

Statement of Volatility – Dell PowerEdge R7615

Dell

PowerEdge R7615 contains both volatile and non-volatile (NV) components. Volatile components lose their data immediately upon removal of power from the component. Non-volatile components continue to retain their data even after the power has been removed from the component. Components chosen as user-definable configuration options (those not soldered to the motherboard) are not included in the Statement of Volatility. Configuration option information (pertinent to options such as microprocessors, remote access controllers, and storage controllers) is available by component separately. The following NV components are present in the PowerEdge R7615 server.

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
Planar										
CPU Internal CMOS RAM	Non- Volatile	1	CPU1	256 Bytes	Battery- backed CMOS RAM	No	Real-time clock and BIOS configuration settings	BIOS	N/A – BIOS only control	1) Set NVRAM_CLR jumper to clear BIOS configuration settings at boot and reboot system. 2) Power off the system, remove coin cell battery for 30 seconds, replace battery and then power back on. 3) Restore default configuration in F2 system setup menu.
BIOS SPI Flash	Non- Volatile	1	U4103	32 MB	SPI Flash	No	Boot code, system configuration information,	SPI interface via CPU	Software write protected	Not possible with any utilities or applications and system is not functional if corrupted or

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
							UEFI			removed.
							environment			
BIOS Data	Non-	1	U19	4 MB	SPI Flash	No	4MB Data SPI	SPI interface	Software write	Not possible with any
SPI Flash	Volatile						ROM storage	via CPU	protected	utilities or applications
							BIOS setting.			and the system is not
										functional if BIOS SPI is
										corrupted or removed.
iDRAC SPI	Non-	1	U29	4 MB	SPI Flash	No	iDRAC Uboot	SPI interface	Embedded iDRAC	The user cannot clear
Flash	Volatile						(boot loader),	via iDRAC	subsystem	memory completely.
							server		firmware actively	However, user data,
							management		controls sub area	lifecycle log and archive,
							persistent store		based write	SEL, and firmware image
							(i.e. iDRAC boot		protection as	repository can be cleared
							variables), and		needed.	using Delete
							virtual planar			Configuration and Retire
							FRU			System, which can be
										accessed through the
										Lifecycle Controller
										interface.
BMC	Non-	1	U4101	8 GB	eMMC NAND	No	Operational	NAND Flash	Embedded FW	The user cannot clear
EMMC	Volatile				Flash		iDRAC FW,	interface via	write protected	memory completely.
							Lifecycle	iDRAC		However, user data,
							Controller (LC)			lifecycle log and archive,
							USC partition, LC			SEL, and firmware image
							service diags, LC			repository can be cleared

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
							OS drivers, USC firmware, IDRAC MAC Address, and EPPID, rac log, System Event Log, lifecycle log cache			using Delete Configuration and Retire System, which can be accessed through the Lifecycle Controller interface.
iDRAC DDR4	Volatile	1	U_IDRAC9_ DRAM1	8Gb	RAM	Yes	iDRAC RAM	iDRAC firmware	Not write- protected	Remove AC
System CPLD RAM	Volatile	1	U_CPLD1	432 kb	RAM	No	Not utilized	Not utilized	Not accessible	Not accessible
System CPLD Flash	Non- Volatile	1	U_CPLD1	448 kb	FLASH	No	Power on System Firmware	Firmware update	BIOS Security Protocols	Not user clearable
System Memory: RDIMM	Volatile	Up to 12	CPU1: A1~A12	Up to 256GB per DIMM	RAM	Yes	System OS RAM	System OS	OS Control	Reboot or power down system
CPU _VDDCR_ COREO,, CPU _VDDCR_ CORE1,	Non- Volatile	3	CPU1: U50, U128,U123,	64KB	OTP (one time programmabl e)	No	Operational parameters	Once values are loaded into register space a cmd writes to nvm.	There are passwords for different sections of the register space	The user cannot clear memory.

