



Alcon Laboratories, Inc.

Centurion ® Footswitch

FCC 15.247:2013

Report #: ALCO0180



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

Last Date of Test: August 14, 2013
Alcon Laboratories, Inc.
Model: Centurion ® Footswitch

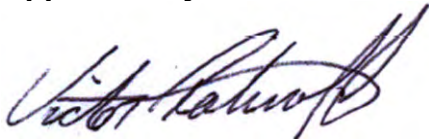
Emissions

Test Description	Specification	Test Method	Pass/Fail
Spurious Radiated Emissions	FCC 15.247:2013	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:



Victor Ratnoff, Operations Manager



NVLAP Lab Code: 200676-0

Test Facility

The measurement facility used to collect the data is located at:
Northwest EMC, Inc.
41 Tesla Ave.,
Irvine, CA 92618
Phone: (503) 844-4066 Fax: 844-3826

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

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

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

REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

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 Guide 65 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025. The scope includes radio, ITE, and medical standards from around the world. See: <http://www.nwemc.com/accreditations/>

Canada

IC - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

European Union

European Commission – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

Australia/New Zealand

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

Korea

KCC / 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.

Hong Kong

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

Vietnam

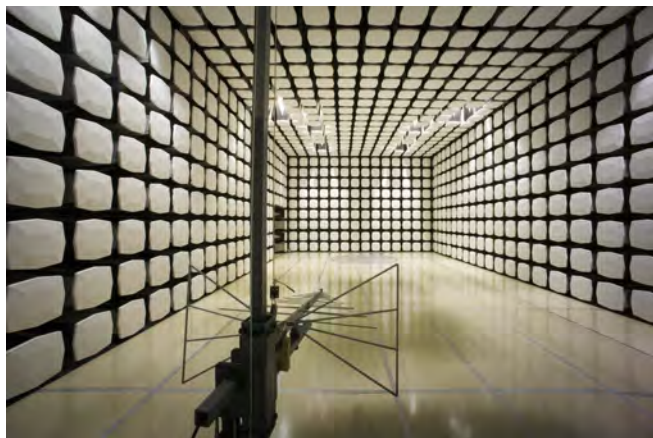
MIC – Recognized by MIC as a CAB for the acceptance of test data.

Russia

GOST – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.



Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	Minnesota Labs MN01-08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281	Washington Labs NC01-05, SU02, SU07 19201 120 th Ave. NE Bothell, WA 98011 (425) 984-6600
VCCI				
A-0108	A-0029		A-0109	A-0110
Industry Canada				
2834D-1, 2834D-2	2834B-1, 2834B-2, 2834B-3		2834E-1	2834C-1
NVLAP				
NVLAP Lab Code: 200630-0	NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200629-0



Measurement Uncertainty

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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is listed below. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-1 as applicable), and are available upon request.

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)	0.12	-0.01
Amplitude Accuracy (dB)	0.49	-0.49
Conducted Power (dB)	0.41	-0.41
Radiated Power via Substitution (dB)	0.69	-0.68
Temperature (degrees C)	0.81	-0.81
Humidity (% RH)	2.89	-2.89
Field Strength (dB)	3.80	-3.80
AC Powerline Conducted Emissions (dB)	2.94	-2.94

Client and Equipment Under Test (EUT) Information

Company Name:	Alcon Laboratories, Inc.
Address:	20511 Lake Forest Drive
City, State, Zip:	Lake Forest, CA 92630
Test Requested By:	Thai Lam
Model:	Centurion ® Footswitch
First Date of Test:	August 14, 2013
Last Date of Test:	August 14, 2013
Receipt Date of Samples:	August 14, 2013
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

The Centurion® Vision System utilizes the Centurion® Vision System footswitch. It has a foot pedal and on/off toe switches (horizontal and vertical). The Centurion® footswitch can be used wirelessly or can be wired to the console. The footswitch contains radio transmitter module and operates in the frequency band of 2.4 GHz.

Testing Objective:

The applicant desires to add a new ceramic patch antenna, WPC25A with MMCX connector (maximum gain is 5dBi) to the modular approval of the RF module FCC ID: R17XE61. Additional radiated spurious emissions testing, documented in this report, was performed to demonstrate compliance under FCC 15.247 for the new (additional) antenna.



