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ZT 8920

32-Bit Memory System

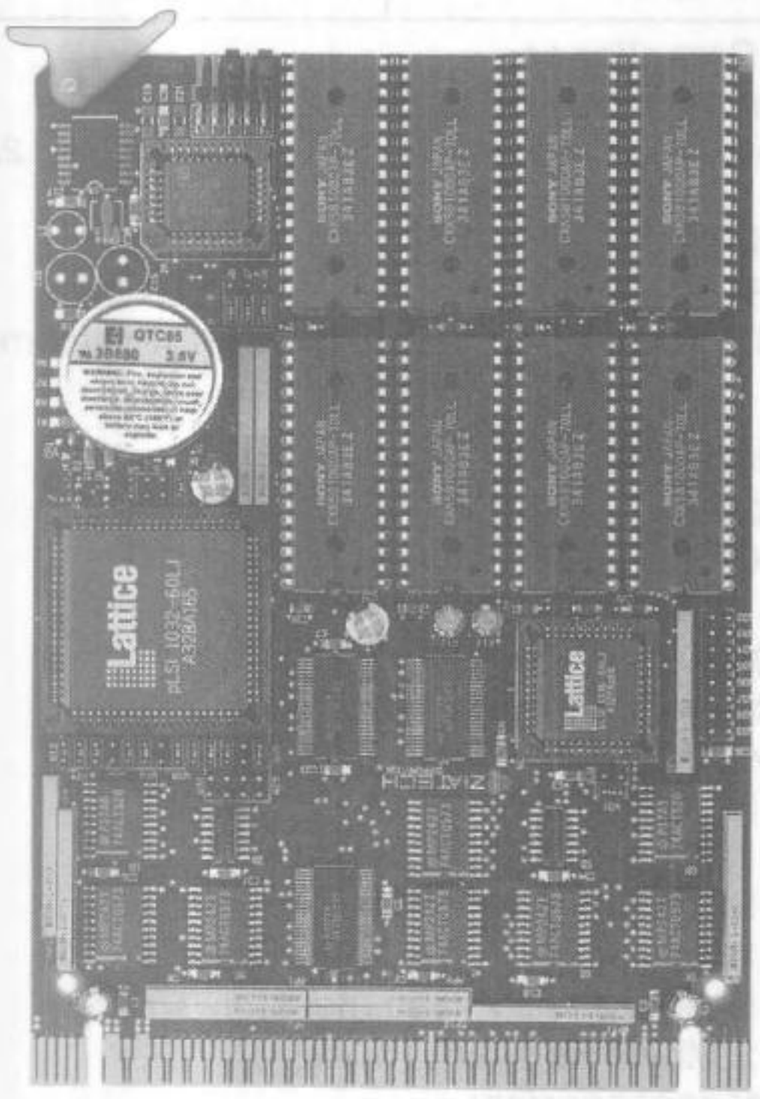
32-bit memory board provides SRAM, flash, shared RAM to STD 32 computers

