

# Data General Nova, Eclipse, MV and AV

Data General Preservation and Restoration

# MPT/100 microNOVA

[Home](#) » Restorations » **MPT/100 Restoration**

## Restoration Progress

20%

Just arrived (Jan 2019) as (hopefully) my second project this gorgeous DG Enterprise MPT/100 desktop computer which sports a microNOVA CPU under the hood. It's a little dirty but in good shape and no screen burn. I am attempting to find schematics, Field Engineering and User manuals and 5.25" floppy disks with MP/OS or MP/DTOS DIAGS before I do much with this unit.

This is exactly as I picked it up, its dirty and needs a good clean!

Once I source the correct size socket I will post images of the internals as well.....

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**Close and accept**



So, having sourced a small imperial socket set I am now able to open the MPT/100 up and see what's under the hood. PCB Part Number 005-15542 contains the keyboard and associated logic and PCB Part Number 005-16560 is best described as a single board microNOVA computer which utilises the following Integrated Circuits:

mN602 (DG)

mN615 (DG)

FD1791A (Floppy Disk Controller)

P8035HL (CPU (Intel 8048 based)- Suspect Keyboard Processing)

2651 UART(s)

4116N DRAM(s)

The overall condition inside is dirty in places but generally 'as new' 😊 The only sign of any kind of damage is some minor oxidisation on both of the DG Integrated Circuit caps and some oxidisation on the legs of both of the Signetics 2651 UART's.

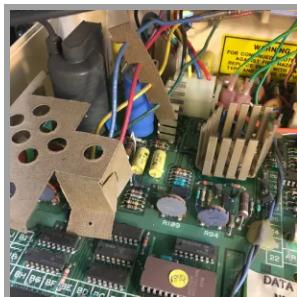
One thing that is immediately clear though is that I will not be able to isolate the Power Supply Unit (PSU) to test it in isolation (I would normally do this to protect the logic from a failed PSU outputting something it shouldn't!). So a very close visual inspection along with through PSU component testing will be in order before any power is applied to it!

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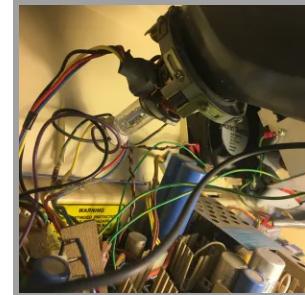
I am VERY keen to obtain schematics for this PCB (005-16560) as it will be far easier for me to check for possible faults prior to power up with drawings in hand. If you have or know where I might be able to obtain schematics or manuals for the MPT/100 please let me know by using the contact form here.

Here's what's under the cover:



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## Inspection

So after a very long time on the shelf (unintentional) I have started the work required to bring this MPT/100 to life. It is now on my bench and is in the process of being completely stripped down, cleaned and visually inspected. The first step in this restoration is to disassemble and inspect each component part within the MPT/100 to the point where the chassis does not contain any component parts and can be thoroughly cleaned.

**Warning:** This device utilises a CRT (Cathode Ray Tube) and there are very high voltages present inside the device which remain present after the device has been turned off. If you are not familiar with safe working practices for CRT devices seek advice from a professional BEFORE you venture inside your device.

**Floppy Drives:** The design of the MPT/100 is such that the Floppy Drives can be removed using a large paper clip pressed in to the small hold located between each floppy drive on the on the right hand side. This dis-engages an internal latch which holds both drives in place and the individual floppy's can be pulled forwards and removed from the chassis.

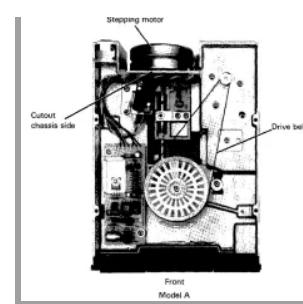
Upon removal a visual inspection is performed along with a moving parts assessment. Sadly these floppy disks have been left (unused) for so long that the belts have adhered to the pulley! Slowly rotating the pulley shows the belt being dragged by the pulley at the top.

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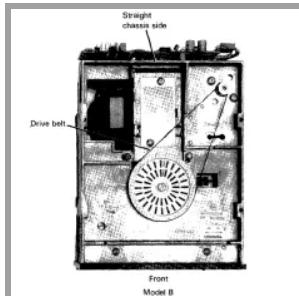
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Floppy Drive 0 Removed



MPT/100 Model A FDD



MPT/100 Model B FDD



Belt Stuck to Pulley

The Data General part number for the Floppy Disk Drive is 005-015163 and there were two versions of floppy drive referred to as Model A and Model B. My example appears to be a Model B variant manufactured by Tandon (Model TM100-2A) I believe Model A was manufactured by Qume.