CONFIGURATIONS

Configuration ALCO0180- 1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Centurion® Footswitch	Alcon Laboratories, Inc.	215-1016-502	1301364805X

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	8/14/2013	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Spurious Radiated Emissions

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

MODES OF OPERATION

Low Channel 11 (2405 MHz), Max Power (Level 1)
Mid Channel 18 (2440 MHz), Max Power (Level 1)
High Channel 26 (2480 MHz), Max Power (Level 1)

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

ALCO0180 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency 1 GHz Stop Frequency 26 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

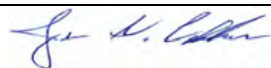
Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 20db, 'SMA'	Weinschel Corp	4H-20	AWB	6/7/2013	12 mo
HP Filter	Micro-Tronics	HPM50111	HGC	11/27/2012	36 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	4/29/2013	12 mo
Antenna, Horn	EMCO	3160-09	AHN	NCR	0 mo
OC floating Cable	N/A	18-26GHz RE Cables	OCK	4/29/2013	12 mo
OC07 Cables	ESM Cable Corp.	8-18GHz cables	OCY	3/7/2013	12 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVP	1/18/2013	12 mo
Antenna, Horn	EMCO	3160-08	AHK	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVL	1/18/2013	12 mo
Antenna, Horn	ETS	3160-07	AHX	NCR	0 mo
OC07 Cables	ESM Cable Corp.	1-8GHz cables	OCX	3/7/2013	12 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	1/18/2013	12 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIR	5/26/2011	36 mo
Spectrum Analyzer	Agilent	E4446A	AAY	2/22/2013	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

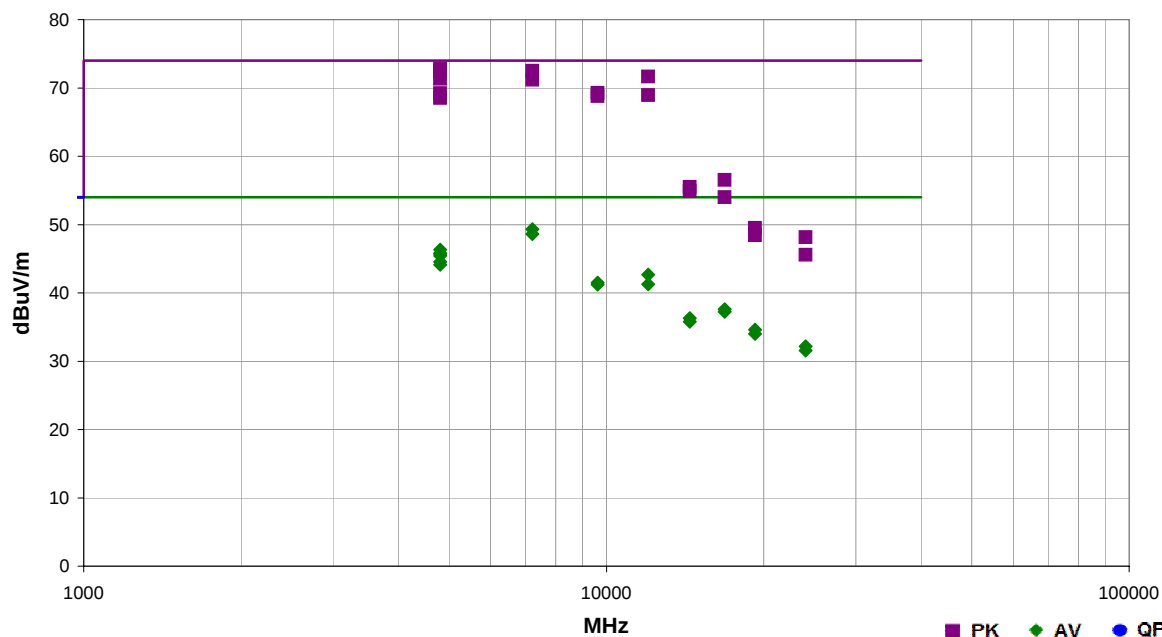
TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Work Order:	ALCO0180	Date:	08/14/13	
Project:	None	Temperature:	24.4 °C	
Job Site:	OC07	Humidity:	48% RH	
Serial Number:	1301364805X	Barometric Pres.:	1013.1 mbar	
EUT:	Centurion ® Footswitch			
Configuration:	1			
Customer:	Alcon Laboratories, Inc.			
Attendees:	Thai Lam			
EUT Power:	Battery			
Operating Mode:	Low Channel 11 (2405 MHz), Max Power (Level 1)			
Deviations:	None			
Comments:	PN: 215-1016-502 FCC ID: R17XE61 & IC ID: 5131A-XE61 RF Module ZE61-2.4			