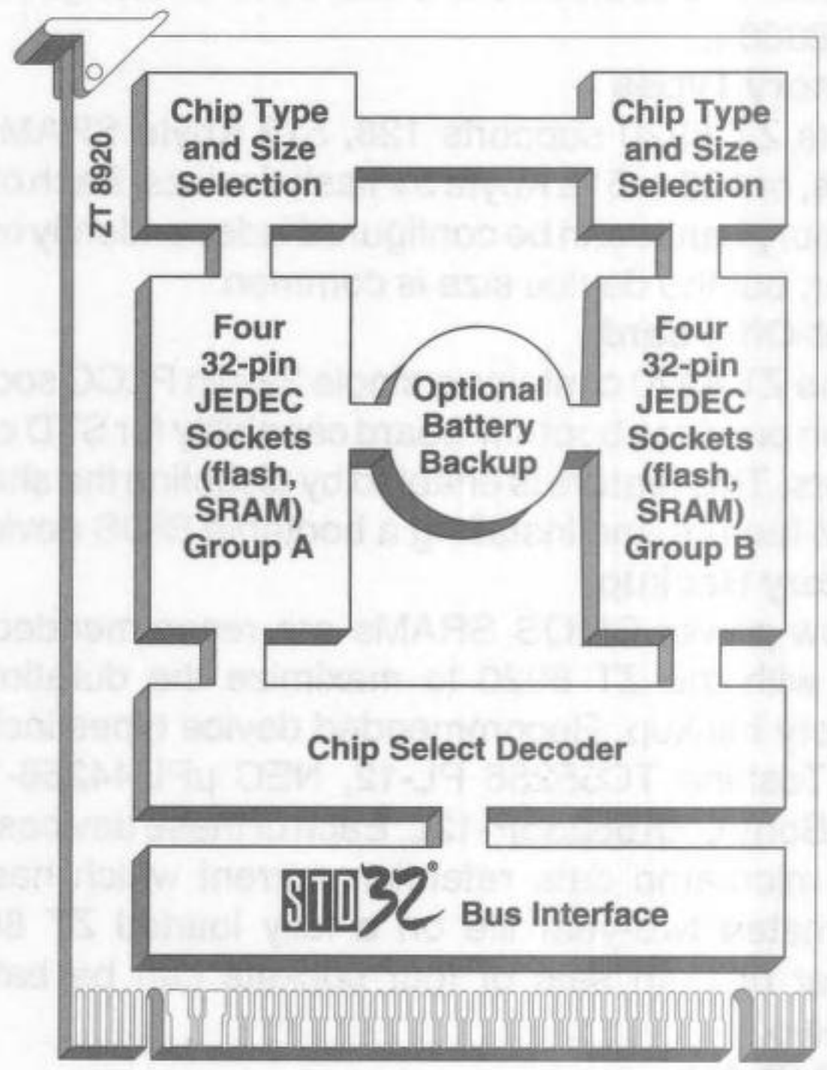
The ZT 8920 is a 32-bit Extended Architecture (EA) and 16-/8-bit Standard Architecture (SA) memory board that provides extended memory capabilities to STD 32® computers. The ZT 8920 is designed to operate with high-end processors that can perform 16-bit SA and 32-bit EA memory transfers across the STD 32 backplane. Ziatech processors with this capability include the ZT 8901 Single Board V53 Computer, ZT 8902 Single Board 486 Computer, and ZT 8911 Scalable Processor Board. The ZT 8920 can be used as extended memory, shared RAM for STD 32 STAR SYSTEMs™, battery-backed RAM, or as a flash disk. In any of these modes, it can accommodate up to 4 Mbytes of memory with eight JEDEC sockets. Several ZT 8920 memory units can be used in a single system, allowing DOS computers to operate with several megabytes of solid state disk or extended memory.

The ZT 8920 doubles backplane performance in 16-bit SA mode, and increases it by 16 times in 32-bit EA single mode over traditional STD-80 specifications.

Other features include a boot-off-board socket for booting single board computers which have not been programmed.

The ZT 89CT20 model is designed and tested for -40° to +85° Celsius operation in harsh environments. This product is designed for use in conjunction with Ziatech's other LT (low temperature) and CT (CMOS, TTL backplane-compatible) products for mobile and outdoor applications.





- 24-bit addressing only
- 32-bit EA transfers
- 8- or 16-bit SA transfers
- Auto EA/SA detect, jumper selectable
- Two sets (four sockets each) of independently configured 32-pin JEDEC sockets
- 0 to128 Kbyte shared RAM, jumper selectable using bank B
- 1, 2, or 4 Mbyte of RAM, flash (5V-only)
- Boot-off-board EA or SA modes, jumper selectable
- Optional 1 amp-hour lithium battery backup for SRAMs (including RAM disks)
- 5V-only board
- Board is mapped on 1, 2, or 4 Mbyte boundaries

Note: CT denotes CMOS, TTL backplane-compatible, and extended temperature operation of -40° to +85° C. (Users should make adjustments for temperature rise in enclosures.)

ZIATECH CORPORATION

ZT 8920 32-Bit Memory System

Functional Considerations

The ZT 8920 is compatible with STD 32 Bus specifications. The board extensions prevent it from fitting into the STD-80 backplane connector.

