

UNSIGNED HARDCOPY
NOT CONTROLLED



Instruction
Hardware Engineering

No. LMS 1-1 Appendix A Rev A

Subject Identification Marking - Unique Identification (UID)


APPROVED BY Manager, Hardware Engineering

STATUS Maintenance Revision

PURPOSE Specify requirements to add a two-dimensional Data Matrix symbol for machine-readable information (MRI) as specified on the Purchase Requisition, Work Order or Contract to the item being identified. This marking requirement is in addition to any human-readable information (HRI) marking requirements which may be specified on the Engineering Drawing or other Engineering documents.

AFFECTED FUNCTIONS Hardware Engineering
Production
Quality Assurance


REFERENCES **LMS 1-1** Identification Marking
MIL-STD-130 Identification Marking of US Military Property
ISO/IEC 15434 Information Technology – Syntax for High Capacity ADC Media
ISO/IEC 15415 Information Technology – automatic identification and data capture techniques

DEFINITIONS Data Matrix- A two-dimensional matrix symbol containing dark and light square data modules made up of individual cells (e.g. ).
Cell- contrasting area within data matrix symbol
Text Element Identifier (TEI)- format code for data qualifiers
Data Qualifiers- 3 alphas + 1 blank code preceding item information (e.g. CAG 1PQF4, PNO A001224-001, SER 1234)
Unique Identification (UID)- A system of establishing unique identifiers within the Department of Defense by assigning a machine-readable character string or number to a discrete entity, which serves to distinguish it from other like and unlike entities.

Unique Item Identifier (UII)- The data set contained within the data matrix symbol. The elements within the data set give the item being marked a unique and unambiguous identification.

INSTRUCTION

1. Requirements

- 1.1 General. The Data Matrix symbol will be added to the item by use of a label (preferred) or by applying the symbol directly to the surface of the item. When data plates are used to identify items, and these items require UID, the data matrix symbol shall be made with and included as an integral part of the data plate. Material for labels and data plates will be such that the data matrix symbol shall remain within the constraints for durability and readability for the life cycle of the item as specified in MIL-STD-130 and ISO/IEC 16022. When a method of applying the data matrix to the surface of the item is used, it shall be done in such a manner to not adversely affect the item's integrity.
- 1.2 The Data Matrix symbol shall be placed within close proximity to existing part identification marking existing on the item and shall be scaled to approximate the size of the existing marking (e.g.,  1PQF4ASSYA123456-001
SER-NO 1234)
- 1.3 Minimum cell size shall be within a range of 0.0075 inch to 0.015 inch. For acceptance the symbol shall have a minimum print quality of grade 3.0/05/660, where the minimum grade is B (3.0), measured with an aperture size of 0.005 inch with a light source wavelength of 660 nm ± 10 nm. The methodology for measuring the print quality shall be specified in ISO/IEC 15415.
- 1.4 The UII Construct #2 method with TEI (format DD) data qualifiers shall be used to generate the concatenated elements within the data matrix symbol. The data elements shall follow the ISO/IEC 15434 standard for message syntax. Other Construct methods and data qualifiers may be used by the direction of the Program Office for which the item is being acquired.
- 1.5 The UII data set contained within the data matrix shall be the same as that contained within the part marking as set forth in LMS 1-1 and specified on the engineering drawing or document with addition of any serialization that is required. The Data Matrix symbol will contain additional data elements that are not part of the UII construct.

**UNSIGNED HARDCOPY
NOT CONTROLLED**



Instruction
Hardware Engineering

No. LMS 1-1 Appendix A Rev A

Examples:

Part is marked 1PQF4-D123456-001 SER-NO 1234 (see para 2.1a of LMS 1-1), data set will be CAG 1PQF4 PNO D123456-001 SEQ 1234, syntax will be []><<RS>>DD<<GS>>CAG 1PQF4<<GS>>PNO D123456-001<<GS>>SEQ 1234<<RS>><<EOT>>

Part is marked 69806-CE000152-18 MFR 1PQF4 SER-NO 1234 (see para 2.1b of LMS 1-1), data set will be MFR 1PQF4 PNO 69806-CE000152-18 SEQ 1234, syntax will be []><<RS>>DD<<GS>>MFR 1PQF4<<GS>>PNO 69806-CE000152-18<<GS>>SEQ 1234<<RS>><<EOT>>

Part is marked 1PQF4-D000512-001 MFR 12345 SER-NO 1234 (see para 2.1c of LMS 1-1), data set will be MFR 1234 PNO 1PQF4-D000512-001 SER-NO 12345, syntax will be []><<RS>>DD<<GS>>MFR 1234<<GS>>PNO 1PQF4-D000512-001<<GS>> SEQ 1234<<RS>><<EOT>>

Part is marked 29778-D000512-001 MFR 12345 CDA 1PQF4 SER-NO 1234 (see para 2.1d of LMS 1-1), data set will be MFR 1234 PNO 29778-D000512-001 CDA 1PQF4, syntax will be []><<RS>>DD<<GS>>MFR 1234<<GS>>PNO 29778-D000512-001<<GS>>>>SEQ 1234<<GS>>CDA 1PQF4<<RS>><<EOT>>

Part is marked 1PQF4ASSYA123456-001 SER-NO 1234 (see para 2.2a of LMS 1-1), data set will be CAG 1PQF4 PNO ASSYA123456-001 SEQ 1234, syntax will be []><<RS>>DD<<GS>>CAG 1PQF4<<GS>>PNO ASSYA123456-001<<GS>>SEQ 1234<<RS>><<EOT>>

Part is marked 1PQF4ASSYA123456-001 MFR 12345 SER-NO 1234 (see para 2.2b of LMS 1-1), data set will be MFR 12345 PNO 1PQF4ASSYA123456-001 SEQ 1234, syntax will be []><<RS>>DD<<GS>>MFR 12345<<GS>>PNO 1PQF4ASSYA123456-001<<GS>> SEQ 1234<<RS>><<EOT>>

Part is marked 29778ASSYA000512-001 MFR 12345 CDA 1PQF4 SER-NO 1234 (see para 2.2c of LMS 1-1), data set will be MFR 12345 PNO 1PQF4ASSYA000512-001 SEQ 1234 CDA 1PQF4, syntax will be []><<RS>>DD<<GS>>MFR12345<<GS>>PNO 29778ASSYA000512-001<<GS>> SEQ 1234<<GS>>CDA 1PQF4<<RS>><<EOT>>