RQDXE
Expander Module

User's Guide

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DESCRIPTION

This guide shows you how to install and configure the RQDXE dual-height expander module. The RQDXE (Digital part number M7513) is a replacement for the RQDX1-E extender module (Digital part number M7512).

The RQDXE lets you expand the RQDXn (RQDX1, RQDX2 and RQDX3) controller modules to support external drives (RD5n and RX50). The RQDXE carries RQDXn controller signals to external MSCP (mass storage control protocol) devices.

The enhanced features of the RQDXE allow support of up to four logical units.

You should install the RQDXE, dual-height module in a backplane slot directly below or next to the RQDXn.

CABLING OPTIONS

There are two cabling options available to connect RQDXE modules with RQDXn controller modules and disk drives.

- RQDXE-AA
- RQDXE-FA

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RQDXE-AA Option

The RQDXE-AA option includes the following parts.

- RQDXE module
- BC02D-01 cable
- Cable assembly 17-01223-01 or 70-20691-01

Figure 1 shows the RQDXE-AA option. Cable assembly 17-01223-01 or 70-20691-01 has a mounting plate to connect the RQDXE and the I/O distribution panel on the BA23-A CPU box. The I/O distribution panel connects to a desktop or rackmount expansion box via an external cable. Cable BC02D-01 comes with the RQDXE and connects the RQDXE to the applicable RQDXn controller.
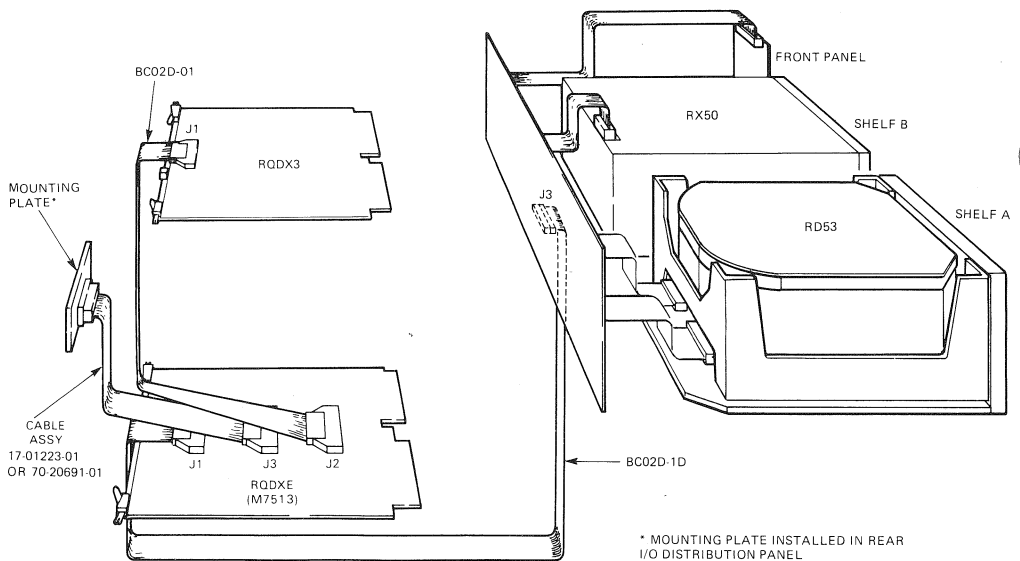
Figure 1   RQDXE-AA Option

RQDXE-FA Option

The RQDXE-FA option includes the following parts.

*   RQDXE module
*   BC02D-01 cable
*   BC02D-04 cable

Figure 2 shows the RQDXE-FA option. Cable BC02D-01 connects the RQDXE to the RQDXn controller. Cable BC02D-04 connects the RQDXE to the distribution panel on the BA23-C expansion box.

