact: Tony Permsonbut Project Engineer: David Bare Standard: FCC Part 15.225, RSS-210 B.6 Class: - Class: - Preliminary readings Preleventy Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBg.V/m v/h Limit Margin PVQP/Avg degrees meters 13.561 1.25 RFID Fundamental 27.120 4.7 0 29.5 -34.2 Peak 281 1.25 RFID Fundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID 2nd harmonic The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector ext for the frequency bands 9.90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands ar based on measurements employing an average detector, with a peak limit 20dB above the average limit. Maximized readings (includes manipulation of EUT interface cables) Frequency Level	Client:	Intuitive Sur	gical, Inc.						PR Number:	PR117602
Contact: Tony Permsonbut Project Manager: Deepa Shetty Standard: FCC Part 15.225, RSS-210 B.6 Class: - Arreliminary readings Class: - Frequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµU/m v/h Limit Margin Pk/QP/Avg degrees meters 13.561 8.5 O 29.5 -21.0 Peak 261 1.25 RFID Fundamental 27.120 -4.7 O 29.5 -34.2 Peak 347 1.25 RFID Pundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID Fundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID Pundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID Pundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID Pund harmonic <td< td=""><td>Madal</td><td></td><td></td><td></td><td></td><td></td><td></td><td>T-</td><td>Log Number:</td><td>TL117602-RANA</td></td<>	Madal							T-	Log Number:	TL117602-RANA
Standard: FCC Part 15.225, RSS-210 B.6 Class: - Treliminary readings Frequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 13.561 8.5 O 29.5 -21.0 Peak 261 1.25 RFID Fundamental 27.120 -4.7 O 29.5 -34.2 Peak 347 1.25 RFID 2nd harmonic 13.561 4.1 C 29.5 -25.4 Peak 186 1.25 RFID 2nd harmonic 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID 2nd harmonic The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector excloses Trequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 27.121 </td <td>wodel:</td> <td>ACCRAUZ</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Proj</td> <td>ect Manager:</td> <td>Deepa Shetty</td>	wodel:	ACCRAUZ						Proj	ect Manager:	Deepa Shetty
Treliminary readings Frequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 13.561 8.5 O 29.5 -21.0 Peak 261 1.25 RFID Fundamental 27.120 -4.7 O 29.5 -34.2 Peak 347 1.25 RFID 2nd harmonic 13.561 4.1 C 29.5 -25.4 Peak 186 1.25 RFID Fundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID 2nd harmonic The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector excloses for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands ar based on measurements employing an average detector, with a peak limit 20dB above the average limit. Maximized readings (includes manipulation of EUT interface cables) Frequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height C	Contact:	Tony Perms	onbut					Proj	ect Engineer:	David Bare
Frequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters interval 13.561 8.5 O 29.5 -21.0 Peak 261 1.25 RFID Fundamental 27.120 -4.7 O 29.5 -34.2 Peak 347 1.25 RFID Pundamental 13.561 4.1 C 29.5 -25.4 Peak 186 1.25 RFID Fundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID 2nd harmonic The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector excloses for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, with a peak limit 20dB above the average limit. Maximized readings (includes manipulation of EUT interface cables) Frequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments <t< td=""><td>Standard:</td><td>FCC Part 15</td><td>.225, RSS</td><td>6-210 B.6</td><td></td><td></td><td></td><td></td><td>Class:</td><td>-</td></t<>	Standard:	FCC Part 15	.225, RSS	6-210 B.6					Class:	-
