## Contents

1.0 General ................................................................................................................................3

2.0 System Components ..........................................................................................................4

3.0 System Engineering ...........................................................................................................5

4.0 Hardware Installation ........................................................................................................7

5.0 Cable Installation ...............................................................................................................8

6.0 Jumper Installation.............................................................................................................11

7.0 Front Door Installation ......................................................................................................11

8.0 Line Assignment Card Installation..................................................................................12
1.0 General

1.1 The 3M™ Fiber Distribution Unit (FDU) 8425 Series is a rack-mounted design, 4 Rack Unit (4RU) in height and is available in a variety of configurations. The FDUs are designed to provide cross-connect and/or interconnect between incoming fiber optic cables and fiber optic equipment. Depending on the connector type, each FDU will accommodate from 72 to 288 fiber adapters. The field fibers enter the rear half of the unit and are spliced to pigtails or are connectorized and plug into adapters that are mounted on adapter plates. The adapter plates are interchangeable and permit rapid adaptation to different numbers of fiber ends, adapter types, in either singlemode or multimode. The FDUs are also compatible with 3M™ Splitter Modules and Fan-out Modules 8400 and 8440 Series for use in 3M Passive Optical LAN Solutions (POLs) applications. These modules offer plug and play connectivity for up to 128 output fibers.

The fiber distribution units are:

- 3M™ Fiber Distribution Unit 8425, 4 RU Rack Mount, Almond
- 3M™ Fiber Distribution Unit 8425BK, 4 RU Rack Mount, Black
- 3M™ Fiber Distribution Unit 8425-BPL, Back Pack Locking with 1 splice tray, 4 RU Rack Mount, Almond
- 3M™ Fiber Distribution Unit 8425BK-BPL, Back Pack Locking with 1 splice tray, 4 RU Rack Mount, Black

Features of these fiber distribution units include:

- Large cable entry ports
- Front and rear doors
- Cable fastening details
- Cable attachment hardware provided
- Cable strength member lug mounting provisions
- Mount in rack
- Grounding lug mounting points
- Compatible with most fanout and breakout kits
- Cable management hardware provided
- Adapter plates available for ST, SC, LC and FC connectors
- A line assignment card to record jumper locations
- Optional locking of front and rear doors (8425-BPL)
2.0 System Components

2.1 Fiber Distribution Unit and Associated Hardware:

a) The 3M™ Fiber Distribution Unit 8425 series carton contains:
   Assembled housing (A)
   Mounting hardware package (B)
   Cable attachment package (C)
   Cable management package (D)
   Line assignment card (E)

b) Mounting hardware package:
   Mounting brackets — 2 ea. (F)
   10-32 Bracket mounting screws — 4 ea. (G)
   12-24 Rack mounting screws — 4 ea. (H)

c) Cable attachment package:
   Cable ties — 2 ea. (I)
   Grounding/strength member lug — 2 ea. (J)
   1/4-20 x 1/2 lug screws — 2 ea. (K)
   1/4-20 Hex nut — 2 ea. (L)
   Hose clamps — 2 ea. (M)

d) Cable management package:
   Fiber routing clips — 8 ea. (N)
   Fiber ring guides — 6 ea. (O)
   Edge grommeting — 2 ft. (P)
   1 1/4" caplugs — 2 ea. (Q)
   Fiber optic tray strap — 1 ea. (R) (8425-BP & BPL only)

e) Packed inside the Fiber Distribution Unit:
   3M™ Fibrlok™ Fiber Splice Tray 2524-FT
   (1 ea.)
   (8425-BP & 8425-BPL)
2.2 Optional Accessories:
   a) 3M™ Scotchlok™ Shield Bond Connector 4460-D
   b) 3M™ Splice Organizer Tray 2524 (for 3M™ Fibrlok™ Splices)
   c) 3M™ Splice Organizer Tray 2524-FT (for fusion splices)
   d) 3M™ Fibrlok™ Optical Fiber Splice 2529
   e) 3M fiber optic connectors, cable assemblies, and pigtails

3.0 System Engineering

3.1 Intended Location: The 3M™ Fiber Management System 8400 components are designed to be used indoors or in an enclosure to provide an environment which is generally free from blowing dust and dirt or excessive temperature and moisture swings. A communications closet, equipment room, central office, computer room, headend, or hub office, provides an appropriate environment.

3.2 Access Requirements: The 3M™ Fiber Distribution Unit 8425 are designed for both front and back access. Back access is required only in installations in which rework or expansion of the fiber area behind the adapter plates is expected after installation. Back access is typically provided through rack mounting.

3.3 Fiber Capacities and Radii: An FDU can hold up to 12 single adapter plates, 12 single slot modules, 6 two-slot modules or 4 three-slot modules. The housing is equipped with jumper exits to allow jumper slack to be stored outside the housing. The jumper exits also permit guided jumper runs from one housing to another. The housing allows installation and use with all fiber bends maintained at a radius of 1.5" (38 mm) or more.

