

REV D
SHT 1
7325760
NAVSEA DRAWING NO.
ESWBS 499

APPLICATION

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REVISIONS

| REV | DESCRIPTION | DATE | APPROVED |
|-----|---|---------|----------|
| A | SHEET 1: SIGNATURE BLOCK | 7-7-98 | K. HIGA |
| B | SHEET 1: DISTRIBUTION STATEMENT | 7-24-98 | K. HIGA |
| C | ALL SHEETS : REVISED PER REV L OF CHANGE NOTICE 1 | 4-1-99 | K. HIGA |
| D | ALL SHEETS : REVISED PER REV A OF CHANGE NOTICE 2 | 7-31-99 | K. HIGA |
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NOTES:

- IDENTIFICATION OF THE SUGGESTED ITEMS HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY.
- SUBSTITUTION OF ITEMS IS NOT ALLOWED WITHOUT APPROVAL OF THE DESIGN ACTIVITY, NSWCCD-SSES CODE 9631
- INDIVIDUAL ITEMS SHALL BE PROCURED USING THE VENDOR PART NUMBER.
- COMPLETE KITS SHALL BE PROCURED USING THE BASE DRAWING NUMBER ONLY.
- QUANTITIES SHOWN ARE FOR THE INDIVIDUAL ITEMS AND MAY NOT CORRESPOND TO THE QUANTITY SUPPLIED FOR THE VENDOR PART NUMBER LISTED.

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| REV STATUS OF SHEETS | REV | D | D | D | D | D | D | | | | | | | | | | | | | |
| | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

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|---|------------------|------------------------|--|--|--|---------------|--------------|------------------------|----------|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: | | CAGE CODE CONTRACT NO. | | DEPARTMENT OF THE NAVY NAVAL SEA SYSTEMS COMMAND WASHINGTON, D.C. 20362-5101 | | | | | |
| FRACTIONS n | DECIMALS .XXn | APPROVED | G.Brown | 6-30-98 | PIERSIDE CONNECTIVITY, PIGTAIL ASSEMBLY, FIBER OPTIC JAM NUT MOUNTED RECEPTACLE (HERMAPHRODITIC) TO ST CONNECTOR | | | | |
| ANGLES P | .XXXn | APPROVED | CDR M. ZIEGLER | 7-7-98 | | | | | |
| DO NOT SCALE DRAWING | | APPROVED | D. INMAN | 7-7-98 | | | | | |
| | | ENGINEER | E.Bluebond | 6-30-98 | | | | | |
| MATERIAL: | | ACCEPTED FOR NAVSEA | H. LEWIS | 7-7-98 | SIZE A | CAGE 53711 | ESWBS 499 | DRAWING NO. 7325760 | REV D |
| FINISHES: | | APPROVED BY NAVSEA | (SIGN ONLY IF ENGINEERING HAS BEEN PROVED BY MANUFACTURE AND TEST) | | SCALE: NONE | UCI | WT GRP | SHEET 1 OF 6 | |