FrequencyLevelPolFCC 15.209/RSS-GENDetectorAzimuthHeightCommentsMHzdBµV/mv/hLimitMarginPk/QP/Avgdegreesmeters13.5618.5O29.5-21.0Peak2611.25RFID Fundamental27.120-4.7O29.5-34.2Peak3471.25RFID 2nd harmonic13.5614.1C29.5-25.4Peak1861.25RFID Fundamental27.1211.3C29.5-28.2Peak1931.25RFID 2nd harmonicThe emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector exclosesfor the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, with a peak limit 20dB above the average limit.laximized readings (includes manipulation of EUT interface cables)FrequencyLevelPolFCC 15.209/RSS-GENMHzdBµV/mv/hLimitMHzdBµV/mv/hLimitMHzdBµV/mv/hLimitMHzdBµV/mv/hLimitMHzdBµV/mv/hLimitMHzdBµV/mv/hLimitMHzdBµV/mv/hLimitMHzdBµV/mv/hLimitMHzG29.5-30.3QPThe emission limits shown in the above table are										
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13.561 4.1 C 29.5 -25.4 Peak 186 1.25 RFID Fundamental 27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID 2nd harmonic The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector exclosed on measurements employing an average detector, with a peak limit 20dB above the average limit. aximized readings (includes manipulation of EUT interface cables) irequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 27.121 -0.8 C 29.5 -30.3 QP 188 1.25 QP (1.00s)			-							
27.121 1.3 C 29.5 -28.2 Peak 193 1.25 RFID 2nd harmonic The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector excloses for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands ar based on measurements employing an average detector, with a peak limit 20dB above the average limit. aximized readings (includes manipulation of EUT interface cables) irequency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 27.121 -0.8 C 29.5 -30.3 QP 188 1.25 QP (1.00s) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector excloses ote 1:										
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector exclosed on measurements employing an average detector, with a peak limit 20dB above the average limit. aximized readings (includes manipulation of EUT interface cables) requency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 27.121 -0.8 C 29.5 -30.3 QP 188 1.25 QP (1.00s)										
ote 1: for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands ar based on measurements employing an average detector, with a peak limit 20dB above the average limit. aximized readings (includes manipulation of EUT interface cables) requency Level Pol FCC 15.209/RSS-GEN Detector Azimuth Height Comments MHz dBµV/m v/h Limit Margin Pk/QP/Avg degrees meters 27.121 -0.8 C 29.5 -30.3 QP 188 1.25 QP (1.00s)	21.121	1.3	U	29.5	-20.2	Peak	193	1.25	רוט zna ha	annonic
27.121 -0.8 C 29.5 -30.3 QP 188 1.25 QP (1.00s) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector excorter 1: ote 1: for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are										
27.121 -0.8 C 29.5 -30.3 QP 188 1.25 QP (1.00s) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector exc for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands ar	aximized	readings (in	cludes m	anipulation of	of EUT inter	face cables)				
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector exc ote 1: for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands ar	requency		Pol			Detector		Height	Comments	
	requency MHz	Level dBµV/m	Pol v/h	FCC 15.209 Limit	9/RSS-GEN Margin	Detector Pk/QP/Avg	Azimuth degrees	meters		
	Frequency MHz 27.121	Level dBµV/m -0.8 The emissio	Pol v/h C n limits sh	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3	Detector Pk/QP/Avg QP	Azimuth degrees 188 neasurements	meters 1.25 s employing	QP (1.00s) a CISPR qua	•