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
						normal operation?				
VDDIO IO										
Controller										

Item	Non- Volatil e or Volatil e	Quantit y	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
8x3.5" SAS3	B/SATA BP	(5TP8Y)								
SEP internal flash	Non- Volatile	1	U46	4Mbit in- chip SPI Serial Flash	Integrated Flash+EEPRO M	No	Firmware + FRU	I2C interface via iDRAC	Program write protect bit	The user cannot clear memory.
Backplane External FRU	Non- Volatile	1	U46	256 Bytes	I2C EEPROM	No	FRU	Programmed at ICT during production.	No write protected	The user cannot clear memory.
12 x3.5" SA	S3/SATA B	P (T158T)								

SEP	Non-	1	U16	4Mbit in-	Integrated	No	Firmware + FRU	I2C interface	Program write	The user cannot clear
internal	Volatile	_		chip SPI	Flash+EEPRO			via iDRAC	protect bit	memory.
flash	, , , , , , ,			Serial	M					·
				Flash						
Backplane	Non-	1	U16	256 Bytes	I2C EEPROM	No	FRU	Programmed	No write protected	The user cannot clear
External	Volatile							at ICT during	·	memory.
FRU								production.		
8x2.5" Uni	BP (YD2C2	2)								
SEP	Non-	1	U14	4Mbit in-	Integrated	No	Firmware + FRU	I2C interface	Program write	The user cannot clear
internal	Volatile			chip SPI	Flash+EEPRO			via iDRAC	protect bit	memory.
flash				Serial	М					
				Flash						
Backplane	Non-	1	U14	256 Bytes	I2C EEPROM	No	FRU	Programmed	No write protected	The user cannot clear
External	Volatile							at ICT during		memory.
FRU								production.		
8x2.5" SAS	4/SATA v2	BP (XRXG5)							
SEP	Non-	1	U46	4Mbit in-	Flash	No	Firmware + FRU	I2C interface	Program write	The user cannot
internal	Volatile			chip SPI				via iDRAC	protect bit	clear memory.
flash	Non-			Serial						
	Volatile			Flash						
Backplane				256 Bytes		No	FRU	Programmed	No write protected	
External								at ICT during		
FRU								production		
24x2.5" SAS	S4/SATA e	xpander Ba	ckplane(GRT5I	N)						
SEP	Non-	2	U14,U15	4Mbit	Integrated	No	Firmware + FRU	I2C interface	Program write	The user cannot
internal	Volatile		,		Flash+EEPRO			via iDRAC	protect bit	clear memory.
flash				in-chip	M					
				SPI						
				Serial						
				Flash						
	1		1	1				1		

Expander Fru	Non- Volatile	1	U3	256Kb	EEPROM	No	Expander FRU	Programmed at ICT during production.	No write protected	The user cannot clear memory.
Expander Flash	Non- Volatile	1	U_FLASH1	128Mb	SPI Flash	No	Card firmware	I2C interface via iDRAC	Program write protect bit	The user cannot clear memory.
Expander NVSRAM	Non- Volatile	1	U_NVSRAM 1	128KB	NVSRAM	No	Configuration data	I2C interface via iDRAC	Program write protect bit	The user cannot clear memory.
Rear 2x2.5"	univ SAS4	(X6XG3)								
SEP internal flash	Non- Volatile	1	U47	4Mbit in- chip SPI Serial Flash	Integrated Flash+EEPRO M	No	Firmware + FRU	I2C interface via iDRAC	Program write protect bit	The user cannot clear memory.
Backplane External FRU	Non- Volatile	1	U47	256 Bytes	I2C EEPROM	No	FRU	Programmed at ICT during production.	No write protected	The user cannot clear memory.
Rear 4x2.5"	univ SAS4	(69NN3)								
SEP internal flash	Non- Volatile	1	U47	4Mbit in- chip SPI Serial Flash	Integrated Flash+EEPRO M	No	Firmware + FRU	I2C interface via iDRAC	Program write protect bit	The user cannot clear memory.

