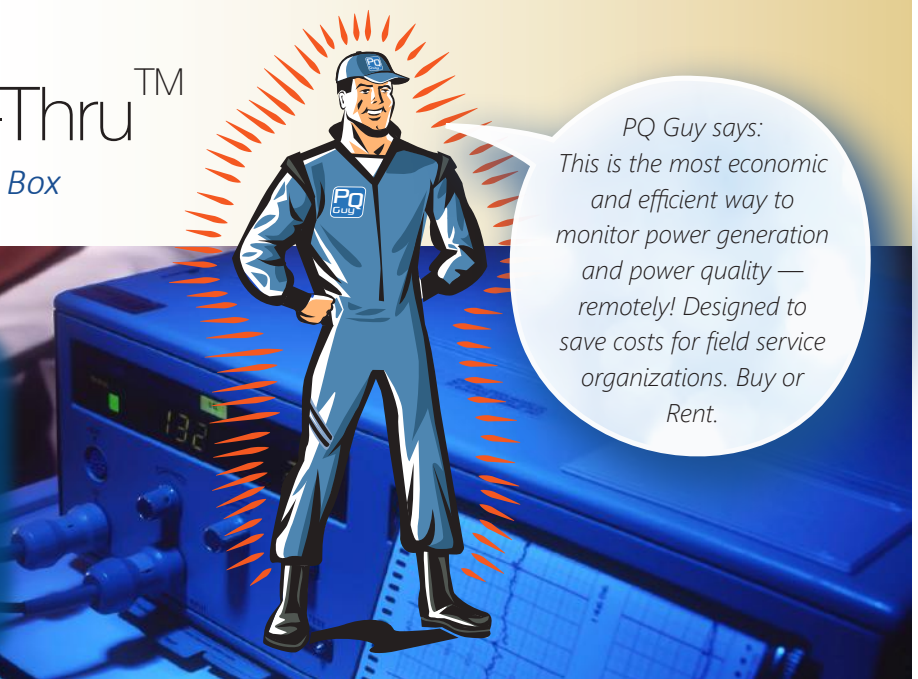


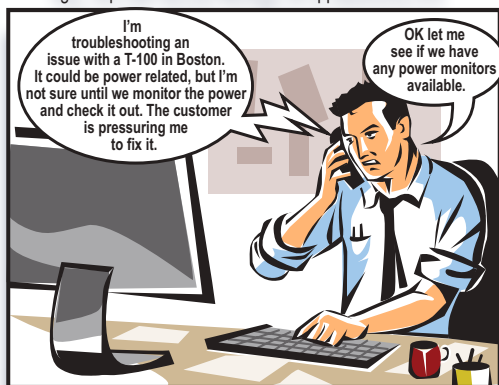


PQube3-Pass-Thru™

Power Quality Service Call in a Box



Max, the Field Service Manager for an electronics firm, gets a phone call from one of his support technicians.



- ▶ Plug-and-Play Power and Energy Monitoring
- ▶ Monitor and Diagnose Power Problems Remotely
- ▶ Quickly Confirm or Rule Out Power Problems
- ▶ Monitor and Record Wide Range of Power Conditions and Events
- ▶ Integral Cell Phone for Access and Control via Central Station

Medical diagnostic and laboratory equipment are expensive and sensitive devices. Keeping them operational is a mission-critical endeavor. When operational problems do occur, it's can often be the result of power quality problems. So, it's important to quickly assess the circuit to either rule out power as the problem or to pinpoint the condition.

The **POWERetc** PQube3-Pass-Thru (PPT) is a unique and efficient answer to identifying power quality issues and monitoring energy usage in sensitive medical electronic equipment. It's like having an expert visit your facility without the expensive service call.