We will return to the floppy drives later.

**Keyboard:** Next to be removed is the keyboard; this unit is comprised of a single PCB (005-015542) which locates into moulded recess posts at the front of the chassis. Removal is a very simple process of un-plugging the PCB connector ribbon (005-014541) and lifting the keyboard PCB up at the rear by approx 30 degrees and lifting the PCB out of the recesses by moving it towards the rear of the MPT.

We will return to this PCB later for inspection and cleaning:

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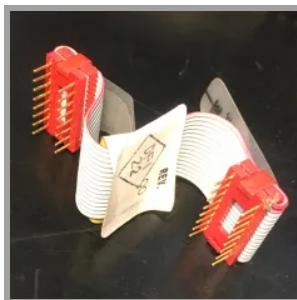
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Hood Up



Keyboard Connector



005-014541



Underside Keyboard PCB



Keyboard Removed



PCB Recess

**Chassis:** The chassis is hinged at the rear (moulded plastic) which allows it to be propped open using an internal rest and also allows the separation of the two halves for maintenance.

I carefully unplugged the AC, deflection coil, floppy power, floppy signal cable, floppy 5v cable, fan power and grounding plugs from the main PCB and pulled the tube end connector off the CRT. The only remaining connection was for High Voltage and even though it's not been powered on for years I still ensured any residual voltage was discharged to earth before I attempted to remove this.

With everything unplugged I was able to extend the chassis up to a point where the hinge exited the lower section thus separating the two half's:

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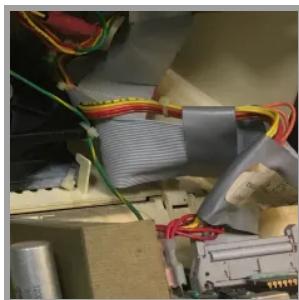
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LHS Hinge



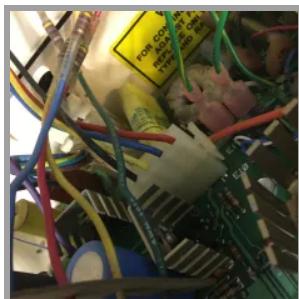
Rear Chassis View



RHS Hinge



Floppy Power Removed



Coil Plug in Place



CRT Neck



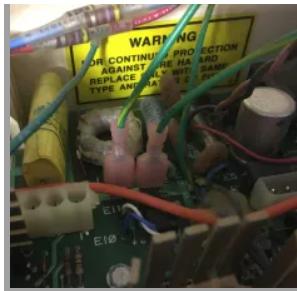
Floppy I/O, GND and 5v



Fan AC and Gnd Post

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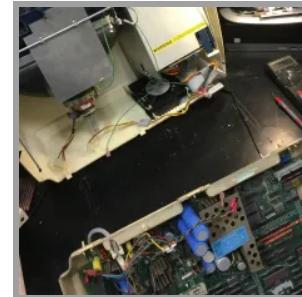
Ground Posts



Fan Restraint



Ready for Separation

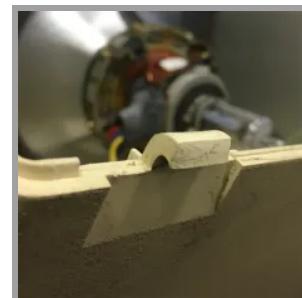


Separation Complete

Here are some close-ups of the hinge parts:



Bottom Chassis Hinge



Top Chassis Hinge

**Main PCB:** The main PCB is held in place by two bolts towards the back of the PCB, four retaining posts across the middle and four retaining clips at the front as illustrated below:

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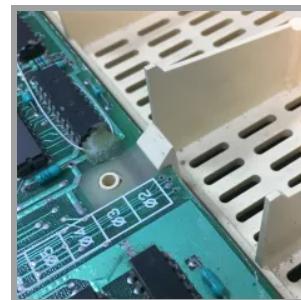
Rear Bolt – 1 of 2



Retaining Post (1 of 4)



Rear Bolt – 2 of 2



Front Clip (1 of 4)



Released PCB from Post



Rear PCB Support (1 of 3)

To remove the PCB from the chassis, undo and remove the two retaining bolts at the rear of the PCB, then carefully pull each of the plastic retaining clips at the front of the MPT forward just far enough to release the PCB from the latch – don't pull the PCB up, just let it rest on top of the retaining clips whilst you release the other three latches.