Backplane External FRU	Non- Volatile	1	U47	256 Bytes	I2C EEPROM	No	FRU	Programmed at ICT during production.	No write protected	The user cannot clear memory.
4x E3 G5x2	Rear Orth	o(62W2P)	_			•				
2U 24x2.5"	NVMe Sw	itch BP - Atl	as 2 Gen5 (3TN	исм)						
		(222.22	-\							
2U 8x E3 G	5x2 G5x4 C	ortho(32M8	5)	1						
HBA355i fP	 PFRC (Interi	 nal controll	 er\/T761V\							
SPI Flash	Non-	1	U2	128Mb	SPI Flash	No	Card firmware	Pre-	Not write	User cannot clear the
	Volatile	_						programmed	protected. Not	memory.
								before	visible to Host	
								assembly. Can	Processor	
								be updated		
								using Dell/LSI		
								tools		
FRU	Non-	1	U5	2Kb	EEPROM	No	Card	Programmed	Not write	User cannot clear the
	volatile						manufacturing	at ICT during	protected	memory.
							information	production.		

CPLD	Non- volatile	1	U23	24kb	Flash	No	Power sequencing and Cache Offload	Controller may program data during FW update	Not write protected Not visible to host CPU	User cannot clear this memory
MCU (Cordoba)	Non- volatile	1	U41	8kB	EEPROM	No	PCIe Bifurcation information to system iDRAC	BMC may program data if there is an updated version packaged with iDRAC	Not write protected Not visible to host CPU	User cannot clear this memory
H355,FPER	C (Interna	controller	(ТКК9К)		·					
SPI Flash	Non- Volatile	1	U2	128Mb	SPI Flash	No	Card firmware	Pre- programmed before assembly. Can be updated using Dell/LSI tools	Not write protected. Not visible to Host Processor	User cannot clear the memory.
FRU	Non- volatile	1	U5	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	Not write protected	User cannot clear the memory.
CPLD	Non- volatile	1	U23	24kb	Flash	No	Power sequencing and Cache Offload	Controller may program data during FW update	Not write protected Not visible to host CPU	User cannot clear this memory
MCU (Cordoba)	Non- volatile	1	U41	8kB	EEPROM	No	PCIe Bifurcation information to system iDRAC	BMC may program data if there is an updated version packaged with	Not write protected Not visible to host CPU	User cannot clear this memory

								iDRAC		
NVSRAM	Non- volatile	1	U3	128kB	NVSRAM	No	Configuration data	ROC writes configuration data to	Not write protected	User cannot clear this memory
								NVSRAM	Not visible to host CPU	
H355,ADP1	Γ (Internal	controller)(VCV6T)							
SPI Flash	Non- Volatile	1	U2	128Mb	SPI Flash	No	Firmware	Pre- programmed	no write protected. Not	User can clear the memory.
								before	visible to Host Processor	
								assembly. Can be updated	Processor	
								using Dell/LSI		
								tools		
FRU	Non-	1		2Kb	EEPROM	No	Card	Programmed	no write protected	User cannot clear the
	volatile		U5				manufacturing	at ICT during		memory.
							information	production.		
CPLD	Non-	1		24kb	Integrated	No	Power	Pre-	no write	User cannot clear the
	volatile				Flash+EEPRO		sequencing and	programmed	protected. Not	memory.
			U23		M		Cache Offload	before assembly. Can	visible to Host Processor	
			023					be updated	Flocessoi	
								using Dell/LSI		
								tools		
HBA465E,A	ADPT (Exte	rnal contr	oller)(8Y0MW	')						
SPI Flash	Non-	1	U2	128Mb	SPI Flash	No	Firmware	Pre-	no write	User can clear the
	Volatile							programmed	protected. Not	memory.
								before	visible to Host	
								assembly. Can	Processor	
								be updated		
								using Dell/LSI		
FRU	Non-	1		2Kb	EEPROM	No	Card	tools	no write protected	User cannot clear the
FNU	INUII-	1	U5	200	EEPROIVI	INO	Caru	Programmed	no write protected	User carriot clear the

