Firmware Release Note: December 4, 1992

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PROBLEMS AND QUESTIONS:

This Release Note describes changes in the CMD SCSI host adapter Firmware revision B2 released by ECO _____.

CQD-220/TMS and CQD-240/TMS	F220S1B2, F220S2B2
CQD-260/TMS	F260S1B2, F260S2B2
CDU-720/TMS	F720S1B2, F720S2B2
CQD-440/TMS	F440S1B2, F440S2B2
CBI-1000/TMS	F1KS1B2, F1KS2B2

Important: When upgrading to B2 firmware from pre B1 firmware, always reset the board with the "z" command with the on-board utility.

Important: New requirements for Truncate mode for VMS Volume Shadowing

In order to run VMS Volume Shadowing "Truncate Disk Size" should be enabled. This truncates the number of blocks on the disk drive so VMS can use 126 blocks at time for shadow set rebulid. To avoid accidentally setting "Truncate Disk Size" the following must be set in additional to the Utility settings.

CQD-220	W12 in
CQD-240, CQD-260	W15 in
CDU-720	W18 in
CQD-440	SW2-9 on

Shadow Improvements:

1. Implemented offline shadow catch-up. If the drive shadow set is configured but unaligned, the utility will do a copy from the primary drive to the shadow drive.

C = CATCH-UP COPY FOR NOT ALIGNED SHADOW

DEV0: DU10S SCSI ID 0 LUN 0
DEV2: DU10X SCSI ID 1 LUN 0

Keep multi-host setup? (Y/N) n (this is for multiple-host set-ups only)

Configure for multi-host? (Y/N) n (this is for multiple-host set-ups only)

Configure for multi-host? (Y/N) n

SELECT OPTION ? c

Number of Disks (including shadow units) ? (0 - 7) 4 (enter the total number of disk drives that will be on the SCSI bus)

Number of Shadow sets ? (0 - 2) 2 (enter the number of drives that will be paired up for shadow sets)

Break Unit LUN Offset ? (Minimum 14) 20 (in the event of disk failure, or the dissolving of a shadow set this will become the device of the failed, or dissovled member of the shadow set)

DU10 to be Reconfigured ? (Y/N)y

DU10 SCSI ID ? (0 - 7) 0

DU10 LUN ? (0 - 3) 0

Shadow unit exist ? (Y/N)y (this device will become the primary unit of the shadow set)

Enable the Shadow set ? (Y/N)y (this will form the shadow set so that the two drives "primary and secondary" will appear as one device to the operating system)

Shadow set already Aligned ? (Y/N)n (if the data on the disks to be shadowed is not identical, then you must answer no to this question)

with this example of the last three questions the shadow status will be "shadow set formed unaligned" and must be initialized before writing too them)

```
 DS10  SCSI ID ? (0 - 7)  1 (this will become the secondary drive in the shadow
                          set)

 DS10  LUN ? (0 - 3)  0

      Repeat for the sencond shadow set to be formed

 DU11   to be Reconfigured ? (Y/N)y

 DU11   SCSI ID ? (0 - 7)  2

 DU11   LUN ? (0 - 3)  0

Shadow unit exist ? (Y/N)y

Enable the Shadow set ? (Y/N)y

Shadow set already Aligned ? (Y/N)n

 DS11  SCSI ID ? (0 - 7)  3

 DS11  LUN ? (0 - 3)  0

Number of Tapes ? (0 - 3)  0

DEV0: DU10S  SCSI ID 0  LUN 0
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV1: DU11S  SCSI ID 2  LUN 0
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV2: DU10X  SCSI ID 1  LUN 0
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV3: DU11X  SCSI ID 3  LUN 0
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV4  NOT AVAILABLE
DEV5  NOT AVAILABLE
DEV6  NOT AVAILABLE
DEV7  SCSI ID 6  HOST ADAPTER, SCSI Reset ON,Density Mode ON,Default Tape OFF,
      Boot Floppy OFF,Jumper Write Protect OFF,Eject Disk ON,Truncate Size OFF,
      Rsv/Rls Option ON,
CHANGE CONFIGURATION ? (Y/N) n

SCANNING SCSI DEVICES ATTACHED ...

DEV0: DU10S  SCSI ID 0  LUN 0  OFFLINE
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV1: DU11S  SCSI ID 2  LUN 0  OFFLINE
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV2: DU10X  SCSI ID 1  LUN 0  OFFLINE
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV3: DU11X  SCSI ID 3  LUN 0  OFFLINE
      Disconnect ON,Sync Mode ON,Prevent Medium Removal ON,Write W/Verify OFF,
DEV4  NOT AVAILABLE
DEV5  NOT AVAILABLE
DEV6  NOT AVAILABLE
DEV7  SCSI ID 6  HOST ADAPTER, SCSI Reset ON,Density Mode ON,Default Tape OFF,
      Boot Floppy OFF,Jumper Write Protect OFF,Eject Disk ON,Truncate Size OFF,
      Rsv/Rls Option ON,
```

```
CHANGE CONFIGURATION ? (Y/N) n
```