Test Specifications	Test Method
FCC 15.247:2013	ANSI C63.10:2009

Run #	2	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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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
4810.917	68.1	4.7	1.0	53.0	3.0	0.0	Horz	PK	0.0	72.8	74.0	-1.2	Low Ch 11, EUT on Side
4809.008	67.8	4.7	1.2	251.0	3.0	0.0	Horz	PK	0.0	72.5	74.0	-1.5	Low Ch 11, EUT standing
7216.542	60.5	12.0	1.5	208.0	3.0	0.0	Horz	PK	0.0	72.5	74.0	-1.5	Low Ch 11, EUT on Side
4808.917	67.7	4.7	1.0	326.0	3.0	0.0	Vert	PK	0.0	72.4	74.0	-1.6	Low Ch 11, EUT flat
12027.100	78.1	-6.4	1.2	249.0	3.0	0.0	Vert	PK	0.0	71.7	74.0	-2.3	Low Ch 11, EUT on Side
4810.867	66.6	4.7	1.2	221.0	3.0	0.0	Horz	PK	0.0	71.3	74.0	-2.7	Low Ch 11, EUT flat
7216.500	59.2	12.0	1.4	251.0	3.0	0.0	Vert	PK	0.0	71.2	74.0	-2.8	Low Ch 11, EUT standing
7216.308	37.3	12.0	1.5	208.0	3.0	0.0	Horz	AV	0.0	49.3	54.0	-4.7	Low Ch 11, EUT on Side
9621.683	79.0	-9.7	1.1	282.0	3.0	0.0	Horz	PK	0.0	69.3	74.0	-4.7	Low Ch 11, EUT on Side
4809.000	64.5	4.7	1.2	114.0	3.0	0.0	Vert	PK	0.0	69.2	74.0	-4.8	Low Ch 11, EUT on Side
12023.900	75.4	-6.4	1.2	272.0	3.0	0.0	Horz	PK	0.0	69.0	74.0	-5.0	Low Ch 11, EUT on Side
9621.733	78.5	-9.7	1.0	264.0	3.0	0.0	Vert	PK	0.0	68.8	74.0	-5.2	Low Ch 11, EUT on Side
7216.133	36.6	12.0	1.4	251.0	3.0	0.0	Vert	AV	0.0	48.6	54.0	-5.4	Low Ch 11, EUT standing
4809.000	63.8	4.7	1.2	21.0	3.0	0.0	Vert	PK	0.0	68.5	74.0	-5.5	Low Ch 11, EUT standing
4810.958	41.6	4.7	1.0	53.0	3.0	0.0	Horz	AV	0.0	46.3	54.0	-7.7	Low Ch 11, EUT on Side
4810.867	41.1	4.7	1.2	251.0	3.0	0.0	Horz	AV	0.0	45.8	54.0	-8.2	Low Ch 11, EUT standing
4811.017	41.0	4.7	1.0	326.0	3.0	0.0	Vert	AV	0.0	45.7	54.0	-8.3	Low Ch 11, EUT flat
4810.933	40.7	4.7	1.2	221.0	3.0	0.0	Horz	AV	0.0	45.4	54.0	-8.6	Low Ch 11, EUT flat
4810.933	39.8	4.7	1.2	114.0	3.0	0.0	Vert	AV	0.0	44.5	54.0	-9.5	Low Ch 11, EUT on Side
4810.992	39.4	4.7	1.2	21.0	3.0	0.0	Vert	AV	0.0	44.1	54.0	-9.9	Low Ch 11, EUT standing
12027.230	49.1	-6.4	1.2	249.0	3.0	0.0	Vert	AV	0.0	42.7	54.0	-11.3	Low Ch 11, EUT on Side
9621.817	51.2	-9.7	1.1	282.0	3.0	0.0	Horz	AV	0.0	41.5	54.0	-12.5	Low Ch 11, EUT on Side

