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Hard disk drives will be covered with a separate warranty provided with the unit.

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EXPANSION
SYSTEMS

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DataFlyerRAM

USER MANUAL

Eight megabyte RAM board.
For use in the Amiga 2000, DataFlyer 500,
DataFlyer 1000 and on the DataFlyer 2000.

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Introduction

The DataFlyerRAM is a very versatile memory card that can be used to increase the fast memory of your A500 in the DataFlyer or in your A2000. The DataFlyerRAM will auto-configure up to eight megabytes of memory into your system. This allows you to run very large RAM disks as well as larger and more sophisticated programs. It is fully compatible with the BaseBoard and the two combined can bring your Amiga 500 up to a total of 10.6 megabytes of memory. The DataFlyerRAM features four layer board construction. This reduces noise to insure data integrity and to perform evenly with all the various types of memory. The DataFlyerRAM was designed with "Maximum Performance" engineering with zero wait states and hidden refresh to guarantee the fastest possible speed. It can be powered via the A2000 bus or an optional power supply on an expanded A500.

Memory Types

The DataFlyer RAM board was designed to use SIMMs (single inline memory modules). This type of memory package provides certain advantages. SIMMs are very easy to install without the worry of bending any pins. They are readily available as they are used by many major computer manufacturers. Also, SIMMs take up less space than other packages.

You should determine if you are a heavy memory user or a light memory user. If cost is a factor and you believe that 2MB will last you a lifetime then the 256X8 SIMMs are the way to go. However, today's programs are very memory intensive and the trend is to even bigger programs which means lots of memory will be required. To this end it is highly recommended to go for a minimum of 2MB using the 1MX8 SIMMs. The two types of memory cannot be combined. If you start with the 256X8 up to 2MB to expand they must be removed to install the 1MX8 units to get to 8 megabyte.

THE DATAFLYER RAM BOARD USES EITHER 256X8 SIMMS OR 1MX8 SIMMS 100NS (NANO-SECONDS) OR FASTER

Installing the Memory

To install memory insert SIMM into socket with memory chips up. Slide down until snap lock is in place. Be very sure they are seated firmly into the bottom of the socket.

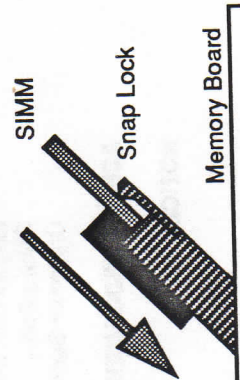


Diagram A

Page 1

Configuring the DataFlyerRAM

The DataFlyerRAM must be configured by setting a series of jumpers that determine how the board will perform in your system. Below is Diagram B showing the location of the jumpers and the 8 rows of memory. Below and on page 3 and 4 is information pertaining to the location of the SIMMs, the settings of each jumper and the function of the connectors. The factory setting is the same as the example. It is 2mb of 1MX8 SIMMs, installed in a DataFlyer Plus Rev. 1.0.

Jumpers

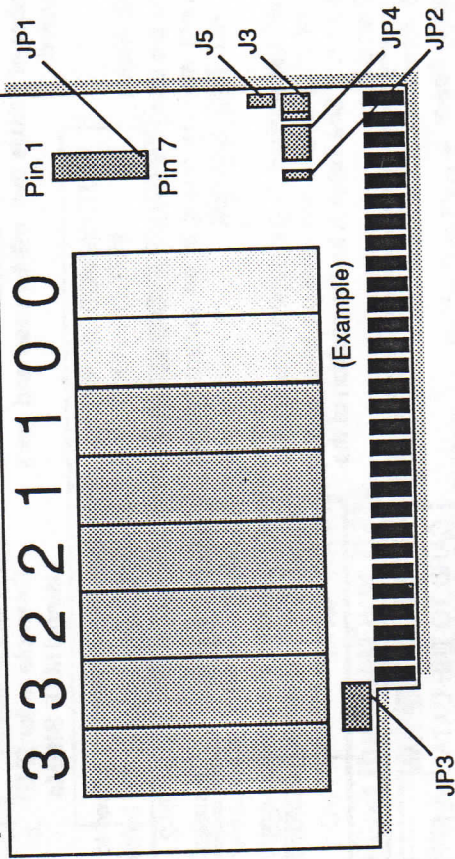


Diagram B

JP-1 Memory

1. Start with what type of memory are you using - 256X8 or 1MX8. Find the location under "Ram Type Used" in the Configuration Chart shown below.

JP-1 Memory Configuration Chart

Ram Type Used	Amount Of Memory	JP-1 Jumper Positions								Number Of Rows Filled							
		1	2	3	4	5	6	7	0		1	2	3				
256X8 SIMM Module	512K																2
	1 Meg																4
	2 Meg																8
	2 Meg																2
	4 Meg																4
	8 Meg																8



= JUMPER IS INSTALLED



= Bank is Filled



= Example

2. Directly to the left of the "Type" column will be "Amount of Memory". Find your amount.

Page 2

3. Directly to the right of the "Amount of Memory" will be indicators showing which of the seven jumper positions needs to have a jumper installed. See drawing at right for numbers of the jumper positions. Of the seven only a maximum of four will be used. Unused jumpers should be stored on a single empty pin.

