

**TEST REPORT CONCERNING THE COMPLIANCE OF
PART 15 JBP Class B Computing Device Peripheral,
BRAND UCB, MODEL ava
WITH 47 CFR PART 15-SUBPART B (10-1-14 Edition)**

**15060902.fcc15B_Rev04
July 11, 2016**

FCC listed : 90828
Industry Canada : 2932G-2
R&TTE and EMC Notified Body : 1856

**TÜV Rheinland Nederland B.V.
P.O. Box 37
9350 AA Leek (NL)
Eiberkamp 10
9351 VT Leek (NL)**

Telephone: +31 594 505005
Telefax: +31 594 504804

Internet: www.tuv.com/nl
E-mail: products@nl.tuv.com

MEASUREMENT/TECHNICAL REPORT

Manufacturer: UCB Medical Devices SA
Brand: UCB
Model: ava

This report concerns: Original certification ~~Class 2 change~~ Verification

Equipment type: JBP Class B Computing Device Peripheral

Report prepared by:	Name	: Richard van der Meer
	Company name	: TÜV Rheinland Nederland B.V.
	Address	: Eiberkamp 10
	Postal code/city	: 9351 VT Leek
	Mailing address	: P.O. Box 37
	Postal code/city	: 9350 AA Leek
	Country	: The Netherlands
	Telephone number	: + 31 594 505 005
	Telefax number	: + 31 594 504 804
	E-mail	: products@tuv-eps.com

The data taken for this test and report herein was done in accordance with 47 CFR Part 15, Subpart B (10-1-14 edition) and the measurement procedures of ANSI C63.4-2013. TÜV Rheinland Nederland B.V. at Leek, The Netherlands, certifies that the data is accurate and contains a true representation of the emission profile of the Equipment Under Test (EUT) on the date of the test as noted in the test report. I have reviewed the test report and find it to be an accurate description of the test(s) performed and the EUT so tested.

Date: July 11, 2016

Signature:


T. Koning
Senior Engineer TÜV Rheinland Nederland B.V.

Summary

The device under test does:

- fulfill the general approval requirements as identified in this test report
- not fulfill the general approval requirements as identified in this test report

Description of test item

Test item : JBP Class B Computing Device Peripheral
Manufacturer : UCB Medical Devices SA
Brand : UCB
Model : ava
Serial number : 451401C2 (155)
Receipt date : June 25, 2015

Applicant information

Applicant's representative : Mr. Giovanni Campana
Company : UCB Medical Devices SA
Address : Chemin de la Croix Blanche 10
Postal code : 1630
City : Bulle
Country : Switzerland
Telephone number : +41 (0)58 822 3052
Telefax number : -
Email : Giovanni.campana@ucb.com

Test(s) performed

Location : Leek
Test(s) started : June 02, 2015
Test(s) completed : June 26, 2015
Purpose of test(s) : Conformity with standard

Test specification(s) : 47 CFR Part 15, subpart B (10-1-14 Edition)

Test engineer(s) : R. van der Meer



Report written by : R. van der Meer



Report date : July 11, 2016

This report shall not be reproduced, except in full, without the written permission of TÜV Rheinland Nederland B.V.
The test results relate only to the item(s) tested.

Table of contents

1	General information.....	5
1.1	Product description.....	5
1.1.1	Introduction.....	5
1.2	Related submittal(s) and/or Grant(s).....	5
1.2.1	General.....	5
1.3	Tested system details.....	5
1.3.1	Description of input and output ports.....	7
1.4	Test Summary.....	7
1.5	Test methodology.....	8
1.6	Test facility.....	8
1.7	Test conditions.....	8
2	System test configuration.....	9
2.1	Justification.....	9
2.2	EUT mode of operation.....	9
2.3	Special accessories.....	9
2.4	Equipment modifications.....	9
2.5	Product Labelling.....	9
2.6	Block diagram of the EUT.....	9
2.7	Schematics of the EUT.....	9
2.8	Part list of the EUT.....	9
3	Radiated emission data.....	10
3.1	Radiated emissions data (30 MHz – 1 GHz).....	11
4	AC Power-line Conducted emission data.....	12
4.1.1	Testresults AC Power-line Conducted Emissions.....	13
5	List of utilized test equipment.....	16

