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MULTIPLE	PATRIOT	-	ORIGINATED RELEASED PER IR349030	14-11-19	MRB
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INTERPRET DRAWING IN ACCORDANCE WITH ASME Y14.100-2013 AND ASME Y14.5M-1994

PART NUMBER: SEE TABLE II

REV STATUS OF SHEETS	REVISION SHEET NO.																			
REV STATUS OF SHEETS	REVISION SHEET NO.	A	A	A	A	A	A	A	A											
		1	2	3	4	5	6	7	8											

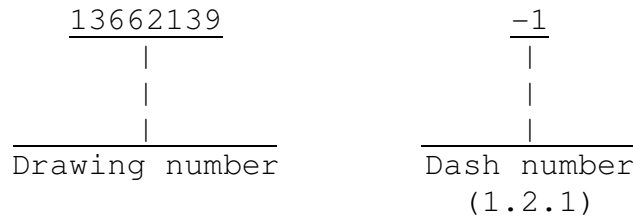
VENDOR ITEM CONTROL DRAWING

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN X INCHES <u> </u> MILLIMETERS TOL: ANGLES ± WHOLE NUMBERS ± 1 PLACE DECIMALS ± 2 PLACE DECIMALS ± 3 PLACE DECIMALS ±	Raytheon Raytheon Company Waltham, MA 02451		U.S. ARMY AVIATION AND MISSILE COMMAND REDSTONE ARSENAL, HUNTSVILLE, AL 35898-7462																
	CONTR. NO. W31P4Q-14-C-0052		DRAWING TITLE CABLE, SPECIAL PURPOSE, ELECTRICAL																
	DWN S. MALDONADO 20141119 SEE PRODUCT DATA MANAGEMENT (PDM) FOR APPROVAL SIGNATURES																		
MATERIAL	APPROVED BY MFG		SIZE	CAGE CODE	DRAWING NUMBER														
	APPROVED BY ORDER OF CG USAAMCOM R. TEAGUE		A	18876	13662139														
		SCALE		WEIGHT		SHEET													
						1 OF 8													

1. SCOPE

1.1 Scope. This drawing describes the requirements for a cable, special purpose, electrical, No. 24 AWG twisted pairs, controlled impedance, 100 ohms nominal.

1.2 Part number. The complete Army part number shall be as shown in the following example:



1.2.1 Outline drawing(s). The outline drawing(s) shall be as follows:

<u>Dash number</u>	<u>Outline drawing</u>
-1, -2	Figure 1

2. APPLICABLE DOCUMENTS

2.1 Referenced documents. The following documents of the issue in effect on the date of the purchase order form a part of this drawing to the extent specified herein. In the event of any conflict between this drawing and any of the reference documents, this drawing shall govern.

2.1.1 Government documents.

STANDARDS

MIL-STD-130	Identification Marking of U.S. Military Property
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts
MIL-STD-810	Environmental Engineering Considerations and Laboratory Tests

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U.S. ARMY AVIATION AND MISSILE COMMAND REDSTONE ARSENAL, HUNTSVILLE, AL 35898-7462	SIZE A	CAGE CODE 18876	DRAWING NO. 13662139	REV A
			SHEET 2	

2.1.1 Government documents (cont.).

SPECIFICATIONS

MIL-DTL-12000 Cable, Cord, and Wire, Electric, Packaging

HANDBOOKS

MIL-HDBK-454 General Guidelines for Electronic Equipment

2.1.2 Non-government documents.

AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)/AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQ Z1.4 Sampling Procedures and Tables for Inspection by Attributes

ANSI/ASQ Z1.9 Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming

ASTM INTERNATIONAL

ASTM B298 Standard Specification for Silver-Coated Soft or Annealed Copper Wire

ASTM B624 Standard Specification for High-Strength, High-Conductivity Copper-Alloy Wire for Electronic Application

ASTM D2116 Standard Specification for FEP-Fluorocarbon Molding and Extrusion Materials

ASTM D3307 Standard Specification for Perfluoroalkoxy (PFA)-Fluorocarbon Resin Molding and Extrusion Materials

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3. REQUIREMENTS

3.1 Item requirement(s). The individual item requirement(s) shall be as specified herein.

3.2 Design, construction, physical dimensions and tolerances. The design, construction, physical dimensions and tolerances shall be as specified herein.