Once the four front retaining latches have been released, gently pull the PCB towards you (forward and not up) to release it from the central retaining posts.

You are now ready to lift the PCB our of the chassis.

***Caution: The PCB construction is delicate and the weight distribution across the PCB is uneven. Because of this you can easily flex the PCB and risk damaging the PCB through stress (cracked***

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***stressing it.***

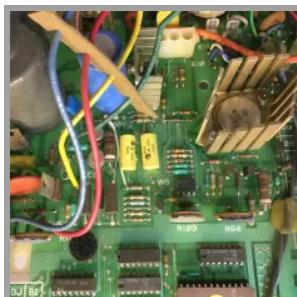
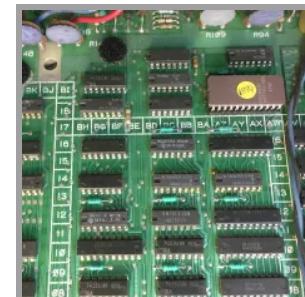
Here it is out of the chassis:



Main PCB Front View



Main PCB Rear View



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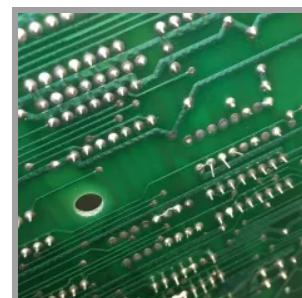
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Not only do you need to exercise caution not to bend the PCB when handling it, be advised that the underside (solder side) has lots of long component legs that can easily be bent into each other. On initial inspection of my PCB I can see a couple of very close encounters:



Close Shave 1



Long Component Legs!

Lots more to follow.....

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The MPT series consisted of the MPT/85, MPT/87 and MPT/100. Although they used the microNOVA chip set, they were not technically part of the microNOVA, MP/100 (or MP/200) micro-products.

You will note that the MPT series evolved over the 1978 – 1985 time frame, starting with the MPT/80 and ending with the MPT/100. Different models were added and dropped depending upon sales and marketing (and embarrassment). These systems were also given the non-unique name “Enterprise” when DG attempted to sell them to select business and general consumer markets as an alternative to the Apples and early IBM PCs(!). Yes, Data General even had its own retail stores. For a while. 😊

The MPT/100 uses a proprietary format (i.e. PC compatible) for the 5.25" diskettes so must have “special” hardware to format, create and copy diskettes.

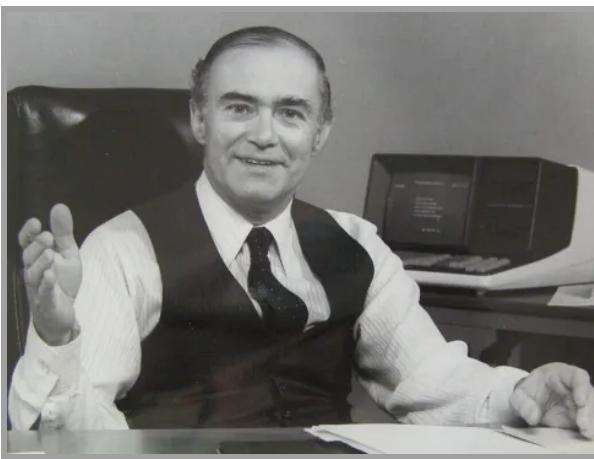
MP/OS is not AOS, nor even MP/AOS. Again, insignificant to outsiders but substantially different when working with DG. MP/OS was designed to be resilient to hardware problems and also minimise disk[ette] accesses.

MP/OS had different names during its gestation and public release: Mikron, Micron (and I believe Ozmos), before the MP/OS name was finally determined. Different trademark conflicts kept DG (and other vendors) busy during those dynamic times trying to come up with non-conflicting names. Different manuals/sales literature had different names on them during this time just depending upon the name-of-the-week used.

## MPT/100 Documents and Pictures

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## A LITTLE GOOD NEWS FOR DATA GENERAL OEMS.

Look what we've put together for you. A desk-top computer that doesn't take up the whole desk.

