# Statement of Volatility – Dell Latitude 5290

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

The Dell Latitude 5290 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 Latitude 5290's 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) |
|---|---|---|---|---|
| Panel EEDID EEPROM | Part of panel assembly | Non Volatile memory, 128bytes. | No | Part of panel assembly |
| System BIOS | UC5 | Non Volatile memory, 128 Mbit (16 MB), System BIOS, embedded controller and Video BIOS for basic boot operation, PSA (on board diags), PXE diags. | No | N/A |
| System Memory – DDR4 memory | Two SODIMM connectors:<br><br>JDIMM1,2 present | Volatile memory in OFF state<br><br>**NOTE:** See state definitions later in text.<br><br>One to Two modules must be populated. System memory size will depend on SODIMM modules and must be between 2 GB and 16 GB. | Yes | Power off system |
| System memory SPD EEPROM | On System memory SODIMM(s) JDIMM1,2 present | Non Volatile memory 512 Bytes.<br><br>Stores memory manufacturer data and timing information for correct operation of system memory. | No | N/A |
| RTC CMOS – BBRAM (battery backed up) | UC1 | Non Volatile memory, 256 Bytes.<br>Stores CMOS information. | No | Remove the onboard coin cell battery |
| Video memory – frame buffer | UMA architecture-uses system DDR4 | Volatile memory in off state. UMA uses main system memory size allocated out of main memory. | No | No Enter S3-S5 State below. |

| Description | Reference Designator | Volatility Description | User Accessible for external data | Remedial Action (Action necessary to prevent loss of data) |
|---|---|---|---|---|
| Security Controller Serial Flash Memory | U1 (up-sell USH daughter board) | Non Volatile memory, 32 Mbit (4Mbyte) | No | N/A |
| Hard drive(s) | User replaceable | SSD (solid State flash drive). various sizes in GB | Yes | Low level format |
| TPM Controller | UZ12 | Non Volatile memory, 16K bytes flash memory | No | N/A |
| TYPE C PD controller FW | UT6 | Non Volatile memory, 8M bits (1M bytes) ROM | 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, 1866/2133 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, S1, S3, 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 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. Win8 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, 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. Win8 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 Dell Latitude 5290:**

| Model Number | S0 | S1 | S3 | S4 | S5 |
|---|---|---|---|---|---|
| Dell Latitude 5290 | X | | X | X | X |

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