1 General information.

1.1 Product description.

1.1.1 Introduction.

The JBP Class B Computing Device Peripheral, brand UCB, model ava, (hereafter referred to as EUT), is equipped with a RFID R/W circuit, operating on passive tags at a frequency of 13.56 MHz. The device is battery powered and can be recharged. For charging a USB port is used and the USB port is also used to connect to a personal computer.

The content of this report and measurement results have not been changed other than the way of presenting the data.

1.2 Related submittal(s) and/or Grant(s).

1.2.1 General.

This test report supports the original grant/certification in equipment authorization

1.3 Tested system details.

Details and an overview of the system and all of its components, as it has been tested, may be found below.

Manufacturer	:	UCB Medical Devices SA
Brand	:	UCB
Model	:	ava
Serial number	:	451401C2 (155)
Operating voltage	:	3.7 Vdc
Voltage output rating	:	--
Current input rating	:	--
Antenna	:	Integral
Operating frequency	:	13.56 MHz
Modulation method	:	OOK (On Off Keying – (ASK))



AUX1: Power Supply/charger
Brand: Emerson
Model: DA-12-050MP-M (SVT-PA-130218-05)
Serial Number: 10
Input Voltage: 100 – 240 Vac 50/60 Hz
Output Voltage: 5 Vdc
Remark: --



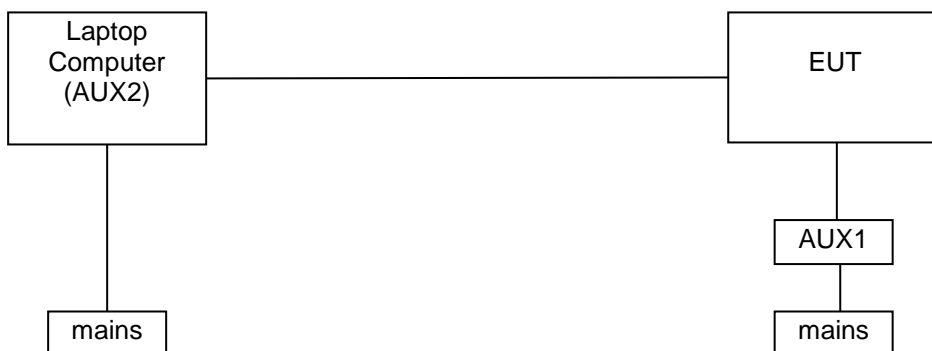
AUX2 : Laptop Computer
Brand : HP
Model : Elitebook 8440p
Serial number : CZC1079LZH
Remark : Contains software to control EUT

AUX1

1.3.1 Description of input and output ports.

Number	Terminal	From	To	Remarks
1	Mains	AUX1	EUT	Used for charging EUT
2	Mains	Mains	AUX2	--
3	USB connection	AUX2	EUT	shielded cable

Table 1: Interconnection between EUT and auxiliary equipment



1.4 Test Summary

The EUT was tested in accordance with the specifications given in the table below.

Test Standard		Description	Page	Pass / Fail
47 CFR Part 15 Subpart B (10-1-14 Edition)				
15.107(a)		AC Power Line Conducted emissions	12 – 15	Pass
15.109(a)		Radiated emissions	10 – 11	Pass

Table : testspecifications

Testmethods: ANSI C63.4-2014

Note: see end of the report for setup photographs.

1.5 Test methodology.

The test methodology used is based on the requirements of 47 CFR Part 15, Subpart B (10-1-14 Edition), sections 15.107 and 15.109.

The test methods, which have been used, are based on ANSI C63.4-2014.