	volatile						manufacturing information	at ICT during production.		memory.
CPLD	Non- volatile	1	U23	24kb	Integrated Flash+EEPRO M	No	Power sequencing and Cache Offload	Pre- programmed before assembly. Can be updated using Dell/LSI tools	no write protected. Not visible to Host Processor	User cannot clear the memory.
H755 PERC			3KDWX)							
SDRAM	Volatile	9	U1077~U10 85	8GB	SDRAM	No	Cache for HDD I/O	ROC writes to this memory - using it as cache for data IO to HDDs	no write protected. Not visible to Host Processor	Cache can be cleared by powering off the card
ONFI	Non- volatile	1	U1100	512Gb	NAND Flash	No		ROC backs up DDR data to this device in case of a power failure	no write protected. Not visible to Host Processor	User cannot clear the memory.
BMU	Non- Volatile	1	U1126	180KB	Integrated Flash+EEPRO M	No	Battery Management control	Programmed at ICT during production	no write protected. Not visible to Host Processor	User cannot clear the memory.
SPI Flash	Non- Volatile	1	U1086	128Mb	SPI Flash	No	Holds cache data during power loss	Pre- programmed before assembly. Can be updated using Dell/LSI tools	no write protected. Not visible to Host Processor	User can clear the memory.
NVSRAM	Non- volatile	1	U1087	128KB	NVSRAM	No	Configuration data	ROC writes configuration data to NVSRAM	no write protected. Not visible to Host Processor	

FRU	Non- volatile	1	U1019	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	no write protected	User cannot clear the memory.
SPD	Non- volatile	1	U22	2Kb	EEPROM	No	Memory configuration data	Programmed at ICT during production. ROC read the configured data from the SPD for DDR settings	no write protected. Not visible to Host Processor	User cannot clear the memory.
CPLD	Non- volatile	1	U1088	64kb	Flash	No	Power sequencing and Cache Offload	Pre- programmed before assembly. Can be updated using Dell/LSI tools	no write protected. Not visible to Host Processor	User cannot clear the memory.
MCU (Cordova)	Non- volatile	1	U41	8KB	EEPROM	No	PCIe Bifurcation information to system iDRAC	Pre- programmed before assembly. Can be updated using Dell/LSI tools	no write protected. Not visible to Host Processor	User cannot clear the memory.
H755N PER	C (Internal	Controller)	(9K2C2)							
NVSRAM	Non- volatile	1	U1087	128KB	NVSRAM	No	Configuration data	ROC writes configuration data to NVSRAM	No write protected. Not visible to Host Processor	User cannot clear the memory.
FRU	Non- volatile	1	U1019	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	No write protected	User cannot clear the memory.

SPD	Non- volatile	1	U1019	2Kb	EEPROM	No	Memory configuration data	Pre- programmed before assembly	No write protected. Not visible to Host Processor	User cannot clear the memory.
NV Flash	Non- volatile	1	U1100	512Gb	SPI Flash	No	Card firmware	Pre- programmed before assembly. Can be updated using Dell/LSI tools	No write protected. Not visible to Host Processor	User cannot clear the memory.
CPLD	Non- volatile	1	U1088	64kb	Flash	No	Power sequencing and Cache Offload	NA	NA	NA
SPI Flash	Non- Volatile	1	U1086	128Mb	SPI Flash	No	Holds cache data during power loss	FPGA backs up DDR data to this device in case of a power failure	No write protected. Not visible to Host Processor	Flash can be cleared by powering up the card and allowing the controller to flush the contents to VDs. If the VDs are no longer available, cache can be cleared by going into controller BIOS and selecting Discard Preserved Cache.
SDRAM	Volatile	9	U1077~U10 85	8GB	SDRAM	No	Cache for HDD I/O	ROC writes to this memory - using it as cache for data IO to HDDs	No write protected. Not visible to Host Processor	Cache can be cleared by powering off the card
MCU (Cordoba)	Non- volatile	1	U41	8KB	EEPROM	No	PCIe Bifurcation information to system iDRAC	NA	NA	NA
BMU	Non- Volatile	1	U1126	180KB	NA	No	Battery Management control	NA	NA	NA

