

June 19, 2025

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 v06.

1. General Information:

Applicant: Fortem Technologies Inc.
Environment: General Population/Uncontrolled Exposure
Exposure Conditions: Mobile
FCC ID: 2APIM-FTR04V001

2. Technical Information:

EUT Description: R40 Radar
Frequency Range: 16.2 – 16.7GHz
Antenna Type: Phased Array
Antenna Gain: 15 dBi
Frame Time: 250 μ s
Radar Type: FMCW

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*

4. Mobile MPE Calculation using a 180cm separation distance:

Mode	Output Power (dBm)	Power Density (mW/cm ²)	FCC Limit (mW/cm ²)
16.2GHz RADAR	55.64	0.900	1

5. Mobile MPE Calculation using a 180cm separation distance

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

6. Mobile MPE Calculation using a 180cm separation distance

16.2GHz RADAR:

Maximum peak output power at antenna input terminal:	55.64	(dBm)
Maximum peak output power at antenna input terminal:	366539.89	(mW)
Antenna gain(typical):	0	(dBi)
Maximum antenna gain:	1	(numeric)
Prediction distance:	180	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	16200	(MHz)
FCC MPE limit for uncontrolled exposure at prediction frequency:	1.0	(mW/cm ²)
Power density at prediction frequency:	0.900	(mW/cm ²)
FCC Margin of Compliance:	-0.46	(dB)



Sincerely,

A handwritten signature in black ink, appearing to read 'Joe Salvador', is positioned below the word 'Sincerely,'.

Joe Salvador

Name

Authorized Signatory

Title: Wireless/RF Test Engineer