It's called MPT. And look what's inside this little thing: a 16 bit microNOVA™ computer, 60 K bytes of memory, 80 column by 25 line screen. Full keyboard with 10-key numeric pad. And up to 716 KB of on-line storage in the form of 358 KB mini diskettes. (Also available with one diskette. Or none.)

Out back you'll find an I/O bus that accepts the standard microNOVA peripherals.

As well as your own interfaces. And two synchronous communications ports, programmable to 19.2K baud.

Standard. (We could go on about why that's an option on other systems. But don't get us started on that.)

Also standard are power-up diagnostics that check out the whole system before it accepts your software. So you know your software shouldn't be far off having a few problems.

MPT is sparsely compatible with the microNOVA, NOVA® and ECLIPSE® computers you're probably using now. And because it uses a run-time version of MP/OS, you're going to be able to develop your software with your MP/OS and AOS operating systems. In PASCAL, FORTRAN, BASIC.

**DataGeneral**  
We take care of our own.

You can get to work on your MPT software immediately. By calling your local Data General sales office or distributor at MS C-238, 4400 Computer Drive, Woburn MA 01880.

Or if you really want to move, you can pick one up at your local Data General industrial electronics stocking distributor this afternoon.



You'll find MPT very easy to take.

Partly because of the \$499 price (USA price, 2 diskette version, OEM quantity 20).

And partly because the whole thing weighs just 30 pounds.

Remember when you decided to become a Data General OEM? That was a very intelligent decision on your part.

MPT is good news for every Data General OEM. And bad news for those who are not.

## Enterprise—a 16 bit business computer from only £2300.



Technical highlights and features Processor 16 bit microprocessor, 1 MHz, 64 Kbytes of memory, 128 Kbytes formatted memory, 1024x25 green phosphor 12" screen, 100% compatibility with the microNOVA. Display 1024x25 green phosphor 12" screen, 100% compatibility with the microNOVA. Communications RS232C, V24, two integral programs. Operating systems Enterprise OS, MP/OS, Languages Basic, Cobol, Fortran, Pascal, Fortran IV, COBOL, PL/I, C, Fortran 77, Expanded menu menu interface.

More software. Better software.

A broad range of application software packages is available to meet most requirements. These include financial modeling, and many others including retail, distribution, payroll, and more. You can solve your problems.

The 16 bit Data General business computer has been designed as a fully compatible extension to our existing range of products. The soft-

ware, level of support and competitive price make it the answer for small businesses and for departments of large organizations.

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Software utilities ensure that the Enterprise is both fast and efficient, and programs may be developed using any of the well-known high level languages. The system also provides the Enterprise to talk to other computers. Both Data General and third party software is available.

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Service where you need it. Every Enterprise is supplied with a Data General service contract. Over 220 service centers worldwide mean fast response.

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## DG Brings Out Its First Small Business System

By Marcia Blumenthal  
WESTBROOK, Staff

WESTBROOK, Maine — Making its long-awaited move into the small business market, Data General Corp. last week introduced its Enterprise 1000 system for businesses in retail, distribution, and manufacturing.

The introduction offers marks the first time DG has introduced a system complete with application packages. Developed under the guidance of the "Big Eight" accounting firm Ernst & Young, the system's retail and manufacturing counting packages will be available.

The first two, available in September, will feature retail management, order entry/inventory control functions, and general ledger processing.

The hardware for the system is a 16-bit microprocessor-based processor with 64 Kbytes of dynamic random access memory, a 16-bit disk part desktop computer featuring a video display, a keyboard, and two 5½" dual-density diskette storage units, each capable of storing 320 Kbytes. The system also includes a high-speed bidirectional printer and tape drive.

Essentially, the system is a repackaged Nova with integrated software. Some of the software is unique to the system, but said that during fiscal 1982, company will begin to offer a standard processor operating system, a subset of the one used in the Nova System. But the conventional business system is not DG's major reason for the introduction.

Richman had no specific project in mind, but said that during fiscal 1982, company will begin to offer a standard processor operating system, a subset of the one used in the Nova System. But the conventional business system is not DG's major reason for the introduction.

Somewhat surprisingly, the Enterprise 1000 is the first in an anticipated family of small business systems. Richman said, "With the initial, it will have the power of a small minicomputer."

Heck Richman, DG's executive vice-president of marketing, said on interview prior to the announcement.