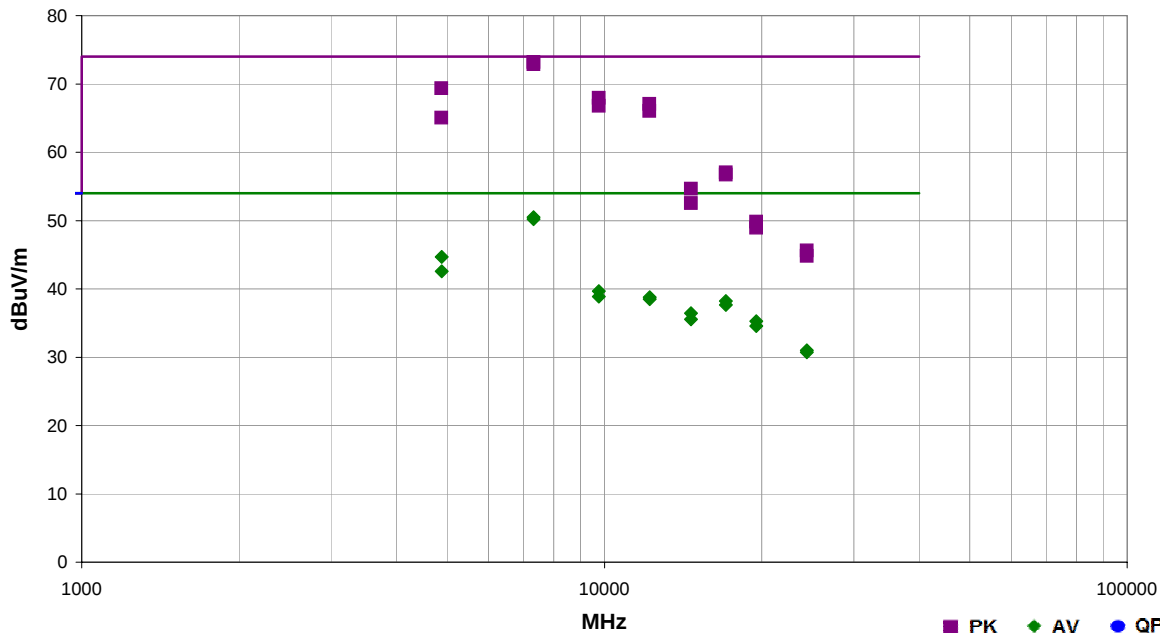
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
12027.170	47.7	-6.4	1.2	272.0	3.0	0.0	Horz	AV	0.0	41.3	54.0	-12.7	Low Ch 11, EUT on Side
9621.900	50.9	-9.7	1.0	264.0	3.0	0.0	Vert	AV	0.0	41.2	54.0	-12.8	Low Ch 11, EUT on Side
16838.280	27.5	10.1	1.2	215.0	3.0	0.0	Vert	AV	0.0	37.6	54.0	-16.4	Low Ch 11, EUT on Side
16838.320	27.1	10.1	1.2	192.0	3.0	0.0	Horz	AV	0.0	37.2	54.0	-16.8	Low Ch 11, EUT on Side
16838.530	46.4	10.1	1.2	215.0	3.0	0.0	Vert	PK	0.0	56.5	74.0	-17.5	Low Ch 11, EUT on Side
14432.850	33.6	2.7	1.2	241.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	Low Ch 11, EUT on Side
14432.800	33.1	2.7	1.3	254.0	3.0	0.0	Horz	AV	0.0	35.8	54.0	-18.2	Low Ch 11, EUT on Side
14426.880	52.8	2.7	1.2	241.0	3.0	0.0	Vert	PK	0.0	55.5	74.0	-18.5	Low Ch 11, EUT on Side
14432.780	52.2	2.7	1.3	254.0	3.0	0.0	Horz	PK	0.0	54.9	74.0	-19.1	Low Ch 11, EUT on Side
19241.750	31.9	2.7	1.2	241.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	Low Ch 11, EUT on Side
19241.670	31.3	2.7	1.2	234.0	3.0	0.0	Horz	AV	0.0	34.0	54.0	-20.0	Low Ch 11, EUT on Side
16838.830	43.9	10.1	1.2	192.0	3.0	0.0	Horz	PK	0.0	54.0	74.0	-20.0	Low Ch 11, EUT on Side
24051.130	28.1	4.1	1.2	74.0	3.0	0.0	Vert	AV	0.0	32.2	54.0	-21.8	Low Ch 11, EUT on Side
24050.520	27.5	4.1	1.2	354.0	3.0	0.0	Horz	AV	0.0	31.6	54.0	-22.4	Low Ch 11, EUT on Side
19242.450	46.8	2.7	1.2	241.0	3.0	0.0	Vert	PK	0.0	49.5	74.0	-24.5	Low Ch 11, EUT on Side
19238.150	45.7	2.7	1.2	234.0	3.0	0.0	Horz	PK	0.0	48.4	74.0	-25.6	Low Ch 11, EUT on Side
24048.530	44.1	4.1	1.2	74.0	3.0	0.0	Vert	PK	0.0	48.2	74.0	-25.8	Low Ch 11, EUT on Side
24050.530	41.5	4.1	1.2	354.0	3.0	0.0	Horz	PK	0.0	45.6	74.0	-28.4	Low Ch 11, EUT on Side

Spurious Radiated Emissions

Work Order:	ALCO0180	Date:	08/14/13		
Project:	None	Temperature:	24.4 °C		
Job Site:	OC07	Humidity:	48% RH		
Serial Number:	1301364805X	Barometric Pres.:	1013.1 mbar	Tested by:	Johnny Candelas
EUT:	Centurion ® Footswitch				
Configuration:	1				
Customer:	Alcon Laboratories, Inc.				
Attendees:	Thai Lam				
EUT Power:	Battery				
Operating Mode:	Mid Channel 18 (2440 MHz), Max Power (Level 1)				
Deviations:	None				
Comments:	PN: 215-1016-502 FCC ID: R17XE61 & IC ID: 5131A-XE61 RF Module ZE61-2.4				