H755 ADPT	PERC (Inte	ernal Contro	oller) (29XMF)							
SDRAM	Volatile	9	U1077~U10 85	8GB	SDRAM	No	Cache for HDD I/O	ROC writes to this memory - using it as cache for data	no write protected. Not visible to Host Processor	Cache can be cleared by powering off the card
NV Flash	Non- volatile	1	U1100	512Gb	SPI Flash	No	Card firmware	Pre- programmed before assembly. Can be updated using Dell/LSI tools	no write protected. Not visible to Host Processor	User cannot clear the memory.
BMU	Non- Volatile	1	U1126	180KB	Integrated Flash + EEPROM	No	Battery Management Control	ROC may program data during FW and during boot during battery detection	Not write protected Not visible to host CPU	User cannot clear this memory
SPI Flash	Non- Volatile	1	U1086	128Mb	SPI Flash	No	Holds cache data during power loss	FPGA backs up DDR data to this device in case of a power failure	no write protected. Not visible to Host Processor	Flash can be cleared by powering up the card and allowing the controller to flush the contents to VDs. If the VDs are no longer available, cache can be cleared by going into controller BIOS and selecting Discard Preserved Cache.
NVSRAM	Non- volatile	1	U1087	128KB	NVSRAM	No	Configuration data	ROC writes configuration data to NVSRAM	no write protected. Not visible to Host Processor	User cannot clear the memory.

FRU SPD	Non- volatile Non- volatile	1	U1019 U22	2Kb	EEPROM	No	Card manufacturing information Memory configuration data	Programmed at ICT during production. Pre-programmed before	no write protected no write protected. Not visible to Host Processor	User cannot clear the memory. User cannot clear the memory.
CPLD	Non- volatile	1	U1088	64kb	Flash	No	Power sequencing and Cache Offload	assembly ROC may program data during FW update	Not write protected Not visible to host CPU	User cannot clear this memory
H965i FPER	-									
SPI Flash	Non- Volatile	1	U2	256Mb	SPI Flash	No	Card firmware	Pre- programmed before assembly. Can be updated using Dell/Broadcom tools	Not write protected. Not visible to Host Processor	User cannot clear the memory.
FRU	Non- volatile	1	U1019	2Kb	EEPROM	No	Card manufacturing information	Programmed at ICT during production.	Not write protected	User cannot clear the memory.
CPLD	Non- volatile	1	U1088	64kb	Flash	No	Power sequencing and Cache Offload	Controller may program data during FW update	Not write protected Not visible to host CPU	User cannot clear this memory
MCU (Cordoba)	Non- volatile	1	U41	8kB	Flash	No	PCIe Bifurcation information to system iDRAC	BMC may program data if there is an updated version packaged with	Not write protected Not visible to host CPU	User cannot clear this memory

								iDRAC		
NVSRAM	Non- volatile	1	U1087	128kB	NVSRAM	No	Configuration data	ROC writes configuration data to NVSRAM	Not write protected Not visible to host CPU	User cannot clear this memory
BMU	Non- Volatile	1	U1126	180KB	Integrated Flash + EEPROM	No	Battery Management control	ROC may program data during FW and during boot	Not write protected	User cannot clear this memory
SPD	Non- volatile	1	U22	256b	EEPROM	No	Memory configuration data	Pre- programmed before assembly	No write protected. Not visible to Host Processor	User cannot clear the memory.
NAND Flash	Non- volatile	1	U1100	512Gb	ONFI Flash	No	Cache offload during unexpected power loss	Programmed by ROC during cache offload	No write protected. Not visible to Host Processor	User cannot clear the memory.
SDRAM	Volatile	9	U1077~U10 86	8GB	SDRAM	No	Cache for HDD I/O	ROC writes to this memory - using it as cache for data IO to HDDs	No write protected. Not visible to Host Processor	Cache can be cleared by powering off the card
H965e PER	C (External	Controller)	(VWHMH)		·					
SDRAM	Volatile	9	U1077~U10 85	8GB	SDRAM	No	Cache for HDD I/O	ROC writes to this memory - using it as cache for data IO to HDDs	no write protected. Not visible to Host Processor	Cache can be cleared by powering off the card
ONFI	Non- volatile	1	U1100	512Gb	ONFI Nand	No	Memory backup storage for DDR4	ROC backs up DDR data to this device in case of a	no write protected. Not visible to Host Processor	User cannot clear the memory.

