



166 South Carter, Genoa City, WI 53128

Company:

Traffic and Parking Control Co., Inc.

Model:

RM8003-03

Project Number:

12348

Report Number:

27199 rev2.0

FCC Title 47 CFR Part 1.1307(b)
&
FCC Title 47 CFR Part 1.1310(e)(1)(ii)

Maximum Permissible Exposure (MPE) – Fixed Device – General Population
RF Exposure Statement of Compliance

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION
(For Single-Modular Approval)

FCC ID: 2ANWN-RM8003-03

Formal Name:	100mW Radio Module
Kind of Equipment:	Fixed location 900 MHz ISM FHSS 100 mW transceiver module
Frequency Range:	902.4 to 927.6 MHz
Evaluation Method:	Compliance based on MPE limits of FCC Part 1.1310(e)(1)(ii)
Model Number:	RM8003-03
Date of Evaluation:	October 4, 2022
Conducted For:	Traffic and Parking Control Co., Inc. (TAPCO) 5100 W Brown Deer Road Brown Deer, WI 53223, USA

NOTICE: This report contains test data and/or other information regarding only the sample provided by the client for testing. This test report shall not be used to claim product approval or endorsement by any governmental, regulatory, or accrediting agency. Please see the "Description of Test Sample" page listed inside of this report.

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SIGNATURE PAGE

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CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

DLS Electronic Systems, Inc.
1250 Peterson Drive
Wheeling, IL 60090
(and satellite locations as shown on the scope)

Fulfills the requirements of

ISO/IEC 17025:2017

and

**U.S. Federal Communication Commission (FCC) EMC and Telecommunications (EC&T)
Testing Designation Program**

and

**Recognition of Telecommunications Testing - Innovation, Science, and Economic Development
(ISED) Canada**

and

**FDA Accreditation Scheme for Conformity Assessment (ASCA) Pilot Program - Basic Safety
and Essential Performance of Medical Electrical Equipment, Medical Electrical Systems, and
Laboratory Medical Equipment**

In the field of

TESTING

This certificate is valid only when accompanied by a current scope of accreditation document.

The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 23 April 2024

Certificate Number: AT-1859



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SATELLITE SITE

DLS Electronic Systems, Inc. (Oats site)

166 South Carter

Genoa City, Wisconsin 53128

www.dlsemc.com



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1.0 Description of Test Sample

The device is a 900 MHz ISM FHSS 100 mW transceiver module intended for use in fixed traffic warning systems.

2.0 Transmitter Information

Frequency Range: 902.4 – 927.6 MHz

Maximum Peak Conducted Output Power (measured): 20.45 dBm

Maximum Conducted Output Power including acceptable tolerances due to component and production variations and tune up procedures (rated): 21.1 dBm

Maximum Antenna Gain: 10.65 dBi

Maximum Effective Isotropic Radiated Power (EIRP)
(Used for RF Exposure evaluation): **31.75 dBm**

3.0 Rule Part for RF Exposure Evaluation

Title 47 CFR Part 1.1307(b)

Title 47 CFR Part 1.1310(e)(1)(ii)

4.0 Evaluation Procedure

Compare the MPE limits in Part 1.1310(e)(1)(ii) with calculated worst-case MPE values.

Calculations are based on the maximum EIRP value using the worst-case rated peak conducted output power (including tolerances) and the maximum antenna gain to be certified for use with the radio module.

Statement of compliance is based on the worst-case calculated MPE being lower than the MPE limit.



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5.0 MPE Limit

Maximum Permissible Exposure (MPE) limit for General Population / Uncontrolled Exposure in the frequency range 300 – 1,500 MHz (ref: Title 47 CFR Part 1.1310(e)(1)(ii))

Limit: (S) (mW/cm²) = $f/1500 \text{ mW/cm}^2$, where f = frequency in MHz
Limit = $(902.4/1500) \text{ mW/cm}^2 = \mathbf{0.6016 \text{ mW/cm}^2}$

6.0 MPE Calculation

Power Density (mW/cm²):

$$S = \frac{PG}{4\pi R^2}$$

S = Power Density (mW/cm²)

P = Power Input to the antenna (mW)

G = Numeric Power Gain of the antenna

R = Distance to the center of the radiation of the antenna (cm)

7.0 Results

RF Exposure Calculation								
	Input							
Frequency =	902.4	MHz						
P =	21.10	dBm						
G =	10.65	dBi						
R =	20	cm						
π	3.14159							
Transmit Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)	Margin
902.4	21.1	128.82496	10.65	11.61449	20	0.2977	0.6	0.306



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8.0 Summary of Results

With a minimum separation distance of 20 centimeters, the TAPCO 100mW Radio Module **meets** the RF exposure evaluation requirements for maximum permissible exposure to any radiating structure and the general population / uncontrolled exposure.

9.0 Conclusion

The TAPCO 100mW Radio Module, model RM8003-03, operating under FCC Part 15.247 complies with the requirements of FCC Part 1.1307(b) for RF Exposure Evaluation.

END OF REPORT

Revision #	Date	Comments	By
1.0	08-10-2022	Initial Release	CB
2.0	10-04-2022	Adjustment made to Maximum Rated and Measured Output Power	CB