

085-000048-04

RELEASE NOTICE: MICRO NOVA DTOS REV. 04.00 UPDATE 00

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1. SUMMARY

 THIS IS THE REV 04 RELEASE OF THE "MICRO NOVA
 DIAGNOSTIC OPERATING SYSTEM" - (MNDTOS).

2. PRODUCT ORGANIZATION

A. SOFTWARE

SCHEDULE
 560

MICRO NOVA DTOS

STATUS

PART-NUMBER

FORMAT

R
R

DISKETTE MODEL
 3650F
 075-000009-04
 075-000011-04

DTOS FORMAT
 DTOS FORMAT
 DTOS FORMAT

B. DOCUMENTATION

STATUS

PART-NUMBER

TITLE

R
R

015-000059-03
 085-000048-04

MICRO NOVA DTOS
 USER'S MANUAL
 RELEASE NOTICE

LISTED BELOW ARE THE NAMES AND PART NUMBERS FOR THE LISTING FILES FOR THE MODULES INCLUDED IN MICRO NOVA DTOS. THESE FILES CAN BE ORDERED BY THE PART NUMBER LISTED.

MICRO NOVA CPU DTOS LISTINGS

A. SYSTEM PROGRAMS

STATUS	LISTING NUMBER	DIRECTORY NAME	PROGRAM NAME AND TITLE
A	096-001006-02	IOMOD	HIOMOD.SR-DTOS IOMODULE LOADER PROGRAM
A	096-001723-00	IOSIZER	MNSIZER.SR-MNDTOS SIZER
A	096-001101-01	DEBUG III	ITNDEB.SR-NOVA DEBUGGER FOR MICRO NOVA
R	096-000466-01	ODT	MNODT.SR-MNDTOS ODT DEBUGGER
R	096-000461-01	HELP	MHELP.SR-MNDTOS HELP PROGRAM
A	096-001010-01	HDSKMINIO	HDSKMINIO.SR-HOST/IOP DTOS MINI-MONITOR FOR STANDARD DISKS
A	096-001011-01	HDSKMINI1	HDSKMINI1.SR-HOST/IOP DTOS MINI-MONITOR FOR 6038/39 DISKS
A	096-001008-02	HDSKBOOT0	HDSKBOOT0.SR-HOST/IOP DTOS BOOTSTRAP FOR STANDARD DISKS
A	096-001009-02	HDSKBOOT1	HDSKBOOT1.SR-HOST/IOP DTOS BOOTSTRAP FOR 6038/39 DISKS
A	096-001666-01	HSDKFILES	HSDKFILES.SR-DTOS DISK OVERLAY DRIVER FILES
A	096-001012-04	HDSKMON	HDSKMON.SR-HOST/IOP DTOS DISK MONITOR FOR STANDARD DISKS
A	096-001007-03	HDSKBLD	HDSKBLD.SR-HOST/IOP DTOS DISK BUILDER PROGRAM
A	096-001014-03	CAT0	CAT0.SR-DCH EXERCISER FOR STANDARD DISKS
R	096-000463-03	CAT2	MKITTEN.SR-DCH EXERCISER FOR I/O TESTER
A	096-001017-02	CAT3	CAT3.SR-DCH EXERCISER FOR 6038/9 DISKETTES
A	096-001018-02	CAT4	CAT4.SR-DCH EXERCISER FOR 6096 DISKETTES