Radiated emission tests above 30 MHz were performed at a measurement distance of 3 meters. To calculate the field strength level from these results to the appropriate distance at which the limit is specified, the appropriate extrapolation factor is used.

The receivers are switching automatically to the right bandwidth in accordance with CISPR 16. This is implemented in the receiver. The antenna factors are programmed in the test receiver. The receiver automatically calculates the appropriate correction factor for the utilized antenna and also the appropriate antenna factor for the cable loss. The total correction is automatically added to the measured value.

1.6 Test facility.

The Federal Communications Commission and Industry Canada has reviewed the technical characteristics of the test facilities at TÜV Rheinland Nederland B.V., located in Leek, 9351VT Eiberkamp 10, The Netherlands, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948.

The description of the test facilities has been filed at the Office of the Federal Communications Commission under registration number 90828. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The description of the test facilities has been filed to Industry Canada under registration number 2932G-2. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

1.7 Test conditions.

Normal test conditions:

Temperature (*)	: +15°C to +35°C
Relative humidity(*)	: 20 % to 75 %
Supply voltage	: 5Vdc for charging/ 3.7 Vdc in normal battery operation
Air pressure	: 950 – 1050 hPa

When it was impracticable to carry out the tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests are stated separately.

2 System test configuration.

2.1 Justification.

The system was configured for testing in a typical situation (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4-2014.

2.2 EUT mode of operation.

Testing where performed while EUT was operating in normal operating mode

2.3 Special accessories.

No special accessories are used and/or needed to achieve compliance.

2.4 Equipment modifications.

No modifications have been made to the equipment.

No modifications have been made to the equipment in order to achieve compliance.

2.5 Product Labelling

The product labeling information is available in the technical documentation package.

2.6 Block diagram of the EUT.

The block diagram is available in the technical documentation package.

2.7 Schematics of the EUT.

The schematics are available in the technical documentation package.

2.8 Part list of the EUT.

The part list is available in the technical documentation package.

3 Radiated emission data.

RESULT: PASS

Date of testing: 2015-07-03

Frequency range: 30MHz - 1000MHz

Requirements:

FCC 15.109(a)

Except for Class A digital devices, the field strength of radiated emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Test procedure:

ANSI C63.4-2014.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y, Z) were varied in order to ensure that maximum emission amplitudes were attained.

The spectrum was examined from 30 MHz to 1 GHz. Final radiated emission measurements were made at 3m distance.

At each frequency where a spurious emission was found, the EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Field strength values of radiated emissions at frequencies not listed in the tables are more than 20 dB below the applicable limit.

3.1 Radiated emissions data (30 MHz – 1 GHz).

Frequency (MHz)	EUT orientation	Antenna polarization	Results @3m (dBμV/m)	Limits @3m (dBμV/m)	Pass/Fail
53.280	Vertical	Vertical	23.1	40.0	Pass
92.080	Vertical	Vertical	24.7	43.5	Pass
142.520	Vertical	Horizontal	30.2	43.5	Pass
206.540	Vertical	Vertical	25.0	43.5	Pass
344.280	Vertical	Vertical	25.3	46.0	Pass
503.360	Vertical	Vertical	29.0	46.0	Pass

Table 1 Radiated emissions of the EUT

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.109 are depicted in Table 1. The system is tested as in whole, so with all equipment as shown in Figure.1 in place and functioning. Being the worst case situation.

Notes:

1. Field strength values of radiated emissions at frequencies not listed in the table above are more than 20 dB below the applicable limit.
2. Measurement uncertainty is ± 5.0 dB
3. The reported field strength values are the worst case values at the indicated frequency. The EUT was varied in 3 positions, the antenna was varied in horizontal and vertical orientations and also in height (between 1m and 4m).
4. A Quasi-peak detector was used with a resolution bandwidth of 120 kHz.
5. The EUT was tested in in normal operation mode. Worst case values have been noted.

Used test equipment and ancillaries:

A00257	A00258	A00314	A00450	A00447	A00235	A00466		

4 AC Power-line Conducted emission data.

RESULT: Pass.

