



## **MPE/RF EXPOSURE REPORT**

**FCC CFR 47 Part 1.1310**

**Report No.: LYFT08-U6 FCC MPE Rev A**

**Company:** Lyft, Inc

**Model Name:** STN020D

## MPE/RF EXPOSURE REPORT

**Company Name:** Lyft, Inc

**Model Name:** STN020D

**To:** FCC CFR 47 Part 1.1310

**Report Serial No.:** LYFT18-U6 FCC MPE Rev A

This report supersedes: NONE

Applicant: Lyft, Inc  
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## 1. MAXIMUM PERMISSIBLE EXPOSURE

### Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d \text{ (mW/cm}^2\text{)} = \text{EIRP}/(4*\pi*d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10 \wedge (\text{G (dBi)}/10)$$

### FCC CFR 47 Part 1.1310 Power Density Limits for General Population/Uncontrolled Exposure:

$$1.34 - 30 \text{ MHz Plane Wave Power Density} = (180/f^2) \text{ mW/cm}^2$$

$$300\text{-}1,500 \text{ MHz; Power Density} = f/1500 \text{ mW/cm}^2$$

$$1,500\text{-}100,000 \text{ MHz; Power Density} = 1.0 \text{ mW/cm}^2$$

The calculations in the table below use the highest measured conducted power values together with the antenna gain specified for the EUT. These calculations represent worst case in terms of the exposure levels.

NFC Output Power is as declared by the manufacturer.

### 3<sup>rd</sup> party Reference reports:

LTE band outputs from Quectel Modem EG91NAXD tested by TA Technology in the following reports:

R2006A0379-R6 , Dated July 29, 2020

R2006A0379-R5, Dated Aug 21, 2020

R2006A0379-R4, Dated July 29, 2020

R2006A0379-R3, Dated Aug 21, 2020

R2006A0379-R2, Dated July 8, 2020

R2006A0379-R1, Dated Aug 21, 2020

### Specification - Maximum Permissible Exposure Limits.

The Limit is defined in Table 1 of FCC §1.1310.

Freq. Band (MHz)	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Power Density (mW/cm <sup>2</sup> ) @ 20cm	Power Density Limit (mW/cm <sup>2</sup> )	Min Calculated safe distance for Limit (cm)
NFC Rideable 13.56	0.0	1.00	25.5	354.81	0.071	0.98	5.37
NFC User 13.56	0.0	1.00	33.0	1995.26	0.400	0.98	12.73
LTE Band 12 699.7	-2.1	0.62	22.71	186.64	0.023	0.47	4.43
LTE Band 13 779.5	-2.1	0.62	22.82	191.43	0.023	0.52	4.25
LTE Band 26 814.7	-2.1	0.62	22.56	180.30	0.022	0.54	4.04
LTE Band 5 836.5	-2.1	0.62	22.95	197.24	0.024	0.56	4.17
LTE Band 4 1732.5	5.3	3.39	22.96	197.70	0.133	1.00	7.30
LTE Band 2 1850.7	4.5	2.82	22.85	192.75	0.108	1.00	6.57
LTE Band 25 1914.2	4.8	3.02	22.82	191.43	0.115	1.00	6.78

Note 1: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

### Worst Case Simultaneous Operation

These calculations represent worst case in terms of the exposure levels and assume all radio transmitters i.e. LTE Cellular, NFC radios are operating simultaneously.

Freq. Band (MHz)	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Safe Distance for Summation (cm)	Power Density Limit (mW/cm <sup>2</sup> ) @ 20cm Pd <sub>Limit</sub>	Calculated Power Density (mW/cm <sup>2</sup> ) Pd <sub>Calc</sub>	Pd <sub>Calc</sub> / Pd <sub>Limit</sub>
13.56	0.0	1.00	25.5	354.81	20.00	0.98	0.071	0.072
13.56	0.0	1.00	33.0	1995.26	20.00	0.98	0.400	0.408
1732.5	5.3	3.39	22.96	197.70	20.00	1.00	0.133	0.133
<b>Summation Pd<sub>Calc</sub>/ Pd<sub>Limit</sub> @ 20 cm distance:</b>								<b>0.613</b>

Evaluation for compliance of simultaneous transmission where the power density limits are different is performed by the summation of ratios;

Calculated Power Density/Power Density Limit

$$Pd_{Calc1}/Pd_{Limit1} + Pd_{Calc2}/Pd_{Limit2} + Pd_{Calc3}/Pd_{Limit3} + \text{etc.} < 1.$$

**SUMMARY;** Minimum safe distance to meet the RF exposure requirements = 20cm

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

### Specification

#### Maximum Permissible Exposure Limits

#### FCC CFR 47 Part 1.1310 Power Density Limits for General Population/Uncontrolled Exposure:

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300-1,500 MHz; Power Density =  $f/1500$  mW/cm<sup>2</sup>

1,500-100,000 MHz; Power Density = 1.0 mW/cm<sup>2</sup>



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