DELLTechnologies

Statement of Volatility – Dell Pro Micro QCM1250

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

The Dell Pro Micro QCM1250 contains both volatile and nonvolatile components. Volatile components erase their data immediately after power is removed from the component. Nonvolatile components continue to retain their data even after power is removed from the component. The following nonvolatile components are present on the Dell Pro Micro QCM1250 system board.

Table 1. List of nonvolatile 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 SSD1 SSD2	Nonvolatile magnetic media, various sizes in GB. SSD (solid-state flash drive).	Yes	Low-level format
System BIOS/EC	U2504 (32 MB) RPMC + U2501 (32 MB) - Non-RPMC	Nonvolatile memory, 256 Mbits (32 MB), System BIOS and Video BIOS for basic boot operation, ePSA (on board diagnostics), PXE diagnostics.	No	Not applicable
System memory – DDR5 memory	Two SO-DIMM on board DDR5 memory: DM1/DM2	Volatile memory in OFF state (see state definitions later in text) One or two modules are populated. System memory size depends on DIMM modules and will be between 8 GB to 64 GB.	Yes	Power off system
System memory SPD EEPROM	On memory DIMM (s)	Nonvolatile EEPROM memory. 512 bytes. One Device present on each DIMM. Stores memory manufacturer data and timing information for correct operation of system memory.	No	Not applicable
RTC CMOS	BATTERY BT1	Nonvolatile memory 256 bytes stores CMOS information	No	Removing the on-board coin-cell battery
Video memory – frame buffer	For UMA platform: Using system memory	Volatile memory in off state. UMA uses main system memory size that is allocated out of main memory.	No	Enter MODS-S5 state below
Intel ME Firmware	Combine on BIOS ROM	Nonvolatile memory, Intel ME firmware for system configuration, security, and protection	No	Not applicable
TPM controller NPCT760JABYX	U9101	Nonvolatile memory, 192K bits (24K bytes) ROM	No	Not applicable
Embedded Flash memory in embedded controller NUVOTON NPCX483DA0DX	U2406	The two SRAM block in the NPCX483DA0DX total is 512 KB. The NPCX483DA0DX contains a 192 KB block of ROM. EC uses 1 MB with SPI ROM by G3 sharing mode.	No	Not applicable

⚠ CAUTION: All other components on the system board erase data if power is removed from the system. Primary power loss (unplugging the power cable and removing the battery) destroys all user data on the memory (DDR5, 5600 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, MODS, 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.

MODS 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 MODS if the OS and the peripherals used in the system supports MODS state. Linux and Windows11 support MODS 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 nonvolatile 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. Windows 11 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 Pro Micro QCM1250:

Model Number	S0	S1	MODS	S4	S5
Dell Pro Micro QCM1250	X		X	X	X