

RF EXPOSURE EVALUATION REPORT

FCC ID : UZ72119976501
Equipment : RFID Reader
Brand Name : ZEBRA
Model Name : 21-199765-01
Applicant : Zebra Technologies Corporation
1 Zebra Plaza, Holtsville, NY 11742
Manufacturer : Zebra Technologies Corporation
1 Zebra Plaza, Holtsville, NY 11742
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full



Approved by: Cona Huang / Deputy Manager



SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

1. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)	4
2. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS	4
3. RF EXPOSURE LIMIT INTRODUCTION	6
4. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION	6
4.1. Standalone Power Density Calculation	6



History of this test report

Report No.	Version	Description	Issued Date
FA430652	Rev. 01	Initial issue of report	Apr. 03, 2024



1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	RFID Reader
Brand Name	ZEBRA
Model Name	21-199765-01
FCC ID	UZ72119976501
Wireless Technology and Frequency Range	RFID : 902.75 MHz ~ 927.25 MHz
Mode	RFID: ASK
HW Version	REV: A
SW Version	3.24.52.0
MFD	16JAN24
EUT Stage	Identical Prototype

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

<RFID_Port 1>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.76
915.75 MHz	27.75
927.25 MHz	27.78

<RFID_Port 2>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.76
915.75 MHz	27.80
927.25 MHz	27.85

<RFID_Port 3>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.82
915.75 MHz	27.80
927.25 MHz	27.81



<RFID_Port 4>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.77
915.75 MHz	27.76
927.25 MHz	27.75

<RFID_Port 5>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.81
915.75 MHz	27.74
927.25 MHz	27.90

<RFID_Port 6>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.81
915.75 MHz	27.84
927.25 MHz	27.92

<RFID_Port 7>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.83
915.75 MHz	27.85
927.25 MHz	27.93

<RFID_Port 8>

Frequency(MHz)	Data Rate
	RFID
902.75 MHz	27.67
915.75 MHz	27.74
927.25 MHz	27.75



3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Table with 5 columns: Frequency range (MHz), Electric field strength (V/m), Magnetic field strength (A/m), Power density (mW/cm^2), Averaging time (minutes). It is divided into two sections: (A) Limits for Occupational/Controlled Exposures and (B) Limits for General Population/Uncontrolled Exposure.

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

S = PG / (4 * pi * R^2)

Where:

- S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Table with 8 columns: Band, Antenna Gain (dBi), Maximum Power (dBm), Maximum EIRP (dBm), Maximum EIRP (W), Average EIRP (mW), Power Density at 20cm (mW/cm^2), Limit (mW/cm^2). Row for RFID shows values: 7.50, 27.93, 35.4, 3.49, 439.54, 0.087, 0.602.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.