> **NOTE**
> **Figures 1 and 2 use the RQDX3 as a typical example. You can also use the RQDX1 or the RQDX2 with the RQDXE.**

BC02D-01

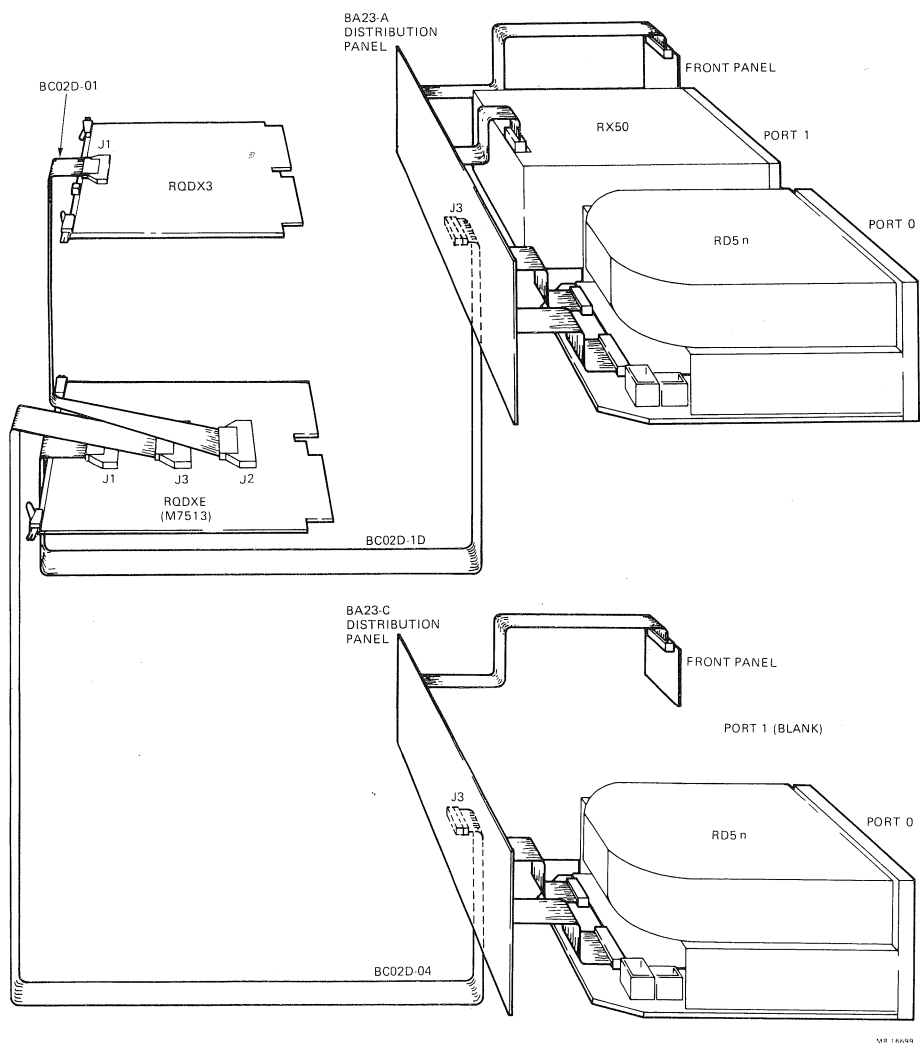J1

RQDX3

BA23-A
DISTRIBUTION
PANEL

FRONT PANEL

RX50

PORT 1

J3

PORT 0

RD5 n

J1   J3   J2

RQDXE
(M7513)

BC02D-1D

BA23-C
DISTRIBUTION
PANEL

FRONT PANEL

PORT 1 (BLANK)

J3

PORT 0

RD5 n

BC02D-04

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Figure 2   RQDXE-FA Option

MODULE SPECIFICATIONS

Dimensions

Height	22.8 cm (8.9 in)
Width	1.27 cm (0.5 in)
Length	13.34 cm (5.25 in)

Power Consumption

Typical	+5 Vdc ±5% @ 0.80 Amps
Maximum	+5 Vdc ±5% @ 0.90 Amps

Operating Requirements

Operating temperature mounted in cabinet	0° to 60°C (32° to 140°F)
Maximum outlet Temperature	5°C above 60°C (9°F above 140°F)
Relative humidity	10 to 90% noncondensing

Storage Requirements

Ambient temperature	−40° to +65°C (−40° to 149°F)
Relative humidity	10 to 90% noncondensing
Maximum altitude	9.1 km (50,000 feet)

Bus Loads

DC	1 unit load
AC	0 unit load

JUMPER CONFIGURATIONS

Figures 3, 4 and 5 show RQDXE jumper settings for different systems. Figure 3 is for a BA23-A CPU box. Figure 4 is for a BA23-C expansion box. Figure 5 is for an RD5n-D/-R or RXnn-D/-R mass storage tabletop or rackmount enclosures. These figures show the most common configurations. Figure 6 shows the RQDXE factory jumper configuration and the layout of the points to jump.

