

Field Service **TECH TIP**

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Page 1 of 4

| | | |
|----------------------------------|------------------|-------------|
| Title RQDX2 Tips and Rev History | Category Systems | Rev A |
| Cross Reference N/A | Option RQDX2 | |
| | TECH TIP No. | RQDX2-TT-02 |

Problem/Solution

Bus Citizenship and DMA activity

The M8639-YB (RQDX2) does not implement a BDMR Hold Off timer. This means that the M8639-YB will tend to dominate DMA activity on the bus (if it has commands and data to execute). Good 'citizen' devices will do a DMA cycle then wait, typically 4 to 5 us, before requesting another DMA cycle. The M8639-YB will request DMA cycles, in immediate succession until its service requirements are met. If DMA devices were placed behind the RQDX2 they may not get their DMA requirements served in a timely manner.

Therefore, to avoid problems in Q-Bus systems the best policy is to maintain the M8639-YB as the last device on the bus. If a customer desires a configuration requiring two RQDX2's the loading of each must be considered. Put the heavily loaded controller at the end of the bus.

Rev Compatibility

The different revs of the RQDXn (1 and 2) controller firmware are not backwards compatible. Once a Winchester disk (RD5n) is accessed with a RQDX1 containing 'Rev 9.0' firmware it would no longer be possible to access it with a controller containing 'Rev 8.0' firmware unless the Winchester disk was reformatted and the customer software restored. The inability to use older rev controllers is because the RCT tables are reorganized during the first power up by a controller containing the new firmware. Note, the RX50's are always a compatible media between the different revs of controllers and it is recommended that the customer back up the entire RD5n Winchester before installation of an FCO.

Approvals

| | | |
|---------------------------------|---|------------------------------|
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| Author's Manager D. Margerum | | Field Service Product Safety |
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46

Field Service **TECH TIP**

digital

Page 2 of 4

Title RQDX2 Tips and Rev History

Category Systems Rev A

Option RQDX2

TECH TIP No RQDX2-TT-02

M8639 ECO HISTORY

Current Revisions

| Part | Rev | Etch | Comments |
|----------|-----|------|--|
| M8639-00 | C1 | E1 | Phased out by -YA. -00's can be updated via FCO compatible to -YA variation. |
| M8639-YA | B1 | E1 | V9.4 firmware |
| M8639-YB | E1 | A1 | V10 firmware |

ECO History

Version `7' (initial release ~1983)

RX50 compatability problems. A diskette created on one drive may not be readable on another. Problem was application dependant. FCO issued (subsequently superceded) to replace with V8 firmware.

V7 --> presence of 23-239E4-00 at E105 and 23-238E4-00 at E106.

Supports: MicroPDP11/23, RX50, RD51

Version `8'

ECO: M8639-ML002 FCO: M8639-R0002 EQ kit obsolete

Corrects the RX50 compatibility problem. FCO superceded by Version 9. The use of table top drives is not supported in the V8 release.

V8 --> presence of 23-265E4-00 at E105 and 23-264E4-00 at E106.

Supports: MicroPDP11/23, RX50, RD51

Version `9' (RD52 / MicroVAX I)

ECO: M8639-ML003 FCO: M8639-R0003 EQ kit obsolete

Contains 32 bit support required for MicroVAX I. Corrects the RX50 "Behind Track Zero" problem which would cause "Drive Not On Line" errors on MicroPDP11. Includes Leprechaun support. Includes RD52 support. When installed in MicroPDP11's a related FCO needs to be installed in the KDF11B (KDF11B-R004). FCO superceded by Version 94.

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Field Service **TECH TIP**

digital™

Page 3 of 4

Title RQDX2 Tips and Rev History

Category Systems

Rev A

Option RQDX2

TECH TIP No. RQDX2-TT-02

V9 --> presence of 23-043E5-00 at E105 and 23-042E5-00 at E106.

Supports: MicroPDP11/23, MicroPDP11/73, MicroVAX I, RX50, RD51, RD52, External Table top and Rack Mount units (Leprechauns).

Version '9.4'

ECO: M8639-TW007

FCO: M8639-R007

EQ-01361-01

Corrects a problem affecting MicroVAX I Systems running MicroVMS and RD52's. If the RD52 has greater than 19 revectorized blocks system throughput will drop from a nominal 150 Kbs to 20 Kbs. Symptoms difficult to describe as system appears to be operating normally. Diagnostics not effective in isolating problems. Generally Customer will complain of "Slow Response".

Corrects "Fails to Cold Start (Power Up) Boot" on MicroVAX I Systems.

Corrects a problem prevalent on MicroPDP 11/23 systems which utilize RSX. Symptoms include "System Hangs".

V9.4 --> presence of 23-173E5-00 in E105 and 23-172E5-00 in E106.

Supports: MicroPDP11/23, MicroPDP11/73, MicroVAX I, RX50, RD51, RD52, External Table top and Rack Mount units (Leprechauns).

ALL MICROVAX I, VAXSTATION I, MICROPDP 11/23, MICROPDP 11/73 (CONTAINING RQDX1) SYSTEMS SHOULD BE UPDATED TO THIS LEVEL WITH THIS FCO.

Version '10D' (RQDX2 only, MicroVAX II and 11/83 Support)

ECO: M8639-TW008

Affects only the -YB variation. Adds RD53 support. This change is ONLY possible on RQDX2 (M8639-YB) modules. This is the production release level of the RQDX2.

Version 10D is INCOMPATIBLE with the -00 and -YA (RQDX1) module!

V10D --> presence of 23-179E5-00 in E105 and 23-178E5-00 in E106.

Supports: MicroPDP11/23, MicroPDP11/73, MicroVAX I, MicroVAX II, 11/83, RX50, RD51, RD52, RD53, table top and rack mount units

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Field Service **TECH TIP**

digital™

Page 4 of 4

Title RQDX2 Tips and Rev History

Category Systems Rev A

Option RQDX2

TECH TIP No. RQDX2-TT-02

V10D (cont.)

ALL RQDX2 CONTROLLERS CONTAINING 10D FIRMWARE SHOULD BE REPLACED WITH CONTROLLERS CONTAINING 10E FIRMWARE (SEE BELOW).

Version '10E' (RQDX2 only)

ECO: M8639-TW009

Affects only the -YB variation. Fixes a problem with the revectoring algorithm which would cause the same block to come up repeatedly as bad. Fixes a number of minor bugs with RD53, primarily allows the RD53 to complete an 11 second timeout properly. This is necessary if the RD53 receives a large shock or vibration during operation.

Version 10E is INCOMPATIBLE with the -00 and -YA (RQDX1) module.

V10E --> presence of 23-189E5-00 in E105 and 23-188E5-00 in E106.

Supports: MicroPDP11/23, MicroPDP11/73, MicroVAX I, MicroVAX II, 11/83, RX50, RD51, RD52, RD53, table top and rack mount units.

ALL RQDX2 CONTROLLERS SHOULD BE AT THIS REVISION!

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