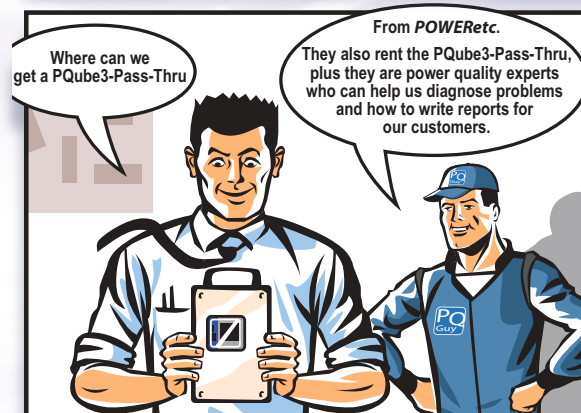
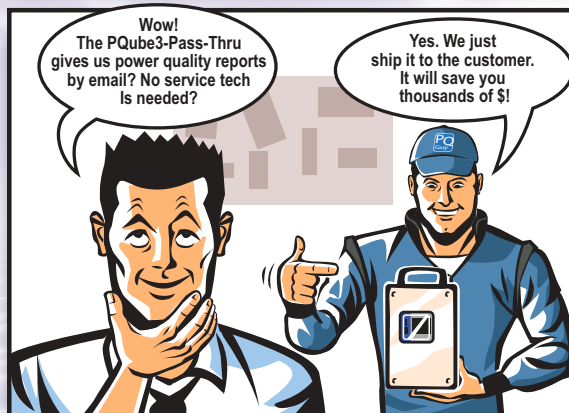
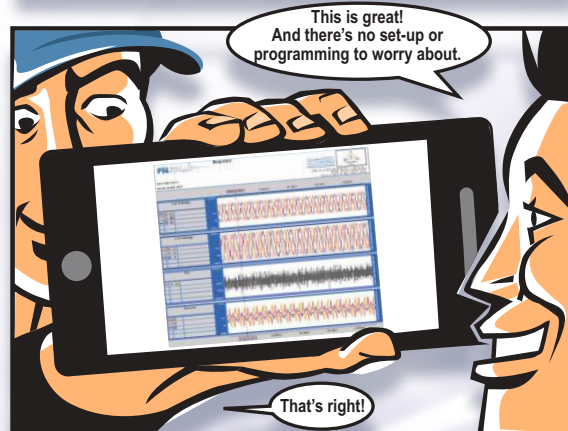
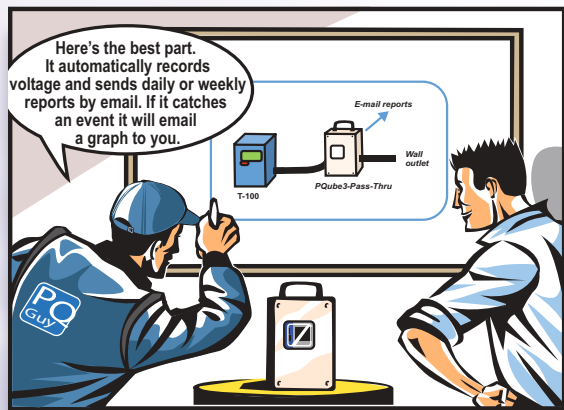
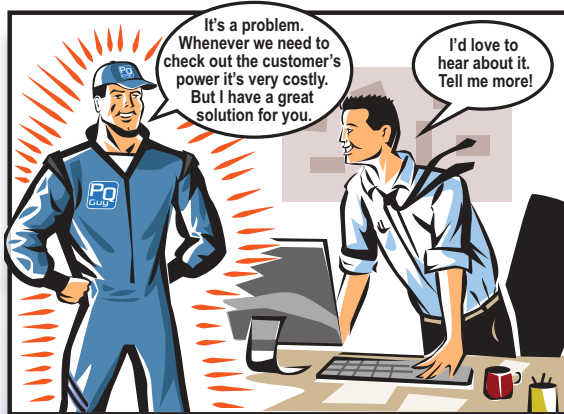
All you need to do is unplug the equipment, plug the PPT into the wall receptacle and then plug the equipment into the PPT. It immediately begins monitoring the power for energy usage and a range of power quality conditions including voltage sags and swells, transients, under and overvoltage and harmonic distortion. And with its own IP address and cell phone connections, it automatically connects with **POWERetc's** monitoring station where it can be accessed, controlled and queried.

If power-related issues are the cause of the equipment malfunction, you'll know that quickly and a service call can often resolve the problem quickly with a single visit. And if the power isn't the problem, you can address other possible causes without concern about the power.

PQube3-Pass-Thru™: Power Quality Service Call in a Box

The **POWERetc** PQube3-Pass-Thru (PPT) makes it easy to identify power quality problems without the time and expense of making multiple service calls.

The PPT is a valuable tool for every service department dealing with sensitive medical and laboratory equipment. The PQube3-Pass-Thru is available for sale or lease exclusively from **POWERetc**.



