



Certification Exhibit

FCC ID: SK9NIC

FCC Rule Part: 47 CFR Part 2.1091

Project Number: 72186194

Manufacturer: Itron, Inc
Model Name: NIC

RF Exposure

Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Modification Record

Issue	Description of Change	Date of Issue
0	First Issue	3/23/2023
1	Second issue – Client added an additional Mode FSK 100kbps	08/01/2023

General Information:

Applicant: Itron, Inc.
 Device Category: Mobile
 Environment: General Population/Uncontrolled Exposure

Technical Information (900 MHz NIC Module) – DSSS:

Detail	Description
Frequency Range	902.3 – 926.9 MHz 902.4 – 927.6 MHz
Modulation Format	FSK, OFDM, DSSS
Data rates (kbps)	FSK: 50, 100, 150 GFSK: 150, 200, 300 OFDM: 200, 600 DSSS: 12.5
Number of Channels	83 / 64
Channel Spacing	300kHz / 400kHz
Antenna Type / Description:	External Omnidirectional / 3 dBi (Laird, P/N: TRA9023P)

Technical Information (900 MHz NIC Module) – DTS:

Detail	Description
Frequency Range	903.2 – 926 MHz 902.8 – 926.8 MHz
Modulation Format	OFDM
Data rates (kbps)	OFDM: 1200, 2400
Number of Channels	31 / 20
Channel Spacing	800kHz / 1200 kHz
Antenna Type / Description:	External Omnidirectional / 3 dBi (Laird, P/N: TRA9023P)

Maximum Transmitter Conducted Power: *29.92dBm, 981.75mW

*Maximum power output from all equipment classes.

Maximum System EIRP: 32.92dBm, 1958.84mW

Exposure Conditions: 20 centimeters

RF Exposure Calculation

Table 1: Device Characteristics

Technical Parameters	900 MHz radio
Frequency (MHz)	902.4
Separation Distance (cm)	20.0
Separation Distance (m)	0.20
Antenna Gain (dBi)	3.0
ERP Easily Determined	YES
Conducted Power (dBm)	29.92
Conducted Power (mW)	981.75
Duty Factor (Source-Based) %	100.0
Maximum (Source-Based) Time-Averaged Conducted Power (mW)	981.75
Maximum (Source-Based) Time-Averaged ERP (mW)	1194.42
Maximum (Source-Based) Time-Averaged EIRP (mW)	1958.84
Maximum Output (mW)	1194.42

Test Exemption Criteria

Test exemption is determined by 47 CFR 1.1307(b)(3)(i)(B) where single RF source is exempt if:

The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

Table 2: 47 CFR 1.1307(b)(3)(i)(B) SAR – Based Exemption Pth (mW)

Technical Parameters	900 MHz radio
x	1.46
ERP _{20cm} (mW)	1840.90
Maximum Output (mW)	1194.417
P _{th} (mW)	1840.896
Exemption	YES