

Statement of Volatility – Dell Pro Tower QCT1250

⚠ CAUTION: A CAUTION indicates either potential damage to hardware or erasure of data and tells you how to avoid the problem.

The Dell Pro Tower QCT1250 contains both volatile and non-volatile components. Volatile components erase their data immediately after power is removed from the component. Non-volatile components continue to retain their data even after power is removed from the component. The following non-volatile components are present on the Dell Pro Tower QCT1250 system board.

Table 1. List of non-volatile components on system board

Description	Reference designator	Volatility description	User accessible for external data	Remedial action (action necessary to erase data)
Embedded Flash memory in embedded controller Microchip DEC1547H-D0-I	U2403	320 KB Code/Data SRAM (240 KB for code, 80 KB for data) 64 Bytes Battery Powered Storage SRAM (4 Kb OTP)	No	Not applicable
System BIOS	U2501	Non-volatile memory, 256 Mb (32 MB), System BIOS and Video BIOS for basic boot operation, ePSA (on-board diagnostics.)	No	Not applicable
	U2502	Non-volatile memory, 128 Mb (16 MB), System BIOS and Video BIOS for basic boot operation, ePSA (on-board diagnostics.)	No	Not applicable
	U2504	Non-volatile memory, 256 Mb (32 MB), System BIOS and Video BIOS for basic boot operation, ePSA (on-board diagnostics.)	No	Not applicable
System Memory – DDR5 DIMM memory	Connectors: DIMM1, DIMM2	Volatile memory in OFF state (see state definitions later in text) One to four modules will be populated. System memory size will depend on DIMM modules and total memory will be between 8 GB to 64 GB.	Yes	Power off system.
System memory SPD EEPROM	On memory DIMM(s)	Non-volatile EEPROM memory. One Device present on each DIMM. Stores memory manufacturer data and timing information for correct operation of system memory.	No	Not applicable
TPM	U9101	32 KB non-volatile memory located in the TPM module.	No	Not applicable
RTC CMOS	RTC	Volatile battery back-backed CMOS memory 256 bytes. Stores CMOS information.	No	Removing the coin-cell battery.
Video memory – type – see next column	UMA architecture-uses system memory.	Volatile memory in off state. UMA uses main system memory size allocated out of main memory.	No	Enter MODS/S3-S5 state below.
M.2 Solid State Disk	User replaceable	Non-volatile magnetic media, various sizes in GB.	Yes	Low level format.
Hard drive	User replaceable	Non-volatile magnetic media, various sizes in GB.	Yes	Low level format.
CD-ROM/RW/ DVD/ DVD+RW/ Diskette Drives	User replaceable	Non-volatile optical/magnetic media.	Yes	Low level format/erase.

⚠ CAUTION: All other components on the system board erase data if power is removed from the system. Primary power loss (unplugging the power cord) destroys all user data on the memory. Secondary power loss (removing the coin-cell battery) destroys system data on the system configuration and time-of-day information.

In addition, to clarify memory volatility and data retention in situations where the system is put in different ACPI power states the following is provided (those ACPI power states are S0, S1, MODS, S3, S4 and S5):

S0 state is the working state where the dynamic RAM is maintained and is read/write by the processor.

S1 state is a low wake-up latency sleeping state. In this state, no system context is lost (CPU or chip set) and hardware maintains all system contexts.

MODS is called “suspend to RAM” state or stand-by mode. In this state the dynamic RAM is maintained. Dell systems will be able to go to MODS if the OS and the peripherals used in the system supports MODS state. Linux and Windows11 support MODS state.

S3 (Suspend to RAM): The S3 sleeping state is a low wake latency sleeping state. This state is similar to the S1 sleeping state except that the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor’s reset vector after the wake event. In NCR systems, during S3, power is only provided to the USB 3.0 ports.

S4 is called “suspend to disk” state or “hibernate” mode. There is no power. In this state, the dynamic RAM is not maintained. If the system has been commanded to enter S4, the OS will write the system context to a non-volatile storage file and leave appropriate context markers. When the system is coming back to the working state, a restore file from the non-volatile storage can occur. The restore file must be valid. Dell systems will be able to go to S4 if the OS and the peripherals support S4 state. Windows 11 support S4 state.

S5 is the “soft” off state. There is no power. The OS does not save any context to wake up the system. No data will remain in any component on the system board, i.e. cache or memory. The system will require a complete boot when awakened. Since S5 is the shut off state, coming out of S5 requires power on which clears all registers.

The following table shows all the states supported by Dell Pro Tower QCT1250

Model Number	S0	S1	MODS	S4	S5
Dell Pro Tower QCT1250	X		X	X	X