								power failure		
BMU	Non-	1	U1126	180KB	Integrated	No	Battery	Programmed	no write protected.	User cannot clear the
	Volatile				Flash+EEPRO		Management	at ICT during	Not visible to Host	memory.
					М		control	production	Processor	
SPI Flash	Non-	1	U2	128Mb	SPI Flash	No	Firmware	Pre-	no write protected.	User can clear the
	Volatile							programmed	Not visible to Host	memory.
								before	Processor	
								assembly. Can		
								be updated		
								using Dell/LSI		
								tools		
NVSRAM	Non-	1		128KB	Flash	No	Power	ROC writes	no write protected.	User cannot clear the
	volatile		U1087				sequencing and	configuration	Not visible to Host	memory.
			01087				Cache Offload	data to	Processor	
								NVSRAM		
FRU	Non-	1		2Kb	EEPROM	No	Board	Programmed	no write protected	User cannot clear the
	volatile		U1019				manufacture	at ICT during		memory.
							information	production.		
SPD	Non-	1		2Kb	EEPROM	No	Memory	Pre-	no write protected.	User cannot clear the
	volatile		U22				configuration	programmed	Not visible to Host	memory.
			022				information	before	Processor	
								assembly		
CPLD	Non-	1		64kb	Integrated	No	Power	Pre-	no write protected.	User cannot clear the
	volatile				Flash+EEPRO		sequencing and	programmed	Not visible to Host	memory.
					М		Cache Offload	before	Processor	
			U1088					assembly. Can		
								be updated		
								using Dell/LSI		
								tools		
MCU	Non-	1		8KB	Integrated	No	Battery	Pre-	no write protected.	User cannot clear the
(Cordova)	volatile		U41		Flash+EEPRO		Management	programmed	Not visible to Host	memory.
			041		М		control	before	Processor	
								assembly. Can		

								be updated		
								using Dell/LSI		
								_		
								tools		
			roller) (W3T2J	-		1				
SPI Flash	Non-	1	U2	256Mb	SPI Flash	No	Card firmware	Pre-	Not write	User cannot clear the
	Volatile							programmed	protected. Not	memory.
								before	visible to Host	
								assembly. Can	Processor	
								be updated		
								using Dell/LSI		
								tools		
FRU	Non-	1	U1019	2Kb	EEPROM	No	Card	Programmed	Not write	User cannot clear the
	volatile						manufacturing	at ICT during	protected	memory.
							information	production.		
CPLD	Non-	1	U1088	24kb	Flash	No	Power	Controller	Not write	User cannot clear this
	volatile						sequencing and	may program	protected	memory
							Cache Offload	data during		
								FW update	Not visible to host	
									CPU	
BMU	Non-	1	U1126	180KB	Integrated	No	Battery	ROC may	Not write	User cannot clear this
	Volatile				Flash +		Management	program data	protected	memory
					EEPROM		control	during FW and		
								during boot		
NVSRAM	Non-	1	U1087	128kB	NVSRAM	No	Configuration	ROC writes	Not write	User cannot clear this
	volatile						data	configuration	protected	memory
								data to		
								NVSRAM	Not visible to host	
									CPU	
SPD	Non-	1	U22	256b	EEPROM	No	Memory	Pre-	No write	User cannot clear the
	volatile						configuration	programmed before	protected. Not	memory.
							data	assembly	visible to Host	
								assembly	Processor	
NAND	Non-	1	U1100	512Gb	ONFI Flash	No	Cache offload	Programmed	No write	User cannot clear the
Flash	volatile						during	by ROC during	protected. Not	memory.
Do								cache offload		

							unexpected		visible to Host	
							power loss		Processor	
SDRAM	Volatile	9	U1077~U10 86	8GB	SDRAM	No	Cache for HDD I/O	ROC writes to this memory - using it as cache for data IO to HDDs	No write protected. Not visible to Host Processor	Cache can be cleared by powering off the card

