Nemko Test Report:	2014 01250340 FCC2
Applicant:	Crisi Medical Systems 9191 Towne Centre Drive, Suite 330 San Diego, CA 92122
Equipment Under Test: Model:	Anesthesia System B1
FCC ID: IC:	2ABS9IPORT1 11742A-IPORT1
In Accordance With:	**FCC Part 15, Subpart C, 15.249** **Industry Canada RSS-210 Issue 8** Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.
Tested By:	Nemko USA Inc. 2210 Faraday Ave, Suite 150 Carlsbad, CA 92008-7226

TESTED BY: _____ **DATE:** January 30, 2014

Mark Phillips, EMC Test Engineer

APPROVED BY: _____ **DATE:** March 4, 2014

Alan Laudani, Senior RF/EMC Engineer

Total Number of Pages: 12

Table Of Contents

Section 1. Summary Of Test Results

Manufacturer: Crisi Medical Systems

Model No.: B1

Serial No.: none

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15.249. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated Emissions were made on an open area test site.

☒ New Submission ☐ Production Unit

☐ Class II Permissive Change ☐ Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.
See " Summary of Test Data".

NVLAP Lab Code 200116-0

Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Conducted Emissions	15.207	Complies
Radiated Emissions	15.249	Complies
Receiver Spurious Emissions	RSS-Gen 4.10 & RSS-Gen 6.1	Complies

Footnotes For N/A's:

15.207 (c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtainig their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

Section 2. General Equipment Specification

Frequency Range:	MHz	2402 to 2480
Operating Frequency(ies) of Sample:	MHz	2402, 2440, 2480
Field Strength @ 3m Average:	dBµV/m	92.5
Number of Channels:		79
User Frequency Adjustment:		None

	Yes	No
Integral Antenna	☒	☐

Description of EUT

The Intelliport Radio Model B1 is a part of the Intelliport Anesthesia Management System which is capable of identifying the drug type and concentration of medication in a syringe attached to its fluid inlet port and measuring the exact dosage of drug delivered through the injection port; time stamping the event; and, sending the corresponding data wirelessly to external devices and healthcare information systems. . It communicates with a USB dongle that passes information to a generic laptop computer.

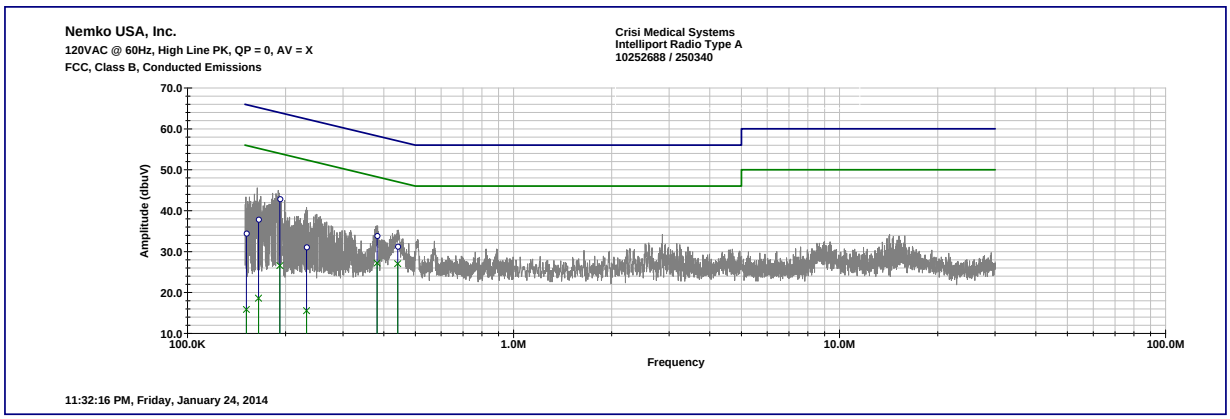
The EUT (in test mode) was set to continuously transmit a modulated carrier.