Date of testing: 2015-07-07

Requirements:

Except when the requirements applicable to a given device state otherwise, for any license-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the following table. The tighter limit applies at the frequency range boundaries.

Frequency of Emission (MHz)	Conducted Limit (dBμV) Quasi-Peak	Conducted Limit (dBμV) Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 - 30	46	50

*Decreases with the logarithm of the frequency.

Test procedure:

ANSI C63.4-2014.

Each phase and neutral of the AC power line were measured with respect to ground. Measurements were performed using a 50 μH / 50 Ω LISN. The frequency range from 150kHz to 30MHz was searched. The six highest EUT emissions relative to the limit were noted. The EUT is placed on a non-conductive table 0.8m above the ground plane. The EUT was positioned at least 80cm from the LISN. The power cable was routed over the non-conductive plate to the LISN.

4.1.1 Testresults AC Power-line Conducted Emissions

Frequency (MHz)	Measurement results L1 (dBµV)		Measurement results L2/Neutral (dBµV)		Limits (dBµV)		Verdict (Pass/Fail)
	QP	AV	QP	AV	QP	AV	
0.16637	50.0	*3	49.9	*3	65.0	55.0	Pass
0.18453	46.9	*3	40.0	*3	64.0	54.0	Pass
0.25380	35.0	*3	35.0	*3	61.8	51.8	Pass
0.37204	29.2	*3	29.0	*3	58.5	48.5	Pass
15.99422	28.5	*3	19.1	*3	56.0	46.0	Pass
21.13887	28.9	*3	25.9	*3	56.0	46.0	Pass
23.82263	34.1	*3	23.4	*3	60.0	50.0	Pass

The results of the AC power-line conducted emission tests, carried out in accordance with 47 CFR Part 15 section 15.107(a) Class B, at the 120 Volts/ 60 Hz AC mains connection terminals of the AUX1 that connects to the EUT, are depicted in the table above.

Notes:

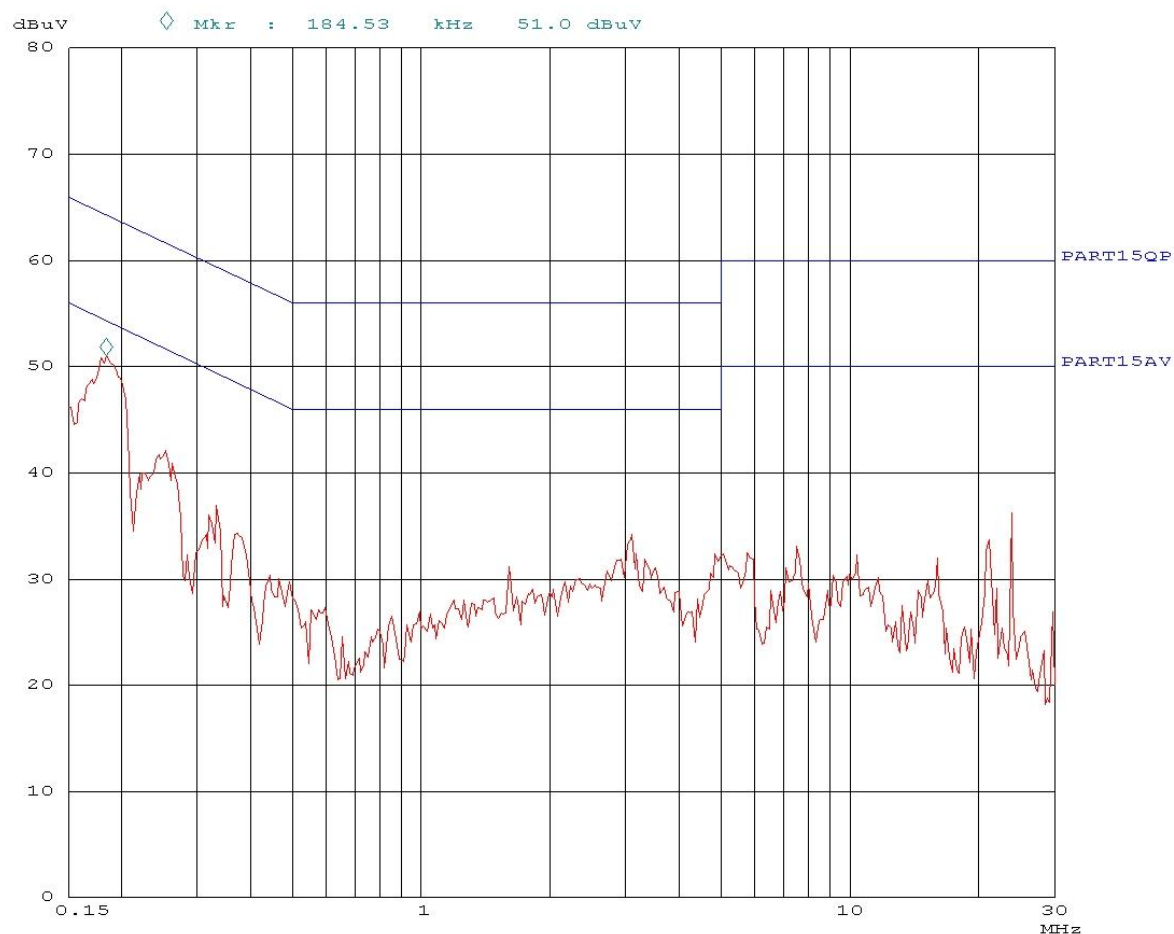
1. The resolution bandwidth used was 9 kHz.
2. Plots are provided on the next pages.
3. Qp values already within Av limits, therefor Av not tested.

