DELLTechnologies

Statement of Volatility – OptiPlex Tower Plus 7020

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

The OptiPlex Tower Plus 7020 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 OptiPlex Tower Plus 7020 system board.

Table 1. List of non-volatile components on the 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 DEC1515H-D0-I/Z2	EC1	256 K bytes Code/Data SRAM (224 KB optimized for code performance, 32 KB optimized for code performance), 64-bytes Battery Powered Storage SRAM.	No	N/A
System BIOS	U2502	Non-volatile memory, 256 Mbits (32 MB), System BIOS and Video BIOS for basic boot operation, ePSA (on board diagnostics).	No	N/A
	U2504	Non-volatile memory, 128 Mbits (16 MB), System BIOS and Video BIOS for basic boot operation, ePSA (on board diagnostics).	No	N/A
System memory – DDR5 DIMM Memory	Connectors: DIMM1, DIMM2, DIMM3, DIMM4	Volatile memory is in an OFF state (see state definitions later in the text). One to four modules are populated. System memory size depends on the DIMM modules and is between 8 GB and 128 GB.	Yes	Turn off the computer
System memory SPD EEPROM	On memory DIMM(s)	Non-volatile EEPROM memory. (256 bytes). One Device is present on each DIMM. Stores the memory manufacturer data and timing information for correct operation of system memory.	No	N/A
TPM	U9101	32448-bytes non-volatile memory is located in the TPM module.	No	N/A
RTC CMOS	RTC	Volatile battery is backed by CMOS memory 256 bytes. Stores CMOS information.	No	Remove the on-board Coin Cell battery
Video memory – type – see next column	UMA architecture- uses system memory.	Volatile memory is in an OFF state. UMA uses the main system memory size that is allocated out of main memory.	No	Enter S3(MoDS)-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 and removing the battery) destroys all user data on the memory (DDR5, 4400MHz). Secondary power loss (removing the on-board 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, S3 (MoDS), 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 chipset) and the hardware maintains all system contexts.

> S3 (MoDS) is called "suspend to RAM" state or stand-by mode. In this state, the dynamic RAM is maintained. Dell systems can go to S3 (MoDS) if the OS and the peripherals that are used in the system supports the S3 (MoDS) state. Linux and Windows11 support the S3 (MoDS) state.

> 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 writes 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 can go to S4 if the OS and the peripherals support the S4 state. Windows 11 support the 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 remains in any component on the system board, that is, cache or memory. The system requires 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 that are supported by Dell OptiPlex Tower Plus 7020.

Model Number	S0	S1	S3 (MoDS)	S4	S5
Dell OptiPlex 7020	X		X	X	X