	Frequency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	Frequency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	Frequency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	requency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are
	Frequency MHz 27.121	Level dBµV/m -0.8 The emission for the freque	Pol v/h C n limits sh ency banc	FCC 15.209 Limit 29.5 own in the ab	9/RSS-GEN Margin -30.3 pove table are 110-490 kHz	Detector Pk/QP/Avg QP e based on m and above 1	Azimuth degrees 188 neasurements 000 MHz. Ra	meters 1.25 s employing idiated emis	QP (1.00s) a CISPR qua ssion limits in	these three bands are

Client:	Intuitive Sur	gical, Inc.						PR Number:	PR117602
N4. 1.1							T-	Log Number:	TL117602-RANA
Model:	ACCRX02						Proj	ect Manager:	Deepa Shetty
Contact:	Tony Perms	onbut					Proj	ect Engineer:	David Bare
	FCC Part 15		S-210 B.6					Class:	-
un #3: Ra	adiated Spur	ious Emis	ssions, 30 - 1	150 MHz					
	Fre	quency Ra	ange	Test D	istance	Limit D	istance	Extrapolat	tion Factor
		0 - 150 MI			3		}	1	.0
pn: 20.0	-~~~	14	M	Villandy			May	mal II	
a ₩ 10.0		50.0	••~~\ ••~~\	70.0 80.0			0.0 120.0		140.0 150.0
0.0 eliminary			60.0	70.0 80.0 F	0 90.0 requency (M	100.0 11 IHz)	0.0 120.0	0 130.0 1	
eliminary	/ Readings	Pol	60.0	70.0 80.0 F	0 90.0 requency (M Detector	100.0 11 IHz) Azimuth	0.0 120.0 Height		
eliminary equency MHz	/ Readings / Readings Level dBµV/m	Pol v/h	60.0 FCC 15.200 Limit	70.0 80.0 F 9/RSS-GEN Margin	0 90.0 requency (M Detector Pk/QP/Avg	100.0 11 IHz) Azimuth degrees	0.0 120.0 Height meters	0 130.0 1	
eliminary	/ Readings	Pol	60.0	70.0 80.0 F	0 90.0 requency (M Detector	100.0 11 IHz) Azimuth	0.0 120.0 Height	0 130.0 1	
eliminary requency MHz 47.384 62.771	/ Readings / Readings Level dBµV/m 37.1	Pol v/h V	FCC 15.209 Limit 40.0	9/RSS-GEN Margin -2.9	0 90.0 requency (M Detector Pk/QP/Avg Peak	100.0 11 Hz) Azimuth degrees 275	Height Heters 1.0	0 130.0 1	
eliminary requency MHz 47.384 62.771 120.007 126.512	 κ κ	Pol v/h V V V V H	FCC 15.209 Limit 40.0 43.5 43.5	9/RSS-GEN Margin -2.9 -6.3 -10.9 -12.0	Detector Pk/QP/Avg Peak Peak Peak Peak Peak	100.0 111 IHz) Azimuth degrees 275 300 266 156	Height Height 1.0 1.5 1.0 2.5	0 130.0 1	
reliminary requency MHz 47.384 62.771 120.007 126.512	/ Readings / Readings Level dBμV/m 37.1 33.7 32.6	Pol v/h V V V	FCC 15.200 Limit 40.0 40.0 43.5	70.0 80.0 F 9/RSS-GEN Margin -2.9 -6.3 -10.9	0 90.0 requency (M Detector Pk/QP/Avg Peak Peak Peak	100.0 111 IHz) Azimuth degrees 275 300 266	Height Height 1.0 1.5 1.0	0 130.0 1	
10.0 0.0 reliminary requency MHz 47.384 62.771 120.007 126.512 135.608	/ Readings 2.0.0 40.0 (Readings Level dBμV/m 37.1 33.7 32.6 31.5 32.2	Pol v/h V V V H V	FCC 15.209 Limit 40.0 43.5 43.5 43.5	9/RSS-GEN Margin -2.9 -6.3 -10.9 -12.0 -11.3	0 90.0 requency (M Detector Pk/QP/Avg Peak Peak Peak Peak Peak	100.0 111 IHz) Azimuth degrees 275 300 266 156	Height Height 1.0 1.5 1.0 2.5	0 130.0 1	
eliminary requency MHz 47.384 62.771 120.007 126.512 135.608 aximized	- 30.0 40.0 (Readings Level dBμV/m 37.1 33.7 32.6 31.5 32.2 readings (in	Pol v/h V V V H V	FCC 15.209 Limit 40.0 40.0 43.5 43.5 43.5 anipulation	9/RSS-GEN Margin -2.9 -6.3 -10.9 -12.0 -11.3 of EUT inter	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak Peak	100.0 111 Hz) Azimuth degrees 275 300 266 156 255	Height meters 1.0 1.5 1.0 2.5 1.0	0 130.0 1	
eliminary equency MHz 47.384 62.771 120.007 126.512 135.608 aximized	- 30.0 40.0 (Readings Level dBμV/m 37.1 33.7 32.6 31.5 32.2 readings (in Level	Pol v/h V V H V cludes m Pol	FCC 15.209 Limit 40.0 40.0 43.5 43.5 43.5 anipulation	9/RSS-GEN Margin -2.9 -6.3 -10.9 -12.0 -11.3	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak Peak face cables) Detector	100.0 111 IHz) Azimuth degrees 275 300 266 156 255 Azimuth	Height Height 1.0 1.5 1.0 2.5 1.0 Height	0 130.0 1	