Used test equipment and ancillaries:

A00022	A00051	A00171	A00437	A00444	A00726	

07. Jul 15 09:06

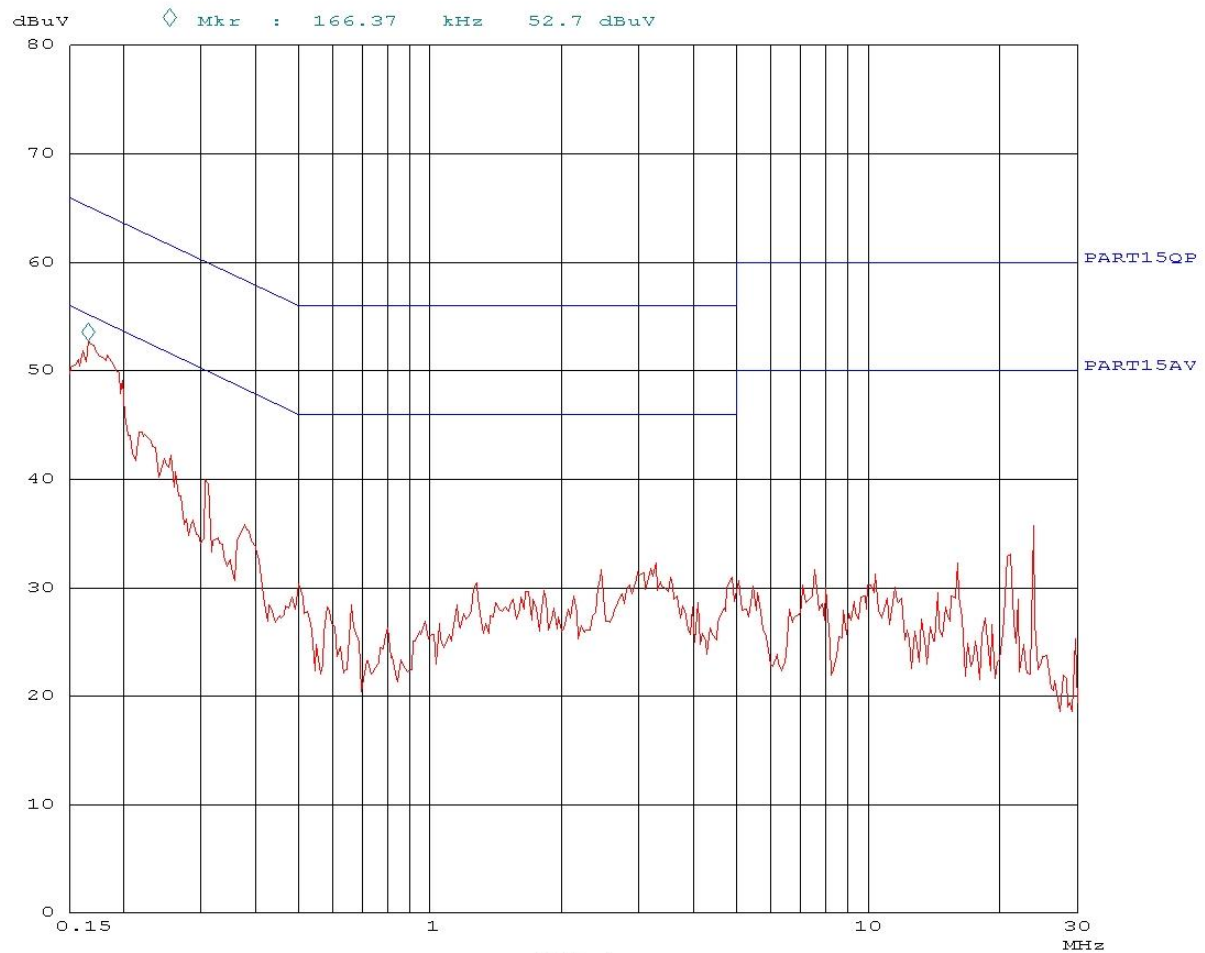
Scan Settings (1 Range)			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	0.8%	9k	PK	100ms	AUTO LN	OFF



