

DFAR Case #: 2004-D011  
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 Subject: Visual Identification of a RFID enabled MSL

None of the documentation to-date has addressed how to visually identify a RFID enabled MSL. We offer the suggestion that the Association for Automatic identification and Mobility (AIM) RFID Marks, specifically the DoD Constructs, be used on the MSL's that are RFID enabled. This would allow everyone who sees an MSL to visually identify those that are RFID enabled MSL. This is especially true of the receiving entities. As not all locations or commodities will require RFID enabled MSL's this year or next; this would help everyone to know which MSL's are RFID enabled. We feel that the following benefits would be gained by all:

- 1). If a case or pallet has a RFID enabled MSL and it can not be read by the QAR or receiving dock door reader, it can be identified as "defective". When the TCN is scanned and the WAWF record is retrieved it should state that the MSL was submitted as "RFID enabled". Knowing that it did not read will help identify defects in tags and/or handling of cases & pallets that had operational RFID MSL's when shipped by the DoD Supplier. The AIM symbol also denotes if the tag is DoD or EPC Constructed.
- 2) If anyone walks up to a RFID enabled MSL they would not know that it was RFID enabled from looking at the human readable information on the MSL. The use of the AIM standard DoD symbols is not only good practice; but also using the DoD/AIM jointly developed RFID Marks is constructive.

imobile systems offers the following two samples as possible use of the current MIL-STD129P (3) format:

**Sample RFID enabled MSL #1**

TCN <b>YPC05031000485XXX</b>				
From <b>3Q6A2</b> imobile systems <a href="http://www.imobilesystems.com">www.imobilesystems.com</a> PO Box 2015 Port Townsend, WA 98368			TAC/Type Service/Postage <b>SZZZ</b> <b>Frt LTL</b>	
Piece <b>99</b>	Of <b>100</b>	Weight (lbs.) <b>7760</b>	Date Shipped <b>4321</b>	RDD <b>000</b>
		Cube (ft.) <b>385</b>	Project <b>9BU</b>	Priority <b>1</b>
Ship To/POE W25G1U XU TRANSPORTATION OFFICER <b>W25G1U</b> DDSP NEW CUMBERLAND FACILITY BUILDING MISSION DOOR 113-134 NEW CUMBERLAND, PA 17070-5001				
POD MSL, Supply, & TCMD Data 				
FMS Case <b>CKM</b>				
Ultimate Consignee/Mark For Consignee <b>W25G1U</b> W25G1U XU TRANSPORTATION OFFICER DDSP NEW CUMBERLAND FACILITY BUILDING MISSION DOOR 113-134 NEW CUMBERLAND, PA 17070-5001				

**Sample RFID enabled MSL #2**

TCN <b>YPC05031000485XXX</b>				
From <b>3Q6A2</b> imobile systems <a href="http://www.imobilesystems.com">www.imobilesystems.com</a> PO Box 2015 Port Townsend, WA 98368			TAC/Type Service/Postage <b>SZZZ</b> <b>Frt LTL</b>	
Piece <b>99</b>	Of <b>100</b>	Weight (lbs.) <b>7760</b>	Date Shipped <b>4321</b>	RDD <b>000</b>
		Cube (ft.) <b>385</b>	Project <b>9BU</b>	Priority <b>1</b>
Ship To/POE W25G1U XU TRANSPORTATION OFFICER <b>W25G1U</b> DDSP NEW CUMBERLAND FACILITY BUILDING MISSION DOOR 113-134 NEW CUMBERLAND, PA 17070-5001				
POD MSL, Supply, & TCMD Data 				
FMS Case <b>CKM</b>				
CC73476072004E5F 				
Ultimate Consignee/Mark For Consignee <b>W25G1U</b> W25G1U XU TRANSPORTATION OFFICER DDSP NEW CUMBERLAND FACILITY BUILDING MISSION DOOR 113-134 NEW CUMBERLAND, PA 17070-5001				

The basic difference between the two proposed MSL formats is the presence or absence of the RFID tag data.

- a) Sample #1 uses the AIM symbol (M1) for a 96 bit Class 1 DoD formatted RFID tag.
- b) Sample #2 uses the AIM symbol and displays the RFID tag data that was submitted to WAWF. It displays the data in both human readable and 1D barcode.

Using the format of Sample #2 provides the additional safety of having a “back-up” of the RFID tag data for input in case of RFID tag failure. We feel this is especially true during the start-up period of this initiative; RFID being the “belt” and barcode being the “suspenders”.

The following is detail information from the AIM Web Site concerning the AIM RFID Marks:

“The AIM RFID Mark™!

