



FCC Certification Guidelines for End Products Using the DM3730/AM3703 Torpedo + Wireless SOM

Application Note 538

Logic PD // Products
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1 Introduction

The DM3730/AM3703 Torpedo + Wireless SOM is a modular transmitter. Therefore, customers who wish to use the DM3730/AM3703 Torpedo + Wireless SOM and 802.11a/b/g/n and/or Bluetooth in their end product must follow region-specific regulations.

This application note provides guidelines for the specific United States of America Federal Communications Commission (FCC) and Industry Canada (IC) regulations that pertain to the DM3730/AM3703 Torpedo + Wireless SOM. End products may be subject to additional regulations, and it is the responsibility of the end-product manufacturer to determine and comply with those regulations.

2 Certification Overview

2.1 Unintentional vs. Intentional Radiation

The FCC and IC require end products to comply with both unintentional and intentional radiation regulations.

Unintentional radiation occurs from a product that inherently or unwillingly transmits RF signals.

Intentional radiation occurs from a product that is designed to radiate or transmit RF signals for the purpose of wireless communication. The DM3730/AM3703 Torpedo + Wireless SOM is an intentional radiation emitter.

2.2 Modular Transmitter Approval

A modular transmitter is an intentional radiator device, such as the DM3730/AM3703 Torpedo + Wireless SOM, that is designed to be installed in a host device. Obtaining modular transmitter approval allows the modular transmitter to be integrated into an end product without the need for additional intentional radiation testing of the final end-product assembly, as long as the modular transmitter is installed and operated in accordance with certain guidelines.

NOTE: Unintentional conducted and radiated emissions testing of the end product is still required to ensure compliance with the rules governing unintentional radiators. It is the responsibility of the end-product manufacturer to verify the end product meets these regulations. Additionally, the customer is responsible for any and all tests and/or certifications pertaining to their end product. This may include but is not limited to Specific Absorption Rate (SAR) compliance and potential recertification as an intentional radiation emitter if the SOM is installed or operated in a manner that differs from the instructions herein.

3 Product Approvals

3.1 United States – FCC

The DM3730/AM3703 Torpedo + Wireless SOM has been tested and found to comply with the limits for a Class B digital device, pursuant to 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.

Any changes or modifications not expressly approved by Logic PD could void the user's authority to use this device.

In addition, the DM3730/AM3703 Torpedo + Wireless SOM has been tested to comply with FCC CFR47, Part 15, Sub-Part C "Intentional Radiators" and meets the requirements for modular transmitter approval as detailed in FCC Public Notice DA 00-1407, released June 26, 2000.

3.2 Canada – IC

DM3730/AM3703 Torpedo + Wireless SOM has been certified for use in Canada under the IC Radio Standards Specification (RSS) RSS-210, RSS-102, and RSS-Gen. The IC has granted the DM3730/AM3703 Torpedo + Wireless SOM modular approval for Category I equipment.

4 Compliance Guidelines

4.1 Overview

Modular approval permits the DM3730/AM3703 Torpedo + Wireless SOM to be integrated into an end product without the need to recertify the end product as long as the following guidelines are followed by the module integrator.

4.2 Integration Requirements

4.2.1 Antenna Systems

The DM3730/AM3703 Torpedo + Wireless SOM has been approved using the antenna and coaxial cable specified below. Use of this antenna and cable will satisfy FCC/IC modular transmitter requirements. Substituting a different antenna of the same type with a peak gain of 2.5 dBi or less at 2.4 GHz, or 3.5 dBi or less at 5 GHz is also permitted.

- Antenna:
 - Manufacturer: Ethertronics Inc.
 - Model number: 1000418
 - Description: Prestta Embedded Antenna
 - Gain: 2.5 dBi peak gain at 2.4 GHz and 3.5 dBi peak gain at 5 GHz
- Coaxial Cable:
 - Manufacturer: Sunridge Corporation
 - Model number: MCD-R1-60-105-MCBG
 - Description: Coax, MCD/W.FL to MCB/U.FL, 105 mm, R1 orientation
 - Cable Loss: .47 dB at 2.39-2.49 GHz and .78 dB at 4.9-5.9 GHz

4.2.2 Substitute Antennas/Cables

If an antenna with a higher gain, of a different type, or with a shorter MCD/W.FL to MCB/U.FL coaxial cable is used, the end product must be put through intentional radiation testing at a qualified test lab.

