

# CHASSIS PLANS

ENGINEERED SOLUTIONS

## Application

Current generation military aircraft, and especially 4th- and 5th-Generation front line fighters such as the F22 are highly dependent on multiple onboard computer systems for flight dynamics and engine control as well as communications, radar and weapons systems. These aircraft are essentially complex computer systems with wings. Interfacing with the multiple on-board processors and systems and managing data flow requires state-of-the-art rugged ground-based maintenance systems.



## Specification

Testing is ongoing but it is anticipated the following will be met

Vibration 5-500Hz	
Operational	1G
Non-Operational	2G
Shock	
Operational	10G
Non-Operational	30G
Temperature	
Operating	-10 to 60°C
Storage	-20 to 70°C
Humidity	5 to 95%



## Solution

Examining the intended flight line environment, Chassis Plans determined that industrial rack-mount computers would not survive the transit shock, temperature extremes, dirt loading, and exposure to aircraft fuels and fluids.

A custom shock mounted transit case was specified as the protective shell for the system as a first line of defense. A Chassis Plans M4U-20A Military Grade Computer System was mounted in this rack. This computer system is designed for harsh environments and provides shock management and environmental sealing. Installed was a dual-XEON motherboard and high-end graphics card providing the required processing and graphics power. Dual UPS's provide clean power while connected to the aircraft on the flight line.

To manage the aircraft software interface, a rugged 3-screen tip up LCD was installed providing three 17-inch 1280x1024 displays with anti-reflective filters. Below that was mounted a NEMA sealed keyboard drawer with sealed trackball.

Custom cables were fabricated for a rear mounted connector panel for connection to the aircraft data busses. In-system storage is provided for cables.

Using long-life components, Chassis Plans was able to create systems that will accommodate the customer's needs, worldwide, for years to come.