Section 3. Powerline Conducted Emissions

NAME OF TEST: Conducted Emissions	PARA. NO.: 15.207
TESTED BY: Mark Phillips	DATE: 01/24/2014

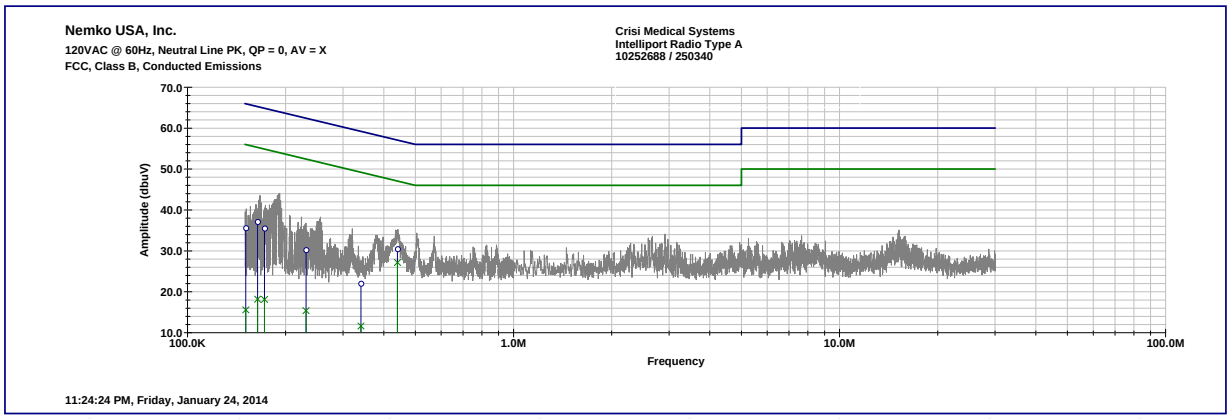
Peak RBW: 100kHz VBW: 100kHz
Quasi-Peak: RBW 9kHz, VBW 30 kHz
Average: RBW 9kHz, VBW 30 kHz
Quasi-Peak Limit Blue Line, Average Limit Green Line

Line 1



Frequency	Measured		Limit		Margin	
(kHz)	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
151.6	34.5	15.8	65.9	55.9	-31.4	-40.1
165.1	37.9	18.6	65.2	55.2	-27.3	-36.6
192.0	42.9	26.5	63.9	53.9	-21.0	-27.4
231.8	31.1	15.5	62.4	52.4	-31.3	-36.9
381.7	33.9	27.2	58.2	48.2	-24.3	-21.0
441.3	31.3	27.0	57.0	47.0	-25.7	-20.0

Line 2



Frequency	Measured		Limit		Margin	
(kHz)	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
151.0	35.6	15.6	65.9	55.9	-30.3	-40.3
164.1	37.1	18.2	65.3	55.3	-28.2	-37.1
172.3	35.5	18.1	64.8	54.8	-29.3	-36.7
230.9	30.3	15.4	62.4	52.4	-32.1	-37.0
340.3	22.0	11.6	59.2	49.2	-37.2	-37.6
440.5	30.5	27.1	57.1	47.1	-26.6	-20.0

Section 4. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.249
TESTED BY: Mark Phillips	DATE: 01/23/2014

Minimum Standard: Para no. 15.249

(a) The field strengths shall not exceed the following **average** limits:

Carrier (MHz)	Field Strength (mV/m)	Field Strength (dBμV)	Harmonic (μV/m)	Harmonic (dBμV)
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54
24000-24250	250	108	2500	68

(b) Field strength limits are specified at a distance of 3 metres.

(c) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated limits of 15.209 whichever is the less attenuation.