Please refer to FCC rules 47 CFR § 15.204 and IC rules RSS-Gen, Issue 3, Section 7.1.2 for more information.

If a different antenna is desired, please [contact Logic PD¹](#) for assistance with certification.

4.2.3 SAR Testing Requirements for End-Product

This device is to be used in mobile configurations. To comply with FCC/IC RF exposure limits for general population/uncontrolled exposure, the antenna(s) used for 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.

As long as the two conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing the end product for any additional compliance requirements that are necessary when this module is installed (e.g., digital device emissions, PC peripheral requirements).

IMPORTANT NOTE: In the event that these conditions cannot be met (for certain configurations or because of co-location with another transmitter), the FCC and IC authorizations are no longer considered valid and the FCC ID and IC certification number cannot be used on the final product.

¹ <http://support.logicpd.com/support/askaquestion.php>

In these circumstances, the OEM integrator will be responsible for re-evaluating the end product, including the transmitter, and obtaining a separate FCC and IC authorization.

4.2.4 Software Requirements

The DM3730/AM3703 Torpedo + Wireless SOM has been tested using approved Logic PD board support packages (BSP). Modular approval applies as long as approved Logic PD BSPs are used to create the end product.

If other software is desired, please [contact Logic PD](#) for assistance with certification.

4.3 Labeling Requirements for End-Product

4.3.1 FCC

The DM3730/AM3703 Torpedo + Wireless SOM has been certified by the FCC as a modular transmitter. As such, it has been assigned an FCC ID that is printed on a label permanently affixed to the SOM.

If the FCC ID label is not visible when the DM3730/AM3703 Torpedo + Wireless SOM is installed in the end product, this FCC ID must be located on the exterior surface of the end product where users can easily access it. The end product's exterior label or etching should use wording similar to one of the examples below.

- **Contains FCC ID: YKP1021149**
- **Contains Transmitter Module FCC ID: YKP1021149**

Please refer to FCC rules 47 CFR § 15.212(vi)(A) for additional information.

4.3.2 IC

The IC certification number is printed on a label permanently affixed to the DM3730/AM3703 Torpedo + Wireless SOM. The label shall be clearly visible at all times when the DM3730/AM3703 Torpedo + Wireless SOM is installed in the end product. If this is not possible, the end product must be labeled to display the IC certification number of the module, preceded by the words "Contains transmitter module" or "Contains" or similar wording expressing the same meaning. Examples are provided below.

- **Contains IC: 10029A-1021149**
- **Contains transmitter module IC: 10029A-1021149**

4.4 End-Product User Manual Statements

The following section outlines statements that are required to appear in the end product's user manual in order to maintain modular transmitter approval.

4.4.1 FCC User Manual Guidelines

For products marketed and used in the United States, the end-product user manual must include the following caution statement in a prominent location:

To satisfy FCC RF exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

4.4.2 IC User Manual Guidelines

For products marketed and used in Canada, the end-product user manual must include the statement below in a prominent location. The statement must be provided in both English and French.

Notice: To satisfy IC RF exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Avis: Pour répondre à la IC d'exposition pour les besoins de base et mobiles dispositifs de transmission de la station, sur une distance de séparation de 20 cm ou plus doit être maintenue entre l'antenne de cet appareil et les personnes en cours de fonctionnement. Pour assurer le respect, l'exploitation de plus près à cette distance n'est pas recommandée. L'antenne (s) utilisé pour cet émetteur ne doit pas être co-localisés ou fonctionner conjointement avec une autre antenne ou transmetteur.

5 Disclaimer

The FM transmitter and receiver functions are not currently supported and the DM3730/AM3703 Torpedo + Wireless SOM is not certified for their application.