RF Exposure Evaluation Report

Product	:	FleetCam Pro
Trade mark	:	FleetCam®
Model/Type reference	:	FC-PRO-NA-22
Serial Number	:	N/A
Report Number	:	EED32P80888003
FCC ID	:	2BBMVFCPRONA22
Date of Issue	:	Jun. 16, 2023
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Test result	:	PASS

Prepared for:

Forward Thinking Systems, LLC.
575 Jericho Turnpike, Suite 301 Jericho, NY 11753

Prepared by:

Centre Testing International Group Co., Ltd.
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Approved by:	Aaron Ma	Date:	Jun. 16, 2023

Check No.: 1244140623

2 Version

Version No.	Date	Description
00	Jun. 16, 2023	Original

3 Contents

4 General Information

4.1 Client Information

Applicant:	Forward Thinking Systems, LLC.
Address of Applicant:	575 Jericho Turnpike, Suite 301 Jericho, NY 11753
Manufacturer:	Forward Thinking Systems, LLC.
Address of Manufacturer:	575 Jericho Turnpike, Suite 301 Jericho, NY 11753

4.2 General Description of EUT

Product Name:	FleetCam Pro
Mode No.:	FC-PRO-NA-22
Trade mark:	FleetCam®
EUT Supports Radios application:	2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz LTE: B2,B4,B5,B12,B13,B66,B71

4.3 Product Specification subjective to this standard

Frequency Range:	2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz LTE: B2: 1850-1910MHz, B4: 1710-1755MHz, B5: 824-849MHz, B12: 699-716MHz, B13: 777-787MHz, B66: 1710-1780MHz, B71: 663-698MHz
Modulation Type:	2.4GHz Wi-Fi: IEEE for 802.11b:DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g:OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20): OFDM (64QAM, 16QAM,QPSK,BPSK) LTE: QPSK,16QAM
Test Power Grade:	Default
Antenna Type (WiFi):	Internal antenna
Antenna Gain (WiFi):	3dBi

Antenna Type (LTE):	Internal antenna
Antenna Gain (LTE):	3dBi
Function (Wi-Fi):	☒ SISO ☐ 2x2 MIMO ☐ 3x3 MIMO ☐ 4x4MIMO
Function (LTE):	☒ SISO ☐ 2x2 MIMO ☐ 3x3 MIMO ☐ 4x4MIMO
Power Supply:	9-36V⎓ 2A
Max Conducted Peak Output Power:	2.4G WiFi:1.99dBm, LTE: B2: 23.84dBm, B4: 23.72dBm, B5: 24.19dBm, B12: 23.74dBm, B13: 23.85dBm, B66: 23.82dBm, B71: 23.47dBm
	The Max Conducted Peak Output Power data refer to the report EED32P80888001,R2007A0434-R1,R2007A0434-R2,R2007A0434-R3. (LTE module’s FCC ID:XMR202008EC25AFXD.) and R1907A0408-R1,R1907A0408-R2,R1907A0408-R3 (LTE module’s FCC ID:XMR201909EC25AFX.)
Sample Received Date:	May 17, 2022
Sample tested Date:	May 25, 2022 to Jun. 06, 2022

Remark:
Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn’t verified.

This report changed the Applicant, Manufacturer, Factory, Trade Mark, Product Name, Photos, and Model No., all test data come from the report of No. EED32O80680303.

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385
No tests were sub-contracted.
FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

1)Maximum tune-up Power

	Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
				(dBm)	(mW)
2.4G WiFi	7	1.99	1.00±1	2.00	1.585
LTE	20600	24.19	23.5±1	24.50	281.838

Remark: The Max Conducted Peak Output Power data refer to the report EED32P80888001,R2007A0434-R1,R2007A0434-R2,R2007A0434-R3.Only the worst case was recorded in the report.(LTE module’s FCC ID:XMR202008EC25AFXD.)

2)For SISO transmit:

①2.4G WiFi:

Calculated data:

Ch.	Frq. (MHz)	P (mW)	Gain (dBi)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
7	2437	1.585	3.00	1.995	20	0.00063	1

Result: compliant

②LTE:

Calculated data:

Ch.	Frq. (MHz)	P (mW)	Gain (dBi)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
20600	844	281.838	3.00	1.995	20	0.11189	1

Result: compliant

3)For 2.4G WiFi+LTE transmit:

SUM=0.00063+0.11189=0.11252＜1

Result: compliant

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***