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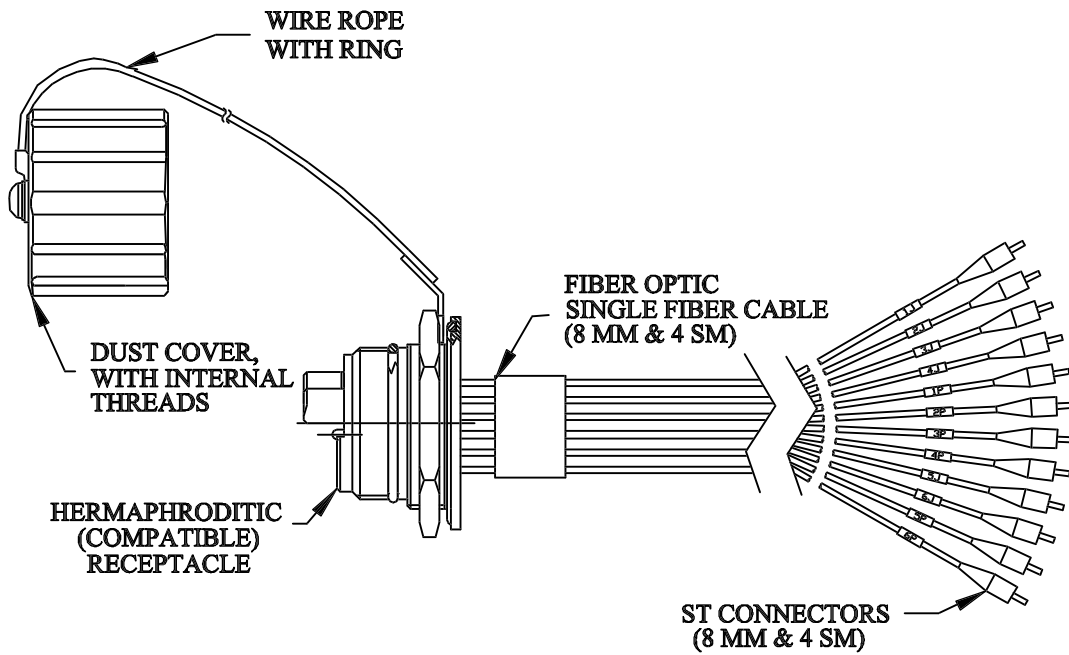


FIGURE 1. ITEMS OFFERED AS PART OF THIS DRAWING,
PIGTAIL ASSEMBLY (CONFIGURATIONS 6000AB AND 6000AC)

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Pigtail Assembly Construction

The pigtail assembly is to be comprised of the components listed in table 1 and assembled as shown in the figure above.

Notes:

1/ For purposes of ordering a "pigtail assembly" to the NAVSEA drawing number, a quantity of one pigtail assembly, item 6000AC, is to be provided.

2/ Pin-out positions in the jam nut mounted receptacle are as follows for multimode and single mode termini:

- a. Multimode positions: 1J, 2J, 3J, 4J, 1P, 2P, 3P, 4P.
- b. Single mode positions: 5J, 6J, 5P, 6P.

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Table 1A. Pigtail Assembly List & Quantity

| Item | Description | Quantity |
|--------|--|----------|
| 6000AB | Pigtail assembly, hermaphroditic receptacle, 1 meter length 9/, 10/, 14/ | 1 |
| 1 | Connector, receptacle, jam nut mounted, hermaphroditic compatible (CR-12-DI-A-12) 1/, 2/, 7/ | 1 |
| 2 | Dust cover, hermaphroditic connector, with internal screw threads, wire rope with ring (DR) 1/, 2/, 7/ | 1 |
| 3 | Termini, socket, no alignment sleeve, crimp sleeve included (TS-SM-A) 3/, 7/ | 6 |
| 4 | Termini, pin, crimp sleeve included (TP-SM) 3/, 7/ | 6 |
| 5 | Single fiber cable, SM 4/, 8/ | 4 |
| 6 | Single fiber cable, MM 5/, 8/ | 8 |
| 7 | ST connector, MM, 62.5/125 um, commercial ruggedized 6/, 8/ | 8 |
| 8 | ST connector, SM, commercial ruggedized 6/, 8/ | 4 |
| 9 | Cable markers | 12 |

Table 1B. Alternate Pigtail Assembly Configurations

| Item | Description | Quantity |
|--------|---|----------|
| 6000AC | Pigtail assembly, hermaphroditic receptacle, 1.5 m cable length 10/, 11/, 14/ | 1 |
| 6000AD | Pigtail assembly, hermaphroditic receptacle, 3 m cable length without ST connectors 12/, 13/, 15/ | 1 |

Notes for tables 1A and 1B:

1/ Component shall meet Commercial Item Description (CID) A-A-XX159 Fiber Optic Connectors, Hermaphroditic, Multiple Removable Termini, Draft dated 31 July 1999 or latest version.

2/ Dust cover mounting hardware and connector receptacle gasket/o-ring shall be provided with each pigtail assembly.

