



Integration Guide

BMX-3 Disk Controller

BMX-3 Disk Controller has been tested and verified by Engineering for use in the following disk drives and Data General CPUs.

SECTION A: DATA GENERAL PROCESSORS

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NOVA 4..... via DCH..... RDOS (Rev 6.0 to Rev 7.5)
S/120..... via DCH..... RDOS (Rev 6.0 to Rev 7.5)
                               and AOS (Rev 6.0 to Rev 7.0)
S/140..... DCH or BMC..... RDOS (Rev 6.0 to Rev 7.5)
                               and AOS (Rev 6 to Rev 7)
S/280..... DCH or BMC..... RDOS (Rev 7.0 to Rev 7.5)
                               and AOS (Rev 6.0 to Rev 7.0)
MV/4000..... via BMC..... AOS/VS (Rev 5.0 to Rev 7.63)
MV/7800U*.... via BMC..... AOS/VS (Rev 6.06 to 7.63)
MV/6000..... via BMC..... AOS/VS (Rev 5.0 to Rev 7.63)
MV/8000,II,C. via BMC..... AOS/VS (Rev 5.0 to Rev 7.63)
MV/10000**... via BMC..... AOS/VS (Rev 5.0 to Rev 7.63)
MV/15000.... via BMC..... AOS/VS (Rev 7.55 to Rev 7.63)
MV/20000**... via BMC..... AOS/VS (Rev 6.54 to 7.63)
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* Model BMX-3 is designed to run with the MV/7800U, but NOT with the MV/7800C; for the MV/7800C, use Zetaco's Model BMX-3A instead, which has the proper pin-outs to accomodate its backplane.

** The diagnostic program provided on the BMX-3 Software Support Tape will run only on the first IOC (not the second).

NOTE: The BMX-3 product is a discontinued product and has been replaced by the BMX-3AP.

SECTION B: Verified Disk Drives

Disk Drive Model	Transfer Rate MB/sec	Unfor- matted Capacity	FORMATTED CAPACITY		
			RDOS Below Rev. 7.0	RDOS, Rev. 7.0 and Above	AOS & AOS/VS
Century Data ^{AMS} 571	2.0	615	267/267	534	190/190
CDC 9710 FSD	12	82	67	73	73
CDC 9715-160 FSD	12	165	134	147	147
CDC 9715-340 FSD	12	344	279	305	277
CDC 9715-500 FSD	18	516	227/227	454	277 or 190/190
CDC 9720-368 Sabre	18	368	149/149	324	277
CDC 9720-736 Sabre	18	736	320/320	640	277/277 or 602**
CDC 9771 XMD /	18	825	268/268	360/360	277/277/73 or 602**
Fujitsu 2351 Eagle	19	475	207/207	207/207	277 or 190/190
Fujitsu 2333*	2.5	337	134/134	147/147	277 or 147/147
Fujitsu 2344*	2.5	690	276/276	602 or 301/301	277/277 or 602**
Fujitsu 2361 EagleXP*	2.5	690	275/275	602 or 301/301	277/277 or 602**

* ZETACO recommends against interfacing these 20 Mhz drives on the Data Channel (DCH), because performance limitations will likely result (depending on the CPU).

** AOS/VS ONLY

*9720-500
70 Sectors
ZTA 2 format*

BMX-3 FEATURES SUMMARY

- * Supports Data Transfer Rates up to 2.5 MB/sec:
 - ZETA 1 FORMAT: Standard SMD Drives
 - ZETA 2 FORMAT: Fujitsu 20 MHz
 - ZETA 3 FORMAT: High Speed BMX-1 Compatible
- * Virtual Mapping Feature allows higher formatted capacities.
- * Emulates DG's 6060, 6061, 6067, 6160, 6161, 6122, 6214
- * Both FCC & Non-FCC cabling are off the backplane.
- * Requires an "I/O ONLY" slot within chassis.
- * Has logical interleave

Rev

Revision Compatibility/ECO Reference Chart

B44-3

~~Model X Software Support Package Tape~~
400-496-00 *444*

Model X
Assembly
500-492-00
444

	A	B	C	D	E	F	G	H	J	K	ECO #	Class	Note
A	X												
B													
C													
D											Q485		1
E				X	X						Q498		2
F				X	X						Q526		4
G				X	X						Q562		5
H													
J						X					Q576		6
K						X					Q592		7
L							X				Q591		8
Microcode revision													
ECO #					Q511	Q517	Q519	Q576	Q584	Q589			
Class					Q61	Q66	Q61	Q64	Q64	Q69			
Note					3	6	8	1	2	2			

