

Airvine WaveTunnel™ Regulatory and Safety Guide

Model 2041-DC



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Introduction

This document contains the safety and regulatory compliance information for the following Airvine Products:

<u>Product Model</u>	<u>Country/Certification</u>
Airvine WaveTunnel Model 2041-SM	USA FCC, Class A Device
Airvine WaveTunnel Model 2041-DC	USA FCC, Canada ICES (Class A Device), and Europe (CE Mark)

Safety Warnings

All products are intended to be installed, used, and maintained by experienced and trained professional personnel only.

When installing and using these products, safety precautions should always be carefully followed to reduce the risk of fire, electrical shock, injury to persons, and damage to the system.

Such safety precautions including the following:

- Read the installation instructions before using, installing, or connecting the system to the power source.
- Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
- Devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation.
- Installation of these products in the end use environments must conform to all applicable national and local regulations and codes including all relevant electrical codes.
- Devices are to be used with and powered only by power sources that are either provided by Airvine or recommended by Airvine. Failure to properly power the unit, which includes using power sources that don't comply to the system's required input voltage or current ranges, or the use of unapproved power sources, or the failure to not properly connect the power sources to the system's power connector, can result in possible injury or permanent damage to the unit.
- Ultimate disposal of this product should be handled according to all national laws and regulations.
- No user-serviceable parts inside; all repairs and services must be handled by a qualified Airvine service center.
- To avoid the risk of electric shock or damage to the unit, do not open unit or remove any covers of the unit.
- Do not insert any objects of any shape or size inside these devices while powered on. Such objects may contact hazardous energy parts that could result in a risk of fire, personal injury, or damage to the unit.
- Do not remove or alter the markings or labels affixed to these devices.

Airvine devices are for indoor use only and are not meant to be installed outdoors.

Symbols on Equipment or Documentation



DANGER

DANGER statements indicate potentially hazardous situations including those that could cause loss of life or physical injury.



CAUTION

CAUTION statements alert a possibility of damage to the system, software, or individual items or parts of equipment withing a system. However, this damage presents no danger to a person.



NOTE

A NOTE provides a tip, guidance, or advice and can emphasize important information.

Important Regulatory Notices

FCC Communications Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice for FCC Class A Equipment - Models: WaveTunnel 2041SM and 2041DC



Caution

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Notice for Equipment Modifications

**CAUTION**

Any changes or modifications not expressly approved by Airvine Scientific Inc. could void the user's authority to operate the equipment.

FCC Notice for RF Exposure

**CAUTION**

The antenna used with this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

Regulatory Notices for Canada - Model 2041DC

General

**CAUTION**

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L' émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L' exploitation est autorisée aux deux conditions suivantes:

1. L' appareil ne doit pas produire de brouillage
2. L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

Class A Equipment

**CAUTION**

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. CAN ICES-3(A)/NMB-3(A)

Cet appareil numérique de la class A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada

Regulatory Notices for European Union - Model 2041DC

General

This section provides required notices for Airvine products listed as having CE Mark for distribution in Europe.

- 2014 / 53 / EU of the European Parliament and of the Council of 16 April 2014 on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 19 99 / 5/ EC; Radio Equipment Directive (RED) and amendments.
- 2011 / 65 / EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive) and amendments.

CE Compliance



AT	FI	IT	PL	UK	RO
BE	FR	LV	PT	IS	TR
CY	DE	LT	SK	LI	HR
CZ	EL	LU	SI	NO	
DK	HU	MT	ES	CH	
EE	IE	NL	SE	BG	

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20cm between the radiator & your body.

The frequency and the maximum transmitted power (dBm) in EU are listed below:

Europe Maximum Radio Frequency Power

Model	Frequency Band	Maximum Radio Frequency Power (dBm EIRP)
2041SM, 2041AC, 2041DC	2.4 Ghz (2412 to 2464 MHz)	19.98
	60 GHz	35 dBm

Europe Transmitter Power Levels (at antenna port)

Model	Frequency Band	Mode	Channels	Data Rates	Transmit Output Power in dBm (typical)
2041SM, 2041AC	60 GHz (57.24 to 68.04 GHz)	N/A	1-6	All Rates	35 dBm
		802.11b	1-11	All Rates	12 +3.0/-2.0
	2.4 GHz (2.412 to 2.464 GHz)	802.11g	1-11	All Rates	13 +3.0/-2.0
		802.11n ¹	1-11	All Rates	13 +3.0/-2.0

¹ 20 MHz 801.11n Channel

Additional Europe Specific Regulatory Information

Usage of Hazardous Chemicals

Airvine Models that employ the CE Mark comply with European Union Directive 2011/65/EU rules of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive).