3.2.1 Workmanship. Cable assemblies shall be manufactured and processed in such a manner as to be uniform in quality and shall be free from any burrs, die marks, foreign material and other defects that will affect life, serviceability or appearance. The workmanship should be in accordance with MIL-HDBK-454, Guideline 9.

3.2.2 Outline drawing. The outline drawing shall be in accordance with paragraph 1.2.1 herein.

3.2.3 Environmental requirements. The environmental requirements are as specified herein. Parts shall be capable of meeting the requirements of this drawing when subjected to any single or naturally occurring combination of environmental conditions.

3.2.3.1 Temperature. The operating and non-operating temperature shall be -65°C to $+200^{\circ}\text{C}$.

3.2.3.2 Fungus. The materials used in construction of this item shall be inert to, or protected from fungus growth. Materials that are non-nutrient to fungus growth are those that achieve a Fungal Growth Rating of 0 or 1 when tested in accordance with MIL-STD-810, Method 508. MIL-HDBK-454, Guideline 4 should be used for guidance regarding the inherent inertness of materials to fungus.

3.2.3.3 Vibration. The part shall withstand vibration in accordance with MIL-STD-202, Test Method 204, Test Condition A.

3.2.3.4 Shock. The part shall withstand shock in accordance with MIL-STD-202, Test Method 213, Test Condition A.

3.2.3.5 Salt Atmosphere (corrosion). The part shall show no signs of corrosion or deleterious effects after being subjected to salt spray in accordance with MIL-STD-202, Method 101, Test Condition B.

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3.2.4 Material(s) and finish(es).

3.2.4.1 Wire(s). The wire(s) shall be No. 24 AWG, stranded 19/36, copper alloy 135 in accordance with ASTM B624, strands shall be silver coated and shall meet the requirements of ASTM B298 (40 microinches minimum silver coating).

3.2.4.2 Insulation. Insulation shall be fluorinated ethylene propylene (FEP) in accordance with ASTM D2116, Type I, or perfluoroalkoxy (PFA) in accordance with ASTM D3307, Type I.

3.2.4.3 Color code. The twisted pairs shall be color coded in accordance with Table I.

Table I. Color code.

Raytheon part number	Color combination
13662139-1	White and brown (tan)
13662139-2	White and blue

3.2.5 Weight. The weight shall be 4.34 pounds nominal per 1000 feet.

3.2.6 Twisted pair. Two conductors shall be twisted together with a 0.50 to 1.00 inch left hand lay.

3.2.7 Bend radius. The bend radius shall be 0.75 inch minimum.

3.3 Electrical performance characteristics. The electrical performance characteristics are as specified in subpara(s) 3.3 herein. The characteristics shall apply over the full operating temperature range unless otherwise specified.

3.3.1 Characteristic impedance. The characteristic impedance between conductors shall be 100 ±10 ohms at 100 MHz.

3.3.2 Capacitance. The capacitance between conductors shall be 15 pF/ft nominal.

3.3.3 Velocity of propagation. The velocity of propagation shall be 69% nominal.

3.3.4 Operating voltage. The operating voltage shall be 300 Vrms.

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3.4 Marking. Marking shall be in accordance with MIL-STD-130 and shall include the manufacturer's name, symbol or CAGE code, part number and lot code, date code or serial number. Additional marking shall be at the manufacturer's option

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. The supplier is responsible for the compliance of all requirements specified herein. The supplier may use his own or any other facilities suitable for the inspection, examination and test requirements necessary to insure compliant product, unless disapproved by the procuring activity. The procuring activity reserves the right to perform any inspections, examinations, and tests deemed necessary to assure products conform to prescribed requirements.

4.2 Responsibility for compliance. The supplier is responsible for ensuring that all products submitted to the procuring activity for acceptance comply with all requirements of this drawing. Sampling inspections in accordance with ANSI/ASQ Z1.4 or Z1.9, as part of manufacturing operations, are acceptable methods to ascertain conformance to requirements. However, this does not authorize submission of defective material, nor does it commit the procuring activity to accept defective material.

