AC6000 UPS

Peak Shave Mode

OVERVIEW

The Enconnex AC6000 Li-Ion UPS is a single-phase UPS, providing up to 6kVA/6kW of uninterruptable power in a small 2U form factor. It combines an efficient Line-Interactive topology and industrial-grade Li-Ion battery pack, allowing for up to 12 minutes of runtime at 50% load (3kVA/3kW), up to 6 minutes of runtime at full load (6kVA/6kW) and a fast recharge time to 90 percent battery pack capacity in less than 1 hour.

Taking advantage of the superior cycle performance of Li-Ion batteries, the AC6000 is designed to both protect IT equipment from power outages and to supplement the AC grid, via our Peak Shave operating mode. Peak Shave or Peak Shaving Mode (sometimes referred to as Peak Boost) allows the user to set the power threshold the AC6000 will draw from the AC grid, allowing the Li-Ion batteries to provide additional or supplemental power consumed by your IT load.

WHEN TO USE PEAK SHAVE MODE

There are 2 common scenarios to use Peak Shave mode.

1. Limiting the amount of power drawn from the utility (AC Grid) during times when energy cost is highest. In this case the user can 'cap' the amount of energy drawn from the utility and allow the batteries to provide any peak or additional power.
2. Using the batteries to provide additional power during a peak energy consumption event. In this case, the user does not have to oversize his power architecture for occasional peak power events. The batteries can be used to supplement the AC Grid and provide the additional peak power consumed by the IT load.

Figure 1 below illustrates how the AC6000 can be used in Peak Shave operating mode using the batteries to provide supplemental peak power.

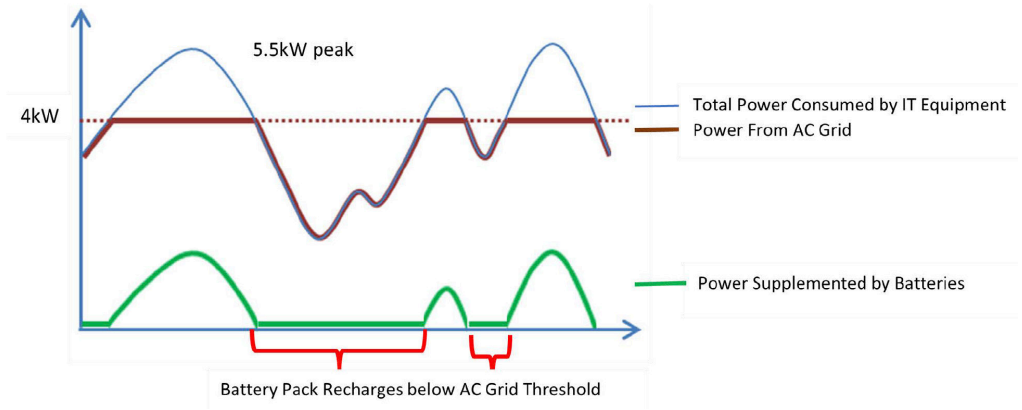

Figure 1 - Peak Shave Operating Mode, Example

In Figure 1, with the Peak Shave mode enabled the AC6000 is set to draw no more than 4kW of power from the AC grid. Any peak power consumption between 4kW to 5.5kW would be provided by the batteries. The batteries will provide the peak power as long as the battery pack remains above the minimum State of Charge (SOC) threshold set by the user. When the total power consumption drops to 4kW or less, the batteries will recharge.

HOW TO SET PEAK SHAVE MODE

Peak Shave mode can be accessed either through the AC6000 front panel display or through the Web UI interface. Via the front panel, it is accessed by choosing Settings-Peak Shave. Via the Web UI, it is accessed by choosing UPS Configuration-Peak Shaving.

Three (3) parameters are used to set the Peak Shave functions. They are:

1. Rack Power Threshold (Rack Pwr Thresh on front panel) – the maximum power the AC6000 will draw from the AC grid. This can be set by the user from 0-6kW
2. Max UPS Power Supplement (UPS Pwr Sup on front panel) – the amount of power the batteries will provide above the Rack Power Threshold. This can be set by the user from 0.5kW-3kW
3. Min SOC Threshold (Min SOC Thresh on front panel) - sets the battery state of charge threshold where peak shaving is no longer available. This can be set by the user from 30-90%

To place the AC6000 in Peak Shave mode via the front panel, enable Peak Shave on the menu and save changes. To enable Peak Shave mode via the Web UI, check the Enable Peakshaving box on the menu and save.

Setting the Peak Shave function through the Web UI using the previous example, the Rack Power Threshold is set at 4kW. The Max UPS Power Supplement is set at a minimum of 1.5kW. The Min SOC Threshold is set between 30-90%. This threshold determines how long the batteries will be available to provide supplemental power, i.e., if choosing 70%, the batteries will provide supplemental power until the battery pack reaches 70% state of charge. If the battery pack drops below the Min SOC threshold, Peak Shaving will no longer be available, and the full IT load will be drawn from the AC grid. When the IT load drops below the Rack Power Threshold, the batteries will begin charging and the UPS will continue to operate in Peak Shave mode as long as it is enabled.

PEAK SHAVE MODE EFFECTIVENESS

When using the AC6000 UPS in Peak Shave mode, the battery pack capacity could potentially be at the min SOC threshold (30-90% capacity) at the time of a power outage event. The battery capacity and IT load will have a varying impact on the amount of run-time the AC6000 will provide in battery back-up mode. The user should be careful to balance all the system requirements to ensure the AC6000 will be available with enough battery capacity to protect your IT equipment, in the event of a power outage.

Whether using the Peak Shave mode to cap power consumption from the utility when energy cost is highest, or to right size your power architecture by using the UPS batteries to provide peak (supplemental) power, the AC6000 is the ideal solution to both protect IT equipment from power outages and to supplement the AC grid during times of peak energy consumption.

For more information on the AC6000, contact your sales representative, visit enconnex.com, or call us at 1-833-TALK-ECX or 1-775-562-2138 and start protecting your IT equipment today!