Disposal of Airvine Equipment

Airvine Models that employ the CE Mark and WEEE Markings comply with European Union Directive 2012/19/EU rules on Waste Electrical and Electronic Equipment (WEEE Directive).

Instructions on how to dispose of end-of-life Airvine Equipment can be found at:

www.airvine.com/support/regulatory/weee

Customers must always follow national and local regulations regarding the disposal of Airvine Equipment.

Disposal of Product Packaging

Customers must always follow national and local regulations regarding the disposal of product packaging.

Certifications - 2041DC

FCC Equipment Authorization Certificate

TCB

**GRANT OF EQUIPMENT
AUTHORIZATION**

TCB

**Certification
Issued Under the Authority of the
Federal Communications Commission
By:**

**MiCOM Labs
575 Boulder Court
Pleasanton, CA 94566**

**Date of Grant: 02/12/2024
Application Dated: 02/12/2024**

**Airvine Scientific Inc.
1500 Wyatt Drive
Suite 9
Santa Clara, CA 95054**

Attention: Robert Olstad , Sr. Director Product Management

NOT TRANSFERABLE

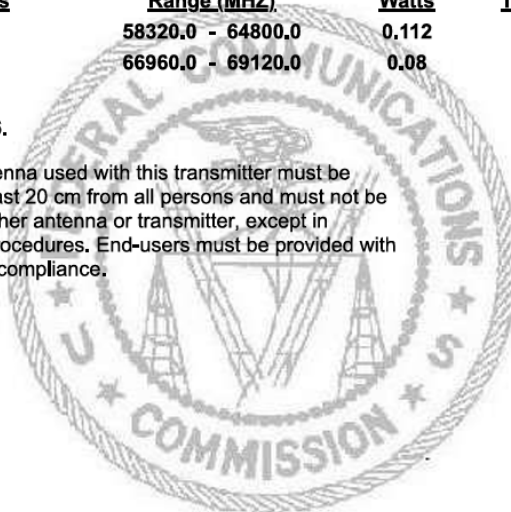
EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

FCC IDENTIFIER: 2BAAIWT-2041SM-US00
Name of Grantee: Airvine Scientific Inc.
Equipment Class: Part 15 Low Power Communication Device Transmitter
Notes: WaveTunnel

<u>Grant Notes</u>	<u>FCC Rule Parts</u>	<u>Frequency Range (MHZ)</u>	<u>Output Watts</u>	<u>Frequency Tolerance</u>	<u>Emission Designator</u>
	15C	58320.0 - 64800.0	0.112		
	15C	66960.0 - 69120.0	0.08		

Class II permissive change to add channels 5 & 6.

Output power listed is conducted power. The antenna used with this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures. End-users must be provided with operating procedures for satisfying RF exposure compliance.



Canada ISED Certificate



TECHNICAL ACCEPTANCE CERTIFICATE



Certificate Validation

TECHNICAL ACCEPTANCE CERTIFICATE

30790-2041DC / 7 Feb 2024 / Rev A

for Innovation, Science and Economic Development (ISED) Canada

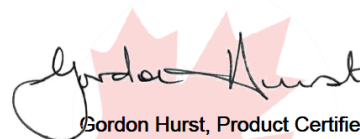
MiCOM Labs Inc. declares, on the basis of the assessment of the tests and the technical documentation provided by the applicant that the following product complies with the requirements of the above noted regulator.

Product Marketing Name:
WaveTunnel

Applicant Name:
Airvine Scientific

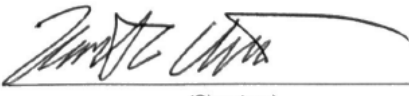
I hereby attest that the subject equipment was tested and found in compliance with the below noted specification.
J'atteste, par la présente, que le matériel a fait l'objet d'essai et a été jugé conforme à la spécification ci-dessous.




