



## INTELLIGENT POWER MANAGEMENT PANEL



AC or DC Front Rack Unit

### Description

The Intelligent Power Management Panel (IPMP) is a single rack intelligent, adaptive, with plug-n-play AC/DC modules. IPMP can be used to quickly implement intelligent power management technology into tents, encampments, work areas, etc. IPMP's small footprint makes it an effective device for modernization of Power and Signal panels in legacy military shelters and vehicles. A stand-alone IPMP can be used with small tactical power sources to provide load management and assure critical power delivery.

Load management is an accepted method of effective power management in the industrial marketplace, though it has not been widely implemented in the military and fielded tactical systems. The price of fuel and the logistics burden of delivery have significantly increased the need for power management. The Intelligent Power Management Panel (IPMP) provides a smart "power panel" system for significant, improved efficiencies and capacity. Developed under a Phase I, II, and III Army SBIR project, the IPMS is a comprehensive architecture that embodies small, adaptive AC/DC plug-n-play modules placed into individual IPMP racks that can be easily integrated into standard military Power & Signal panels or new platform enhanced power distribution panels.

The advanced power modules monitor the power distribution loads in vehicles, shelters, or even tents. Each module monitors voltage, frequency, current, and temperature for each circuit and measures over/under conditions. These measurements allow the system to perform automatic load shedding to protect the network from brownouts, and provide energy consumption management to prevent waste and excess fuel consumption. IPMP uses pre-set load priority settings to automatically provide load management. An IPMP prioritized power distribution network will significantly minimize electrical failure potential in transportable field and tactical platforms, conserve limited fuel resources, and protect power generation equipment from wetstacking.

Units of various configurations were fully tested at Aberdeen Proving Grounds and NAVAIR Pax River facilities for product qualification tests and approvals.

### Applications

The IPMP protects against power failures and equipment shutdown at critical times. IPMP is designed to be integrated into rack-mounted applications in vehicle and or shelter power panels of any Standardized Integrated Command Post (SICPS). The IPMP is the only military proven load management panel using adaptive, AC/DC plug-n-play modules.

### Key Features & Benefits

- Small module and outlet footprint
- Critical mission equipment protection
- AC/DC plug-n-play modules are hot swappable modules
- Fail-safe technology prevents unplanned outages and power disturbances
- Linked circuits provide constant feedback
- Reports Power Source: Voltage, Current, Frequency, Power Availability, Temperature
- Monitors and Controls: Fault Sensing, Tolerance, Protection
- Circuits prioritized for power management and load shedding for AC and DC circuits

# INTELLIGENT POEWR MANAGEMENT PANEL

## SPECIFICATIONS

Input Voltage	120 VAC single phase (85 to 132 VAC)
Output Voltage	AC or DC using single, adaptive modules
Input/Output	Voltage Input/output Frequency: 47 to 63 Hz
Max Input Current	20A per module; greater than 20A via external control
Power Input Rating	2.4 kW maximum for each module
Over Load Protection	Current automatically sensed to initiate auto-breaker limit. Electro mechanical relays provided for fail-safe protection. Smart load shedding prevents brownouts and manages peak loads.
Dimensions	Six module chassis is 16.5 in W x 9.5 in D x 3.75 in H 20A modules are 2.25 in W x 5.5 in D x 2.1 in H Custom width panels can be specified Number of modules dependent on custom width specified
Weight	15 pounds
Receptacles	Standard AC outlets become smart
Ambbient Temperature	AC outlets; same for DC versions
Relative Humidity	-50°F to +145°F operating, -60°F to +160°F nonoperating
Power	10 to 95 percent non-condensing
User Interfaface	Operates at nominal 120 VAC, 50/60 Hz or 28 VDC
Indicators	Hand-held control and monitor device (CMD) with keypad and LCD screen
Compliance	LEDs, Audible alarms, CMD LCD screen Environmental (MIL-STD-810F) EMI (MIL-STD-461E) Munson Road and Rail Impact NLS/EDS/HEMP US Army Safety Release



AC OR DC FRONT RACK UNIT



Power Strip



SINGLE AC/DC MODULE



BACK