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
Status LED Co	ntrol Panel									
Microcontrol	Non-	1	U_TINY	8KB	Flash	No	Driving Health	I2C via iDRAC	Hardware	User cannot clear
ler	Volatile						and Status LED		strapping	the memory.
Standard/LC R	IO									
MCU	Non-	1	U6	8kB	Flash ROM	No	Standard /LC	The data is	No write	User cannot clear
	Volatile						RIO	flash via iDRAC	protected. Not	the memory.
							information	auto update	visible to Host	
									Processor	
Power Button	Control Pa	inel								
SPI Flash	Non-	1	U2	32 Mb	SPI Flash	No	EasyRestore	SPI interface	Embedded iDRAC	The user cannot
	Volatile						functionality	from iDRAC to	subsystem	clear memory.
							contains Service	Right Cntl	firmware actively	
							Tag, Copy of SEL	Panel	controls sub area	
							logs		based write	
									protection as	
									needed.	

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
LOM										
SPI Flash	Non- Volatile	1	U1	8-Mbit DataFlash (with Extra 256-Kbits)	SPI Flash EEPROM	Yes	Firmware, configuration data	Firmware and some configuration data flashed via Dell Update Package (DUP); some configuration data is programmed during manufacturing; end user configuration data is written via UEFI HII	Reserving write protection function for HW design.	User cannot clear the memory.
MCU TPM	Non- Volatile	1	U2	64KB Flash and 8KB of SRAM	Flash ROM	No	LOM Security data	Off-line programming Before production	No write protected. Not visible to Host Processor	User cannot clear the memory

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
Trusted	Non-	1	U2	128 Bytes	EEPROM	Yes	Storage of	Using TPM	SW write	F2 Setup option
Platform	Volatile						encryption keys	Enabled	protected	
Module (TPM)								operating systems		
BOSS N1								Зузсента		
FRU	Non- volatile	1	U4	2Kbit	EEPROM	No	Card manufacturing information	During Manufacturing, by programming the image via firmware update process. During runtime, by I2C Proprietary Command Protocol	no write protected	User cannot clear the memory.
MCU	Non- Volatile	1	U41	8kB	Flash ROM	No	BOSS-N1 information	The data is flash via iDRAC auto update	No write protected	User cannot clear the memory.
SPI flash	Non- Volatile	1	U5	128 Mb	SPI Flash EEPROM	Yes	Firmware, Boot code	Firmware and some configuration data flashed via Dell Update Package (DUP); some	no write protected	User cannot clear the memory.

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
IDCDM								configuration data is programmed during manufacturing; end user configuration data is written via UEFI HII		
iDSDM iDSDM	Non-	2	J1, J2	16GB, 32GB,	NAND Flash	Yes	Provides mass	device resides	physical write	(1) card may be
(uSD1, uSD2)	Volatile	2		64GB			storage	in host domain; they are exposed to the user via an internally connected, non-removable USB mass storage device	protect switch on ACE card	physically removed and destroyed or cleared via standard means on a separate computer OR (2)User has access to the card in the host domain and may clear it manually
SPI Flash	Non- Volatile	1	U2	8Mb	SPI Flash	SPI flash is only indirectly connected to iDRAC.	Boot firmware storage, configuration and state data for IDSDM.	User can initiate a firmware update of the IDSDM device.	There is no mechanism provided to iDRAC to write any SPI NOR area outside	iDRAC may issue a clear command to erase all contents of the SPI NOR, but doing this will leave

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
						iDRAC can read any address in the SPI flash, but may only write the primary firmware storage area as a part of a firmware update procedure.			of the primary IDSDM firmware region.	the IDSDM non-functional.
LCD Bezel						<u> </u>				
MCU	Non- Volatile	1	IC1	2MB Flash in chip	Internal Flash	No	bootloader and s/w implementation of LCD command set	Updated as part of secure iDRAC software update. Configuration parameters can change only as part of	Writes are only allowed as part of secure iDRAC update	not user clearable.