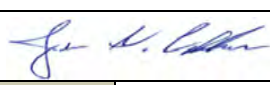
Test Specifications	Test Method
FCC 15.247:2013	ANSI C63.10:2009

Run #	6	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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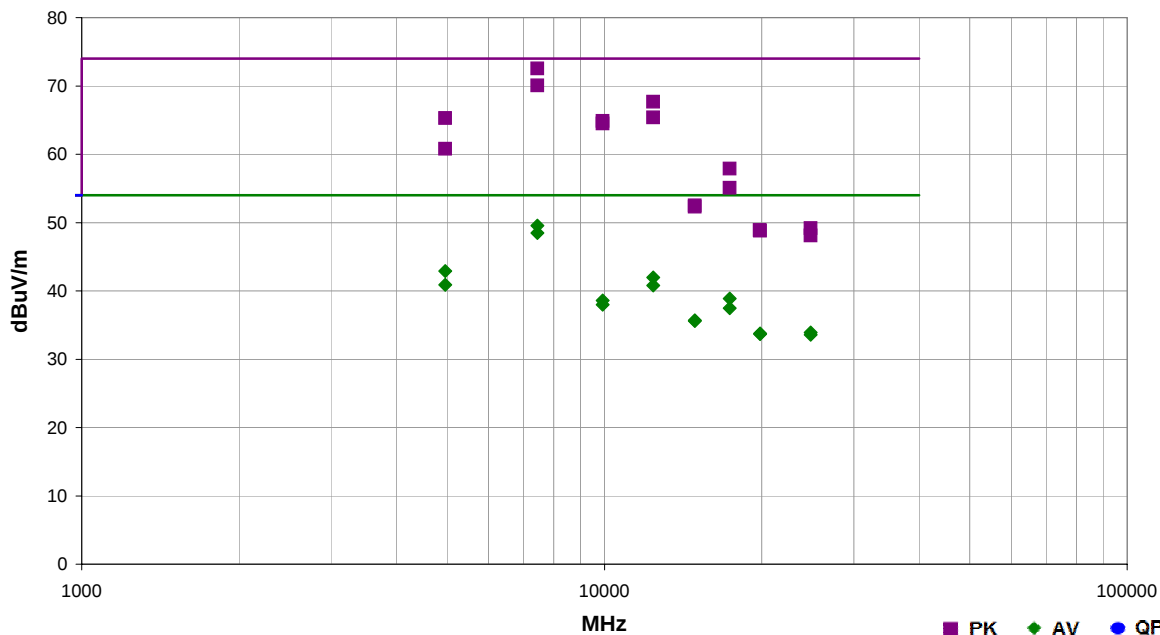
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7321.408	60.7	12.5	1.6	223.0	3.0	0.0	Vert	PK	0.0	73.2	74.0	-0.8	Mid Ch 18, EUT on Side
7318.317	60.4	12.5	1.6	279.0	3.0	0.0	Horz	PK	0.0	72.9	74.0	-1.1	Mid Ch 18, EUT on Side
7320.983	38.0	12.5	1.6	223.0	3.0	0.0	Vert	AV	0.0	50.5	54.0	-3.5	Mid Ch 18, EUT on Side
7320.908	37.7	12.5	1.6	279.0	3.0	0.0	Horz	AV	0.0	50.2	54.0	-3.8	Mid Ch 18, EUT on Side
4879.025	64.4	5.0	1.1	14.0	3.0	0.0	Horz	PK	0.0	69.4	74.0	-4.6	Mid Ch 18, EUT on Side
9757.700	77.5	-9.5	1.3	278.0	3.0	0.0	Horz	PK	0.0	68.0	74.0	-6.0	Mid Ch 18, EUT on Side
12198.580	72.8	-5.7	1.2	258.0	3.0	0.0	Horz	PK	0.0	67.1	74.0	-6.9	Mid Ch 18, EUT on Side
9757.717	76.3	-9.5	1.2	263.0	3.0	0.0	Vert	PK	0.0	66.8	74.0	-7.2	Mid Ch 18, EUT on Side
12197.270	71.8	-5.7	1.1	258.0	3.0	0.0	Vert	PK	0.0	66.1	74.0	-7.9	Mid Ch 18, EUT on Side
4879.017	60.1	5.0	1.2	199.0	3.0	0.0	Vert	PK	0.0	65.1	74.0	-8.9	Mid Ch 18, EUT on Side
4880.983	39.7	5.0	1.1	14.0	3.0	0.0	Horz	AV	0.0	44.7	54.0	-9.3	Mid Ch 18, EUT on Side
4880.825	37.6	5.0	1.2	199.0	3.0	0.0	Vert	AV	0.0	42.6	54.0	-11.4	Mid Ch 18, EUT on Side
9761.883	49.2	-9.5	1.3	278.0	3.0	0.0	Horz	AV	0.0	39.7	54.0	-14.3	Mid Ch 18, EUT on Side
9761.883	48.4	-9.5	1.2	263.0	3.0	0.0	Vert	AV	0.0	38.9	54.0	-15.1	Mid Ch 18, EUT on Side
12202.400	44.5	-5.7	1.2	258.0	3.0	0.0	Horz	AV	0.0	38.8	54.0	-15.2	Mid Ch 18, EUT on Side
12202.370	44.2	-5.7	1.1	258.0	3.0	0.0	Vert	AV	0.0	38.5	54.0	-15.5	Mid Ch 18, EUT on Side
17083.280	28.2	10.0	1.2	263.0	3.0	0.0	Vert	AV	0.0	38.2	54.0	-15.8	Mid Ch 18, EUT on Side
17083.180	27.6	10.0	1.2	189.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	Mid Ch 18, EUT on Side
17082.480	47.0	10.0	1.2	189.0	3.0	0.0	Horz	PK	0.0	57.0	74.0	-17.0	Mid Ch 18, EUT on Side
17078.020	46.7	10.0	1.2	263.0	3.0	0.0	Vert	PK	0.0	56.7	74.0	-17.3	Mid Ch 18, EUT on Side
14642.830	33.3	3.2	1.2	270.0	3.0	0.0	Vert	AV	0.0	36.5	54.0	-17.5	Mid Ch 18, EUT on Side
14642.730	32.4	3.2	1.2	220.0	3.0	0.0	Horz	AV	0.0	35.6	54.0	-18.4	Mid Ch 18, EUT on Side