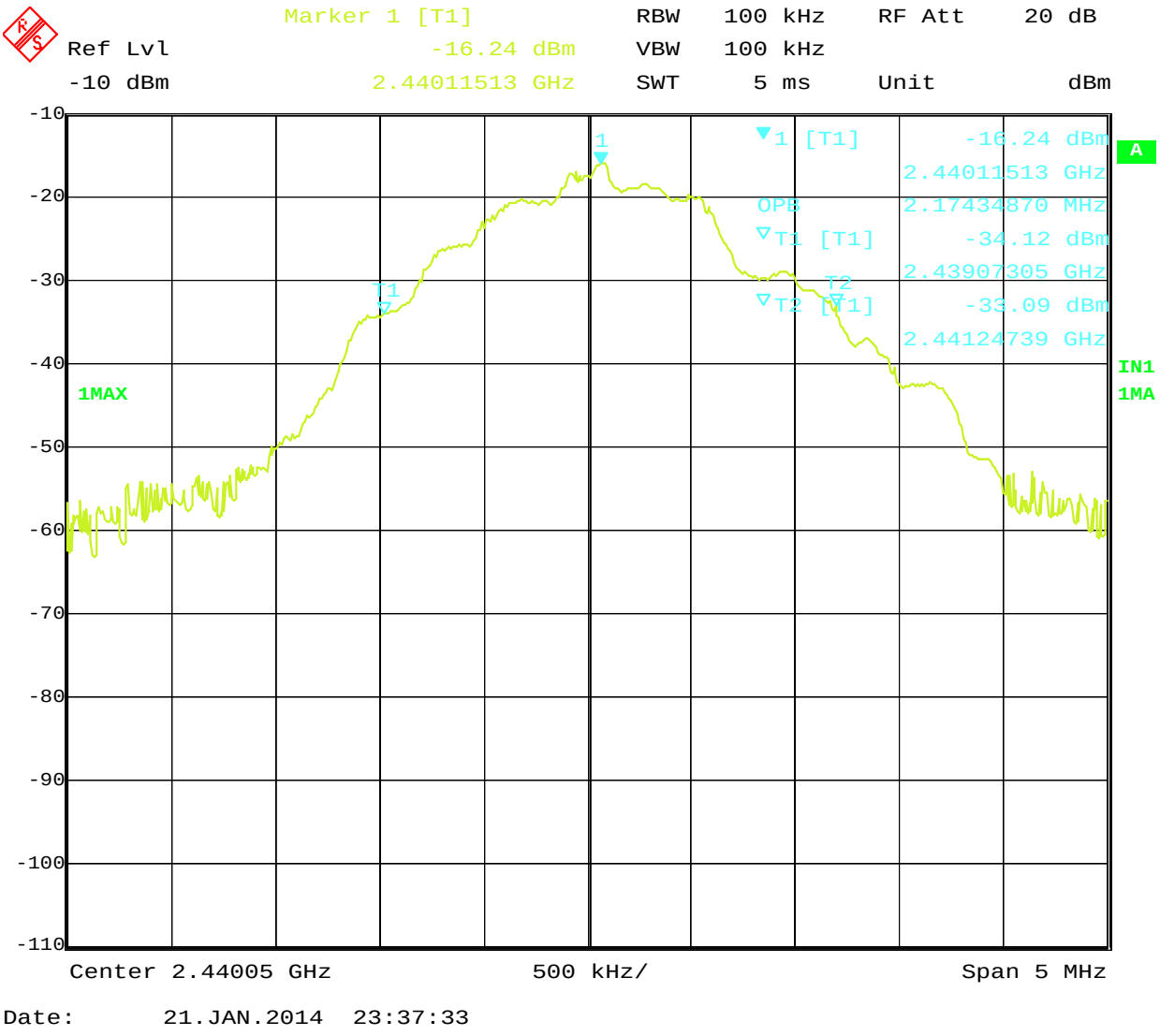
(d) …for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Test Results: Complies