10.0 0.0 reliminary requency MHz 47.384 62.771 120.007 126.512 135.608 aximized requency	- 30.0 40.0 (Readings Level dBμV/m 37.1 33.7 32.6 31.5 32.2 readings (in	Pol v/h V V H V cludes m	FCC 15.200 Limit 40.0 43.5 43.5 43.5 43.5 anipulation of FCC 15.200	9/RSS-GEN 9/RSS-GEN 9/RSS-GEN 9/RSS-GEN 9/RSS-GEN	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak Peak	100.0 111 Hz) Azimuth degrees 275 300 266 156 255	Height meters 1.0 1.5 1.0 2.5 1.0	0 130.0 1	
10.0 	 κ κ	Pol v/h V V H V cludes m Pol v/h V V V	FCC 15.200 Limit 40.0 43.5 43.5 43.5 43.5 anipulation FCC 15.200 Limit	9/RSS-GEN 9/RSS-GEN 9/RSS-GEN -2.9 -6.3 -10.9 -12.0 -11.3 0f EUT inter 9/RSS-GEN Margin	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak face cables) Detector Pk/QP/Avg	100.0 111 IHz) Azimuth degrees 275 300 266 156 255 Azimuth degrees	Height meters 1.0 1.5 1.0 2.5 1.0 Height meters	Comments Comments Comments Comments	
10.0 	/ Readings / Rea	Pol V/h V V H V cludes m Pol v/h V	FCC 15.209 Limit 40.0 43.5 43.5 43.5 43.5 anipulation FCC 15.209 Limit 40.0	9/RSS-GEN Margin -2.9 -6.3 -10.9 -12.0 -11.3 of EUT inter 9/RSS-GEN Margin -6.5	Detector Pk/QP/Avg Peak Peak Peak Peak Peak Peak face cables) Detector Pk/QP/Avg QP	100.0 111 IHz) Azimuth degrees 275 300 266 156 255 Azimuth degrees 268	Height meters 1.0 1.5 1.0 2.5 1.0 Height meters 1.0	Comments Comments QP (1.00s) QP (1.00s) QP (1.00s)	
10.0 	/ Readings / Readings Level dBµV/m 37.1 33.7 32.6 31.5 32.2 readings (in Level dBµV/m 33.5 28.0	Pol v/h V V H V cludes m Pol v/h V V V	FCC 15.209 Limit 40.0 43.5 43.5 43.5 43.5 anipulation FCC 15.209 Limit 40.0 40.0	9/RSS-GEN 9/RSS-GEN Margin -2.9 -6.3 -10.9 -12.0 -11.3 of EUT inter 9/RSS-GEN Margin -6.5 -12.0	Detector Pk/QP/Avg Peak Peak Peak Peak Peak face cables) Detector Pk/QP/Avg QP QP	100.0 111 IHz) Azimuth degrees 275 300 266 156 255 Azimuth degrees 268 304	Height meters 1.0 1.5 1.0 2.5 1.0 2.5 1.0 Height meters 1.0 1.0	Comments Comments QP (1.00s) QP (1.00s)	

Client	Intuitive Surgical, Inc.			PR Number: I	DD117602
Cilent.	Intuitive Surgical, Inc.				TL117602-RANA
Model:	ACCRX02		P	roject Manager: I	
Contact.	Tony Permsonbut			oject Engineer: I	
	FCC Part 15.225, RSS-2	10 B.6		Class: I	
Fast Sna	cific Dotails	RSS-GEN and FCC P Occupied Bandwidth and Fre		y	
rest spe		e of this test session is to perform final o listed above.	qualification testing c	of the EUT with re	espect to the
With the empty of the measurer	ment instrument via an att	purious emissions tests, all measureme enuator or dc-block if necessary. All am	plitude measuremer	nts are adjusted t	o account for the
	on between EUT and mea ental chamber.	suring instrument. For frequency stabili	ty measurements the	e EUT was place	inside an
environm	ental chamber.	suring instrument. For frequency stabili with the EUT located on a non-conduct		·	
environm Radiated	ental chamber.		ve table, 3m from th C	·	
environm Radiated Ambient	ental chamber. measurements are made	with the EUT located on a non-conduct Temperature: 20 ° Rel. Humidity: 41 %	ve table, 3m from th C	·	
environm Radiated Ambient Summary Run #	ental chamber. measurements are made Conditions:	with the EUT located on a non-conduct Temperature: 20 ° Rel. Humidity: 41 % Test Performed	ve table, 3m from th C	e measurement a	antenna. Result / Margin
environm Radiated Ambient Summary	ental chamber. measurements are made Conditions:	with the EUT located on a non-conduct Temperature: 20 ° Rel. Humidity: 41 %	ve table, 3m from th	e measurement a	antenna.



