Statement of Volatility
Dell Precision 5540

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

The Dell Precision 5540 contains both volatile and non-volatile (NV) components. Volatile components lose their data immediately after power is removed from the component. Non-volatile (NV) components continue to retain their data even after power is removed from the component. The following NV components are present on the Dell Precision 5540 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 prevent loss of data)
Embedded Flash in embedded controller MEC5106	UE3	320KB of SRAM	No	N/A
System BIOS	UH8	Non Volatile memory, 256 Mbit (32 MB), System BIOS and Video BIOS for basic boot operation, PSA (on board diags), PXE diags.	No	N/A
System Memory – DDR4 - SODIMM	Two Channel SODIMM JDIMM1 JDIMM2	Max Capacity is 32GB.	Yes	N/A
System memory SPD EEPROM	Embedded in system BIOS UH8		No	N/A
RTC CMOS – BBRAM	UH2	Non Volatile memory, 256 Bytes. Stores CMOS information.	No	N/A
Video memory – frame buffer	UV23 ~ 26	8 Gb per density. Total is 32Gb	No	N/A
Intel ME Firmware	Embedded in system BIOS UH8	Non Volatile memory, 256 Mbit (32MB) for vPro and non-vPro, Intel ME firmware for system configuration, security and protection	No	N/A
Hard drive(s)	JNGFF2	Support M2 type SSD(SATA/PCIE interface).	Yes	N/A

Description	Reference Designator	Volatility Description	User Accessible for external data	Remedial Action (Action necessary to prevent loss of data)
Hard drive(s)	JHDD	Support 2.5" HDD/SSD	Yes	N/A
Touch screen Embedded Flash in Wacom	N/A	Wacom G12+ (leveraged with LaFerrari)	No	N/A
Power Delivery Controller SPI ROM FW	UT5	Non Volatile memory, 8 Mbit (1MB) for controller TPS65982 FW flash.	No	N/A
TPM NPCT750JAAYX	U32	NV Storage Space for 24K bytes of User Defined Data	No	N/A
TBT Controller SPI ROM	UT2	Non Volatile memory, 8 Mbit (1MB) for controller TPS65982 FW flash.	No	N/A
HDMI2 Controller F/W	UM2	Non Volatile memory, 2 Mbit	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 (DDR3, 1067 MHz). 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 (ACPI power states are S0, S1, S3, S4 and S5):

- S0 state is the working state where the dynamic RAM is maintained and is read/written 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 state if the OS and the peripherals used in the system support S3 state. Linux and Windows 7 support 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 state, the OS will write the system context to a non-volatile storage file and leave appropriate context markers. When the system returns to the working state, a restore file from the non-volatile storage can occur. The restore file has to be valid. Dell systems will be able to go to S4 state if the OS and the peripherals support S4 state. Windows 7 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 state requires power-on which clears all registers.

The following table shows all the states supported by Precision 5540.

Model Number	S0	S1	S3	S4	S5
Dell Precision 5540	X		X	X	X