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
19521.760	31.8	3.4	1.2	234.0	3.0	0.0	Vert	AV	0.0	35.2	54.0	-18.8	Mid Ch 18, EUT on Side
14642.870	51.5	3.2	1.2	270.0	3.0	0.0	Vert	PK	0.0	54.7	74.0	-19.3	Mid Ch 18, EUT on Side
19521.700	31.1	3.4	1.2	347.0	3.0	0.0	Horz	AV	0.0	34.5	54.0	-19.5	Mid Ch 18, EUT on Side
14636.420	49.4	3.1	1.2	220.0	3.0	0.0	Horz	PK	0.0	52.5	74.0	-21.5	Mid Ch 18, EUT on Side
24398.310	28.0	3.0	1.2	2.0	3.0	0.0	Vert	AV	0.0	31.0	54.0	-23.0	Mid Ch 18, EUT on Side
24402.300	27.7	3.0	1.2	211.0	3.0	0.0	Horz	AV	0.0	30.7	54.0	-23.3	Mid Ch 18, EUT on Side
19518.050	46.4	3.4	1.2	234.0	3.0	0.0	Vert	PK	0.0	49.8	74.0	-24.2	Mid Ch 18, EUT on Side
19521.280	45.5	3.4	1.2	347.0	3.0	0.0	Horz	PK	0.0	48.9	74.0	-25.1	Mid Ch 18, EUT on Side
24399.560	42.6	3.0	1.2	2.0	3.0	0.0	Vert	PK	0.0	45.6	74.0	-28.4	Mid Ch 18, EUT on Side
24398.610	41.8	3.0	1.2	211.0	3.0	0.0	Horz	PK	0.0	44.8	74.0	-29.2	Mid Ch 18, EUT on Side

Work Order:	ALCO0180	Date:	08/14/13	
Project:	None	Temperature:	24.4 °C	
Job Site:	OC07	Humidity:	48% RH	
Serial Number:	1301364805X	Barometric Pres.:	1013.1 mbar	
EUT:	Centurion ® Footswitch			
Configuration:	1			
Customer:	Alcon Laboratories, Inc.			
Attendees:	Thai Lam			
EUT Power:	Battery			
Operating Mode:	High Channel 26 (2480 MHz), Max Power (Level 1)			
Deviations:	None			
Comments:	PN: 215-1016-502 FCC ID: R17XE61 & IC ID: 5131A-XE61 RF Module ZE61-2.4			