3.4 System Mounting and Size: These fiber distribution units can be rack-mounted with the brackets provided. The brackets allow for 19" (48.3 cm) or 23" (58.4 cm) rack mounting on C.O. or EIA hole spacings. Up to 9 FDUs may be mounted in a 7 foot rack.

The 8425 and 8425BK FDUs fit within the 12" (30.5 cm) depth requirement for central office applications with front and back access. The 8425 BPL FDUs have a maximum depth of 12 1/2" (31.7 cm). There is no protruding hardware on either the front or the back of the units to snag jumpers or sustain damage. The front door swings out and down when opened. It completely clears the front of the unit mounted below it.
a) 3M™ Fiber Distribution Unit 8425 Dimensions:

- For 23" racks: 23" (584 mm)
- For 22 1/4" (565 mm)
- For 19" racks: 19" (483 mm)
- For 18 1/4" (463 mm)
- For 17" (432 mm)

- 8425: 12" (305 mm)
- 8425 BPL: 12 1/2" (317 mm)
- 5 1/4" (133 mm)
4.0 Hardware Installation

4.1 Mounting Brackets:

a) Open the mounting hardware bag which contains two mounting brackets, four 10-32 screws and four 12-32 rack mounting screws.

b) For 19" (48.3 cm) rack mounting, attach the brackets to the housing as shown, using two 10-32 screws for each bracket. Be sure that the long side of the bracket lay against the housing.

c) For 23" (58.4 cm) rack mounting, attach the brackets to the housing as shown, using two 10-32 screws for each bracket. Be sure that the short side of the bracket lay against the housing.

Note: Some CEV equipment racks require about 1" (25.4 mm) more front extension for door clearance in the lowered position. Reverse the brackets so the rack flanges are to the rear and the door will clear.

d) Mount the housings to the rack (or vertical organizers) using the four number 12-32 screws provided.

4.2 Adapter Plates and Modules:

a) From the front of the 3M™ Fiber Distribution Unit, install adapter plates into the adapter plate frame as shown. Align mounting pins at desired enclosure location and press adapter plate or module into place. Firmly press mounting pin plunger in to lock the plate or module in place.

Note: Gently pull on plate or module to ensure it is secure. A small amount of movement is normal due to material thickness.

Note: Be careful when removing a plate not to disturb attached or adjacent fibers any more than necessary.
5.0 Cable Installation

5.1 Securing Cable:

a) When using the 3M™ Fiber Distribution Unit 8425, remove the rear door by pushing on each side near the top as shown, until it unsnaps and then lift the door up and out.

b) Open the cable attachment package that contains the cable ties, hose clamps, grounding/strength member lugs, 1/4-20 screws and 1/4-20 nuts.

c) Cables can enter the FDU on either side from top or bottom.

d) Determine where the cables will enter and mount grounding and strength member lugs as needed using the 1/4-20 screws and nuts as shown.

- If the incoming cable is entering the FDU from above on the left side, the buffer tube will meet the bottom of the housing and move towards the other side. 10' (3 m) of cable buffer tube is to be exposed.

- If the incoming cable is entering the FDU from below on the right side, the buffer tube will meet the top of the housing and must move across the top then down the left side onto the bottom of the FDU. Use the Fiber Routing Clips found in the cable management package to manage these buffer tubes as they cross the top of the housing. 12 feet (3.6 m) of cable buffer tube is to be exposed.
e) When using 3M™ Fiber Distribution Unit 8425-BPL, open the rear door by pushing on each side near the top as shown, until it unsnaps and then swing it down until it stops.

– Open the cable attachment package that contains the cable ties, hose clamps, grounding/strength member lugs, 1/4-20 screws and 1/4-20 nuts.

– If the incoming cable is coming down the rack from above, it should enter the FDU on the left side (when standing in front of the rack).

– If the incoming cable is coming up the rack from below, it should enter the FDU on the right side (when standing in front of the rack).

– Repeat step 5.1.4.

f) Strip and prepare the cable end per your standard practice keeping the following in mind.

– The cable fastener (hose clamp or cable tie) must be on the cable sheath when the cable is installed and only the buffer tube enters the FDU.

– Trim the central strength member so that 5 1/2" (14 cm) is exposed for securing in lug.

g) If the cable is to be grounded a 3M™ Scotchlok™ Shield Bond Connector 4460-D should be installed now.

h) Insert the cable strength member into the lug and feed the cable into the back of the FDU as shown. Tighten the set screw on the lug to secure the strength member. Attach cable to the FDU using a hose clamp or a cable tie.

*Note: Scotch® Linerless Rubber Tape 130C may be used to protect cable jacket.*

i) If the cable is to be grounded attach grounding braid.
5.2 Direct Fiber Connectorization:

a) Trim buffer tubes to the middle of the bottom floor of the 3M™ Fiber Distribution Unit.

b) Install appropriate connectors on the fibers.

Note: Consult connector manufacturer's instructions for information on the proper installation of fiber optic connectors.