Somewhat surprisingly, the Enterprise system does not feature word processing, but Richman said, "It is highly likely DG will add that feature in the future." He added that Lawrence Sellman, vice-president and general manager of the Small Business Systems division, will be in charge.

The system, including hardware

and operating system software, is priced at \$7,200. An optional 80 Kbytes of memory costs \$1,200.

The system will be distributed through 130 retail outlets nationwide, with a total of 400 such retail outlets expected to be in place by next six months. The system will be avai-

lable through dealers.

**Significant Opportunity**

Although DG will market the Enterprise system only through retail outlets, Richman sees the small business market as a very significant new business opportunity.

"We will continue to develop the market in microcomputers," he said.

But Richman said, "I am looking forward to seeing that should not be so significant because the retail outlets of distributors and contractors have developed along with the cost curve for microcomputers."

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**Data General Corp. last week announced its Enterprise 1000 small business system complete with applications packages.**

application software for Enterprise 1000, including retail management, order entry/inventory control, and general ledger.

But the conventional business system is not DG's major reason for the introduction.

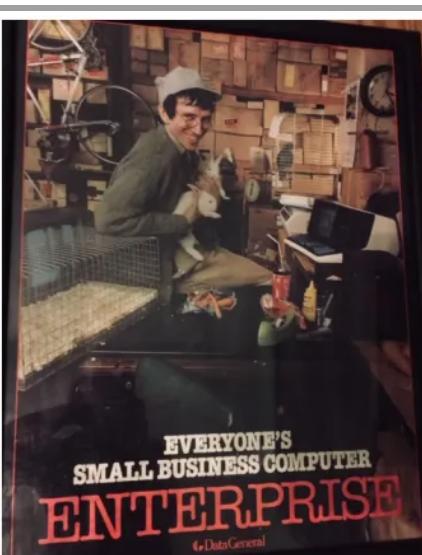
**Video Disk Training**

Buyers of an Enterprise system will be trained to use it through a series of training programs. Training will be given at the retail outlet.

With DG providing training via video disk, users can learn basic operations on a leased basis.

The company is also offering a specialized training program for dealers, he said.

Moreover, DG is offering a 90-day maintenance agreement. Annual hardware maintenance will be available through dealers for \$1,200 to \$1,727/mo. Software maintenance will be handled through dealers for when DC has set up a toll-free hot-line.



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## 6 thoughts on “MPT/100 microNOVA”



**Thomas Guntlin, Switzerland** says:

7TH MAY 2019 AT 9:11 PM

Hi, my name is Thomas and i'm from Switzerland.

I'm very pleased to see that some of the MPT/100 still exist's.

I have a fully working MPT/100 and a fully working mainboard.

Also i have MP/OS and some Diskettes (Pascal and MP tools)

I'm very interested to share technical informations.

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Thomas

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**Tyler** says:

8TH MAY 2021 AT 9:20 PM

Nice machine. I found a mN615 chip in a lot of chips I purchased and after lots of searching I ended up here. If you find out what it does or if yours is bad let me know!

[Reply](#)



**Ian Willing** says:

27TH MAY 2021 AT 10:08 PM

Hi I worked for DG from 1983 until 1992 at the European repair center in the UK, The first product I worked on was the MPT series (known affectionately as Muppets), I will give you a word of caution about these machines, the power supplies have a habit of spectacular failure, (I ran them at 220V), a 'cure' was found by retro fitting a resistor in line with the mains input but I cannot remember anything more about this (sorry). I will see if I have anymore information about these machines.

[Reply](#)

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11TH JUNE 2021 AT 11:03 AM

Have one with 8" floppy HD??

[Reply](#)



**Bob Plyler** says:

19TH FEBRUARY 2022 AT 3:07 AM

I used one of these in the early 80;s to develop the software for the Nimslo 3D photographic printer. MP/OS was burned into EPROM along with the control code. I used MP/Pascal and assembler. The control code ran on an MP/100 SBC.

[Reply](#)



**Richard Sullivan** says:

14TH FEBRUARY 2024 AT 11:07 PM

If one does not have the knowledge handle a CRT (Cathode Ray Tube) all one has to do is find any television repair book from the 90's and previous decades, it is not rocket science. It is nice to be cautious but there is no need to scare people from the task either.

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Marty on Nova General Purpose Interface

Matt on Data General One (Pepi II)

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