Statement of Volatility – Precision 3591

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

The Precision 3591 contains both volatile and non-volatile (NV) components. Volatile components erase 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 Precision 3591 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 erase data)
SSD drives	M.2 – 2280/2230	Non-Volatile memory, various sizes in GB. SSD (solid state flash drive).	Yes	Low-level format
Embedded Flash in embedded controller MEC5200	U2401	384KB Code/Data SRAM	No	Not applicable
System BIOS/EC	vPro: U2501-64MB U7901(upsell GPU configuration)	Non-Volatile memory, System BIOS, embedded controller, and video BIOS for basic boot operation, PSA (onboard diagnostics), and PXE diagnostics.	No	Not applicable
Thunderbolt EEPROM	U7103 (1MB)	Non-Volatile memory	No	Not applicable
System memory SPD EEPROM	On System memory SODIMMs DM1, DM2 present	Non-Volatile memory 1024 bytes for DDR5. Stores memory manufacturer data and timing information for correct operation of system memory.	No	Not applicable
RTC CMOS	CPU1(PCH)	Non-Volatile memory 256 bytes. Stores CMOS information.	No	Remove the onboard coin-cell battery
Security Controller Serial Flash Memory	U401 (upsell USH daughter board)	Non-Volatile memory, 128 Mbit (16 Mbyte)	No	Not applicable
TPM Controller	U9101	Non-Volatile memory, 43K bits	No	Not applicable
LCD Panel EEDID EEPROM	Part of panel assembly	Non-Volatile memory, stores panel manufacturing information, display configuration data.	No	Not applicable
Touch screen Embedded Flash	Not applicable	Non-Volatile memory	No	Not applicable
Digital IMVP9.2 controller	PU4601	Non-Volatile memory, 13344 bits (full configuration size) Digital IMVP9.2 controller (OTP space supports up to four full configurations).	No	Not applicable
Camera ISP Flash ROM	On Camera module	Non-Volatile memory, 4M-bit	No	Not applicable

△ **CAUTION: All other components on the system board lose data if power is removed from the computer. Primary power loss (unplugging the power cable and removing the battery) destroys all user data on the memory. Secondary power loss (removing the onboard 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 computer 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 computer has been commanded to enter S4, the operating system writes the computer context to a non-volatile storage file and leave appropriate context markers. When the computer is coming back to the working state, a restore file from the non-volatile storage can occur. The restore file must be valid. Dell computers can go to S4 if the operating system and the peripherals support S4 state.
- S5 is the “soft” off state. There is no power. The operating system does not save any context to wake up the computer. No data remains in any component on the system board that is cache or memory. The computer requires a complete boot when awakened. Since S5 is the shut off state, coming out of S5 requires a turn on which clears all registers.

The following table shows all the states that are supported by Precision 3591.

Table 2. States supported by Precision 3591

Model Number	S0	Modern Standby	S4	S5
Precision 3591	Yes	Yes	Yes	Yes

2024-03