B. DIAGNOSTIC PROGRAMS

R	080-000256-01	-	MNDTOS CPU DIAG ON MICROFICHE
R	080-000257-01	-	MNDTOS PERIPH DIAG ON MICROFICHE
R	096-000423-03	MNLGCT	MNLGCT.SR-MICRO NOVA LOGIC TEST
A	096-001115-00	CCPLGCT	CCPLGCT.SR-CCP LOGIC TEST
R	096-000444-02	ARITH TST	ARITHST.SR-MICRO NOVA ARITHMETIC TEST
R	096-000440-02	MOSMEM	MOSMEM.SR-MOS MEMORY DIAG
R	096-000422-02	MNSCMT	MNSCMT.SR-MICRO NOVA SC MEMORY TEST
R	096-000448-02	MNIOT	MNIOT.SR-MICRO NOVA I/O TESTER DIAGNOSTIC
R	096-001057-01	MNHSC TST	MNHSC.SR-MICRONOVA HIGH SPEED DATA CHANNEL DIAGNOSTIC
R	096-000446-02	MNASYN	MNASYN.SR-MICRONOVA ASYNC INTERFACE DIAGNOSTIC
R	096-000424-04	MNMORT S	MNMORTS.SR-MICRONOVA MULTI-PROGRAMMING SHORT VERSION
R	096-000506-04	MNMORT L	MNMORTL.SR-MICRONOVA MULTI-PROGRAMMING LONG VERSION
-	096-000437-03	PRINT-TST	PRINTALL.SR-PRINTER ACTION TEST
R	096-000443-02	FPY FRMT	FPYFR.SR-6038/6039 FLOPPY DISK FORMATTER
R	096-000445-03	FPY DIAG	FPYDIA.SR-6038/6039 FLOPPY DISK DIAGNOSTIC
R	096-000442-05	FPY RELI	FPYRL.SR-6038/6039 FLOPPY DISK RELIABILITY
R	096-000672-01	PDKP RELI	CDRP.SR-PHOENIX DISK RELIABILITY
R	096-001058-01	UNCD DIAG	UNCDD.SR-MICRONOVA 6095 MOVING HEAD DISK DIAGNOSTIC
R	096-000673-01	PDKP FMTR	CDFP.SR-PHOENIX DISK FORMATTER
A	096-001139-00	6096 DIAG	SKYD.SR-6096 QUAD DENSITY FLOPPY DISK DIAGNOSTIC
A	096-001117-00	6100 DIAG	MFDD.SR-6096,6101,6102 MOVING HEAD DISK/FLOPPY DIAG
A	096-001138-00	SECR RELI	SECR.SR-6096,6101,6102 MOVING HEAD DISK/FLOPPY RELI/FMTR
-	096-001060-01	MNCSD	MNCSD.SR-MICRONOVA COMM SUB-SYSTEM DIAGNOSTIC
-	096-000538-01	MNRPC	MNRPC.SR-MICRONOVA READER,PUNCH CLOCK TEST
-	096-000537-00	MNLPT TST	MNLPT.SR-MICRONOVA LINE PRINTER TEST
R	096-001114-01	LP2/TP2 R	LP2REL.SR-DASHER LP2 RELIABILITY
-	096-000447-01	MNHHC	MNHHC.SR-MICRO NOVA HAND HELD CONSOLE TEST
-	096-000535-00	PBP DIAG	MNPBP.SR-MICRONOVA PROM BOARD TEST
-	096-000441-00	MNPWR	MNPWR.SR-MICRO NOVA POWER FAIL DIAGNOSTIC
-	096-001061-01	MNCOMM	MNCOMM.SR-MICRONOVA COMM SUB-SYSTEM RELIABILITY
-	096-001062-01	MNALD	MNALD.SR-MICRONOVA ASYNC LINE DIAGNOSTIC

-	096-000637-00	MNADE	MNADE.SR-MICRONOVA A/D INTERFACE EXERCISER
-	096-000638-01	MNDAE	MNDAE.SR-MICRONOVA D/A INTERFACE EXERCISER
-	096-000539-01	MNADC	MNADC.SR-MICRONOVA A/D INTERFACE DIAGNOSTIC
-	096-000540-01	MNDAC	MNDAC.SR-MICRONOVA D/A INTERFACE DIAGNOSTIC
A	096-001713-00	MNMDAC	MDAC.SR-MICRONOVA 4335-S A/D, D/A, DIGITAL INTERFACE (MICRODAC) DIAG/EXER
-	096-000666-01	MNDGIF	MNDGIF.SR-MICRONOVA DIGITAL INTERFACE DIAGNOSTIC
-	096-001121-00	DGAE EXER	DGAE.SR-MN4300M DGDAC ANALOG EXERCISER
-	096-001122-00	DGAD DIAG	DGAD.SR-MN4300M DGDAC ANALOG DIAGNOSTIC
-	096-001120-00	DGDD DIAG	DGDD.SR-MN4300M DIGITAL DIAGNOSTIC
-	096-001059-00	MNACSE	MNACSE.SR-MN ANALOG CONV- ERSION SYSTEM EXER.

3. ENVIRONMENT

A. PREREQUISITES

! MICRO NOVA CPU WITH TELETYPE AND EITHER:
! (1) 8K MEMORY AND SINGLE OR DUAL FLOPPY DRIVE(S) OR
! (2) 12K MEMORY AND HARD DISK DRIVE.