Gordon Hurst, Product Certifier

This Certificate is Issued under the Authority of:
MiCOM Labs Inc., 575 Boulder Court, Pleasanton, California 94566, USA
FCB Number: US0159

EU Declaration of Conformity

DECLARATION OF CONFORMITY	
I hereby declare that the product	
Product Name: WaveTunnel Model Number(s): 2041DC	
satisfies all the technical regulations applicable to the product within the scope of Council Directives 2014/53/EU, 2014/35/EU and 2014/30/EU: and declare that the same application has not been lodged with any other notified body.	
EN IEC 62368-1:2020+A11:2020, EN 62311:2008 EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4 EN 55032:2015/A11:2020, EN 55035:2017/A11:2020 EN 303 722 V1.2.1 EN 300 328 V2.2.2:2019	
All essential radio test suites have been carried out.	
NOTIFIED BODY: MiCOM Labs Inc	
- Address:	
575 Boulder Court, Pleasanton, California 94566 USA Identification Number: 2280	
MANUFACTURER: - Address: Airvine Scientific, Inc 1500 Wyatt Drive, Suite 9 Santa Clara, CA 95054 USA	IMPORTER: - Address: We declare that this information will be provided either here or on accompanying documentation at the time of importation.
This declaration is issued under the sole responsibility of the manufacturer and, if applicable, his authorised representative.	
Point of contact:	
Airvine Scientific Inc., TEL: 669-231-4318, FAX: 669-231-4398	
Santa Clara, CA 30 January 2024 <small>(Place, date of issue)</small>	 <small>(Signature)</small> Robert Olstad / Sr. Director Product Management <small>(Name and title in block letters)</small>

EU-Type Examination Certificate



CERTIFICATE of EXAMINATION



Certificate Validation

NOTIFIED BODY EU-TYPE EXAMINATION CERTIFICATE
AIR105-EU / 4 Feb 2024 / Rev A
Radio Equipment Directive (RED) 2014/53/EU

MiCOM Labs Inc., Notified Body Number 2280 declares, on the basis of the assessment of the tests and the technical documentation provided by the applicant that the following product complies with the essential requirements of the above noted Directive.

Product Name:
WaveTunnel

Approval Holder Name:
Airvine Scientific Inc.



Gordon Hurst, Product Certifier

This Certificate is Issued under the Authority of:
MiCOM Labs Inc., 575 Boulder Court, Pleasanton, California 94566, USA
Notified Body Number: 2280



Notified Body EU-Type Examination Certificate

AIRI05-EU / 4 Feb 2024 / Rev A

for Radio Equipment Directive (RED) 2014/53/EU

Product Name:
WaveTunnel

Product Model Numbers: **2041DC**

Brand Name:  **AIRVINE**

Approval Holder: **Airvine Scientific Inc.**, 1500 Wyatt Drive Suite #9, Santa Clara, California, 95054, USA




Product Manufacturer: **Airvine Scientific Inc.**, 1500 Wyatt Drive Suite #9, Santa Clara, California, 95054, USA

Standards	
Group	Name
Article 3.1(a) Health & Safety	EN IEC 62368-1:2020+A11:2020
	EN 62311:2008
	EN IEC 62311:2020
Article 3.1(b) Electromagnetic Compatibility	EN 301 489-1 V2.2.3
	EN 301 489-17 V3.2.4
	EN 55032:2015/A11:2020
	EN 55035:2017/A11:2020
Article 3.2 Effective Use of Spectrum	EN 300 328 V2.2.2
	EN 303 722 V1.2.1

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566, USA
 Tel: +1 (925) 462-0304, Fax: +1 (925) 462-0306, Web: www.micomlabs.com
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AIRI05-EU

Certified Body - CB Safety Test Certificate

		Ref. Certif. No. DE 2-041028
IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME		
CB TEST CERTIFICATE		
Product	WaveTunnel	
Name and address of the applicant	Airvine Scientific, Inc. 1500 Wyatt Drive, Suite #9 Santa Clara CA 95054, USA	
Name and address of the manufacturer	Airvine Scientific, Inc. 1500 Wyatt Drive, Suite #9 Santa Clara CA 95054, USA	
Name and address of the factory	AQS Garland 2010 Merritt Drive Garland TX 75041, USA	
Ratings and principal characteristics	DC 43-58V; 4.7A; Class III	
Trademark (if any)	AIRVINE	
Customer's Testing Facility (CTF) Stage used	2041DC	
Model / Type Ref.		
Additional information (if necessary may also be reported on page 2)		
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2018 For national differences see test report	
As shown in the Test Report Ref. No. which forms part of this Certificate	US23IJE8 001	
This CB Test Certificate is issued by the National Certification Body		
	TÜV Rheinland LGA Products GmbH Tillystr. 2, 90431 Nürnberg, Germany Phone + 49 221 806-1371 Fax + 49 221 806-3935 Mail: cert-validity@de.tuv.com Web : www.tuv.com	
Date: 2024-01-05	Signature:	 Dipl.-Ing. M. Glagla

Disclaimer: This is an electronically released document. The authenticity of this certificate can be verified on the IECEE Website "<http://certificates.iecee.org>"