Plot 1 Conducted emissions on L1 (Peak values)

07. Jul 15 09:12

Scan Settings (1 Range)			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	0.8%	9k	PK	100ms	AUTO	LN OFF



Plot 2 Conducted emissions on L2 (Peak values)

5 List of utilized test equipment.

Kind of Equipment	Manufacturer	Model Name	Inventory number	Calibration date (mm/yyyy)	Calibration due date (mm/yyyy)
For Radiated Emissions					
Measurement Receiver	Rohde & Schwarz	ESCI	A00314	03/2015	03/2016
RF Cable S-AR	Gigalink	APG0500	A00447	01/2015	01/2016
Controller	Maturo	SCU/088/8090811	A00450	N/A	N/A
Controller	EMCS	DOC202	A00257	N/A	N/A
Test facility	Comtest	FCC listed: 90828 IC: 2932G-2	A00235	04/2014	04/2017
Measuring receiver	R&S	ESCI	A00314	03/2015	03/2016
Antenna mast	EMCS	AP-4702C	A00258	N/A	N/A
Temperature-Humiditymeter	Extech	SD500	A00444	03/2015	03/2016
Biconilog Testantenna	Teseq	CBL 6111D	A00466	06-11/2015	06-11/2016
For AC Power Line					
	Conducted	Emissions			
Pulse limiter	R&S	ESH3-Z2	A00051	01/2015	01/2016
Variac	RFT	LSS020	A00171	NA	NA
LISN	EMCO	3625/2	A00022	01/2014	01/2016
Measurement Receiver	Rohde & Schwarz	ESCS30	A00726	09/2014	09/2015
Shielded room for Conducted emissions	--	--	A00437	NA	NA
Temperature-Humiditymeter	Extech	SD500	A00444	03/2015	03/2016

NA= Not Applicable

Conformance of the used measurement and test equipment with the requirements of ISO/IEC 17025:2005 has been confirmed before testing.

<<< End of report >>>