4. ENHANCEMENTS

1. PROGRAMS HAVE BEEN ADDED TO MICRO NOVA DTOS REV 03 TO TEST:
6095 DISKS, DASHER LP2, DIGITAL I/O, AND DGDAC PERIPHERALS.
 2. THE PROGRAM NAME'S AS THEY ARE LISTED IN THE MICRO NOVA DTOS
DIRECTORIES ARE NOW SHOWN IN THE PRODUCT ORGANIZATION TO AID IN
LOCATING THE LISTING NUMBER FOR A PROGRAM INCLUDED ON THE MICRO
NOVA DTOS DISKETTES.
 - ! 3. MICRO NOVA DTOS NOW SUPPORTS THE 6095 DISK AS A SYSTEM
! MEDIA AND FOR RUNNING THE DATA CHANNEL EXERCISER'S (CAT).
 - ! 4. MICRO NOVA DTOS NOW PROVIDES SUPPORT FOR NONSTANDARD CONSOLE
! DEVICES LIKE THE MBC'S CONSOLE ON DEVICE CODE 20 AND ALSO
! PROVIDES BOOTSTRAP TESTING OF THE BASIC SYSTEM.
! THESE FEATURES WILL CAUSE THE SYSTEM TO TAKE LONGER (APROX.
! 45 SEC.) TO BOOTSTRAP THAN PREVIOUS REVS.
! SEE SECTION 7.2 FOR INFORMATION ABOUT THE BOOTSTRAP TEST.
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5. FIXES
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NONE

6. NOTES
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1. ONLY WRITE ENABLE DISKETTE DRIVE CONTAINING MNDIOS DISKETTE WHEN RUNNING DISKETTE DATA CHANNEL EXERCISER (MNCAT).
 2. MAKE SURE THAT THE MICRO NOVA DTOS DISKETTE IS REMOVED BEFORE RUNNING MNMORTL FROM THE DISKETTE
 3. MICRO NOVA DTOS IS NOW AVAILABLE AS TWO DISKETTES. ONE DISKETTE FOR THE CPU DIAGNOSTICS AND ONE FOR THE PERIPHERAL DIAGNOSTICS.
 - ! 4. IF THE DATA CHANNEL EXERCISER IS INCORRECTLY SPECIFIED BY
! THE OPERATOR UNPREDICTABLE RESULTS MAY OCCUR.
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7. DOCUMENTATION CHANGES

1. IN THE DTOS SUMMARY (015-000082-02) THE DECRPTION
 FOR THE ACCEPT COMMAND READS "SAME AS RUN,1" IT
 SHOULD READ "SAME AS RUN,1 EXCEPT THE INTERNAL PASS
 COUNTER FOR EACH PROGRAM IS FORCED TO 1."

2. DTOS BOOTSTRAP TEST

NEW RELEASES OF THE DTOS MEDIA INCLUDE A BOOTSTRAP TEST WHICH RUNS AS
 PART OF THE BOOTSTRAPPING PROCEDURE. THE TEST QUICKLY CHECKS THE BASIC
 FUNCTIONS OF THE SYSTEM HARDWARE AND DISPLAYS THE WORD TESTOK ON THE
 SYSTEM-OPERATOR'S CONSOLE WHEN IT RUNS SUCCESSFULLY. OTHERWISE, IT HALTS
 THE CPU BEFORE DISPLAYING THE ENTIRE WORD. THUS, THE PORTION OF THE
 DISPLAYED TESTOK WORD INDICATES THE PROBABLE AREAS OF FAILURE, AS SHOWN
 BELOW.

TESTOK MESSAGE INTERPRETATION

MESSAGE!	MEANING
	WHEN NO PART OF THE WORD DISPLAYS (AFTER 30 SECONDS), THE FOLLOWING ARE PROBABLE AREAS OF FAILURE: . A JMP, JSR, OR STA INSTRUCTION . AN INDIRECT JMP OR JSR . TIO BUSY COULD NOT BE CLEARED
I	INDICATES THAT EITHER AN ARITHMETIC/LOGIC OR AN INDEXED MEMORY-REFERENCE INSTRUCTION FAILED. THE FOLLOWING ARE THE PROBABLE AREAS OF FAILURE: FIRST: CPU BOARD SECOND: MEMORY SUBSYSTEM
IE	INDICATES THAT THE TEST COULD NOT SIZE MEMORY. THE MOST PROBABLE FAILURE IS THE MEMORY SUBSYSTEM.
IES	INDICATES THAT THE DATA=ADDRESS SUBTEST FAILED. THE MOST PROBABLE FAILURE IS THE MEMORY SUBSYSTEM.
TEST	INDICATES THAT THE DATA=COMPLEMENT-OF-ADDRESS SUBTEST FAILED. THE MOST PROBABLE FAILURE IS THE MEMORY SUBSYSTEM.
TESTO	INDICATES THAT THE MEMORY-PATTERN SUBTEST FAILED. THE MOST PROBABLE FAILURE IS THE MEMORY SUBSYSTEM.
TESTOK	INDICATES THAT THE ENTIRE PROGRAM RAN SUCCESSFULLY.