Test Specifications	Test Method
FCC 15.247:2013	ANSI C63.10:2009

Run #	10	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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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
7441.475	59.9	12.7	1.5	283.0	3.0	0.0	Horz	PK	0.0	72.6	74.0	-1.4	High Ch 26, EUT on Side
7441.417	57.4	12.7	1.6	226.0	3.0	0.0	Vert	PK	0.0	70.1	74.0	-3.9	High Ch 26, EUT on Side
7441.008	36.9	12.7	1.5	283.0	3.0	0.0	Horz	AV	0.0	49.6	54.0	-4.4	High Ch 26, EUT on Side
7440.958	35.8	12.7	1.6	226.0	3.0	0.0	Vert	AV	0.0	48.5	54.0	-5.5	High Ch 26, EUT on Side
12402.620	63.3	4.4	1.1	259.0	3.0	0.0	Horz	PK	0.0	67.7	74.0	-6.3	High Ch 26, EUT on Side
12402.680	61.0	4.4	1.2	229.0	3.0	0.0	Vert	PK	0.0	65.4	74.0	-8.6	High Ch 26, EUT on Side
4961.008	60.0	5.3	1.1	22.0	3.0	0.0	Horz	PK	0.0	65.3	74.0	-8.7	High Ch 26, EUT on Side
9922.017	74.3	-9.4	1.2	292.0	3.0	0.0	Horz	PK	0.0	64.9	74.0	-9.1	High Ch 26, EUT on Side
9917.700	73.9	-9.4	1.2	263.0	3.0	0.0	Vert	PK	0.0	64.5	74.0	-9.5	High Ch 26, EUT on Side
4960.933	37.6	5.3	1.1	22.0	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1	High Ch 26, EUT on Side
12402.520	37.6	4.4	1.1	259.0	3.0	0.0	Horz	AV	0.0	42.0	54.0	-12.0	High Ch 26, EUT on Side
4960.983	35.6	5.3	1.3	61.0	3.0	0.0	Vert	AV	0.0	40.9	54.0	-13.1	High Ch 26, EUT on Side
4960.950	55.5	5.3	1.3	61.0	3.0	0.0	Vert	PK	0.0	60.8	74.0	-13.2	High Ch 26, EUT on Side
12402.520	36.4	4.4	1.2	229.0	3.0	0.0	Vert	AV	0.0	40.8	54.0	-13.2	High Ch 26, EUT on Side
17363.380	29.1	9.8	1.2	264.0	3.0	0.0	Vert	AV	0.0	38.9	54.0	-15.1	High Ch 26, EUT on Side
9921.900	48.0	-9.4	1.2	292.0	3.0	0.0	Horz	AV	0.0	38.6	54.0	-15.4	High Ch 26, EUT on Side
9921.833	47.4	-9.4	1.2	263.0	3.0	0.0	Vert	AV	0.0	38.0	54.0	-16.0	High Ch 26, EUT on Side
17363.750	48.1	9.8	1.2	264.0	3.0	0.0	Vert	PK	0.0	57.9	74.0	-16.1	High Ch 26, EUT on Side
17363.600	27.7	9.8	1.2	184.0	3.0	0.0	Horz	AV	0.0	37.5	54.0	-16.5	High Ch 26, EUT on Side
14882.850	31.8	3.9	1.2	292.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	High Ch 26, EUT on Side
14882.880	31.7	3.9	1.2	289.0	3.0	0.0	Horz	AV	0.0	35.6	54.0	-18.4	High Ch 26, EUT on Side
17355.780	45.3	9.8	1.2	184.0	3.0	0.0	Horz	PK	0.0	55.1	74.0	-18.9	High Ch 26, EUT on Side

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
24798.310	30.2	3.7	1.2	331.0	3.0	0.0	Vert	AV	0.0	33.9	54.0	-20.1	High Ch 26, EUT on Side
19841.730	30.4	3.4	1.2	354.0	3.0	0.0	Vert	AV	0.0	33.8	54.0	-20.2	High Ch 26, EUT on Side
19841.730	30.3	3.4	1.2	331.0	3.0	0.0	Horz	AV	0.0	33.7	54.0	-20.3	High Ch 26, EUT on Side
24798.030	29.9	3.7	1.2	216.0	3.0	0.0	Horz	AV	0.0	33.6	54.0	-20.4	High Ch 26, EUT on Side
14883.070	48.6	3.9	1.2	289.0	3.0	0.0	Horz	PK	0.0	52.5	74.0	-21.5	High Ch 26, EUT on Side
14883.200	48.4	3.9	1.2	292.0	3.0	0.0	Vert	PK	0.0	52.3	74.0	-21.7	High Ch 26, EUT on Side
24799.980	45.5	3.7	1.2	331.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8	High Ch 26, EUT on Side
19839.020	45.5	3.4	1.2	354.0	3.0	0.0	Vert	PK	0.0	48.9	74.0	-25.1	High Ch 26, EUT on Side
19841.890	45.4	3.4	1.2	331.0	3.0	0.0	Horz	PK	0.0	48.8	74.0	-25.2	High Ch 26, EUT on Side
24801.150	44.4	3.7	1.2	216.0	3.0	0.0	Horz	PK	0.0	48.1	74.0	-25.9	High Ch 26, EUT on Side



