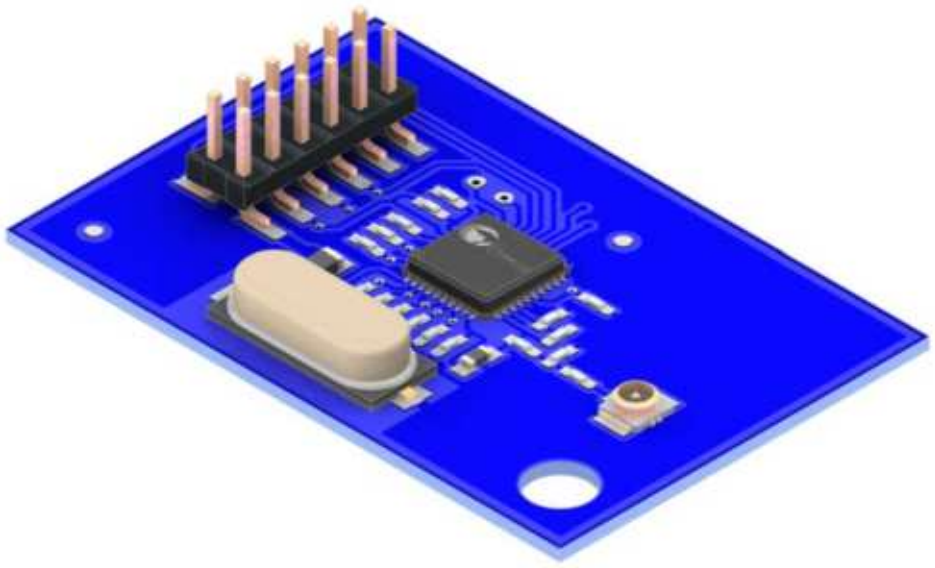
# AWS24S User Manual

## 2.4GHz DSSS SPI Radio for External Antenna



UMAWS24S Rev 2v0
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## Introduction

One of the bottlenecks that many product developers encounter in incorporating any radio communication device is facing the legal aspect of qualifying the products and going to market without encountering legal problems. The Telecommunication Certification Body (TCB) authorization process in the United States offers manufacturers more than one approval body. The TCB authorization process certifies devices in accordance with FCC rules and policies. The performance of the Artaflex AWS24S radio is measured according to the requirements of FCC rules. The major applicable FCC regulations are described in Section 15.247 (a) to (d).

This document gives an overview of the legal issues governing the manufacture and sale of the Artaflex AWS24S wireless module intended for unlicensed operation in the United States under FCC Part 15, Industry Canada RSS-210 and European Union ETSI EN 300 328-2 (Article 3.2 of R&TTE) and ETSI EN 301 489-1 & ETSI EN 301 489-7.

OEMs may need to obtain standard equipment regulatory agency certification and for end product deployment in countries where Modular Approval is not recognized.

The details of standard equipment regulatory compliance are beyond the scope of this document. OEMs needing standard equipment regulatory testing or who need council for determining regional requirement should contact approved certification and test service providers accordingly. Artaflex can provide assistance in obtaining regulatory compliance when required by the OEM.

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## 1.0 Eligibility Requirements for Regulatory Module Approval

The Artaflex 2.4GHz DSSS SPI Radio with Integrated Print Antenna module (AWS24S) is a device that transmits and receives radio signals in accordance with the spectrum regulations for the 2.4GHz unlicensed frequency range. Regional regulatory agency approval may be required to operate AWS24S throughout the world.

For purposes of ease of integration, time to market, and product surety, Artaflex submitted the AWS24S to relevant agencies and obtained regulatory approvals for specific countries. The AWS24S was approved under the "Modular Approval (MA) Grant". This certification represents a significant cost savings to the OEM.

The radio certification portion of this grant is transferable to Digital Electronic Device manufacturers given adherence to specific implementation criteria noted herein. Any modification of the AWS24S will void the manufacturer's warranty. Any alteration or deviation from the documented installation and/or use of the AWS24S will void the MA Grant as it applies to the end-product.

In the event the Digital Electronic Device manufacturer alters the herein described and approved installation of the AWS24S, the end-product may require a complete recertification testing by the Digital Electronic Device manufacturer. The MA Grant provides that Digital Electronic Device manufacturers, who incorporate the AWS24S as tested and approved, can be relieved from having to perform the Radio Regulatory certification portion of the respective agency certification.

While the OEM for a device into which an authorized module is installed is not required to obtain a new authorization for the module, this does not preclude the possibility that some other form of authorization or testing may be required for the device (e.g., a WLAN into which an authorized module is installed must still be authorized as a PC peripheral, subject to the appropriate equipment authorization).

The MA Grant is valid only in countries that recognize the MA Grant certification process. Countries currently accepting the MA Grant include; the USA, Canada, and many European countries as noted in Section 5.2 of this document. Terms and conditions of regulatory approval for these countries are also described herein. However, this "grandfathered" radio certification does not relieve the Digital Electronic Device manufacturers from submitting their device for digital emissions certifications. Electronic device manufacturers may disregard the requirements of this section provided they accept full responsibility for regulatory type-approval of the electronic device with an integrated Artaflex AWS24S wireless module.

## 2.0 User Guide Information

Electronic device manufacturers using Artaflex's Modular Approval are required to place the below text in their product user's guide in accompaniment with other regulatory information.
The text may be disbursed according to language or geographic regions if desired, but the exact text shown below must be maintained.