THE BOOTSTRAP TEST RUNS QUICKLY. THE MAXIMUM TIME FOR SUCCESSFULL
 COMPLETION IS ABOUT 15 SECONDS. THE TIME INTERVAL BETWEEN DISPLAYING THE
 LETTERS T E S I IS VERY SHORT; THE TIME INTERVAL BETWEEN T O AND O K IS
 LONGER.

! THE FOLLOWING MEMORY SUBTESTS RUN AS PART OF THE BOOTSTRAP TEST: DATA=
! ADDRESS (TES), DATA=COMPLEMENT-OF-ADDRESS (TEST), AND MEMORY- PATTERN
! (TESTU). ALL THREE TESTS RUN WITH MEMORY UNMAPPED (FIRST 32K ONLY). IF
! ANY FAILS, IT HALTS THE CPU, AND AC2 CONTAINS THE FAILING ADDRESS. DE-
! PENDING UPON THE TEST, OTHER INFORMATION CAN BE FOUND IN AC0 AND AC1
! AS SHOWN BELOW.

! VALUE OF AC'S FOR MEMORY SUBTESTS

! TEST NAME	! AC0	! AC1	! AC2
! DATA=ADDRESS ! (TES)	! BAD DATA	! ---	! FAILING ADDRESS ! (GOOD DATA)
! DATA=COMPLEMENT ! OF ADDRESS ! (TEST)	! BAD DATA ! (A COMPLEMENT- ! ED NUMBER)	! ---	! FAILING ADDRESS ! (COMPLEMENT THE ADDRESS! ! TO GET THE GOOD DATA)
! MEMORY=PATTERN ! (TESTU)	! GOOD PATTERN	! BAD PATTERN	! FAILING ADDRESS

! WHEN THERE IS NO SYSTEM-OPERATOR'S CONSOLE ON DEVICE CODES 10 AND 11
! (FOR EXAMPLE MBC'S) THE BOOTSTRAP TEST RUNS, BUT DOES NOT DISPLAY THE
! TESTOK WORD. IF IT ENCOUNTERS AN ERROR, THE TEST EXECUTES A HALT
! INSTRUCTION. OTHERWISE, THE DTOS PROMPT (*) APPEARS ON THE OPERATOR'S
! CONSOLE AFTER AN INTERVAL OF APPROXIMATELY 90 SECONDS (AFTER DTOS LOADS
! AND RUNS THE INITIALIZING PROGRAMS).

! ADDITIONALLY IN SYSTEMS WHICH DO NOT DISPLAY THE TESTOK MESSAGE, THE
! PROBABLE AREA(S) OF FAILURE CAN BE FOUND BY EXAMINING THE PC CONTENTS
! (PC=ADDRESS+1) AT HALT TIME AND MATCHING THE RESULTING ADDRESS TO A
! VALUE IN THE TABLE BELOW.

! NOTE: IN HARDWARE SYSTEMS WITH SOFT CONSOLES, THE CONTENTS OF THE PC
! DISPLAYS ON THE OPERATOR'S CONSOLE BEFORE THE MACHINE MICROCODE
! AUTOMATICALLY ENTERS THE ODT WHEN EXECUTING A HALT INSTRUCTION.
! IN SYSTEMS WITH FRONT-PANEL SWITCHES AND LIGHTS, THE PC CONTENTS
! DISPLAY IN THE ADDRESS LIGHTS.

ADDRESS RELATED TO TESTOK
MESSAGE (FAILING SUBTEST)

CONTENTS OF PC AT HALT TIME DISK	RELATED TESTOK MESSAGE (FAILING SUBTEST)
514	-----
531	
537	
545	
547	
552	
556	T
560	
562	
564	
567	
571	
NO HALTS DURING MEMORY SIZING.	TE
632	TES
634	
713	TEST
715	
736	TESTO
746	
NO HALTS, NO ERRORS.	TESTOK

8. PROBLEMS

NONE

9. PATCHES

NONE