



MET Laboratories, Inc. *Safety Certification - EMI - Telecom Environmental Simulation*

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Radio Frequency Exposure Test Report

47 CFR Part 1, Subpart I, Section 1.1310

Model: Watch Charger

MET Report: EMC99785-FCC MPE

Company	InVue
Address	9201 Baybrook Lane
	Charlotte, NC 28277
Report date	August 16, 2018

Benjamin Taylor
Manager, EMC Wireless Laboratory

Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	August 16, 2018	Initial Issue.

1.0 Scope

The Federal Communications Commission (FCC) publishes standards regarding the evaluation of RF exposure hazard of wireless communications devices. An evaluation was performed to InVue, Watch Charger, pursuant to the relevant requirements of the 47 CFR Part 1, Subpart I, Section 1.1310.

1.1 Objective

The objective of the manufacturer is to comply with the Federal Communications Commission (FCC) publishes standards referenced above.

1.2 Statement of Compliance

The evaluation of InVue Watch Charger in the configuration detailed in this test report, complied with the relevant requirements of 47 CFR Part 1, Subpart I, Section 1.1310. Maintenance of compliance is the responsibility of the manufacturer.

2.0 Equipment Configuration

2.1 Overview

MET Laboratories, Inc. was contracted by InVue to perform testing on the Watch Charger, under InVue purchase order number 57873.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the InVue, Watch Charger.

In accordance with §2.955(a) (3), the following data is presented in support of the verification of the InVue, Watch Charger. InVue should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the Watch Charger has been **permanently** discontinued, as per §2.955(b).

The results obtained relate only to the item(s) tested.

Model(s) Tested:	Watch Charger
Model(s) Covered:	Watch Charger
Primary Power as Tested:	4.5-5.5 VDC
Equipment Emissions Class:	B
Highest Clock Frequency:	N/A
Evaluated by:	Benjamin Taylor
Report Date:	August 16, 2018

Table 1. EUT Overview

2.2 Test Site

All testing was performed at MET Laboratories, Inc., 914 West Patapsco Avenue, Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

MET Laboratories is a ISO/IEC 17025 accredited site by A2LA, #0591.01.

Radiated Emissions measurements were performed in a semi-anechoic chamber. In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

2.3 Equipment Configuration

The EUT was set up as outlined in the customer provided block diagram. All equipment incorporated as part of the EUT is included in the following list.

Ref. ID	Slot #	Name / Description	Model Number	Part Number	Serial Number	Rev. #
A		Watch Charger (EUT)	F1671	F1671107	N/A	0

Table 2. Equipment Configuration

2.4 Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

Ref. ID	Name / Description	Manufacturer	Model Number	*Customer Supplied Calibration Data
B	Power Supply (5V)	InVue	PS515	N/A
C	Smart Watch	Confidential	Confidential	N/A
The 'Customer Supplied Calibration Data' column will be marked as either not applicable, not available, or will contain the calibration date supplied by the customer.				

Table 3. Support Equipment

2.5 Ports and Cabling Information

Ref. ID	Port name on EUT	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded ? (Y/N)	Termination Box ID & Port Name
1	Vin	2 conductor, 24AWG	1	1	1.1	No	B.Vout
2	RFout	Wireless power transfer (no cable)	1	N/A	N/A	No	C.RFin

Table 4. Ports and Cabling Information

2.6 Modifications

2.6.1 Modifications to the EUT

No modifications were made to the EUT.

2.6.2 Modifications to the Test Standard

No modifications were made to the test standard.

3.0 Limits

The EUT shall comply with the relevant limits for general public exposure specified as basic restrictions or reference levels in the 47 CFR Part 1, Subpart I, Section 1.1310 as below table.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30
F=frequency in MHz *=Plane-wave equivalent power density RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).				

4.0 Evaluation

Environmental Conditions	
Ambient Temperature (°C)	23.7
Relative Humidity (%)	38

4.1 Results

The device was tested at a 10 cm distance both alone, and with the watch charging.

Frequency of Operation	Mode of Operation	Electric Field	50% MPE Limit (V/m)	Result
164 kHz	Charging	3.448 V/m	307	Pass
	Not Charging	3.828 V/m	307	Pass

Frequency of Operation	Mode of Operation	Magnetic Field	50% MPE Limit (A/m)	Result
164 kHz	Charging	0.0786 A/m	0.815	Pass
	Not Charging	0.255 A/m	0.815	Pass

5.0 Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2005.

Test Name: MPE Evaluation				Test Date(s): Aug 10, 2018	
MET/EF Asset #	Nomenclature	Manufacturer	Model	Last Cal Date	Cal Due Date
1T4784	Isotropic Electric Field Probe	Holaday Industries	HI-4422	08/29/2017	02/28/2019
EF 00605	Wideband Exposure Level Tester	Narda	ELT-400	02/18/2018	02/19/2019
EF 00606	Isotropic B Field Sensor	Narda	BN 2300/90.10	02/18/2018	02/19/2019
1T4148	Shield Room #2 Semi- Anechoic	Rantec	20	NA	NA

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