

FCC Rule Part	:	CFR §2.1093
Standards	:	IEEE Std 1528:2013 KDB 865664 D01 v01r04, KDB 865664 D02 v01r02.
		KDB 447498 D01 v06 2015.10.23 General RF Exposure Guidance
Report No.	:	SFBAOZ-WTW-P24080124
Applicant	:	Alpha Networks Inc.
Address	:	No. 8, Li-Hsin 7th Rd., Hsinchu Science Park, Hsinchu 300094, Taiwan
Product	:	Arming Station Pro
Brand	:	AVIGILON
Model No.	:	220-4463B
FCC ID	:	RRK-AAAC2361
Sample Received Date	:	Aug. 07, 2024
Date of Evaluation	:	Sep. 06, 2024
Lab Address	:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location	:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City, Taiwan
FCC Accredited No.	:	TW0003

**CERTIFICATION:** The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch – Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

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This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <a href="http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/">http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/</a> and is intended for your exclusive use. Any copying or replication of this report test forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance or cirteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



## Table of Contents

Re	ease Control Record	.3
1.	Summary of Maximum SAR Value	.4
2.	Description of Equipment Under Test	.5
3.	SAR Measurement Evaluation	.6
•-	3.1 Maximum Output Power	.6
	3.2 SAR Testing Exclusions	.7
4	Information on the Testing Laboratories	9



## **Release Control Record**

Issue No.	Reason for Change	Date Issued
SFBAOZ-WTW-P24080124	Initial release	Dec. 03, 2024

## 1. Summary of Maximum SAR Value

Equipment Class	Mode	Highest Reported SAR <sub>10g</sub> (W/kg)	
DXX	RFID	Not Required	
DXX	NFC	Not Required	

Note:

1. The SAR limit (Head & Body: SAR<sub>1g</sub> 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.



## 2. Description of Equipment Under Test

EUT Type	Arming Station Pro	
Brand Name	AVIGILON	
Model Name	220-4463B	
FCC ID	RRK-AAAC2361	
Ty Frequency Bands	RFID: 125kHz	
TX Frequency Banus	NFC : 13.56MHz	
Unlink Modulations	RFID : ASK	
	NFC : ASK	
Maximum Tune-up Conducted Power	Please refer to section 3.1 of this report	
(Unit: dBm)		
Antonna Tuno	RFID: Wire Loop Antenna	
Antenna Type	NFC: Printed Antenna	
EUT Stage	Engineering Sample	

**Note:** The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

## 3. SAR Measurement Evaluation

#### 3.1 Maximum Output Power

The maximum Tune up power (Unit: dBm) including tune-up tolerance is shown as below.

RFID				
Mode Channel Frequency (MHz) Max. Tune-up				
ASK	1	0.125	-92.79	

NFC				
Mode Channel Frequency (MHz) Max. Tune-up				
ASK	1	13.56	-50.79	



#### 3.2 SAR Testing Exclusions

According to KDB 447498 D01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The SAR exclusion threshold is determined by the following formula.

A. For the test separation distance <= 50 mm

 $\frac{\text{Max. Tune up Power}_{(mW)}}{\text{Min. Test Separation Distance}_{(mm)}} \times \sqrt{f_{(GHz)}} \leq 3.0$ 

- When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- For the test separation distance > 50 mm, and the frequency at 100 MHz to 1500 MHz

 $\left[ (\text{Threshold at 50 mm in Step 1}) + (\text{Test Separation Distance} - 50 \text{ mm}) \times \left( \frac{f_{(MHz)}}{150} \right) \right]_{(mW)}$ 

- For the test separation distance > 50 mm, and the frequency at > 1500 MHz to 6 GHz [(Threshold at 50 mm in Step 1) + (Test Separation Distance - 50 mm) × 10]<sub>(mW)</sub>
- B. For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following.
  - (1). {[Power allowed at numeric threshold for 50 mm in step A)] + [(test separation distance 50 mm)·(f(MHz)/150)]} mW, for 100 MHz to 1500 MHz
  - (2). {[Power allowed at numeric threshold for 50 mm in step A)] + [(test separation distance 50 mm)×10]} mW, for > 1500 MHz and ≤ 6 GHz
- C. For frequencies below 100 MHz, the following may be considered for SAR test exclusion.
  - For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step B) is multiplied by [1 + log(100/f(MHz))]
  - (2). For test separation distances ≤ 50 mm, the power threshold determined by the equation in C.(1) for 50 mm and 100 MHz is multiplied by ½
  - (3). SAR measurement procedures are not established below 100 MHz.

Mode	Frequency (MHz)	Max. Tune-up Power (dBm)	Max. Tune-up Power (mW)	Exclusion	Require SAR Testing?
RFID_Ant 0	0.125	-92.79	0.000000005	2314.25 (mW)	No
NFC_Ant 0	13.56	-50.79	0.0000083368	1107.43 (mW)	No

#### Note:

- 1. When the device output power is less than the power threshold shown in above table, the SAR testing exclusion is applied.
- 2. The exclusion is multiplied by 2.5 for extremity limits.

#### Summary:

Since the SAR assess for all device orientations apply SAR test exclusion per KDB 447498, SAR testing for this device is not required.



#### <Estimated SAR Calculation>

According to KDB 447498 D01, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR was estimated according to following formula to result in substantially conservative SAR values of <= 0.4 W/kg to determine simultaneous transmission SAR test exclusion.

Estimated SAR = 
$$\frac{\text{Max. Tune up Power}_{(\text{mW})}}{\text{Min. Test Separation Distance}_{(\text{mm})}} \times \frac{\sqrt{f_{(\text{GHz})}}}{7.5}$$

If the minimum test separation distance is < 5 mm, a distance of 5 mm is used for estimated SAR calculation. When the test separation distance is > 50 mm, the 0.4 W/kg is used for SAR-1g and the 1.0 W/kg is used for SAR-10g

Mode	Frequency (GHz)	Max. Tune-up Power (dBm)	Separation Distance (mm)	Estimated 10g SAR (W/kg)
RFID	0.000125	-92.79	5	0.00
NFC	0.01356	-50.79	5	0.00

#### Note:

- 1. The separation distance is determined from the outer housing of the EUT to the user.
- 2. This SAR estimation formula has been considered in conjunction with the SAR Test Exclusion Thresholds to result in substantially conservative SAR values of ≤ 0.4 W/kg.
- 3. When standalone SAR testing is not required, an estimated SAR can be applied to determine simultaneous transmission SAR test exclusion.

#### <Simultaneous Multi-band Transmission Evaluation>

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous TX Combination	Capable Transmit Configurations	Extremity Exposure Condition	
А	MAX. RFID + MAX. NFC	Yes	

Simultaneous Transmission SAR Evaluation (Extremity)				
	1	2	A(1+2)	
Position	Max RFID 10g SAR W/kg	Max NFC 10g SAR W/kg	Summing result 10g SAR W/kg	
worst	0.00	0.00	0.00	





## 4. Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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