

Surge Protection, Conditioning, and Analytics in the Modern Office Space

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Abstract

The modern office space has changed. Even before the global pandemic, a shift took place towards more flexible office environments. The employee dedicated cubicles were replaced with flex-spaces. The solution to power distribution in the modern-day huddle space is to have a single power center that has both AC power distribution as well as robust DC outputs via rugged screw-terminal connectors, negating the need for wall-warts. All equipment is securely connected to its respective power source eliminating frivolous service calls.

The Challenge

The modern office space has changed. Even before the global pandemic, a shift took place towards more flexible office environments. The employee dedicated cubicles were replaced with flex-spaces. The square footage reserved for traditional large conference rooms were reimagined into collaboration spaces of varying sizes to accommodate specific numbers of associates. Why design all conference rooms to accommodate 10 associates when many times only 4 associates need to collaborate?

This new thinking on space utilization presented a challenge for commercial system integrators. Not only have these meeting spaces reduced in size, but they no longer have adjacent equipment closets or space for furniture to store AV/IT equipment. On top of that, these new spaces require a higher level of technology for the business to run efficiently. The need for computer connectivity and video conferencing was no longer reserved for the large board rooms but was a requirement even for the smallest huddle spaces.

This drove a fundamental change in commercial AV/IT equipment. Where would rack-mount equipment be mounted if there was no rack? Equipment manufacturers responded by repackaging equipment (or including brackets) to allow for vertically mounting on a wall, or horizontally mounting it under a table.

A new challenge emerged. Where are you to plug in all this electronic equipment? Mounting an outlet strip under the table seemed to be a good idea, until the plug in a wall-wart type power supply gets hit by someone's knee or the chair arm and becomes unplugged, leading to a service call.

In addition, these wall-wart power supplies are notorious for being the Achilles heal of a system. These third-party devices often are the culprit for system failure, and not the device they are intended to power.



The Solution

The solution to power distribution in the modern-day huddle space is to have a single power center that has both AC power distribution as well as robust DC outputs via rugged screw-terminal connectors, negating the need for wall-warts. All equipment is securely connected to its respective power source eliminating frivolous service calls. That was the impetus for creating the SQUID Series of AC/DC power centers from SurgeX.



Managed Services

However, innovation does not stop with simply revisiting the form factor. Built into the SQUID Series is secure network connectivity that allows integrators to remotely control each of the (4) AC outputs as well as the 12V/24V DC banks. Control can be accomplished using any garden-variety web browser via the resident web-based GUI. Or, if M2M control is required, a full Restful API is available as well as drivers for many popular control systems.

Not only will SQUID save integrators time and money by providing the ability to remotely reboot locked-up equipment, but it can also be the centerpiece for offering managed service contracts. Managed service contracts are a great recurring revenue source, but only if costs can be managed. SQUID gives integrators remote control of the one thing that all equipment in the system has in common – electrical power.



Green Aspect

Many enterprise clients are looking to not only save money but are also interested in saving natural resources. SQUID has a built-in real-time clock that allows the AC and DC outputs to be switched OFF during non-business hours to not only reduce power consumption, but to also increase the life of the equipment. When it is time to power up the system, the SQUID can be programmed to power ON AC and DC outputs in any sequence to reduce the likelihood of a system lock-up.

AC Power Diagnostics – Get the Monkey off Your Back!

We live in a time where highly powered microprocessors have found their way into almost every piece of electronics. SQUID is no different. The heart of the SQUID is a NXP EdgeVerse microprocessor with the power to not only offer network



connectivity and AC/DC control, but also has the horsepower to analyze the electrical parameters of the incoming AC power. Parameters such as L-N Voltage, N-G Voltage, Current, Wattage, Power Factor, and Crest Factor are not only available to read real-time but are stored to provide a historical account of the power quality. So, when you get the phone call asking why Huddle Space 3a was not available yesterday at 1pm, you can look at the logs to see there was a brief power outage at that time and it is not an equipment or programming issue. Integrators no longer have to take the blame for power issues disguising themselves as equipment issues.

SQUID also supports SNMP V1/V3. So, better yet, let SQUID tell your SNMP server of the power issue so YOU can call the customer before they call you!

Enterprise Ready

At SurgeX, we know the challenges that integrators face when installing network enabled equipment on Enterprise networks. That is why we built SQUID using 802.1x secure communications protocol. The IT department will rest easy knowing that Security Certificates of up to 2048 bits can be used to securely communicate with SQUID. In addition, SQUID conforms to LDAP (Single Sign On) allowing authorized users to use their network credentials to log on to SQUID rather than having to create a unique username/password for SQUID. For Enterprise clients who have rigorous password change policies, SQUID is a perfect choice.