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
								iDRAC update		
R1T										
MCU	Non- Volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R1U										
MCU	Non- Volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R2A										
MCU	Non- volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R2T					_			_		
MCU	Non- volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R3A										
MCU	Non-	1	U1	8kB	Flash ROM	No	Riser	The data is	No write	User cannot clear

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
	volatile						information	flash via iDRAC auto update	protected. Not visible to Host Processor	the memory.
R3B			_	•						
MCU	Non- volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R4A										
MCU	Non- volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R4P										
MCU	Non- volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R4Q										
MCU	Non- volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.
R4S	1		•		•				•	

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
MCU	Non- volatile	1	U1	8kB	Flash ROM	No	Riser information	The data is flash via iDRAC auto update	No write protected. Not visible to Host Processor	User cannot clear the memory.

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
PSU2800W								_		
DELTA PSU										
Primary	Non-	1	IC703	64KB	Internal Flash	No	Boot code, FW	The data is	SW write	Before firmware update,
MCU	volatile							flash via Dell	protected	the memory will be

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
								Update		cleared.
								Package(DUP)		
Secondary	Non-	1	IC805	64KB	Internal	No	Boot code, FW	The data is	SW write	Before firmware update,
MCU	volatile				Flash			flash via Dell	protected	the memory will be
								Update		cleared.
								Package(DUP)		
FRU	Non-	1	IC704	16KB	EEPROM	No	PSU information	During	SW write	User cannot clear the
	volatile							Manufacturing	protected	memory.
								, by		
								programming		
								the image via		
								firmware		
								update		
								process		
LiteOn PSU										
Primary	Non-	1	IC050	64K	Internal Flash	No	Boot code, FW	The data is	SW write	Before firmware update,
MCU	volatile							flash via Dell	protected	the memory will be
								Update		cleared.
								Package(DUP)		
Secondary	Non-	1	IC900	128K	Internal Flash	No	Boot code, FW	The data is	SW write	Before firmware update,
MCU/FRU	volatile							flash via Dell	protected	the memory will be
								Update		cleared.
								Package (DUP)		
PSU 2400W										

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
DELTA PSU		T		1		1	ı			T
Primary MCU	Non- volatile	1	IC703	64KB	Internal Flash	No	Boot code, FW	The data is flash via Dell Update Package (DUP)	SW write protected	Before firmware update, the memory will be cleared.
Secondary MCU	Non- volatile	1	IC805	64KB	Internal Flash	No	Boot code, FW	The data is flash via Dell Update Package (DUP)	SW write protected	Before firmware update, the memory will be cleared.
FRU	Non- volatile	1	IC704	16KB	EEPROM	No	PSU information	During Manufacturing , by programming the image via firmware update process	SW write protected	User cannot clear the memory.
LiteOn PSU										
Primary MCU	Non- volatile	1	IC050	64K	Internal Flash	No	Boot code, FW	The data is flash via Dell Update Package (DUP)	SW write protected	Before firmware update, the memory will be cleared.
Secondary MCU/FRU	Non- volatile	1	IC900	128K	Internal Flash	No	Boot code, FW	The data is flash via Dell Update	SW write protected	Before firmware update, the memory will be cleared.

Item	Non- Volatile or Volatile	Quantity	Reference Designator	Size	Type (e.g. Flash PROM, EEPROM)	Can user programs or operating system write data to it during normal operation?	Purpose? (e.g. boot code)	How is data input to this memory?	How is this memory write protected?	How is the memory cleared?
								Package (DUP)		

NOTE: For any information that you may need, direct your questions to your Dell Marketing contact.

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