Address Selection

The ZT 8920 supports extended memory and can be mapped at 1, 2, or 4 Mbyte boundaries. In SA mode, the board can be mapped anywhere in the 16 Mbyte address range, and in EA mode anywhere in the 4 Gigabyte address range. The address is set by 12 jumpers which control A20 to A31.

Memory Banks

There are two memory banks on the ZT 8920. These banks can be independently configured for different device types but are mapped contiguously to each other. For example, if the ZT 8920 is mapped at 1 Mbyte, RAM bank A is mapped at 100000h to 17FFFFh and RAM bank B is mapped at 180000h to 1FFFFFh.

Shared RAM

The ZT 8920 supports 0 to 128 Kbytes of shared RAM for STD 32 STAR SYSTEMs. The RAM size is configured by three jumpers on the ZT 8920. The available options are 0, 16, 32, 48, 64, 96, and 128 Kbytes. The address of the shared RAM always starts at C8000h.

Memory Types

The ZT 8920 supports 128, 512 Kbyte SRAM devices, or 128 or 512 Kbyte 5V flash devices. Each of the memory banks can be configured independently of the other, but the device size is common.

Boot-Off-Board

The ZT 8920 contains a single 32-pin PLCC socket, which provides boot-off-board capability for STD computers. This feature is enabled by disabling the shared RAM feature and installing a bootable BIOS device.

Battery Backup

Low-power CMOS SRAMs are recommended for use with the ZT 8920 to maximize the duration of battery backup. Recommended device types include the Toshiba TC55256 PL-12, NEC µPD44256-12L, and Sony CXK58255P-12L. Each of these devices has a 1 microamp data retention current which has an estimated two-year life on a fully loaded ZT 8920. Either or both sets of four sockets can be battery backed.

Wait States

The ZT 8920 generates wait states for EA cycles only, when enabled on the ZT 8920. Wait states on each memory bank are controlled independently.

Low Power/Extended Temperature

The ZT 89CT20 version is designed and tested for -40° to +85° Celsius operation in harsh environments. This product is designed for use in conjunction with Ziatech's other LT (low temperature) and CT (CMOS, TTL backplane-compatible) products for mobile and outdoor applications.

Specifications

Electrical

*Power Req. **	*Min.*	*Typ.*	*Max.*
Supply Voltage, V_{CC}	4.75V	5.00V	5.25V
Supply Current, V_{CC}=5.0V	–	200mA	250mA

* Not including memory chips

Mechanical

- Size- and backplane-compatible with STD 32 mechanical specifications (can only be used in an STD 32 system)
- Measures: 4.5"W by 6.5"L by 0.46"H (11.4cm by 16.5cm by 11.5mm)
- Weight: 4.6oz. (130g)
- Occupies one 0.625" (1.6026cm) STD slot

Environmental	
Operating Temperature *(ZT 8920)*	0° to 65° Celsius
Operating Temperature *(ZT 89CT20)*	-40° to +85° Celsius
Storage Temperature	-55° to +105° Celsius
Non-Condensing Relative Humidity	less than 95% at 40° Celsius

STD 32 Compliance

- Memory Slave: SA-8, SA-16, EA-32
  Note: SA8 is equivalent to STD-80 Series Rev. 2.3 (5 and 8 MHz)

Reliability

- MTBF: 40 years
- MTTR: five minutes (based on board replacement)

Ordering Information

ZT 8920	32-Bit Memory System
ZT 89CT20	32-Bit Memory System, extended temperature
ZT M8920	32-Bit Memory System manual

Must choose one memory option:

Memory choices

M0	No memory
M1	128 Kbytes RAM, 70ns
M2	512 Kbytes static RAM, 120ns
M3	2 Mbytes static RAM, 120ns
M4	512 Kbytes 5V flash memory, 150ns
M5	2 Mbyte 5V flash, 150ns

Optional accessories:

B	1 amp-hour lithium battery, extended temperature

All products are shipped FOB San Luis Obispo, CA, USA. OEM discounts are available for quantity purchases. Contact Ziatech for additional information.

Warranty – Five years with an optional five-year extension. See the full warranty statement in the *Technical Data Book* appendix. Batteries are not covered by Ziatech's warranty.

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