



FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E

CERTIFICATION TEST REPORT

CELLULAR ACCESSORY TO THERAPY DEVICE

MODEL NUMBER: ACTIVAC RTM

FCC ID: 2AHDZ-ActiVAC-RTM

REPORT NUMBER: 16U23005-E2V1

ISSUE DATE: 9/29/2016

Prepared for
KCI USA, Inc.
12930 W. INTERSTATE 10
SAN ANTONIO, TX 78249

Prepared by
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NVLAP[®]

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	9/29/2016		

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: KCI USA, INC.
12930 W. INTERSTATE 10
SAN ANTONIO, TX 78249

d
EUT DESCRIPTION: Cellular Accessory to Therapy Device

MODEL: ActiVAC RTM

SERIAL NUMBER: VCQK03108

DATE TESTED: SEPTEMBER 29,2016

APPLICABLE STANDARDS		TEST RESULTS
STANDARD		
FCC PART 22H, 24E		PASS

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-D, FCC CFR 47 Part 22, FCC CFR Part 24.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
<input type="checkbox"/> Chamber A	<input type="checkbox"/> Chamber D
<input type="checkbox"/> Chamber B	<input type="checkbox"/> Chamber E
<input checked="" type="checkbox"/> Chamber C	<input type="checkbox"/> Chamber F
	<input type="checkbox"/> Chamber G
	<input type="checkbox"/> Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

EIRP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)
ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna)
(Path loss = Signal generator output – PSA reading with substitution antenna)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Radiated Disturbance,1000 to 18000 MHz	4.32 dB
Radiated Disturbance,18000 to 26000 MHz	4.45 dB
Radiated Disturbance,26000 to 40000 MHz	5.24 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Cellular Accessory to Therapy Device.

5.2. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	ICCNN exergy	MWA040012B	0027067	N/A

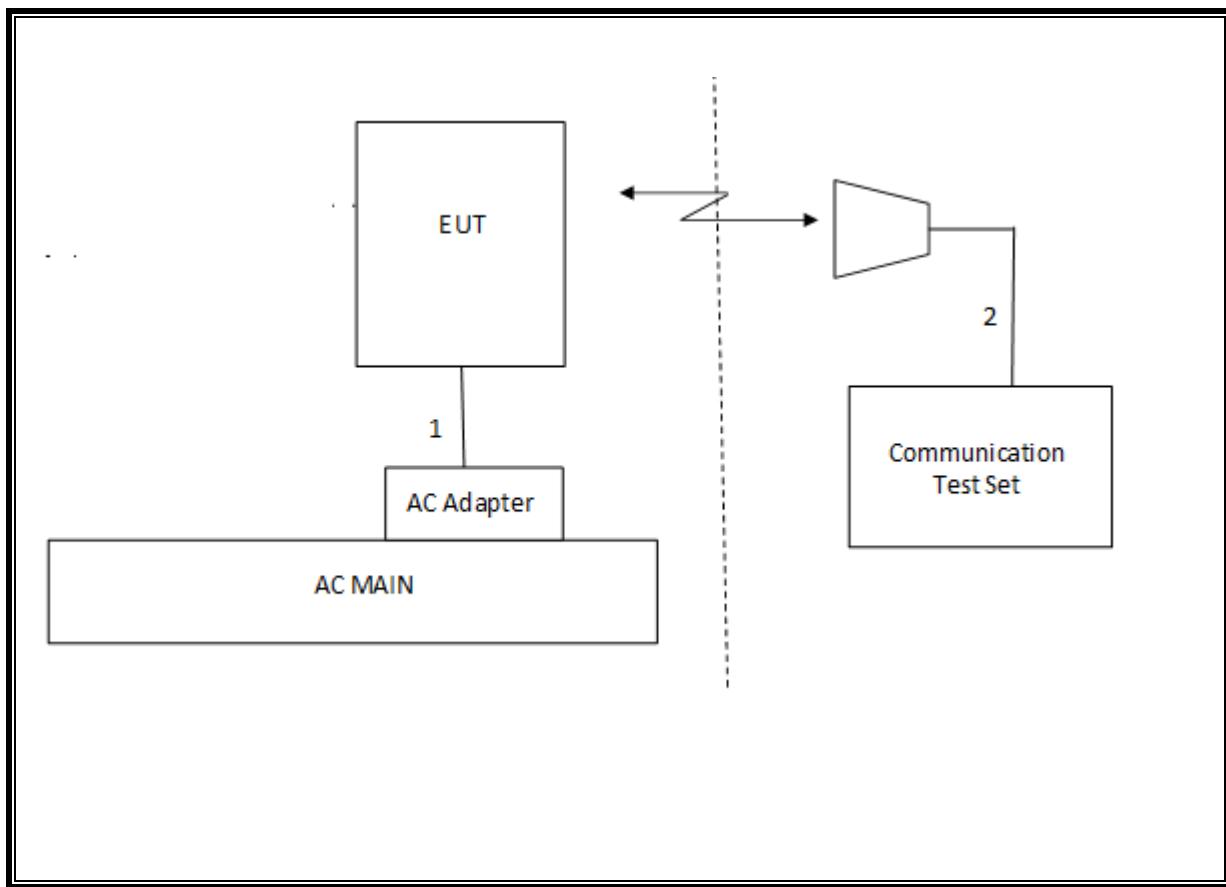
I/O CABLES (RADIATED SETUP)

I/O Cable List						
Cable No	Port	# of Identical ports	Connector Type	Serial Type	Cable Length (m)	Remarks
1	AC	1	US115V	Un-shielded	1.8	N/A
2	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

TEST SETUP

The EUT is continuously communicated to the call box during the tests.

SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Software List				
Description	Manufacturer	Model	T Number	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	123	10/22/16
Antenna, Horn, 18 GHz	EMCO	3115	59	11/18/16
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	151	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	153	CNR
Communications Test Set	Agilent / HP	E5515C	T123	5/1/2017

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
CLT Software	UL	UL RF	Ver 1.0, Feb 2, 2015
Antenna Port Software	UL	UL RF	Ver 3.7, Nov 12, 2015

7. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result
22.917(a)	RSS-132(4.5.1)	Radiated Spurious Emission	-13dBm		Pass
24.238(a)	RSS-133(6.5.1)				

9. RADIATED TEST RESULTS

9.1. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238,

LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

9.1.1. SPURIOUS RADIATION PLOTS

WCDMA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Digi Wireless
Project #: 16U23005
Date: 9/29/2016
Test Engineer: O. Stoelting
Configuration: EUT Only
Location: Chamber C
Mode: Rel99 Band 2 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4									
3704.80	-19.4	V	3.0	33.9	1.0	-52.3	-13.0	-39.3	
5557.20	-19.8	V	3.0	33.1	1.0	-51.9	-13.0	-38.9	
7409.60	-18.9	V	3.0	32.9	1.0	-50.8	-13.0	-37.8	
3704.80	-18.0	H	3.0	33.9	1.0	-50.9	-13.0	-37.9	
5557.20	-14.0	H	3.0	33.1	1.0	-46.1	-13.0	-33.1	
7409.60	-17.6	H	3.0	32.9	1.0	-49.5	-13.0	-36.5	
Mid Ch, 1880									
3760.00	-18.9	V	3.0	33.8	1.0	-51.7	-13.0	-38.7	
5640.00	-16.7	V	3.0	33.1	1.0	-48.8	-13.0	-35.8	
7520.00	-17.8	V	3.0	32.8	1.0	-49.7	-13.0	-36.7	
3760.00	-18.4	H	3.0	33.8	1.0	-51.2	-13.0	-38.2	
5640.00	-15.6	H	3.0	33.1	1.0	-47.7	-13.0	-34.7	
7520.00	-17.9	H	3.0	32.8	1.0	-49.8	-13.0	-36.8	
High Ch, 1907.6									
3815.20	-14.0	V	3.0	33.7	1.0	-46.8	-13.0	-33.8	
5722.80	-14.4	V	3.0	33.1	1.0	-46.5	-13.0	-33.5	
7630.40	-13.0	V	3.0	32.8	1.0	-44.9	-13.0	-31.9	
3815.20	-14.1	H	3.0	33.7	1.0	-46.9	-13.0	-33.9	
5722.80	-12.6	H	3.0	33.1	1.0	-44.7	-13.0	-31.7	
7630.40	-12.7	H	3.0	32.8	1.0	-44.6	-13.0	-31.6	

B2 REL99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Digi Wireless
Project #: 16U23005
Date: 9/29/2016
Test Engineer: O. Stoelting
Configuration: EUT Only
Location: Chamber C
Mode: Rel99 Band 5 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4									
1652.80	-11.9	V	3.0	36.4	1.0	47.3	-13.0	-34.3	
2479.20	-23.9	V	3.0	35.0	1.0	57.8	-13.0	-44.8	
3305.60	-21.1	V	3.0	34.3	1.0	54.3	-13.0	-41.3	
1652.80	-7.3	H	3.0	36.4	1.0	42.7	-13.0	-29.7	
2479.20	-21.6	H	3.0	35.0	1.0	55.5	-13.0	-42.5	
3305.60	-22.1	H	3.0	34.3	1.0	55.3	-13.0	-42.3	
Mid Ch, 836.6									
1673.20	-9.9	V	3.0	36.3	1.0	45.2	-13.0	-32.2	
2509.80	-24.1	V	3.0	34.9	1.0	58.0	-13.0	-45.0	
3346.40	-21.8	V	3.0	34.2	1.0	55.0	-13.0	-42.0	
1673.20	-5.5	H	3.0	36.3	1.0	40.9	-13.0	-27.9	
2509.80	-23.2	H	3.0	34.9	1.0	57.2	-13.0	-44.2	
3346.40	-22.2	H	3.0	34.2	1.0	55.4	-13.0	-42.4	
High Ch, 846.6									
1693.20	-10.4	V	3.0	36.3	1.0	45.7	-13.0	-32.7	
2539.80	-23.6	V	3.0	34.9	1.0	57.5	-13.0	-44.5	
3386.40	-21.8	V	3.0	34.2	1.0	55.0	-13.0	-42.0	
1693.20	3.8	H	3.0	36.3	1.0	31.5	-13.0	-18.5	
2539.80	-13.3	H	3.0	34.9	1.0	47.2	-13.0	-34.2	
3386.40	-22.6	H	3.0	34.2	1.0	55.8	-13.0	-42.8	

B5 REL99