December 10, 2022

TUV SUD America CB
10 Centennial Drive FL2
Peabody, MA 01960

Attention: Director of Certification

RE: Analysis of RF Exposure per KDB 447498 D01 RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices v01 and RSS-102 Amendment 1 February 2021.

FCC ID: 2AY6H-101440
IC: 27808-101440

1. General Information:

Applicant: Piaggio Fast Forward, Inc.
Environment: General Population/Uncontrolled Exposure
Exposure Conditions: Mobile

2. Technical Information:

Minimum Test Separation Distance:	2.31 cm
Operating Frequency:	76 to 77 GHz
Antenna Type:	PCB embedded array
Antenna Gain:	16.5 dBi
Maximum Transmitter Conducted Power:	-8.36 dBm
Maximum Transmitter EIRP (Average):	8.14 dBm
Maximum Transmitter EIRP (Peak):	34.51 dBm

3. Limits:

Limits for General Population/Uncontrolled Exposure (Title 47 Subpart J §2.1091 and KDB 447498 D01 referring to limits under §1.1310)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Electric Field Strength (H) (A/m)	Power Density (S) (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*

Limits for Devices Used by the General Public (Uncontrolled Environment (RSS-102 Issue 5 March 2015 with Ammendment 1 (February 2, 2021))

Frequency Range (MHz)	Electric Field Strength (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Reference Period (minutes)
0.003 - 10^{21}	83	90	-	Instantaneous
0.1 - 10	-	0.73/f	-	6**
1.1 - 10	$87/f^{0.5}$	-	-	6**
10 - 20	27.46	0.0728	2	6
20 - 48	$-58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48 - 300	22.06	0.05852	1.291	6
300 - 6000	$3.142\ f^{0.3417}$	$0.008335\ f^{0.3417}$	$0.02619\ f^{0.6834}$	6
6000 - 15000	61.4	0.163	10	6
15000 - 150000	61.4	0.163	10	$616000/f^{1.2}$
150000 - 300000	$0.158f^{0.5}$	$4.21 \times 10^{-4}\ f^{0.5}$	$6.67 \times 10^{-5}\ f$	$616000/f^{1.2}$

f is frequency in MHz
**Based on nerve stimulation (NS)*
*** Based on specific absorption rate (SAR)*

4. *Mobile MPE Calculation using a 2.31cm separation distance (manufacturer declaration):*

Note: At 2.31cm, the EUT is subject to SAR limits per KDB 447498 D01. However, at -8.36dBm input conducted power, the EUT is exempt per 1mW rule of 47 CFR 1.1307(b)(3)(i)(A).

Using Power Density formula:

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to isotropic
R = distance to the center of radiation of the antenna

Maximum output power at antenna input terminal:	**-8.36**	(dBm)
Maximum output power at antenna input terminal:	**0.15**	(mW)
Antenna gain(typical):	**16.5**	(dBi)
Maximum antenna gain:	**44.668**	(numeric)
Prediction distance:	**2.31**	(cm)
Source Based Time Average Duty Cycle:	**100**	(%)
Prediction frequency:	**76653.5**	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	**1.00**	(mW/cm^2)

Power density at prediction frequency:	**0.09718**	(mW/cm^2)
Power density at prediction frequency:	**0.972**	(W/m^2)
FCC/ISED Margin of Compliance:	**-10.12**	(dB)

Sincerely,

Ferdie S. Custodio
Name
Authorized Signatory
Title: Senior EMC Test Engineer /Wireless Team Lead