

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant: 1VALET CORP

Address: 1601 Telesat Court Ottawa Ontario K1B1B9 Canada

Product Name: 1VALET Smart Intercom

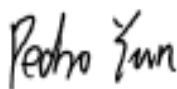
FCC ID: 2BMUX-1001

Standard(s): 47 CFR §1.1310, 47 CFR §2.1091

Report Number: 2402X36043E-RF-00G

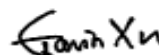
Report Date: 2024/11/30

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).



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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402X36043E-RF-00G	Original Report	2024/11/30

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	1VALET Smart Intercom
EUT Model:	1001
Rated Input Voltage:	DC 24V From Adapter DC 48V From POE
Serial Number:	2RXE-1
EUT Received Date:	2024/9/20
EUT Received Status:	Good

2. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 Applicable Standard

According to 1.1310, 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for Maximum Permissible Exposure (MPE)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
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;

According with KDB 680106 D01 Wireless Power Transfer v04 clause 3.2

The RF exposure limits, as set forth in § 1.1310, do not cover the frequency range below 100 kHz for Specific Absorption Rate (SAR) and below 300 kHz for Maximum Permitted Exposure (MPE). In addition, present limitations of RF exposure evaluation systems prevent an accurate evaluation of SAR below 4 MHz. For these reasons, a specific MPE-based RF Exposure compliance procedure for devices operating in the aforementioned low-frequency ranges has been set in place. This procedure is applicable to Equipment Authorization of all RF devices, thus including, but not limited to, Part 18 and WPT devices.

Accordingly, for § 2.1091-Mobile devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively. For § 2.1093-Portable devices below 4 MHz and down to 100 kHz, the MPE limits in § 1.1310 (with the 300 kHz limit applicable all the way down to 100 kHz) can be used for the purpose of equipment authorization in lieu of SAR evaluations.

2.2 Calculation For Test Exclusion:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

2.3 MPE Test Procedure

1. Place the EUT's antenna was vertical polarization on the table.
2. The EUT was set to transmit at the frequency at maximum RF power.
3. The Distance is 20cm between the test probe and the investigated EUT's antenna equal to the distance be specified as safety distance in the user manual.
4. Power density measurements were taken at different heights of the probe from the ground (0.8 to 2.8 meters) while rotating versus azimuth (from 0° to 360°) the antenna.
5. adjusted the distance between the test probe and the tested antenna to the real safe distance, R_{real} , such that the measured highest power density in the "worst case" position was the same or slightly less than the test limit.
6. The measurement results of final measurements conducted at the chosen azimuth and different heights of the probe above the ground.

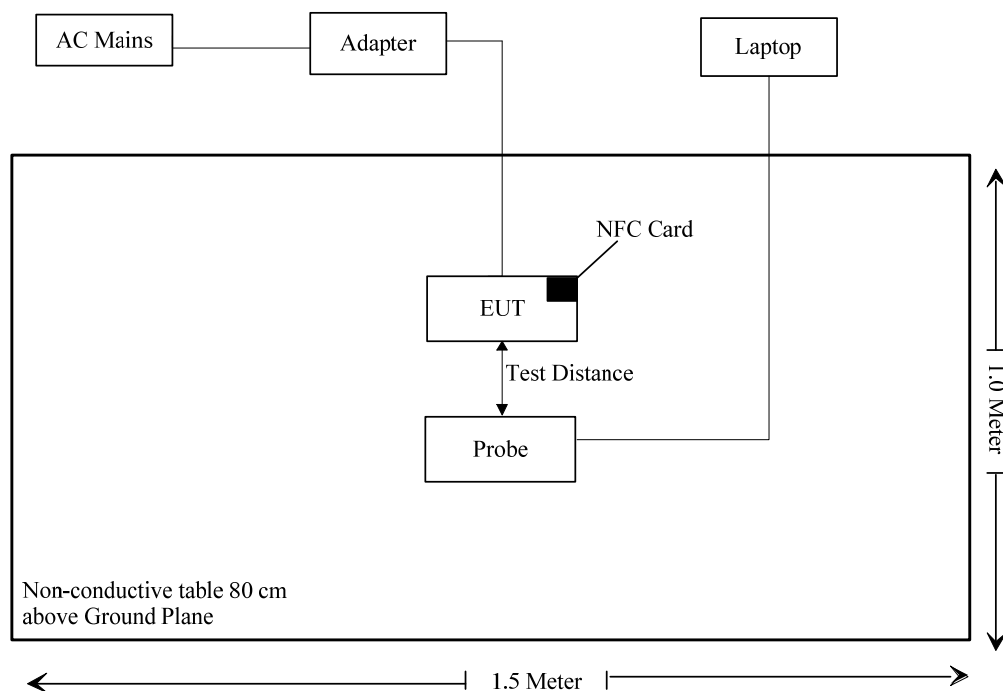
2.4 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
HEWEISHUN	Adapter	BN073-A12012E	220617-27055ERFS1
Unknown	NFC Card	EINOLDA	EMZBNC21103001
Lenovo	Laptop	G510	CB30920865

