This application note has been written to address issues when using the DM9008 in designs other than a standard ISA bus Network Interface Card environment. This is a list of frequently ask questions our Technical Support staff have fielded in response to the use of the DM9008 in variety of applications that do not use our standard reference designs or drivers.

Whose Magnetics can I use for 10Base-T application?

Trough-Hole PCB:

>	YCL part no. 20F001N
>	Fil-Mag. part no. 78Z034
>	Valor part no. FL1012/1066
>	Pulse Eng. part no. PE65424

Surface Mount PCB:

>	YCL part no. 20F001NS
>	Fil-Mag. part no. 78Z1122D-01
>	Valor Part no. SF1012

Is an external EEPROM required?

The EEPROM is not required to operate in applications not requiring ISA PNP or Jumperless Mode. The default I/O address is 300H and default IRQ is 3. If you need to program a physical destination MAC address use register PA0-PA5. If you want to use promiscuous modem program the receiver configuration register, RCR, bit 4 to a 1. This will let the DM9008 receive all packets, it ignores the contains of (PA0-PA5).

How do I distinguish between a "Remote Write" operation and a "Send Packet" operation?

The DM9008's command register, bits 5-3 (RD2-0), control which type of remote DMA access is currently in use.

Can the DM9008 send packets larger than 1580 bytes?

The DM9008 does not prevent the user from sending larger packets. A packet size of up to 64K can be transmitted by programming TBCR0 and for the desired transmit byte count.

How does the remote DMA and local DMA interact?

The remote DMA is used to move data between the system memory and the DM9008's internal SRAM. This operation is controlled using the remote DMA registers, RSAR1, RSAR0, RBCR1 and RBCR0. The user programs the remote Start Address (RSAR) that points to the desired SRAM location to begin the data transfer and programs the Remote Byte Count Registers (RBCR) to indicate how many bytes to transfer. The user then programs the Command Register (CR) to transfer data to or from the SRAM by using the Remote Read, Remote Write or Send Packet operation (refer to the Command Register description in the DM9008's data sheet).

To move data between the internal SRAM and the network interface the user must program the local DMA registers. All local DMA movement is bounded to 256 byte pages, therefore only the Page address (the upper 8 bits of address) need to be supplied to the local DNA transfer state machine. There are separate

Copyright © DAVICOM Semiconductor Inc.

registers that control local DMA for transmit and receive operations (this allows the user to receive while transmitting). The local DMA registers for transmit data are the Transmit Page Register (TPSR) and Transmit Byte Count Register 1 and 0. The local DMA register for receive data are the Page Start (PSTART), Page Stop (PSTOP), Current Page (CURR), Boundary (BRNY) and the Current Local DMA Address (CLDA1, 0). Refer to the DM90008's data sheet for further programming information.

To transmit data the user must first move the data to DM9008's internal SRAM using a remote DMA operation. Once the data has been transferred, the user then programs the local DMA to transmit the data to the network interface. To receive data the user must program the local DNA to move data from the network interface to DM9008's internal SRAM. Once data has been received the user then programs the remote DMA state machine to move data to the system memory. All remote DMA involves a "test and Transfer" loop to data port (10H offset +base I/O address). This data transfer loop is generally executed using I/O move data instructions by the system CPU.