Figures 3 and 4 together show jumper settings required to support BA23-A/BA23-C configurations.

Figures 3 and 5 together show jumper settings required to support BA23-A/RD5n-D/-R or RXnn-D/-R configurations.

CPU and Expansion Box Terms

Figures 3 and 4 use the following terms to describe the CPU box (BA23-A) and expansion box (BA23-C).

Ports 0 and 1 identify the location of the drives in the BA23-A and BA23-C boxes.

CPU BOX (BA23-A AND BA23-C)	PORT 0	PORT 1	FRONT PANEL

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CPU box simply refers to the box in which the RQDXn controller resides.

The same terms apply to systems with disks in desktop or rackmount enclosures (external drives). In a desktop or rackmount enclosure, connector J1 is port 0 and J2 is port 1 (see below).

RD0, RD1, RD2 or RD3 designate the RD5n hard disks.

PORT 0   PORT 1

OUTPUT TO NEXT
RD5n-D/-R
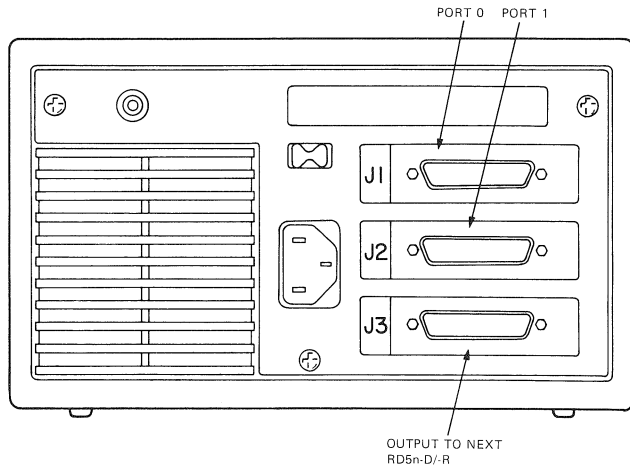
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To configure the RQDXE to meet your system requirements, do the following:

- *For a CPU box* (BA23-A)

  Install jumpers as shown in Figure 3. Use the column (A through C) that applies to your system. Pick column B if you have an RD0 in port 0 and an RX50 in port 1 of the CPU box, as shown in Figure 1.

- *For an expansion box* (BA23-C)

  Install jumpers as shown in Figure 4. Use the column (A through C) that applies to your system. Pick column A if you have an RD1 in port 0 of the BA23-C, as shown in Figure 2.

- *For mass-storage tabletop enclosures* (RD5n-D/-R or RXnn-D/-R)

  Install jumpers as shown in Figure 5.

  NOTES

  - **RD0 must be in port 0 in the BA23-A box.**

  - **PORT 0 RD (drive select setting) must be 3.**

  - **RX selects should be 1-2 for the first RX50 (factory configuration).**

  - **The RQDXE occupies one dual Q-Bus slot in the backplane.**

  - **RQDXn can be an RQDX1, RQDX2 or RQDX3.**

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		A	B	C
PORT 0	RD0	X	X	−
PORT 1	RD1 RX50	− −	− X	− X
INT PORT SEL	N1 N2	●—●	●—●	● ○
	N3 N4	○	○	○
	P1 P2	○	○	○

NOTES

1. RD0 MUST BE IN PORT 0 IN THE BA23-A CPU BOX

2. " ○ " IS A PIN; "−" OR " | " IS A JUMPER.

3. NO TWO RD5n DISK DRIVES SHOULD ATTEMPT TO MAP THE SAME LUN (CPU OR EXPANSION BOX) OR RESIDE IN THE SAME BA23 BOX.

4. COLUMN A OR C REPRESENTS FACTORY JUMPER CONFIGURATIONS.

5. ●—● AND ⃒ INDICATE JUMPERS INSTALLED.