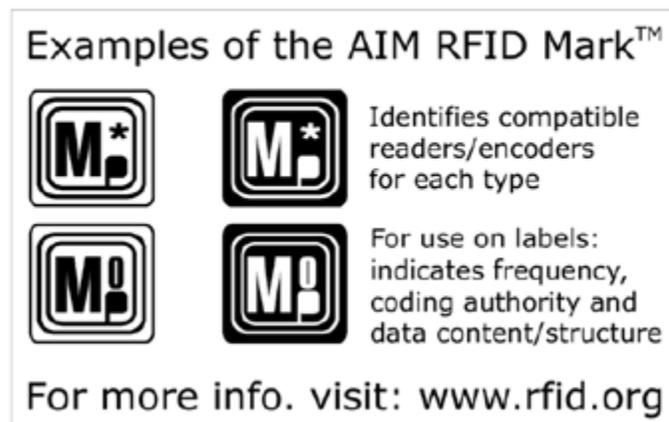
In order to provide workers with a simple, visual guide to identify RFID-enabled labels and tags, the AIM North America Standards Action Group (NASAG) developed the AIM RFID Mark™ to be placed on a label or tag.

The AIM RFID Mark consists of a unique, public domain logo with a two-character code to indicate the frequency range and in certain cases, the data structure contained within the encoded RFID transponder. These are defined in the AIM RFID Mark Index that is part of the standard.

The two forms of the AIM RFID Mark are dark-on-light and light-on-dark; the form which most visually striking on the printed RFID-enabled label material or tag should be used. The AIM RFID Mark may also be engraved or embossed in the covering of an RFID tag or item containing an RFID transponder.

The AIM RFID Mark remains the Intellectual Property of AIM, Inc. but may be freely used by any organization, company or individual as long as it is applied in conformance with the requirements set forth in the most current version of the AIM RFID Mark standard. Please see the AIM RFID Mark standard for additional information, conditions and caveats.”

*Figure 1: Examples of the AIM RFID Mark*



The “M” marks seen above are reserved for DoD applications. The table on the next page defines the usage of each mark. The DoD marks follow the table.

Table 1. Two Character code assignments for the AIM RFID Mark.

2-Character Printed Code	Transponder Frequency†	Data Structure Defining Agency	Bit Length	Data Structure
A*	433 MHz	ISO JWG	N/A	Indicates compatible readers/encoders
A0	433 MHz	ISO 17363	<400	License plate identification only
A1	433 MHz	ISO 17363	<1kbit	Extensible: License plate ID plus supply chain data
A2	433 MHz	ISO 17364	<400	License plate identification only
A3	433 MHz	ISO 17364	<1kbit	Extensible: License plate ID plus supply chain data
B*	860-960 MHz	ISO JWG	N/A	Indicates compatible readers/encoders
B0	860-960 MHz	ISO 17364	<400	License plate identification only
B1	860-960 MHz	ISO 17364	<1kbit	Extensible: License plate ID plus supply chain data
B2	860-960 MHz	ISO 17365	<400	License plate identification only
B3	860-960 MHz	ISO 17365	<1kbit	Extensible: License plate ID plus supply chain data
B4	860-960 MHz	ISO 17366	<400	License plate identification only
B5	860-960 MHz	ISO 17366	<1kbit	Extensible: License plate ID plus supply chain data
B6	860-960 MHz	ISO 17367	<400	License plate identification only
B7	860-960 MHz	ISO 17367	<1kbit	Extensible: License plate ID plus supply chain data
E*	860-960 MHz	EPCglobal ††	N/A	Indicates compatible readers/encoders
E0	860-960 MHz	EPCglobal ††	96	GID-96 General Identifier
E1	860-960 MHz	EPCglobal ††	96	SGTIN-96 Serialized GTIN
E2	860-960 MHz	EPCglobal ††	96	SSCC-96 Serial Shipping Container Code
E3	860-960 MHz	EPCglobal ††	96	SGLN-96 Serialized Global Location Number
E4	860-960 MHz	EPCglobal ††	96	GRAI-96 Global Returnable Asset Identifier
E5	860-960 MHz	EPCglobal ††	96	GIAI-96 Global Individual Asset Identifier
M*	860-960 MHz	US DoD	N/A	Indicates compatible readers/encoders
M0	860-960 MHz	US DoD	64	UID-64 64-bit form of Unit Identification
M1	860-960 MHz	US DoD	96	UID-96 96-bit form of Unit Identification
M2	860-960 MHz	US DoD	256	UID-256 256-bit form of Unit Identification

† Meeting local UHF regulatory regulations.

†† See EPC™ Tag Data Standards Version 1.1 Rev 1.2, Annex D, Section D.4.4

		Readers & Encoders
		UID-64
		UID-96
		UID-256

Images are available in both 36KB .bmp and 248KB .jpg formats.