1.14

Revision Compatibility/ECO Reference Chart

R-X-3

Model-X Software Support Package Tape

400-496-00 4/24

Model-X-
Assembly
500-492-00
4/24

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	ECO #	C l a s s	N o t e	
A M	X																													
N	X																										0615		9	
P	X																										0631		10	
R	X																										0648		11	
S	X																										0650		12	
T	X																										0665		13	
U	X																													
V	X																										0741		14	
W	X																										0748		15	
X	X																										0764		16	
Y			X																								0768		17	
Microcode revision																														
ECO #	0 5 9 1	0 7 6 4																												
Class																														
Note	3	1 6																												

19. Fixed intermittent BIOS ^{boot} problems in the S/280. ~~280~~
20. New PROMs. Fixed a problem with the Amcoodyne 7110.
21. Documentation change only.
22. Documentation change only.
23. New diagnostic : Fixed error reporting problem.
New formatter: Fixed error reporting problem.
New Reliability: Corrected a bug that occasionally caused the program to loop displaying 'unexpected interrupt'
- Added a DOS printer 'help' to all programs.
24. Paddleboard change.
25. Tape documentation change.
26. Brought assembly & parts list revisions up to the same level. Unmatched revision levels was a mistake.
27. New PROMs. Fixed an address error problem which occurred when formatting a drive with more than 32 heads. Also fixed a format problem with drives that have more than 32 heads AND less than 32 sectors.

25. F10 Fix to help prevent failures on Powerup when attached to 20 matte drives. Prevents disk control from getting inadvertently set to 350ms instead of 200ms. Problem seen in C16 on S140.

Notes

1. New PROMs. Corrected a problem with multiple virtual unit configuration. When virtual mode was software disabled, the deferred seek bit caused seeks to not be executed.
2. New PROMs. Added single/double DOC override. Fixed a Zebra sizing problem w/DFMTR so that drives with more than 32 sectors can be formatted. Provided for an alternate PROM IC type for production.
3. New Configurator. Added RDOS virtual, more help, small path changes, better lists, modified megabyte calculations, added drive types.
4. New PROMs. Sped up DIB statusing. This corrected a DOC format problem in the S/280. Fixed a reselect problem with some drives, including CDC 9760. Present invalid status on a unit change for MIIS compatibility.
5. Added a notch to the board cover so that the terminators can be removed without removing the board cover.
6. New PROMs. Improved 20MHz performance via 'slip-skip' changes. No more skipping revs. Added ability to sector slip while logically interleaved. Also corrected a MIIS problem - what? -. Configurator changes.
7. ~~Power~~ fail circuit changes. Added calibration resistor selection for flexibility in production.
8. New PROMs. Fixed an S/280 dual port problem. Added rework for the MV/10000 & DG Zebra. New diagnostic and formatter ✓
9. Manual change only ✓
10. New PROMs. Corrected potential DC or UNSAFE errors @ 20MHz. ✓
11. Cable and manual change. Added ground wire and lug to cables.
12. Added AVIV board cover option.
13. Corrected an EEPROM data corruption problem during power-up in an MV/10000
14. Manual change only. Approved the MV/20000.
15. Changed the board cover specs.
16. Various changes in DISKD, DISKF, DISKR, CFBMX3 and SLIPS. ✓
17. New PROMs. Fix a CMD drive problem (Amcodyne 7110). ECO is void. Notice duplicate revision 'Y' - ???
18. Changed some jumper pins. Documentation changes.

14. Fixed intermittent BIOS ^{boot} problems in the S/280. ~~280~~
15. New PROMs. Fixed a problem with the Amcodyne 7110.
16. Documentation change only.
17. Documentation change only.
18. New diagnostic : Fixed error reporting problem.
New formatter: Fixed error reporting problem.
New Reliability: Corrected a bug that occasionally caused the program to loop displaying 'unexpected interrupt'
- Added a DCU printer 'help' to all programs.
19. Paddleboard change.
20. Tape documentation change.
21. Brought assembly & parts list revisions up to the same level. Unmatched revision levels was a mistake.
22. New PROMs. Fixed an address error problem which occurred when formatting a drive with more than 32 heads. Also fixed a format problem with drives that have more than 32 heads AND less than 32 sectors.