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Figure 3   RQDXE Jumper Settings for a BA23-A
CPU Box

		A	B	C
PORT 0	RD1	X	X	-
	RD2	-	-	-
PORT 1	RD1	-	-	-
	RD2	-	-	-
	RX50	-	X	X
RDY AND WRT PROT	A1 A2	●─○	●─○	○ ○
	A3 A4	●─○	●─○	○ ○
	B1 B2	●─○	●─○	○ ○
	B3 B4	●─○	●─○	○ ○
	C1 C2	○ ○	○ ○	○ ○
	C3 C4	○ ○	○ ○	●─●
	D1 D2	○ ○	○ ○	○ ○
	D3 D4	○ ○	○ ○	●─●
DRV SEL	E1 E2	●─●	○ ●	○ ●
	E3 E4	○ ○	○ ●	○ ●
	F1 F2	● ●	● ○	○ ○
	F3 F4	● ●	● ○	○ ○
	H1 H2	○ ○	● ○	● ○
	H3 H4	●─●	● ○	● ○
DRV ACK	K1 K2	○ ●	○ ●	●─●
	K3 K4	○ ●	○ ●	●─●
EX PORT SEL	L1			
	L3 L4	● ●	● ●	● ○
	M1 M2	○ ●	○ ●	○ ●
	M4	○	○	●

NOTE:
COLUMN A REPRESENTS
THE FACTORY CONFIGURATION.

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Figure 4   RQDXE Jumper Settings for a BA23-C
Expansion Box

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		A	B	C	D
J1 PORT 0	RD1	X	X		
	RX50			X	X
J2 PORT 1	RD1				X
	RD2		X		
RDY AND WRT PROT	A1 A2	●─●	●─●	○ ○	○ ○
	A3 A4	●○	●○	○ ○	●─●
	B1 B2	●─●	●─●	○ ○	○ ○
	B3 B4	●○	●○	○ ○	●─●
	C1 C2	○ ○	●○	○ ○	○ ○
	C3 C4	○ ○	●○	●─●	●─●
	D1 D2	○ ○	●○	○ ○	○ ○
	D3 D4	○ ○	●○	●─●	●─●
DRV SEL	E1 E2	●─●	●─●	●●│	○
	E3 E4	○ ○	○ ○	●●│	○
	F1 F2	●●│	●○	○ ○	●─●
	F3 F4	●●│	●○	○ ○	●─●
	H1 H2	○ ○	●─●	●●│	○
	H3 H4	●─●	●─●	●●│	○
DRV ACK	K1 K2	○●│	●●│	●─●	○ ○
	K3 K4	○●│	●●│	●─●	●─●
EX PORT SEL	L1	●│	○ ○	●○	●○
	L3 L4	●○	●●│	●○	●○
	M1 M2	○ ○	●●│	○●	●─●
	M4	○ ○	○ ○	●│	○ ○

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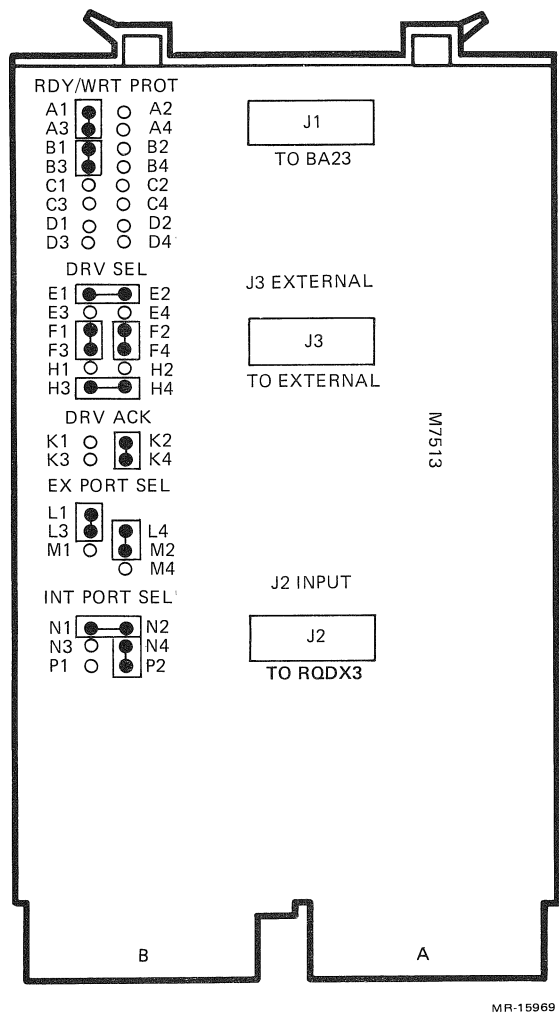Figure 5   RQDXE Jumper Settings for RD5n-D/-R or RXnn-D/-R Add-On Drives

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Figure 6   RQDXE Factory Jumper Configuraton