


## RF Exposure Evaluation Report

**Client:** 701x Inc  
**Address:** 700 Main Ave  
Fargo, ND 58103  
**EUT:** xTag v6  
**Test Report No.:** R240111-70-M1A

**Approved By:**   
**Blake Winter,**  
EMC Test Engineer  
iNARTE EMC-50662-E

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**Total Pages:** 7

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## Revision Page

Rev. No.	Date	Description
0	5 March 2024	Issued by BWinter Reviewed by FLane Prepared by BWinter
A	13 March 2024	Revision A by BWinter <ol style="list-style-type: none"><li>1. Add Cell Module RF Exposure Evaluation.</li></ol>

# 1 Regulatory Requirements:

FCC Part 1.1310, 2.1091, 2.1093  
KDB 447498 D01

## **Summary:**

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

## **EUT:**

Model:	<b>xTag v6</b>
FCC ID:	<b>2AZT3-701XT2</b>

## **Cell Module:**

Model:	BG770A-GL
FCC ID:	XMR2021BG770AGL

MPE Lab	Nebraska Center for Excellence in Electronics
MPE Labs FCC Cab Designation:	US1060
MPE Labs ISED Cab Designation:	US0177

## 2 FCC Limits, Part 1.1310

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

**Calculations:**

**EUT**

Occupational/Controlled							
General Population/uncontrolled		YES					
701x xTag v6							
Frequency	Antenna Gain	Power Conducted	Power (conducted) +10% for tolerance	Power Density	Limit at specified distance	% of limit	Result
MHz	numerical	mW	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>		
2400 - 2483.5	2.0	0.76	0.84	0.00033	1.000000	0.033%	PASS

<b>Distance</b>	20	<b>cm</b>
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Gain values were taken from the tables in the antenna datasheet.

EIRP (mW) = Conducted power (mW) x antenna gain (numeric).

**Cell Module**

Occupational/Controlled							
General Population/uncontrolled		YES					
701x xTag v6							
Frequency	Antenna Gain	Power Conducted	Power (conducted) +10% for tolerance	Power Density	Limit at specified distance	% of limit	Result
MHz	numerical	mW	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>		
1710 – 1755	1.82	240	264	0.087	1.000000	8.7%	PASS

<b>Distance</b>	20	<b>cm</b>
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Gain values were taken from the plots in the antenna datasheet. The selected frequency band is based on the worst-case Conducted Power/Antenna Gain product.

EIRP (mW) = Conducted power (mW) x antenna gain (numeric).

Combined RF exposure: 0.033% + 8.7% = 8.733%

8.7% was the worst-case from the cellular module.

8.733% was the worst-case from the combined RF exposure, which is below the limit.

**Result:**

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

**Result:**

**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 1.1 to account for a 10% tolerance.

## REPORT END