## 3.0 United States Regulatory FCC Modular Approval (MA)

The requirements for FCC Modular Approval were released in June 2000 in the FCC's Public Notice: FCC Public Notice DA 00-1407, Part 15 Unlicensed Modular Transmitter Approvals.

Design Criteria for Modular Approval

General Conditions:
The following conditions must be strictly adhered to for modular approval:

1. **No modification to the module including the circuitry is permitted**
2. **Design criteria to include antenna, interconnects, and local oscillator**
3. **Testing of the final device configuration for Digital Emissions Compliance**

The AWS24S may not be altered or modified in any way by the OEM or other integrator(s). Additionally, no component(s) may be added which change the radio frequency (RF) characteristics. These include unintentional or spurious emissions, immunity, ESD characteristics, or other items commonly associated with RF devices. This includes all components; passive and active (such as RF filters, RF amplifiers, RF switches, etc). Additionally, no RF components may be placed between the RF output of the AWS24S and the antenna.

## 3.1 Antenna Regulation

The antenna has been qualified and approved for use under the Modular Approval certification. The selected antenna is compatible with the RF impedance and frequency range of the AWS24S.

The selected antenna has been specifically tested with the AWS24S, and has been certified through the regulatory agencies in the US, Canada, and European Union for authorized use. Use of a different antenna that does not meet the same parameters as used in the certification of the AWS24S voids the MA grant for that AWS24S.

### 3.2 Emissions Compliance Testing

Notwithstanding the Modular Approval for the Radio Device with associated antenna, the end product configuration must meet digital emissions compliance and must be tested in accordance with FCC Part 15 requirements confirming radiated emissions are within specified limits.

Applicable FCC guidelines:

- Part 15 Section 15.109 Sub-paragraph A, Class B Radiated Emission Limits

These emissions tests can be conducted by the manufacturer or by contacting an approved test facility equipped and certified accordingly. The results of these emissions tests are not required to be submitted to the FCC or Artaflex, but should be kept on file by the OEM.

### 3.3 Working with Additional Transmitters

AWS24S should not be operated with any other transmitter in the end product without obtaining regulatory compliance from FCC.

### 3.4 Product Labeling Requirements

FCC product labeling requirements stipulate an FCC label, including specific text, be placed on the device containing the AWS24S module. The product label must include the following text and must be affixed to the exterior of the OEM's product. The text should be located beneath the FCC compliance logo.

**"This product contains Artaflex AWS24S Transmitter Module FCC ID: UP2AWS24S"**

In addition to the text above the Digital Electronic Devices manufacturers must also have the following statements printed in their user/operations manual and /or indicate this exact text on the outside of the OEM's end product.

**"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**

**Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

**Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment."**

### 4.0 Industry Canada Regulatory Approval

Industry Canada regulatory approval typically conforms to the FCC in terms of emission levels and other regulatory requirements. It is the position of the Industry Canada agency that the OEM is primarily responsible for ensuring end product compliance. Artaflex as grantee and supplier of the module maintains responsibility for the Modular Approved design. FCC end-product compliance certification results may be used to satisfy Industry Canada requirements. Please consult the Industry Canada, RSS 210 specifications to confirm interagency compliance. If comparable FCC testing has not been performed or if the specifications are not cross compliant, RSS 210 testing will be required.

### 4.1 Product Labeling Requirements

Industry Canada product labeling requirements stipulate specific text be placed on the device containing the AWS24S module. The product must include the following text and must be located on the exterior of the OEM's product. This same information must be included in the product user manual.

**"This product contains Artaflex AWS24S Transmitter Module**
**Canadian Cert No IC: 6779A-AWS24S"**

## 5.0 European Union Regulatory Approval

The European Union generally follows the guidelines of the FCC for emissions level requirements. FCC end-product compliance certification results, if available, may be used to satisfy EU requirements (Substitution Method). Please consult the ETSI EN 300 328 specifications to confirm inter-agency compliance. If comparable FCC testing has not been performed or if the specifications are not cross compliant, ETSI EN 300 328 testing will be required. Additionally, testing to the ETSI EN 301 489-1 & ETSI EN 301 489-7 (immunity testing) is strongly recommended. Artaflex assumes no responsibility for compliance of the end-product configuration.

### 5.1 Product Labeling Requirements

European Union product labeling requirements stipulate specific text is placed on the device containing the AWS24S module. The product must include the following text and must be located on the exterior of the OEM's product. The same information may be included in the product user manual, however is not mandatory. Packaging and user documentation must indicate the use restrictions of the end-product (i.e. countries disallowing the operating frequencies of the AWS24S). The end-product must be labeled "CE".

CE

## 5.2 European Countries recognizing Modular Approval

The following text must be copied exactly into the product's user's guide:

> **"This product contains a radio transmitter with WirelessUSB technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400 GHz to 2.4835 GHz frequency range."**

The following countries associated with regulatory agency that recognize the product as authorized for sale and use are:

| | | | |
|---|---|---|---|
| Canada | USA | Austria | Belgium |
| Denmark | Finland | France | Germany |
| Greece | Iceland | Ireland | Italy |
| Luxembourg | Norway | The Netherlands | Portugal |
| Spain | Sweden | Switzerland | United Kingdom |

This list will be updated to reflect additional grants obtained or needed in future revisions.

***Note***: As of the date of publication, Japan does not recognize the "Modular Approval" certification. Regulatory certification for Japan (TELEC) must be acquired through typical approval procedures. These approvals are the sole responsibility of the OEM. Artaflex Inc. may recommend, upon request, TELEC certified laboratories capable of facilitating the appropriate test procedures for the AWS24S.

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