Client:	Intuitive Surgical, Inc.			PR Number:	PR117602
					TL117602-RANA
Model:	ACCRX02			Project Manager:	
Contact:	Tony Permsonbut			Project Engineer:	
	FCC Part 15.225, RSS-2	10 B 6		Class:	
otandara.	1001 art 10.220, 1100 2	10 0.0		01000.	
Run #2: Fre	equency Stability				
Γ	Date of Test: 6/23/2020		Config. Used		
	st Engineer: M. Birgani / F	R. Varelas	Config Change		
T€	est Location: FT Lab #4B		EUT Voltage	: 3.3VDC	
	Nominal Frequency:	13.56 MHz			
	Nominal Frequency.	13.30 10112			
requency	Stability Over Temperate	ure			
			of 30 minutes prior to making	the measurements to ens	sure the EUT and
hambor ha	d stabilized at that temper	ature.		-	
				-	
emperature	Frequency Measured		<u>Drift</u>]	
Temperature (Celsius)	(MHz)	(Hz)	(ppm)]	
<u>Гетрегаture</u> (Celsius) -20	(MHz) 13.560114	(Hz) 114	(ppm) 8.4		
Celsius) -20 -10	(MHz) 13.560114 13.560155	(Hz) 114 155	(ppm) 8.4 11.4		
Celsius) -20 -10 0	(MHz) 13.560114 13.560155 13.560172	(Hz) 114 155 172	(ppm) 8.4 11.4 12.7		
<u>Cemperature</u> (Celsius) -20 -10 0 10	(MHz) 13.560114 13.560155 13.560172 13.560170	(Hz) 114 155 172 170	(ppm) 8.4 11.4 12.7 12.5		
<u>Femperature</u> (Celsius) -20 -10 0 10 20	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150	(Hz) 114 155 172 170 150	(ppm) 8.4 11.4 12.7 12.5 11.1		
Temperature (Celsius) -20 -10 0 10 20 30	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142	(Hz) 114 155 172 170 150 142	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5		
Temperature (Celsius) -20 -10 0 10 20 30 40	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130	(Hz) 114 155 172 170 150 142 130	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6		
(Celsius) -20 -10 0 10 20 30	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132	(Hz) 114 155 172 170 150 142 130 132	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7		
<u>emperature</u> (Celsius) -20 -10 0 10 20 30 40	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130	(Hz) 114 155 172 170 150 142 130	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6		
Temperature (Celsius) -20 -10 0 10 20 30 40 50	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132 Worst case:	(Hz) 114 155 172 170 150 142 130 132 172	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7		
Temperature (Celsius) -20 -10 0 10 20 30 40 50	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132	(Hz) 114 155 172 170 150 142 130 132 172	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7		
Temperature (Celsius) -20 -10 0 10 20 30 40 50	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132 Worst case:	(Hz) 114 155 172 170 150 142 130 132 172 age	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7		
Temperature (Celsius) -20 -10 0 10 20 30 40 50	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132 Worst case: Stability Over Input Volt	(Hz) 114 155 172 170 150 142 130 132 172 age	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7		
Temperature (Celsius) -20 -10 0 10 20 30 40 50 Trequency	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132 Worst case: Stability Over Input Volt Itage of host unit is 120	(Hz) 114 155 172 170 150 142 130 132 172 age	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7 12.7		
Temperature (Celsius) -20 -10 0 10 20 30 40 50 Frequency Vominal Vo Voltage	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132 Worst case: Stability Over Input Volt Itage of host unit is 120 Frequency Measured	(Hz) 114 155 172 170 150 142 130 132 172 age V	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7 12.7 <u>Drift</u>		
Temperature (Celsius) -20 -10 0 10 20 30 40 50	(MHz) 13.560114 13.560155 13.560172 13.560170 13.560150 13.560142 13.560130 13.560132 Worst case: Stability Over Input Volt Itage of host unit is 120 Frequency Measured (MHz)	(Hz) 114 155 172 170 150 142 130 132 172 age V (Hz)	(ppm) 8.4 11.4 12.7 12.5 11.1 10.5 9.6 9.7 12.7 <u>Drift</u> (ppm)		



End of Report

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