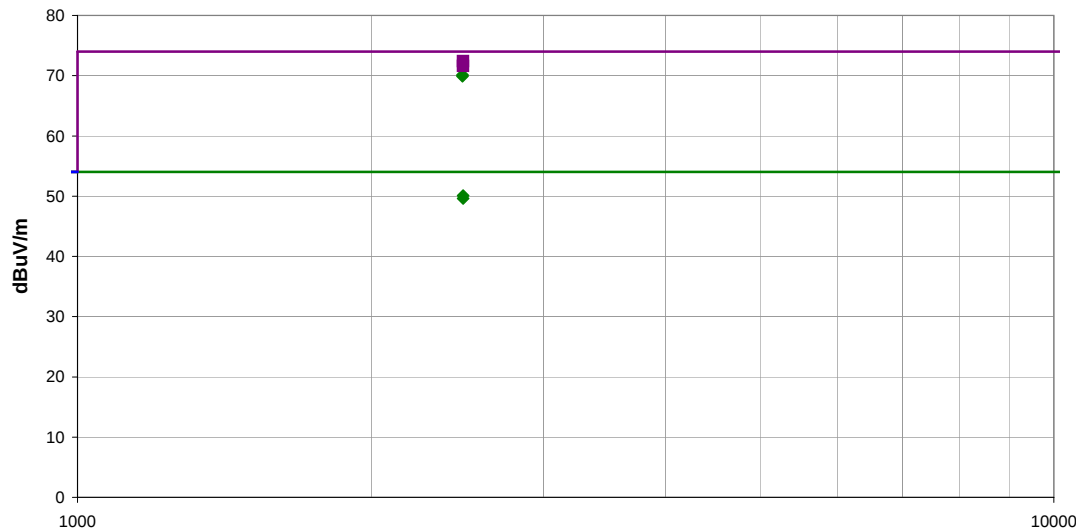
Spurious Radiated Emissions

PSA-ESCI 2012.12.14
EmiRS 2013.08.07

Work Order:	ALCO0180	Date:	08/14/13		
Project:	None	Temperature:	24.4 °C		
Job Site:	OC07	Humidity:	48% RH		
Serial Number:	1301364805X	Barometric Pres.:	1013.1 mbar	Tested by:	Johnny Candelas
EUT:	Centurion ® Footswitch				
Configuration:	1				
Customer:	Alcon Laboratories, Inc.				
Attendees:	Thai Lam				
EUT Power:	Battery				
Operating Mode:	High Channel 26 (2480 MHz), Max Power (Level 1)				
Deviations:	None				
Comments:	EUT on Side, PN: 215-1016-502 FCC ID: R17XE61 & IC ID: 5131A-XE61 RF Module ZE61-2.4				

Test Specifications	Test Method
FCC 15.247:2013	ANSI C63.10:2009

Run #	12	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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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
2480.000	97.5	-4.8	1.7	173.0	3.0	20.0	Horz	PK	0.0	112.7			Fundamental Peak Measurement
2480.000	54.9	-4.8	1.7	173.0	3.0	20.0	Horz	AV	0.0	70.1			Fundamental Average Measurement
2480.000	96.4	-4.8	1.0	114.0	3.0	20.0	Vert	PK	0.0	111.6			Fundamental Peak Measurement
2480.000	54.7	-4.8	1.0	114.0	3.0	20.0	Vert	AV	0.0	69.9			Fundamental Average Measurement
2483.500	57.6	-4.8	1.7	173.0	3.0	20.0	Horz	PK	0.0	72.4	74.0	-1.6	Marker-Delta Method = Fund - 40.28dB
2483.500	34.9	-4.8	1.7	173.0	3.0	20.0	Horz	AV	0.0	50.1	54.0	-3.9	Marker-Delta Method = Fund - 20.00dB
2483.500	56.4	-4.8	1.0	114.0	3.0	20.0	Vert	PK	0.0	71.6	74.0	-2.4	Marker-Delta Method = Fund - 39.98dB
2483.500	34.4	-4.8	1.0	114.0	3.0	20.0	Vert	AV	0.0	49.6	54.0	-4.4	Marker-Delta Method = Fund - 20.30dB