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DM3730/AM3703 Torpedo + Wireless SOM EU Emissions Shield Cover

Application Note 616

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Revision History

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	JMC	-Initial Release	JMC, AF, BSB	2/17/16

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1 Introduction

This application note describes the application and installation of a mechanical electromagnetic emissions shield cover for the -32 model Torpedo + Wireless SOM. This shield cover is necessary in order for the SOM to comply with the European Union (EU) standards for spurious emissions.

2 Scope

This document, and the shield cover described herein, only apply to the -32 model of the DM3703/AM3703 Torpedo + Wireless (T+W) SOM. Further, this shield cover is only necessary when using the -32 model T+W SOM in regions covered by EU standard EN 301 893 v1.8.1:2015. This shield cover is not required for products deployed with the -32 model T+W SOM in the USA or Canada.

3 How to Identify Your SOM

You can determine which SOM you have by referencing the model number on the label of the SOM. Figure 1 shows the beginning of the model number in the 4th line of the label. The SOM seen in this example is a -30 T+W SOM. A -32 T+W SOM will include "-32" as the final characters on this 4th line. Additional information on the model number can be found in the [Logic PD Model Number Explanation & Decoder White Paper 293](#)¹.

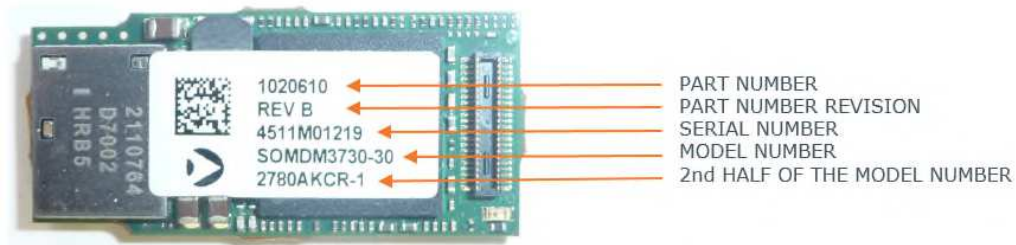


Figure 1: DM37x Torpedo + Wireless SOM Label

4 EU Spurious Emissions Results

During EU standards testing of the -32 model T+W SOM, it was found that the SOM did not comply with the receiver spurious emissions limit specified in section 4.6 of standard EN 301 893 v1.8.1:2015. This testing was performed on WiFi channel 48 where a spectral peak at approximately 13.1GHz was measured above the allowable spectral limit.

Further testing verified that the out of spec spurious emission was emanating from the case of the radio module on the SOM. The spurious emission was not found on the antenna ports of the SOM.

The shield cover described in section 5 was designed as a custom cover to be fitted over the radio module on the SOM to suppress the offending spurious emission.

¹ <https://support.logicpd.com/downloads/601/>

5 Shield Cover Description and Ordering Information

The shield cover is a single piece metal cap that snaps in place over the metal case of the radio module that resides on the T+W SOM assembly. An outline drawing of this shield cover is shown below in Figure 2.

The shield cover is an accessory part that can be ordered from Logic PD's authorized distributors (Digi-Key). The part number assigned to this shield cover is **LPD-SOM-EU-SHIELD**.

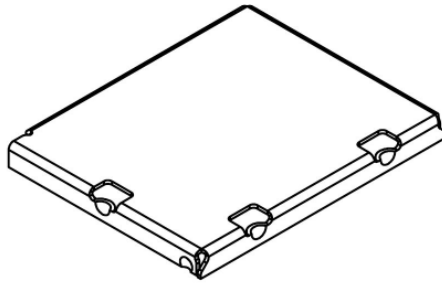


Figure 2: Shield Cover Outline Drawing

6 Shield Cover Installation

The shield cover is installed by snapping it in place over the radio module on the T+W SOM assembly as shown in Figure 3. The correct orientation of the shield cover is important to ensure proper shielding of the emissions coming from the radio module. As shown in Figure 3, the side of the shield cover that contains the two latching dimples needs to be positioned on the outside edge of the SOM assembly.

To install the shield cover, position it squarely over the metal case of the radio module and press down evenly on the shield. When the shield is fully seated you'll hear the three latching dimples snap into place as the cover attaches to the radio module metal case.

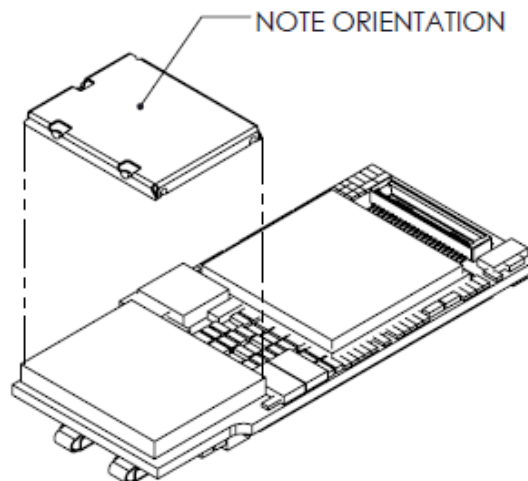


Figure 3: Shield Cover Installation and Orientation

7 Summary

Information in this application note has been provided to assist customers using the -32 model Torpedo + Wireless SOM in regions covered by the European Union electromagnetic emissions standards.

For customers needing additional information about this EU emissions shield cover application, please submit a post to the [Logic PD Technical Discussion Group](#)² forum.

² <https://support.logicpd.com/TDGForum.aspx>