2.5 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
DC Cable	No	No	1.5	Adapter(DC 12V)	EUT
Signal Cable	No	No	3	Probe	Laptop

2.6 Block Diagram of Test Setup



2.7 Test Data:

Serial Number:	2RXE-1	Test Date:	2024/11/23
Test Site:	Chamber 10m	Test Mode:	Transmitting
Tester:	Lane Sun	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.7	Relative Humidity: (%)	49.0	ATM Pressure: (kPa)	102.2
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Narda	Electric and Magnetic Field Probe-Analyzer	EHP-200AC	180ZX10204	2023/9/1	2026/8/31

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:**H-Field Strength**

Frequency Range (kHz)	Position A (A/m)	Position B (A/m)	Position C (A/m)	Position D (A/m)	Position E (A/m)	50% Limit (A/m)	Limit (A/m)
130.89	0.126	0.136	0.117	0.149	0.136	0.815	1.63

Note: Test with 20cm distance from the center of the probe(s) to the edge of the device.

E-Filed Strength

Frequency Range (kHz)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	50% Limit (V/m)	Limit (V/m)
130.89	0.538	0.475	0.145	0.451	0.558	307	614

Note: Test with 20cm distance from the center of the probe(s) to the edge of the device.

For Bluetooth and NFC(13.56MHz):

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance [▲]		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
BT	2402-2480	-0.8	0.83	8.5	7.08	20.00	0.001	1.0
BLE	2402-2480	-0.8	0.83	8.0	6.31	20.00	0.001	1.0
5.8G Radar	5852.74172	1.3	1.35	-8.19	0.15	20.00	0.00004	1.0
NFC(13.56MHz)	13.56	/	/	-49.37	0.00001	20.00	<<0.0001	0.98

Note:

1. NFC field strength is 45.83dBμV/m @ 3m = -49.37 dBm(0.00001mW) EIRP. That equal to antenna gain is 0dBi and used the EIRP value as conducted power.

2. For 5.8G Radar, field strength is 88.31dBμV/m @ 3m = -6.89 dBm(0.2mW) EIRP.

Conducted output power=-8.19dBm.

Conducted output power=EIRP-Gain

Note:

The Conducted output power including Tune-up Tolerance provided by manufacturer[▲].

For Simultaneous transmission:

Bluetooth and 5.8G Radar can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

$$= S_{Bluetooth} / S_{limit-Bluetooth} + S_{5.8G Radar} / S_{limit-5.8G Radar}$$

$$= 0.001 / 1.0 + 0.00004 / 1.0$$

$$= 0.001$$

$$< 1.0$$

For NFC(13.56MHz) and RFID(130.89kHz), the result is too low to calculated the Simultaneous transmission result.

Result: The device meet FCC MPE at 20 cm distance.

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment 2402X36043E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402X36043E-RF-INP EUT INTERNAL PHOTOGRAPHS.

EXHIBIT B - TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2402X36043E-RF-00G-TSP TEST SETUP PHOTOGRAPHS.

******* END OF REPORT *******