

CHASSIS PLANS

ENGINEERED SOLUTIONS

Application

Long Island Railroad wanted to upgrade over 100 computer based Audio/Visual Paging systems. These systems provide rider information in the stations for train arrival times and other information of a critical nature. The upgrade was required in part by the TSA for rider safety in the event of a terrorist attack or other disaster.

Specification

The systems are mounted adjacent to the rolling stock resulting in high levels of almost constant vibration. The contract required delivery of an environmental test report 15 days after award.

Vibration 5-500Hz	
Operational	1G
Non-Operational	2G
Shock	
Operational	10G
Non-Operational	30G
Temperature	
Operating	-6 to 49°C
Storage	-20 to 70°C
Humidity	0 to 90%
MTBF	50,000 hours



Solution

Chassis Plans provided a modified COTS/Industrial™ chassis system to meet the rigorous specifications required by the LIRR contract. Of principle concern was the constant vibration and wide temperature swings.

The 4U chassis is manufactured of .090-inch 5052 high strength aluminum alloy for lightness and structural rigidity. The front panel is milled from a solid billet of .375-inch aluminum. A welded and milled door provides an air filter and lock. The door seats to an EMI/environmental gasket embedded in the front panel. The drive cage assembly is mounted on shock/vibration isolators tailored to the structural weight and vibration dynamic range. A tailored card hold-down system assures cards stay seated in the motherboard.

An integrated solution was provided with a 3.4GHz Core 2 motherboard, 2GB of RAM and a 500W power supply. An 8GB solid state disk is used for assured operation in the high vibration environment. Plug-in boards include an M-Audio High Definition audio processor, 8-port digital I/O board, Diamond ATI 7000 video processor and a Chassis Plans PCI-WDG Watch Dog Timer board.