EXAMPLE #2

TO CONFIGURE FOR MULTIPLE-HOST

```
Configure for multi-host? (Y/N) n
   *** Warning ***
The configuration might be replaced, refer to menu for details

            Note:if this is the second contoller to be configured
                 in the multiple-host configuration, then a "yes" answer
                 will configure this contoller identical to the other one


Enter the lowest host ID? (0 - 6)  6 (this is the controllers SCSI ID)

SELECT OPTION ?  c

      Configure devices the same as in single host setup

Number of Disks (including shadow units) ? (0 - 7)  4

Number of Shadow sets ? (0 - 2)  2

Break Unit LUN Offset ? (Minimum 14)  20

 DU10   to be Reconfigured ? (Y/N)y

 DU10   SCSI ID ? (0 - 7)  0

 DU10   LUN ? (0 - 3)  0

Shadow unit exist ? (Y/N)y

Enable the Shadow set ? (Y/N)y

Shadow set already Aligned ? (Y/N)n

 DS10  SCSI ID ? (0 - 7)  1

 DS10  LUN ? (0 - 3)  0

 DU11   to be Reconfigured ? (Y/N)y

 DU11   SCSI ID ? (0 - 7)  2

 DU11   LUN ? (0 - 3)  0

Shadow unit exist ? (Y/N)y

Enable the Shadow set ? (Y/N)y

Shadow set already Aligned ? (Y/N)n
```

DS11 SCSI ID ? (0 - 7) 3

DS11 LUN ? (0 - 3) 0

Number of Tapes ? (0 - 3) 0

Update drive configuration block? (Y/N) y (this will write the shadow set status
to the drives so both host will know what state the shadow set is in)

Keep multi-host setup? (Y/N) y

SELECT OPTION ? r (this option is neccesary for multiple-host configurations,
it will dissable unwanted SCSI resets on the bus)

Update drive configuration block? (Y/N) n

IMPROVEMENTS:

Support the following devices:

Exabyte 8500C compression mode.
800 = 8200 mode
1600 = 8500 mode
6250 = 8500 compressed mode

Archive, WangDAT, HP 4 mm compression
Fujitsu 2480 with EDRC compression
Cipher T826, T860
DEC TZ85, TZ86

1. A 60 second inactivity timer is implemented for all SCSI phases.
If the timer times out, the SCSI bus will be reset and SCSI commands
will be re-issued. The SCSI Reset is issued even if reset it disabled
by the utility. This is to prevent SCSI hangs.

2. Implemented SCSI "restore data pointers" per SCSI 2 specifications
for SCSI disk and tape drives that requires data to be retransmitted.

3. During VMS Reboot sometimes devices do not show up. A missed bus
init during shutdown was fixed so the board is properly initialized during
shutdown.

Fixes for Tape:

4. Tape controller port PT will report 1 standard port error instead
of 2 during VMS boot.

5. Tape Disconnect timeout timers have been extended to 12 minutes
per read/write command and 60 minutes per position command. This timer
is in case the tape drive did a SCSI disconnect and was unable to
reconnect. The controller will timeout and the process would complete with

a fatal error. The previous timers were too short and may time out during a tape command which took longer than 4 minutes.

6. Properly report to TMSCP the tape desired record length and the actual record length. Previously incorrectly reported if the requested record length is smaller than the actual record length.

7. During space reverse record, if EOT marker is encountered, tape position is checked to report to correctly report either BOT or EOT. This is required if tape is beyond EOT marker.

8. Runs Tapex under Ultrix for 4mm, 9 track, and 3480 tape drives. Exabyte drives will run most Tapex tests except those that does capacity and special repositioning that Exabyte is not capable of doing.

9. Multiple tape volume Tar backups fixed for Ultrix.

10. Tape Density select improved for Exabyte and 9 track. Different firmware version on Exabyte 8500 had different density select methods. Improved so all versions will work.

11. Tape space multiple record improved so positioning is faster. The number of records to be skipped are given to the tape drive and the residual is checked for actual number skipped.

12. Tri-Density mode on the utility implemented. Ultrix should be used with tri-density disabled since it tries to use 800 BPI as default.

Fixes For Disks:

12. The correct device type is reported when a drive is mounted cluster wide under VMS. B1 reported device type of RA81 when drives are mounted cluster.

13. Disks will resume Synchronous mode after device is powered off.

14. The Start Motor command will only be issued during startup or if the drive went offline. This is to prevent multiple start motor commands which causes hardware errors some drives.

15. Fail-over has been improved during multi-hosting so if the SCSI cable is removed from one host, the system continues to run by failing over to the other host. When the SCSI cable is reconnected back, the drives will be accessed by both hosts.

16. CDU-720 auto-boot on the PDP-11/70 fixed.

17. LSI-11 utility is V2.0, implemented X-on X-off for smooth scroll, ignores null characters, and accepts small characters for CSR selection.

18. CQD-440, number of MSCP credits selectable from 16 to 22. CQD-440 RSX11-M boot on a LSI-11/23 processor fixed. SCSI bus REQ/ACK timing adjusted to 50% duty cycle for more reliable 10 megabyte/second data transfer. Adjustable selection timeout from 10 ms to 250 ms so a scan will not occupy SCSI bus time.

end.