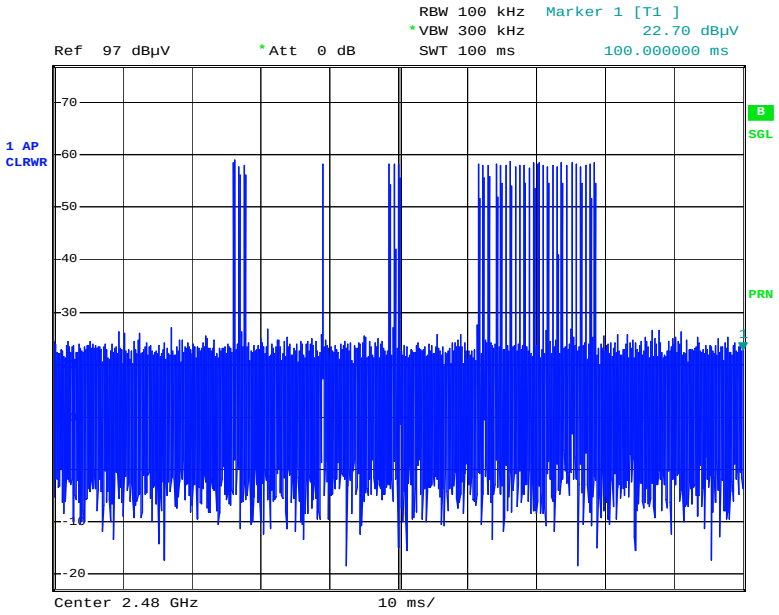
Measurement Data: See attached table.

Test Data – 99% Bandwidth

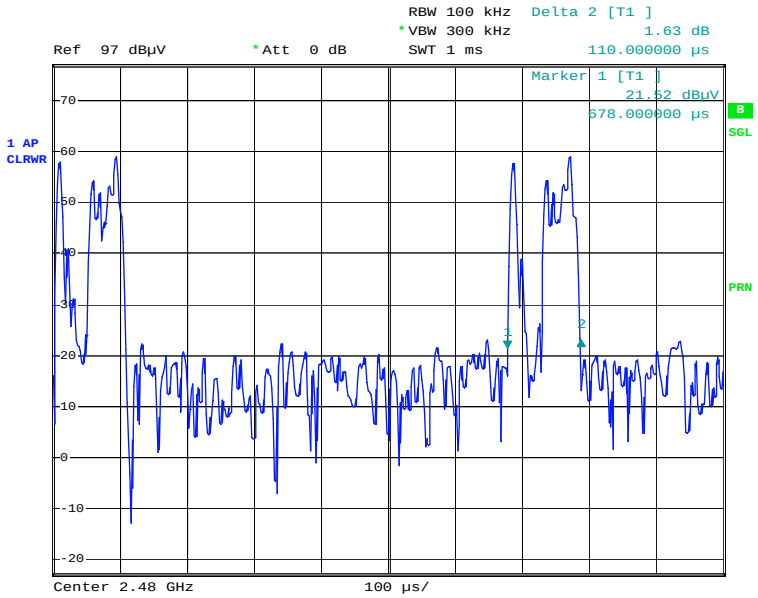
2.17 MHz
A2.9 Bands 2400-2483.5 MHz Devices Operating in Frequency Bands for Any Application



Test Data – Duty Cycle



31 events in 100ms



31 x 0.678 us = 21.02 ms in 100 ms
20 x log .2102 = -13.5 dB

Test Data - Radiated Emissions

No other spurious emissions found within 20dB of the limit.

Radiated Emissions Data

Job # :	10252688-R1	Date :	3/3/2014	Page 1 of 1	
NEX #:	250340	Time :	19:00		
		Staff :	MP		
Client Name :	Crisi Medical Systems			EUT Voltage :	3.6VDC
EUT Name :	Anesthesia Management System			EUT Frequency :	N/A
EUT Model # :	B1			Phase:	N/A
EUT Serial # :	001 001 00158			Distance < 1000 MHz:	3 m
EUT Config. :	Transmitting			Distance > 1000 MHz:	3 m
Specification :	CFR47 Part 15, Subpart C		15.249		
Loop Ant. #:	133				
Bicon Ant.#:	E1046	Temp. (°C) :	21		
Log Ant.#:	110_3m	Humidity (%) :	40		
DRG Ant. #	529	Spec Analyzer #:	100.8		
Cable LF#:	SAC10m	Analyzer Display #:	1767		
Cable HF#:	WCC	Quasi-Peak Detector #:	1767		
Preamp LF#:	901	Duty Cycle (%):	21.0		
Preamp HF#	1016				

