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RF Exposure Evaluation Report

Client:	**Ainstein Inc.**
Address:	**1421 Research Park Drive Suite 2A Lawrence KS, United states, 66049**
Model:	**O79V3**
FCC ID: **IC ID:**	**2ATMB-O79V3** **26683-O79V3**
Test Report No.:	**RFE230319-20-M1B**
Approved By:	**Fox Lane,** **EMC Test Engineer**
Date:	**November 6, 2023**
Total Pages:	**7**

Revision Page

Rev. No.	Date	Description
Original	2 October 2023	Issued by FLane Prepared by FLane
A	20 October 2023	Updated Address Corrected FCCID – FL
B	6 November 2023	Updated Tolerance % - FL

Regulatory Requirements:

FCC Part 1.1310, 2.1091, 2.1093
KDB 447498 D01
RSS-102, Issue 5

Summary:
The purpose of this report is to evaluate the EUT's 79GHz transmitter for exemption from routine SAR testing.

EUT:

Model:	O79V3
FCC ID:	2ATMB-O79V3
IC:	26683-O79V3
MPE Lab	Nebraska Center for Excellence in Electronics
MPE Labs FCC Cab Designation:	US1060
MPE Labs ISED Cab Designation:	US0177

FCC Limits, Part 1.1310

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

Occupational/Controlled	☐
General Population/uncontrolled	☒

FCC Power Density Calculations

Frequency	EIRP	Antenna Gain	Peak Power EIRP	Peak Power EIRP +25% for Tolerance	Power Density	Limit at specified distance	% of limit	Result
GHz	mW	numerical	mW	mW	mW/cm^2	mW/cm^2	%	
76.10	76.91	1.00	76.91	96.14	0.019	1.00	1.913	PASS
78.50	48.08	1.00	48.08	60.10	0.012	1.00	1.196	PASS
80.90	19.23	1.00	19.23	24.04	0.005	1.00	0.478	PASS

Antenna Gain set to 1.00 because power measurements were performed with radiated method

Distance (d)	20	cm

S = (P x G)/(4 x π x d^2) – used to calculate exposure at "d" cm

EIRP = P x G, measured as field strength

d = √(S/(P x G) x 4 X π) – used to calculate minimum distance to meet limits

S = power density (mW/cm^2)

P = transmitter conducted power (in mW)

G = antenna numeric gain (Numerical)

d = distance to radiation center (cm)

Limits:

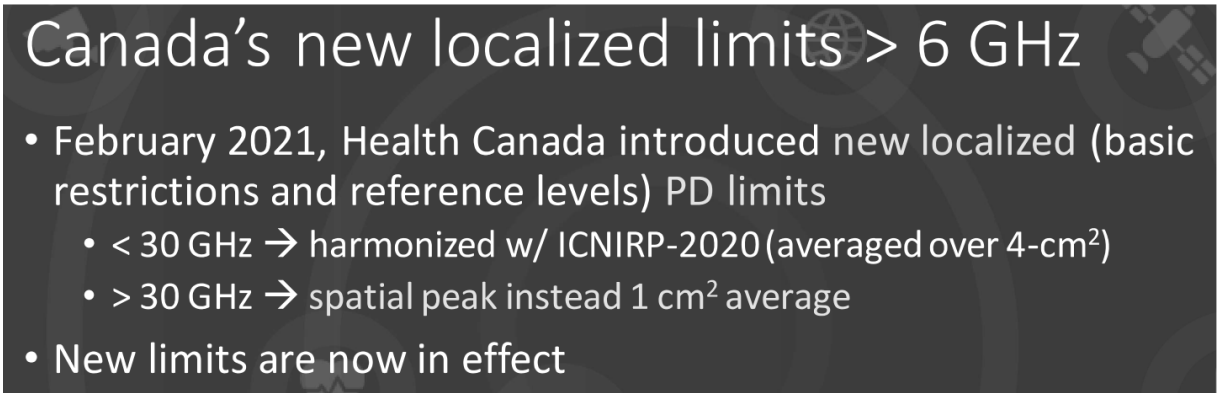
FCC Limit according to FCC Part 1.1310

$10W/m^2 = 1mW/cm^2$

Complies

Note:
The user's manual will stipulate that a 20cm distance from the user is to be maintained.
EIRP values in mW were multiplied by 1.25 to account for a 25% tolerance.

April 2021 TCB Workshop Training



RSS 102, Issue 5, Section 2.5.2

2.5.2 Exemption Limits for Routine Evaluation — RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz[6] and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2}\ f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

ISED Power Density Calculations						
Frequency	**EIRP**	**Antenna Gain**	**Peak EIRP Power**	**EIRP +25% Tolerance**	**Exemption Limit**	**Result**
MHz	**mW**	**Num.**	**mW**	**mW**	**mW**	
76.10	76.91	1.00	76.91	96.14	5000.00	PASS
78.50	48.08	1.00	48.08	60.10	5000.00	PASS
80.90	19.23	1.00	19.23	24.04	5000.00	PASS
Antenna Gain set to 1.00, power measurements were performed with radiated method						

Result:
The EUT was found to be exempt from routine SAR testing and **COMPLIANT** with FCC and ISED RF exposure requirements.

REPORT END