4. Indicated next to the "Jumper Positions" are the banks that will be filled and the resulting number of SIMMs that will be used and rows occupied.

JP-2 Slave

If you are using the DataFlyer RAM as an independent memory board in an expansion slot **INSTALL THIS JUMPER.**

If it will be attached to the DataFlyer controller you must determine the revision level of the controller. See Table A for the position of the JP-2 jumper.

JP-3 Reset

External Power

Set jumper in this position if power is being supplied at J-3.

Attached

Set jumper in this position if the controller will be attached to the RAM board on the memory header.

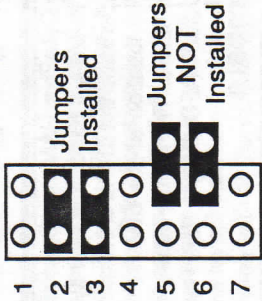
Independent

Set jumper in this position if the board is to be used independently in an expansion slot.

JP-4 Power

This Jumper determines the source of power. When used in the Dataflyer 500 the RAM board can get power from either the A500 bus or an external power supply. If you have a basic A500 system there should be enough power due to the boards low power design to use the A500 bus. If this is not sufficient then use the optional power supply described in this manual. Positions 1 and 5 are never used and provided in the matrix to avoid the possibility of wrong connections. A500 bus is shown installed. DF Plus=DataFlyer Plus revision 1.0 or 2.0

JP-1



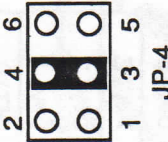
Example is for 2MB Using 1MX8 SIMMs

If DataFlyer RAM is attached to the DataFlyer controller see below.

TABLE A		JP-2
Controller Revision	Installed	Installed
DataFlyer Plus Rev 1.0 & 2.0	YES	YES
DataFlyer DF200 Rev1.2	NO	NO

TO ATTACH THE RAM CARD TO THE DATAFLYER CONTROLLER IN THE A2000 YOU MUST HAVE THE DATAFLYER PLUS REV 2.0 BOARD.

JP-3

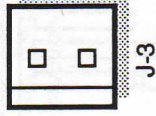


Connect Pins	Power From:	Controller Revision
3 & 4	A500/1000/2000	DF Plus
2 & 4	A500/1000/2000	DF Rev1.2
4 & 6	External	All
2 & 4	A2000	None

Power Connectors

J-3 External Input

This jack accepts the +5 Volts from the external power supply. JP-4 must have positions 4 & 6 connected.



POWER MUST BE APPLIED TO THE J3 CONNECTOR PROPERLY OR IT WILL DAMAGE YOUR SYSTEM.

J-5 Sense

This provides the relay sense voltage. When +5V is detected it trips a relay that automatically turns on your optional power supply.



Installing the DataFlyer RAM

DataFlyer 500

Remove the cover of the DataFlyer 500 chassis. Locate the DataFlyer controller card mounted in the chassis. Locate the 86 pin "memory header" near the 100 pin card edge. It will be labeled on the surface of the board. Orient the DataFlyer RAM the same way as the controller and mount the 86 pin memory socket onto the header. After checking for proper alignment of the pins press down firmly.

Insert the standoff and screw that will hold the memory board above the DataFlyer controller card. See Diagram C

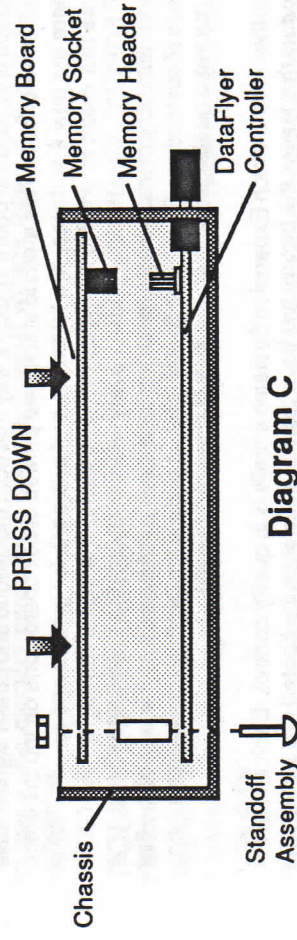


Diagram C

Amiga 2000

The DataFlyer RAM can be installed in the A2000 two ways. One is mounted on the memory header of the DataFlyer Plus Rev 1.0 board (it must be that revision-NOT DataFlyer Rev 1.2). The other is into any standard 100 pin expansion slot.

4. Orient the RAM board with the front of the board sliding into the plastic card guide in the front of the A2000 and the gold card edge connector of the board into the expansion slot. When you are sure of the alignment press down firmly onto the top of the board. The RAM board should be seated completely into the slot. See Diagram D.