3/ Component shall meet Commercial Item Description (CID) A-A-XX160 Removable Termini For Multiple Termini Fiber Optic Connectors, Draft dated 31 July 1999 or latest version.

4/ Single fiber breakout cable, SM fiber per TIA/EIA-492CAAA, 900 ±50 um buffer, PVC jacket, 1 meter length, operating temperature -28 to 65 °C. Outer jacket shall have a diameter between 1.8 and 2.4 mm with a specified tolerance for a particular vendor part number of ± 0.2 mm.

5/ Single fiber breakout cable, 62.5/125 um MM fiber per TIA/EIA-492AAAA, 900 ± 50 um buffer, PVC jacket, 1 meter long, operating temperature -28 to 65 °C. Outer jacket shall have a diameter between 1.8 and 2.4 mm with a specified tolerance for a particular vendor part number of ± 0.2 mm.

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6/ ST connectors shall have:

- a. Ceramic ferrule (no plastic or metal ferrules).
- b. Metal housing (also referred to as: bayonet cap, coupling nut or outside part) and ferrule/crimp sleeve support (also referred to as: barrel, body or inside part) with no zinc die cast parts (stainless steel or nickel plated brass are acceptable).
- c. Crimp sleeve (ring) capture mechanism for yarn strength member rated for a minimum tensile loading of 20 lb.
- d. Adhesive filled system for accepting an externally injected adhesive during cable assembly fabrication. The adhesive is used to encapsulate the bare fiber inside the connector.
- e. Polymeric materials that are fungus resistant.
- f. Crimp sleeve is to accept a single fiber cable with a tight buffer and a maximum outer diameter of 2.5 mm (0.0984 in).
- g. Crimp sleeve can be assembled to the connector using one of the following die sizes:
 - (1) Hex crimp die measuring 4.84 mm ± 0.05 mm (0.190 in ± 0.001 in) across the flats.
 - (2) Circular indent ring crimp die with a 2.67 mm ± 0.08 mm (0.105 in ± 0.003 in) in minor diameter and a 3.43 mm ± 0.08 mm (0.135 in ± 0.003 in) major diameter.
 - (3) Circular indent ring crimp die with a 2.29 mm ± 0.08 mm (0.090 in ± 0.003 in) in minor diameter and a 3.05 mm ± 0.08 mm (0.120 in ± 0.003 in) major diameter.

7/ Approval process for this item to be in accordance with NSWCCD-SSES Itr 9504 Ser 9542/27 of 13 Mar 98 or latest revision. Vendor quality system to be equivalent to that specified in enclosure (2). NSWCCD-SSES audit may be substituted for DSCC audit if deemed appropriate.

8/ Approval process for this item to be in accordance with NSWCCD-SSES Itr 9504 Ser 9542/27 of 13 Mar 98 or latest revision. Vendor quality system to be in compliance with enclosure (3).

9/ Item 6000AB is comprised of items 1 through 9 in table 1A. Pigtail assembly end-to-end length (terminus end face to ST connector ferrule end face) shall be 100 ± 5 cm (39 ± 2 in).

10/ Each pigtail assembly shall be tested to verify the following optical performance requirements: Pigtail assembly shall be tested to and shall meet the link loss performance requirements of MIL-STD-2042, method 7F1. Reflectance (returned optical power at one connection interface) shall be less than or equal to -30 dB for the single mode fiber when tested in accordance with TIA/EIA-455-107. This reflectance requirement is applicable at the interfaces for both the ST connector and the terminus.

11/ Item 6000AC shall be constructed to table 1A with one exception. The length of the single fiber cables shall be 1.5 meters instead of 1 meter. Pigtail assembly end-to-end length (terminus end face to ST connector ferrule end face) shall be 150 ± 5 cm (59 ± 2 in).

12/ Item 6000AD shall be constructed to table 1A with two exceptions. The length of the single fiber cables shall be 3 meters (after cutting the loops in half) instead of 1 meter. One end of the cable shall be terminated with a pin terminus, the other end with a socket terminus. The pin terminus and the socket terminus shall be inserted into the corresponding pin and socket cavities in the jam nut mounted receptacle insert (such as 1J, 1P). Termini-to-termini, end-to-end length shall be 600 ± 5 cm (236 ± 2 in).