Danger: Fiber ends and unmated connectors may emit invisible laser or LED radiation. Avoid direct eye exposure to the beam. Do not inspect live fibers with magnifying instruments. Protective dust caps should be kept on all unmated couplings and connectors.

c) Locate and open the cable management package that contains the eight fiber routing clips, six fiber ring guides, edge grommeting, two 1 1/4" (3.2 cm) cap plugs and fiber optic tray strap.

d) As the connectors are installed and placed into the appropriate adapters use the 8 adhesive backed stick-on fiber routing clips to dress and store the extra fiber in the back of the FDU.

e) Any extra incoming fibers should be stored in the fiber routing clips.

f) Install the rear door of the 8425 and 8425BK by placing the bottom edge between the catches on the bottom of the FDU and then pushing it into the top of the FDU until it snaps into a closed position.

5.3 Pigtail Splicing (8425-BPL FDUs):

a) Trim buffer tubes to the middle of the bottom floor of the FDU.

b) Open up the 3M™ Fibrlok™ Splice Tray that is packed inside the FDU and install it using the 3M™ Dual Lock™ Reclosable Fastener per instructions packed with the 2524-FT splice tray. The locating tabs on the 3M Splice Tray 2524-FT fit into the slots in the back pack door. Install the proper splice inserts into the tray. Locate the gray buffer tube in splice tray package. Be sure to read the 3M Splice Tray 2524-FT instructions.

Note: The 2524-FT Tray has a capacity of 24 fusion splices. Additional trays may be required. Order 3M part 2524-FT Splice Organizer Trays 80-6106-1687-4 (box of three). A maximum of four of the 2524-FT trays for 96 splices will fit in the 3M Fiber Distribution Unit 8425-BPL.

Danger: Fiber ends and unmated connectors may emit invisible laser or LED radiation. Avoid direct eye exposure to the beam. Do not inspect with magnifying instruments. Protective dust caps should be kept on all unmated adapters and connectors.

c) Cut two 16" (40.6 cm) lengths from the gray buffer tube and slip over the 250 micron fiber.

d) Slip the end of the gray buffer tube over the end of the incoming cable buffer tube and install the other end of the gray buffer tube into the 2524-FT tray.

e) Install the proper number of pigtailed connectors for the number of splices to be made into the appropriate adapters.

f) Cut the remaining gray buffer tube into six 11" (28 cm) lengths.

g) Slip four 900 micron pigtails through each buffer tube. Install one end of the buffer tube into the 2524-FT tray and dress the other end as required. Extra 900 mm fiber will be stored in the FDU.

h) Splice the pigtails to the cable per your company standard practice.

i) Locate and open the cable management package that contains the eight fiber routing clips, six fiber ring guides, edge grommeting, two 1 1/4" (3.2 cm) Cap plugs and F/O tray strap.

j) Use the eight adhesive backed stick-on fiber routing clips to dress and store the 900 micron pig tails in the back of the FDU. Dress and store the 250 micron fiber into the 2524-FT splice tray.

k) Close the cover of the 2524 tray.

l) If additional splicing is needed, install additional 2524-FT splice trays. Refer to 2524-FT tray instructions in Section 6.0.
m) When all splicing is complete wrap the 3M™ Hook and Loop Fiber Optic Tray Strap around the splice trays by slipping it under the first installed tray and fastening the two ends together. Store extra strap.

n) Any extra incoming fibers should be stored in the fiber routing clips

o) Close the door by swinging it up and snapping it into a closed position.

6.0 Jumper Installation

Danger: Fiber ends and unmated connectors may emit invisible laser or LED radiation. Avoid direct eye exposure to the beam. DO NOT inspect live fibers with magnifying instruments. Protective dust caps should be kept on all unmated couplings and connectors.

6.1 Open the front door by pulling on each side at the top until it unsnaps and then swing it down.

6.2 Remove the line assignment card.

6.3 Snap the six black fiber ring guides into the square holes in the front floor of the FDU.

6.4 Install the jumper connector into the appropriate adapter. Dress the jumper fiber to minimize tight bending stress or tension, using the fiber ring guides. Jumpers can enter the FDU on either side.

6.5 Mark the jumper routing on line assignment card.

7.0 Front Door Installation

Note: In some cases, the front door may need to be installed. For those cases follow these instructions:

7.1 Remove the protective strip from the adhesive on the bottom of the door.

7.2 Insert one end or corner of the door into the hinge as shown.

7.3 Rotate the opposite end of the door down and into the hinge.

7.4 Press door down firmly into hinge and close door to check that door is fully seated into hinge.

8.0 Line Assignment Card Installation

8.1 Slip the card into the groove in the hinge behind the front door. More clearance can be obtained by rotating the front door slightly forward. The card is lined for plates containing 6 or 12 adapters on one side, and plates containing 8 or 12 adapters on the other side. Fold the card as needed for the adapters used.
Important Notice
All statements, technical information, and recommendations related to 3M’s products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M’s current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability.
This product will be free from defects in material and manufacture for a period of one (1) year from the time of purchase. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M’s option, to replace or repair the 3M product or refund the purchase price of the 3M product. Except where prohibited by law, 3M will not be liable for any indirect, special, incidental or consequential loss or damage arising from this 3M product, regardless of the legal theory asserted.