4.3 Quality conformance inspection. The following attributes shall be inspected for lot acceptance.

4.3.1 Material inspection. Shall be required.

4.3.2 Finish inspection. Shall be required.

4.3.3 Electrical inspection. Shall be required.

4.4 Manufacturer's changes. Subsequent to the manufacturer's assignment of a part number to a cable assembly which meets and has passed the qualification inspection defined herein, all cable assemblies supplied against the part number shall be identical with respect to design, materials, finishes, construction and manufacturing processes unless any prior written agreement of the change has been obtained from the procuring activity. Failure of a manufacturer to comply with this requirement shall be sufficient cause for withdrawal of qualification approval of the manufacturer

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for the cable assembly and for rejection of all cable assemblies affected by such changes.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be sufficient to afford adequate protection against corrosion, deterioration and physical damage during shipment from the manufacturer to point of delivery and may conform to the manufacturer's commercial practice when such meets these requirements. The packaging requirements shall be in accordance with MIL-DTL-12000 and herein.

6. NOTES

6.1 Suggested source(s) of supply. Identification of the suggested source(s) of supply herein is not to be construed as a guarantee of present or continued availability as a source of supply for the item(s).

Table II. Part numbers.

Army part number	Supplier's CAGE code	Supplier's part number
13662139-1	61123	ASDN10076-C
13662139-2	61123	ASDN10076-A

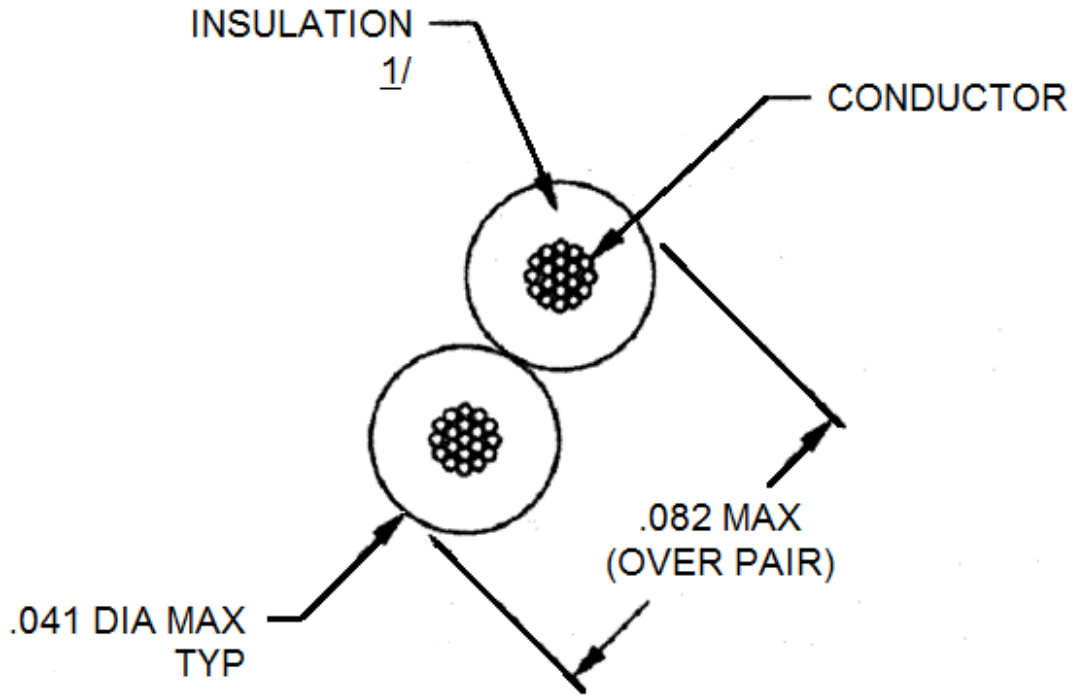
Supplier's CAGE code

Supplier's name and address

61123

RSCC Aerospace & Defense
Manchester, NH 03103

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NOTES:

1/ .008 NOMINAL WALL THICKNESS

FIGURE 1. OUTLINE DRAWING
SCALE = NONE

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