Statement of Volatility – Precision 7780

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

The Precision 7780 contains both volatile and non-volatile 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 7780 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)
Panel EEDID EEPROM	Part of panel assembly	Non-Volatile memory, 128 bytes.	No	Part of panel assembly
System BIOS	UH3, UH5	Non-Volatile memory, 256 Mbit (32 MB) and 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 – DDR5 memory	Option1: CAMM connector: Option2: Two SODIMM connectors: JDIMM1,2	Volatile memory in OFF state One to modules must be populated. System memory size will depend on option1 or 2 and up to 128 GB.	No	Power off system
System memory SPD EEPROM	On System memory SODIMM(s) JDIMM1,2 and CAMM	Non-Volatile memory 1024 Bytes. Stores memory manufacturer data and timing information for correct operation of system memory.	No	N/A
RTC CMOS – BBRAM (battery backed up)	JRTC1	Non-Volatile memory, 256 Bytes. Stores CMOS information.	No	Remove the onboard coin cell battery
Video memory – frame buffer	For SG mode sharing system DDR5 For DSC mode using DGFF VRAM	Volatile memory in off state. SG mode uses main system memory size allocated out of main memory. Discrete graphics mode: Volatile memory in off state. SG mode uses main system memory size allocated out of main memory. Discrete graphics mode: NVIDIA RTX A1000 laptop, 6 GB GDDR6 NVIDIA RTX 2000 Ada Generation laptop, 8 GB GDDR6 NVIDIA RTX 3500 Ada Generation laptop, 12 GB GDDR6 NVIDIA RTX 4000 Ada Generation laptop, 12 GB GDDR6 NVIDIA RTX 5000 Ada Generation laptop, 16 GB GDDR6 NVIDIA GeForce RTX 4090 laptop, 16 GB GDDR6	No	No Enter S3-S5 State below.

Security Controller Serial Flash Memory	U1 (up-sell USH daughter board)	Non-Volatile memory, 128 Mbit (16 Mbyte)	No	N/A
Hard drive(s)	User replaceable	Non Volatile magnetic media, various sizes in GB. May also be SSD (solid state flash drive)	Yes	Low level format
TPM Controller	UZ12	Non Volatile memory, 41 K bytes flash memory Maximum available size of NVM and objects in bytes, it can be split into: -approximately 6 Kbytes corresponding to the minimum PTP requirements (8 objects, 6 counters and 2 PINs) -35 Kbytes that correspond to 76 RSA2048 keys or 100 ECC384 keys, approximately.	No	N/A
TYPE C PD FW embedded in PD controller	UT3, UT5	128 KB of embedded Flash memory for PD controller	No	N/A
Thunderbolt controller FW	UT1	Non-Volatile memory, 8 Mbit (1 MB), Thunderbolt/type C operation	No	N/A
Digital IMVP9.1 controller	PUZ1	Non-Volatile memory, 1736 bits Digital IMVP9.1 controller (Total 238 index, each index 0 /4 /8 bits.)	No	N/A
Camera ISP Flash	On Camera module	Non Volatitle memory 4 Mbits / 8 Mbits by differnt camera module option	No	NA

⚠️ **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 (DDR5, 3600 MHz at 128G / 4800 at 64G/32G/16G config). 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, 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.

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 must be valid. Dell systems will be able to go to S4 if the OS and the peripherals 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 Precision 7780:

Model Number	S0	Modern Standby/Suspend to sleep (Linux)	S4	S5
Precision 7780	X	X	X	X