

Statement of Volatility – Latitude 5431

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

The Latitude 5431 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 Latitude 5431 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)
SSD drives	M.2 – 2280/2230	Non-Volatile magnetic media, various sizes in GB. SSD (solid state flash drive).	No	Low level format
System BIOS/EC	UC2(32MB) UC6(16MB)	Non-Volatile memory, System BIOS, embedded controller and Video BIOS for basic boot operation, PSA (on board diags), PXE diags.	No	N/A
Thunderbolt EEPROM	UT7(1MB)	Non-Volatile memory	No	NA
LCD Panel EEDID EEPROM	Part of panel assembly	Non-Volatile memory, 128 bytes.	No	Part of panel assembly
System Memory – DDR5 memory	Two DIMM on board DDR5 memory: JDIMM1, 2 presents	Volatile memory in OFF state NOTE: See state definitions later in text.	Yes	Power off system
RTC CMOS	PCH-UC1	Non-Volatile memory, 256 Bytes. Stores CMOS information.	No	N/A
Video memory – frame buffer	For UMA platform: Using system memory For DSC platform: UV34, UV35	Volatile memory in off state. UMA uses main system memory size allocated out of main memory.	No	Power off system
Intel ME Firmware	Combine on BIOS ROM	Non-Volatile memory, Intel ME firmware for system configuration, security and protection	No	N/A
Security Controller Serial Flash Memory	Combine on BIOS ROM	Non-Volatile memory	No	N/A
TPM Controller	UZ4	Non-Volatile memory, 192K bits (24K bytes) ROM	No	N/A
ISH	Combine on BIOS ROM		No	N/A

Description	Reference designator	Volatility description	User accessible for external data	Remedial action (action necessary to prevent loss of data)
Touch screen Embedded Flash	N/A	Non-Volatile memory	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, 3200 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 (those ACPI power states are S0, Modern standby, S4 and S5):

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

Modern standby is a standby mode state that is different from S3 mode. In this state, the dynamic RAM is maintained.

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. Win 7 and Win 8 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 Latitude 5431:

Model Number	S0	Modern standby	S4	S5
Latitude 5431	v	v	v	v