Statement of Volatility – Dell XPS 17 9700

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

The Dell XPS 17 9700 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 XPS 17 9700 system board.

Table 1. List of non-volatile components on XPS 17 9700 system board

Description	Reference designator	Volatility description	User accessible for external data	Remedial action (Action necessary to prevent loss of data)
Panel EEDID EEPROM	Part of panel assembly	Non-volatile memory, 2 MB	No	Part of panel assembly
System BIOS	BIOS1	Non-volatile memory, 256 Mbit (32 MB), system BIOS, embedded controller and video BIOS for basic boot operation, PSA (on-board diagnostics), PXE diagnostics	No	N/A
System Memory – DDR4 memory	Two SODIMM connectors: DM1; DM2	Volatile memory in OFF state.	System Memory – DDR4 memory	Two SODIMM connectors: DM1; DM2
RTC CMOS – BBRAM (battery-backed up)	Inside battery pack BATT1 (RTC pin)	Non-volatile memory, 256 Bytes. Stores CMOS information.	No	Remove the on-board coin cell battery and replace it from battery LDO
Video memory – Frame buffer	For DSC mode using DGFF VRAM: VRAM 1,2,3,4,5,6 (6 GB GDDR6) VRAM 1,2,3,4 (4 GB GDDR6)	Graphics modes: • 4 GB GDDR6 for Nvidia N18P-G62 • 6 GB GDDR6 for Nvidia N18E-G1-65 MaxQ	No	N/A
GPU ROM	U7901	Non-volatile memory, 8 Mbit (1 MB)	No	N/A
Hard drives	User replaceable SSD1; SSD2	Non-volatile magnetic media, various sizes in GB. May also be SSD (Solid-State Drive).	Yes	N/A
TPM controller	U9102	Non-volatile memory, 41 Kbytes flash memory	No	N/A
TYPE-C PD FW embedded in PD controller	U7201 U9401	128 KB of embedded flash memory for PD controller	No	N/A

Description	Reference designator	Volatility description	User accessible for external data	Remedial action (Action necessary to prevent loss of data)
Thunderbolt controller FW	U7102 U9302	Non-volatile memory, 8 Mbit (1 MB), Thunderbolt/Type-C operation	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, 2933/3200 MHz-XMP config). Secondary power loss (removing the on-board coin-cell battery) destroys system data on the system configuration and time-of-day information.**

For clarity, memory volatility and data retention in situations where the system is put in different ACPI power States, the following is provided (ACPI power states are S0, S1/S3 (Linux only), 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 the 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. Win 8 supports S3 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 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 nonvolatile storage can occur. The restore file has to be valid. Dell systems will be able to go to S4 if the OS and the peripherals support S4 state. Win 8 supports S4 state.

- S5 is the "soft-off" state where 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 XPS 17 9700:

Model Number	S0	S1/S3 (Linux OS only)	Modern Standby	S4	S5
Dell XPS 17 9700	V	X	V	V	V