23. F10 Fix to fully prevent failures on Powerup when attached to 20 MHz drives. Prevents clk circuit from getting inadvertently set to 350ms instead of 200ms. Problem seen in C10 on S140.

Revision compatability chart

For product model: BMX-3

Assembly number.: 500-404-00

Date: 11/13/90

Assembly: Software support package tape
 Revision: 400-404-00
 50040400 A B C D E F G H I J K

ECO	Note(s)	Assembly	rev
A		X	
B			
C			
D			
E		X	485 1
F		X	498 2
G		X	526 4
H		X	562 5
I			
J		X	576 6
K		X	592 7
L			
M			
N		X	591 8
O			
P		X	618 9
Q		X	630 10
R		X	648 11
S		X	650 12
T		X	665 13
U		X	
V		X	
W		X	741 14
X		X	748 15
Y			
Z		X	764 16
AA		X	768 17
AB		X	769 18
AC		X	773 19
AD		X	785 20
AE		X	
AF		X	
AG		X	
AH		X	
AI		X	
AJ		X	

ECO for	5	6	7	8	9
new	5	5	5	7	8
SSP	1	7	9	6	4
revision	0	6	1	4	4
Note(s)				2	2
	3	6	8	6	3

Notes

1. New PROMs. Corrected a problem with multiple virtual unit configuration. When virtual mode was software disabled, the deferred seek bit caused seeks to not be executed.
2. New PROMs. Added single/double DDC override. Fixed a Zebra sizing problem w/DFMTR so that drives with more than 32 sectors can be formatted. Provided for an alternate PROM IC type for production.
3. New Configurator. Added PDOS virtual, more help, small path changes, better lists, modified megabyte calculations, added drive types.
4. New PROMs. Sped up DIB statusing. This corrected a DCN format problem in the S/280. Fixed a reselect problem with some drives, including CDC 9742. Present invalid status on a unit change for MIIS compatability.
5. Added a notch to the board cover so that the terminators can be removed without removing the board cover.
6. New PROMs. Improved 20MHz performance via 'slip-skip' changes. No more skipping revs. Added ability to sector slip while logically interleaved. Also corrected a MIIS problem - what? -. Configurator changes.
7. ~~Power~~ fail circuit changes. Added calibration resistor selection for flexibility in production.
8. ✓ New PROMs. Fixed an S/280 dual port problem. Added rework for the MV/10000 & DG Zebra. New diagnostic and formatter ✓
9. Manual change only ✓
10. New PROMs. Corrected potential DC or UNSAFE errors @ 20MHz. ✓
11. Cable and manual change. Added ground wire and lug to cables.
12. Added AVIV board cover option.
13. Corrected an EEPROM data corruption problem during power-up in an MV/10000
14. Manual change only. Approved the MV/20000.
15. Changed the board cover specs.
16. Various changes in DISKD, DISKF, DISKR, CFBMX3 and SLIPS. ✓
17. New PROMs. Fix a CMD drive problem (Amcodyne 7110). ECO is void. Notice duplicate revision 'Y' - ???
18. Changed some jumper pins. Documentation changes.

19. Fixed intermittent BIOS ^{boot} problems in the S/250. ~~250~~
20. New PROMs. Fixed a problem with the Amcodeyne 7110.
21. Documentation change only.
22. Documentation change only.
23. New diagnostic : Fixed error reporting problem.
New formatter: Fixed error reporting problem.
New Reliability: Corrected a bug that occasionally caused the program to loop displaying 'unexpected interrupt'
- Added a DCH printer 'help' to all programs.
24. Paddleboard change.
25. Tape documentation change.
26. Brought assembly & parts list revisions up to the same level. Unmatched revision levels was a mistake.
27. New PROMs. Fixed an address error problem which occurred when formatting a drive with more than 32 heads. Also fixed a format problem with drives that have more than 32 heads AND less than 32 sectors.

25. Fio Fix to help prevent Fudax on Powerup when attached to 20 matte drives. Prevents disk count from getting inaccurately set to 350ms instead of 200ms. Problem seen in C/O on S140.

Integration Guide

Revision History

Rev.	Description	Engineering	Marketing	C. Support
A	RELEASE	JR	GB	TL

Model: BMX-3

Part Number: 940-002-00

Rev: A