13/ Each pigtail assembly shall be tested to verify the optical performance requirements for link loss and reflectance. Perform the link loss test per 3.2.2 through 3.2.4, Method 7F1 of MIL-STD-2042 with the following variations:

- (1) Connect one hermaphroditic connector MQJ to the pigtail assembly.
- (2) Connect the pin terminus in the pigtail (socket terminus in the MQJ) to the LED/laser source.
- (3) Connect the corresponding socket terminus in the pigtail (pin terminus in the MQJ) to the power meter.
- (4) Record the optical power, designated as P₂ for that fiber (single fiber cable).
Note: The breakout cable is in a "loop" from the pin terminus to the socket terminus.
- (5) Obtain the optical power for the other fibers in the same manner.

Reflectance (returned optical power at one connection interface) shall be less than or equal to -30 dB when tested in accordance with TIA/EIA-455-107. This reflectance requirement is applicable at both termini ends. The pigtail assembly configuration after fabrication and optical testing shall be as follows: Ship the pigtail assembly without cutting the loops. This will enable the pigtail assembly to be inspected for optical conformance by the customer.

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14/ Pigtail assembly shall contain the following permanent markings: NAVSEA Drawing part number (example: 7325760-6000AC), manufacturer name or logo, manufacturer part number, date code. Connector marker shall be located at the end of each single fiber cable about 5 cm (2 inch) from the ST connector. Connector marker shall list the pinout designation for that single fiber cable.
 15/ Pigtail assembly shall contain the following permanent markings: NAVSEA Drawing part number (example: 7325760-6000AD), manufacturer name or logo, manufacturer part number, date code. Two connector markers shall be provided for each single fiber cable. Connector marker shall list the pinout designation for that single fiber cable. If connector markers are provided on the single fiber cable, then it shall be done in a manner to permit relocation once the cable is cut to application length and connector termination is performed.

Table 2. Pigtail Assembly Recommended Sources Of Supply

| Item | Vendor Name | Part Number | Vendor Address | Vendor Phone/FAX |
|--------|---|-------------|---|----------------------------------|
| 6000AB | Packard Hughes Interconnect | 1123790H | 17150 Von Karman Ave. Irvine, CA 19685 | (949) 660-5704 (949) 660-6981 |
| 6000AC | Packard Hughes Interconnect | 1123790-1H | 17150 Von Karman Ave. Irvine, CA 19685 | (949) 660-5704 (949) 660-6981 |
| 6000AD | Packard Hughes Interconnect | 1020018H | 17150 Von Karman Ave. Irvine, CA 19685 | (949) 660-5704 (949) 660-6981 |
| 1 | Packard Hughes Interconnect | 1123770H | 17150 Von Karman Ave. Irvine, CA 19685 | (949) 660-5704 (949) 660-6981 |
| 2 | Packard Hughes Interconnect | 1143808-4H | 17150 Von Karman Ave. Irvine, CA 19685 | (949) 660-5704 (949) 660-6981 |
| 3 | Packard Hughes Interconnect | 1020079H | 17150 Von Karman Ave. Irvine, CA 19685 | (949) 660-5704 (949) 660-6981 |
| 4 | Packard Hughes Interconnect | 1020078H | 17150 Von Karman Ave. Irvine, CA 19685 | (949) 660-5704 (949) 660-6981 |
| 5 | Note: Item does not require source approval | | | |
| 6 | Note: Item does not require source approval | | | |
| 7 | See Note 1/ | | | |
| 8 | Lucent Technologies, Inc. | 106 812 258 | 2000 Northeast Expy Norcross, GA 30071 | (770) 798-2930 (770) 798-2001 |
| 9 | Note: Item does not require source approval | | | |
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Note for table 2:
 1/ Items approved on Navy Recommended Fiber Optic components Parts List, NSWCCD-SSES ltr 9504 Ser 9542/28 of 1 Apr 98 or latest revision.

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