Quasi-Peak	RBW: 120 kHz
	Video Bandwidth 300 kHz
Peak	RBW: 3 MHz
	Video Bandwidth 3 MHz
Average = Peak + Duty Cycle Factor	
DCF = 20 x log(duty cyle)	

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

Meas. Freq. (MHz)	Meter Reading **Vertical**	Meter Reading **Horizontal**	Det.	EUT Side DEG	Ant. Height cm	Max. Reading (dBµV)	Corrected Reading dBuV/m	Spec. limit dBuV/m	CR/SL Diff. (dB)	Pass Fail	Comment
2402.0	60.3	68.7	P	68.0	100.0	68.7	106.1	114.0	-7.9	Pass	Low Channel
2402.0	60.3	68.7	A	68.0	100.0	68.7	92.5	94.0	-1.5	Pass	
2440.0	55.6	67.6	P	282.0	111.0	67.6	105.0	114.0	-9.0	Pass	Mid Channel
2440.0	55.6	67.6	A	282.0	111.0	67.6	91.4	94.0	-2.6	Pass	
2480.0	56.9	67.2	P	272.0	110.0	67.2	104.6	114.0	-9.4	Pass	High Channel
2480.0	56.9	67.2	A	272.0	110.0	67.2	91.0	94.0	-3.0	Pass	
4804.0	32.0	28.2	P	188.0	100.0	32.0	44.1	74.0	-29.9	Pass	Low Channel Harmonics
4804.0	32.0	28.2	A	188.0	100.0	32.0	30.5	54.0	-23.5	Pass	
2483.5	32.0	45.2	P	122.0	202.0	45.2	51.7	74.0	-22.3	Pass	Upper Bandedge
2483.5	32.0	45.2	A	122.0	202.0	45.2	38.2	54.0	-15.8	Pass	
2400.0	50.7	56.3	P	133.0	104.0	56.3	62.8	74.0	-11.2	Pass	Lower Bandedge
2400.0	50.7	56.3	A	133.0	104.0	56.3	49.3	54.0	-4.7	Pass	

Section 5. Receiver Spurious Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: RSS-Gen 4-10
TESTED BY: Mark Phillips	DATE: 01/23/2014

Minimum Standard: Para no. 6.1

6.1 Radiated Limits
Radiated spurious emission measurements shall be performed with the receiver antenna connected to the receiver antenna terminals.

Table 2: Radiated Limits of Receiver Spurious Emissions

Frequency (MHz)	Field Strength (microvolts/m at 3 meters)*
30-88	100
88-216	150
216-960	200
Above 960	500

*Measurements for compliance with limits in the above table may be performed at distances other than 3 metres, in accordance with Section 7.2.7.

Test Results: Complies

Measurement Data: No emissions found, 30 MHz to 5 GHz.

Section 6. Test Equipment List

Asset #	Description	Manufacturer	Model	S/N	Last Cal	Next Cal
110	Antenna, LPA	Electrometrics	LPA-25	1217	30-Apr-2013	30-Apr-2014
133	Antenna, loop	Electro-Metrics	ALR-25M	678	21-Aug-2013	21-Aug-2015
529	Antenna, DRWG	EMCO	3115	2505	31-Oct-2012	31-Oct-2014
901	Preamplifier	Sonoma	310 N	130607	21-Nov-2013	21-Nov-2014
E1019	Two Line V-Network	Rohde & Schwarz	ENV216	101045	13-Apr-2013	13-Apr-2014
E1026	EMI Test Receiver 9kHz to 7GHz	Rohde & Schwarz	ESCI 7	100800	15-Jul-2013	15-Jul-2014
E1046	Biconical Antenna	A.H. Systems Inc.	SAS-540	736	22-Apr-2013	22-Apr-2014
1016	Preamplifier	Hewlett Packard	8449A	2749A00159	20-Aug-2013	20-Aug-2014
1767	Receiver, EMI Test 20Hz - 26.5 GHz - 150 - +30 dBm LCD	Rohde & Schwartz	ESIB26	837491/0002	19-Dec-2012	19-Dec-2013*

*Extended Calibration