Statement of Volatility – Dell OptiPlex 7090 Micro Form Factor

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

The Dell OptiPlex 7090 Micro Form Factor contains both volatile and non-volatile components. Volatile components lose 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 7090 Micro Form Factor system board.

Description	Reference Designator	Volatility Description	User Accessible for external data	Remedial Action (Action necessary to prevent loss of data)
Embedded Flash memory in embedded controller MICROCHIP DEC1515H-D0-I/Z2	U5	The two SRAM blocks in the DEC1515 total 256 KB. The DEC1515 contains a 64 KB block of ROM. EC use 1 MB with SPI ROM by G3 sharing mode.	Yes	N/A
System BIOS	U21	Non-volatile memory, 256 Mbits (32 MB), System BIOS and Video BIOS for basic boot operation, ePSA (on board diagnostics.)	No	N/A
TPM Nuvoton NPCT750JA DYX	U40	28 K bytes non-volatile memory located in the TPM module.	No	N/A
System Memory – DDR4 DIMM memory	Connections: DIMM1, DIMM2,	Volatile memory in OFF state (see state definitions later in text) One to two modules will be populated. System memory size will depend on DIMM modules and will be between 4 GB to 32 GB.	Yes	Power off system.
System memory SPD EEPROM	On memory DIMM(s)	Non-volatile EEPROM memory. 512 bytes. One Device present on each DIMM. Stores memory manufacturer data and timing information for correct operation of system memory.	No	N/A
RTC CMOS	BATTERY	Volatile battery back-backed CMOS memory 256 bytes. Stores CMOS information.	No	Removing the on-board 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 S3-S5 state below.
Hard drive	User replaceable	Non-volatile magnetic media, various sizes in GB.	Yes	Low level format.

Description	Reference Designator	Volatility Description	User Accessible for external data	Remedial Action (Action necessary to prevent loss of data)
USB CONTROLLE CYPD4125	U71	128 KB Flash and 8 KB SRAM	No	N/A

CAUTION: All other components on the system board lose 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 (DDR4, CML-S Refresh (2666MHz), RKL-S (3200MHz)). 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, S4, S5 and Modern Standby):

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.

S3 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 S3 if the OS and the peripherals used in the system supports S3 state. Linux and Windows10 support S3 state.

S4 is called suspend to disk state or hibernate mode, with no power. In this state, the dynamic RAM is not maintained. If the system has been commanded to enter S4, the operating system writes the system context to a non-volatile storage file and leave appropriate context markers. When the system comes 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 operating system and the peripherals support S4 state. Windows 7/8 support S4 state.

S5 is the soft off state, with no power. The operating system does not save any context to wake up the system. No data will remain 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 supported by Dell OptiPlex 7090 Micro Form Factor:

Model Number	S0	S1	S3	S4	S5
Dell OptiPlex 7090 Micro Form Factor	X		X	X	X