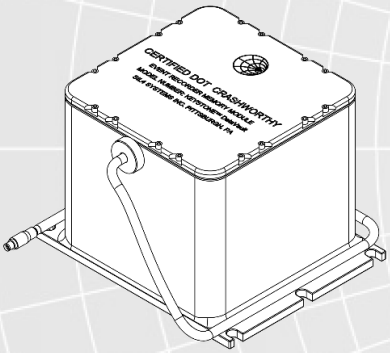
SIL4 SYSTEMS
Embedded Safety & High Reliability Computing Platforms

CHMM Selection Guide

HIGH DENSITY CRASH HARDENED MEMORY MODULES WITH DATA AND EVENT RECORDING CAPABILITIES




Type:	**High Density Crash Hardened Memory Module**	**ODDRS - On Board Driving Data Recording System**	**EDR - Event Data Recorder**
Standard Compliance:	FRA CFR 249; IEEE 1482; (EN55022; EN55024)	EN 62625-1	49 CFR Part 563
Size:	6”x 6”x 5” (152 x 152 x 127mm)	5”x 5”x 5” (127 x 127 x 127mm)	4”x 4”x 2.75”(102 x 102 x 70mm)
Weight:	12.6 lb (5.69 kg)	10.9 lb (4.96 kg)	5.3 lb (2.44 kg)
Event Recording Capability:	LDVR, ATP, ATS, PTS event recording		
Common Feature Set			
Security:	Tamper-proof		
Density (GB):	002, 004, 008, 016GB … 128, 256, 512GB, 1TB		
Interface:	USB2.0, USB3.0 | SATA, eSATA | Eth, PoE		
Operational Temperature:	-40°C to +85°C		
File System:	FAT32, NTFS (flexible - most custom file system compatibility available)		
Operating Systems:	Any OS with compatible w/USB2.0/3.0 mass-storage driver		
Max. Performance (Seq. W/R):	1.2Gbps (Higher density have limitations on speed) (Benchmark via CrystalDiskMark)		
Peak SSD R/W Burst Rating:	40 MB/s		
Advanced Bad Block Manage-ment:	Bad blocks are automatically detected and flagged. Once flagged, the block will no longer be used, and error correction will be used to transfer the existing data on the block to a spare block.		
Flash Memory Endurance:	3,000 cycles (48 hour storage = 150 cycles / year; 3,000 cycles = 10 years)		
Wear Leveling:	Global wear leveling is implemented so the wearing-down of all blocks can almost be evenly distributed. The CHM has a powerful ECC engine; block management and power failure management mechanisms to maximize reliability		
Error Management:	The SIL4 HD-CHM implements a hardware low-density parity-check ECC scheme, based on the BCH algorithm. It can detect and correct up to 40 bits error in 1K bytes.		
Comprehensive Power Outage Protection:	Also implemented is a unique set of comprehensive data protection mechanisms that function before and after a sudden power outage to the CHM. Low-power detection terminates data writing before an abnormal power-off, while table-remapping after power-on deletes corrupt data and maintains data integrity. SIL4 provides effective power cycling management, preventing data stored in flash from degrading with use.		
TRIM Support:	TRIM technology is utilized to maintain data consistency and perform continual data cleansing on the SSD. It runs as a back ground process, freeing up valuable controller resources while sorting good data into available blocks, and deleting bad blocks. Also significantly reduces write operations to the drive, thereby increasing the SSD’s speed and lifespan.		
Vdd:	4.7V - 5.5 VDC		
Power Requirements:	1.2W (max)		
High Reliability (MTBF):	> 3,000,000 hours (Telcordia SR-332 GB; 25°C)		

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