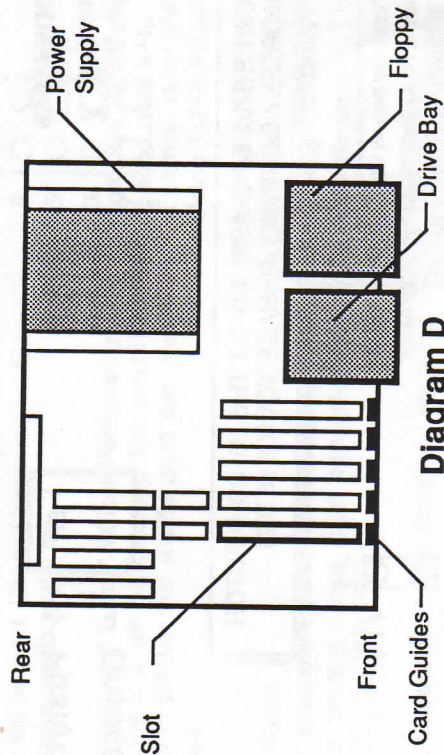


Diagram D
Amiga 2000 Top View

Quality story

A great deal of thought and effort has gone into making your DataFlyer RAM card a trouble free product.

Our story starts with something called a 4 layer board. What is a 4 layer board and why is it so important? All electronics in general and memory boards more than most need good clean "noise free" access to ground and power. If you are restricted to just the top and bottom surface of the printed circuit card the ground and power traces must share available room with the regular signal traces, thus smaller traces. Smaller traces, among other things, means lower quality power and ground signals. The alternative method is to build the board in such a way that both the ground and power signals have their own surface. This method stacks two printed circuit boards one on top the other. There are now 4 surfaces, two for traces and one each for ground and power. What does this mean to you? **RELIABILITY.** The better the signal the higher the **DATA INTEGRITY.** Great! Why doesn't every manufacturer use this method? Cost! It understandably costs twice as much to make this type of board and it is one of the first areas of cost cutting. Expansion Systems takes pride in the fact that we are able to bring to market a quality product at a truly cost competitive price.

Another area in which Expansion Systems excels is in quality control. Each and every product that leaves the factory has been tested. Interfaces are booted and tested with hard drives in a real user environment. Every memory board is loaded by hand to its capacity and given full read write tests. The memory is then removed and packaged for distribution. Yes, this is time consuming. But it pays off in customer loyalty and the comments on our warranty cards is worth it all.

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OPTIONS

For detailed information on the options available refer to the literature included in the box. The products are available from your dealer. If your dealer does not carry what you want you may purchase directly from Expansion Systems. Call 415 656-2890 or Fax 415 656-5131 for more information.

POWER SUPPLIES

If you have the DataFlyer 500 the interface and (almost) all 3.5 inch hard disks can be powered from the expansion bus if you are running one extra floppy drive and a low power BaseBoard memory expansion. Depending on the type and number of peripherals attached to the A500 it may become advantageous to power the separately. To do this we offer two power supplies. One is internal and meant to power both the memory card and hard drive and one is external and meant to power only the memory board.

DATAFLYER 500 POWER SUPPLY

The DataFlyer 500 power supply mounts internally and will power the DataFlyer Plus Rev.1.0 card, the DataFlyer RAM and a 3.5 inch hard drive. This switcher supply turns on automatically when your Amiga is powered up. It is cool running and automatically senses all international input voltages. This eliminates the need to adjust jumpers.

Suggested Retail \$69.00 U.S.D.

DATAFLYER RAM POWER SUPPLY

The DataFlyer RAM power supply is an external table mount power supply that is meant to power the memory card only. The international voltage model is slightly more expensive.

Suggested Retail \$29.00 U.S.D.

POLICY INFORMATION

Registration and Warranty

Please send in your registration card immediately. This must be on file for warranty work to be done.

The Expansion Systems warranty does not cover the hard drive you place in the chassis or mount onto the interface unless purchased directly from Expansion Systems. Please

Return Policy

Before returning any merchandise you must have a warranty card on file and a Return Authorization Number. This number is obtained from an Expansion Systems customer service representative. Package your product very carefully using the original packaging materials. Insure the entire contents for the retail price. Packages without an RA# on the outside of the box will be refused.

If you purchased the DataFlyer RAM from one vendor and the memory from another source you may have to deal with more than one company to get your problem solved. If you agree to have us look at both your interface and the third party memory - it is at your own risk. This also applies to checking over the entire system. We wish to help whenever possible and do not want to be a manufacturer that always points the other way. But the shipping and handling of hard drives must be done at your own risk. As indicated the hard disk is a sensitive piece of equipment. We cannot be responsible for the condition of the drive when it arrives if it is not packaged properly.

Customer service

The best place to obtain answers to your questions and service is from the dealer where you purchased the product. If you need customer service directly from the manufacturer call 415 656-2890 between 1:00 PM and 5:00 PM Monday through Friday Pacific Standard time. Please have your notes documenting what you have tried and what you have isolated. Also it is best if you are at your computer with it turned on. If you have to call back on a continuing problem try to help the customer service representative by updating them with where you are and what has been done. This will save you time. Your satisfaction with our products is very important to us and every attempt will be made to get you running.

Acknowledgements

We wish to thank the engineering staff at ANON for taking a list of very aggressive specifications and exceeding the requirements.

Notices

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