Integrated Device Technology, Inc.

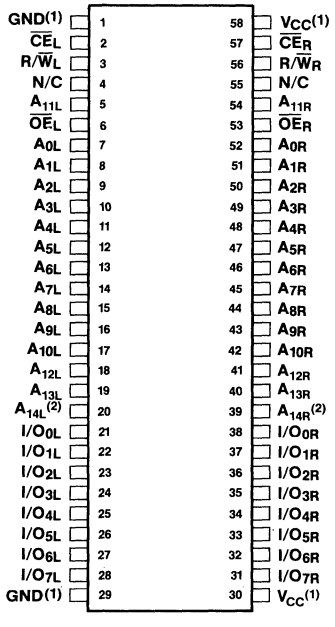
CMOS DUAL-PORT RAM MODULE 128K (16K x 8-BIT) & 256K (32K x 8-BIT)

ADVANCE INFORMATION
IDT7M136
IDT7M137

FEATURES:

- High-density 128K/256K-bit CMOS dual-port RAM module
- 32K x 8 organization (IDT7M137) or 16K x 8 option (IDT7M136)
- Low-power consumption
- CEMOS™ process virtually eliminates alpha particle soft error rates (with no organic die coating)
- Battery backup operation — 2V data retention
- Fully asynchronous operation from either port
- Single 5V (±10%) power supply
- Dual V_{CC} and GND pins for maximum noise immunity
- Inputs and outputs directly TTL-compatible
- Fully static operation
- Modules available with semiconductor components 100% screened to MIL-STD-883, Class B
- Finished modules tested at Room, Hot and Cold temperatures for all AC and DC parameters as per customer requirement

PIN CONFIGURATION



DIP
TOP VIEW

DESCRIPTION

The IDT7M136/137 are 128K/256K-bit high-speed CMOS dual-port static RAM modules constructed on a multi-layered ceramic substrate using four IDT7134 4K x 8 dual-port RAMs (IDT7M136) or eight IDT7134 dual-port RAMs (IDT7M137) in leadless chip carriers. Dual-port function is achieved by utilization of the two on-board IDT54/74FCT138 decoder circuits that interpret the higher order addresses A_{L12-14} and A_{R12-14} to select one of the eight 4K x 8 dual-port RAMs. (On the IDT7M136 16K x 8 option, the A_{L14} and A_{R14} need to be externally grounded and the selection becomes one of the four 4K x 8 dual-port RAMs.) Extremely high speeds are achieved in this fashion due to the use of the IDT7134 dual-port RAM, fabricated in IDT's high-performance CEMOS technology.

The IDT7M136/137s provides two ports with separate control, address and I/O pins that permit independent, asynchronous access for reads or writes to any location in the memory. The IDT7M136/137s are designed to be used in systems where on-chip hardware port arbitration is not needed. It is the user's responsibility to ensure data integrity when simultaneously accessing the same memory location from both ports.

The IDT7M136/136s are available with access times as fast as 60ns commercial and 80ns military temperature ranges, with operating power consumption of only 2.1W/3.5W (max.). The modules also offer a standby power mode of 1.4W/2.8W (max.) and full standby mode of 660mW/1.3W (max.).

All IDT military module semiconductor components are 100% processed to the test methods of MIL-STD-883, Class B, making them ideally suited to applications demanding the highest level of performance and reliability.

PIN NAMES

LEFT PORT	RIGHT PORT	NAMES
$\overline{CE}_L$	$\overline{CE}_R$	CHIP ENABLE
$R/\overline{W}_L$	$R/\overline{W}_R$	READ/WRITE ENABLE
$\overline{OE}_L$	$\overline{OE}_R$	OUTPUT ENABLE
A_{0L-14L}	A_{0R-14R}	ADDRESS
I/O_{0L-7L}	I/O_{0R-7R}	DATA INPUT/OUTPUT
V_{CC}		POWER
GND		GROUND

NOTES:

1. Both V_{CC} pins need to be connected to the 5V supply, and both GND pins need to be grounded for proper operation.
2. On 16K x 8 IDT7M136 option, A_{14L} and A_{14R} need to be externally connected to ground for proper operation.

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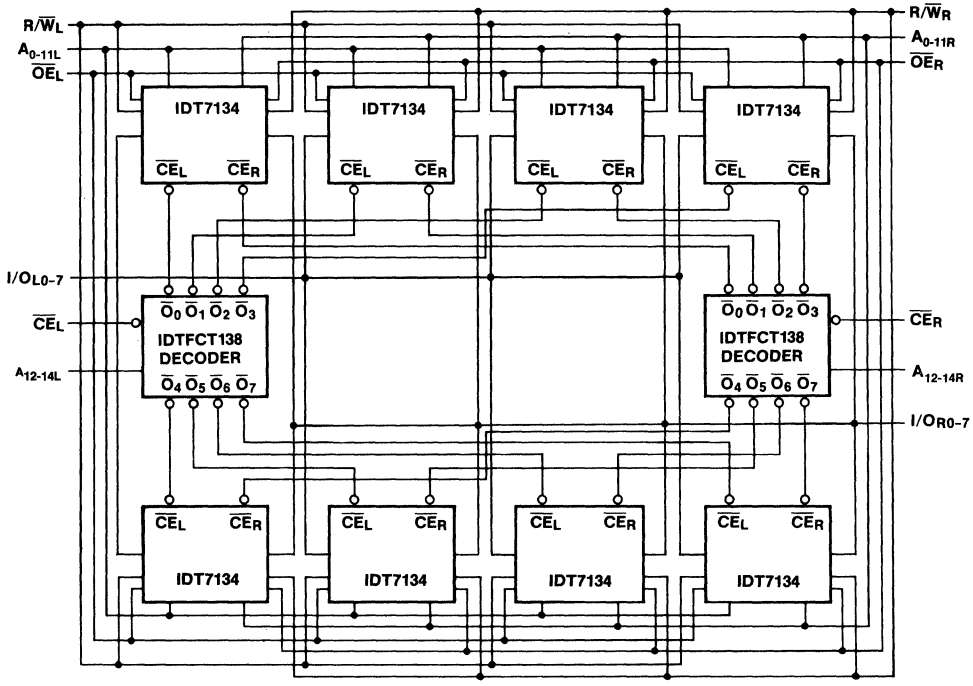
FUNCTIONAL BLOCK DIAGRAM

(A) IDT7M137 (32K x 8-BIT)



(B) IDT7M136 (16K x 8-BIT)