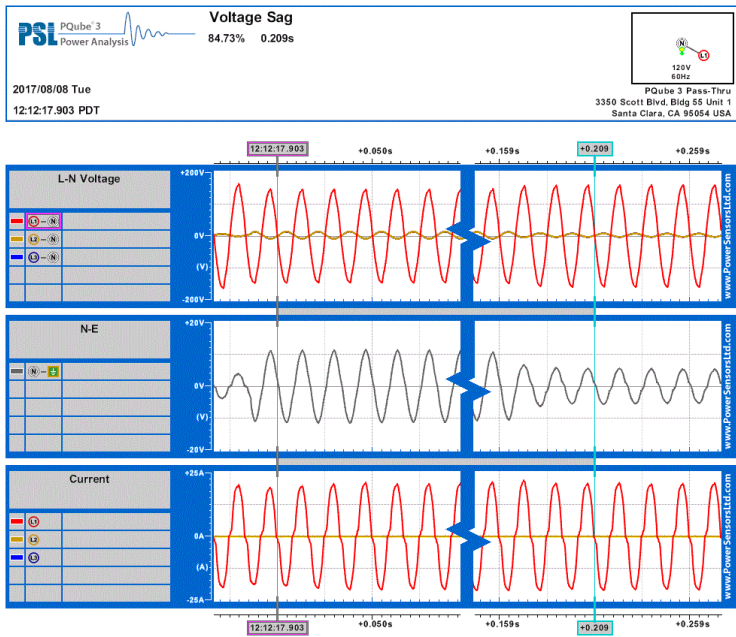


Comprehensive Power Monitoring and Reporting... by Email!

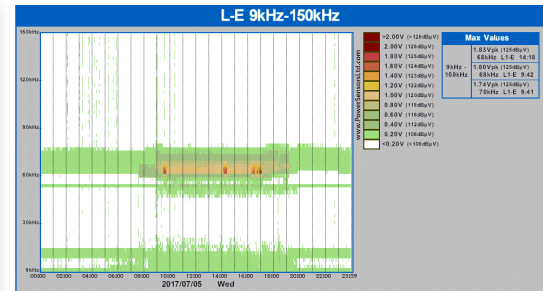
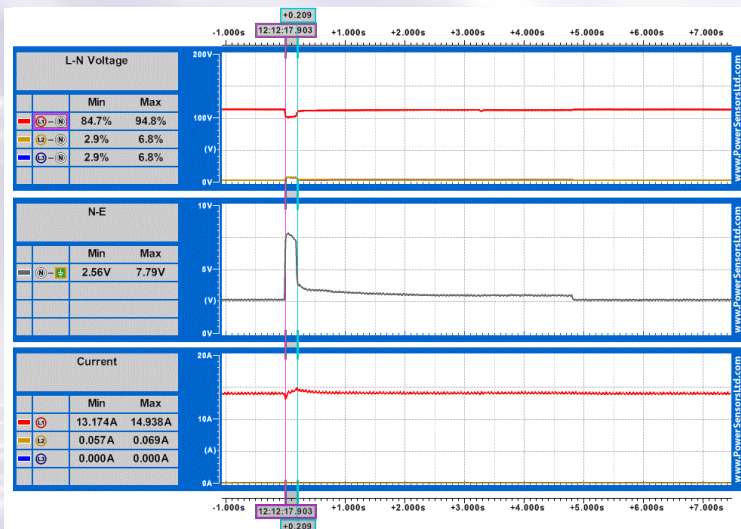
Monitor and record power quality, and energy. Diagnose reliability issues and verify performance. Get the entire range of power parameters, catch transient disruptions and voltage anomalies. The PQube3-Pass-Thru from **POWER_{etc}** confirms “all-good” or “poor” power

quality for a fraction of the cost of sending technicians on service calls. Graphs are attached to emails as industry standard GIF files, along with CSV files (tabbed or delimited) of tables of recorded data that can be imported into spreadsheets.

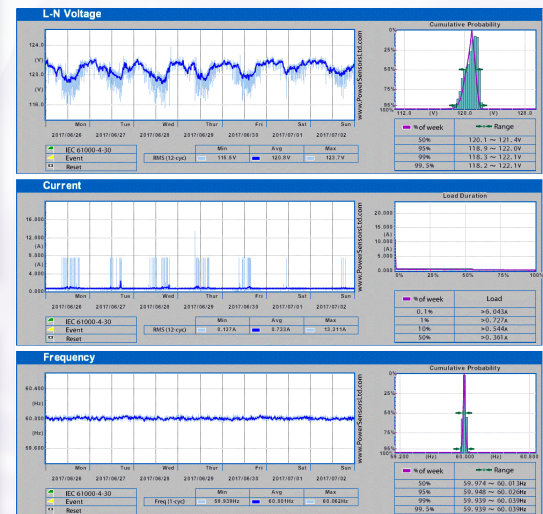
Sample Reports



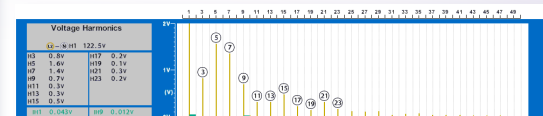
Voltage Sag events - detailed waveform view above, RMS view below



Conducted high-frequency emissions



Weekly voltage, current, frequency trends and statistics



PQube3-Pass-Thru™ : *Power Quality Service Call in a Box*



Don't send a Technician, *send Data!*

Send the PQube3-Pass-Thru to the problem site. Upon power-up it will immediately start sending you power data by email (logs, trend graphs, disturbance events plus your choice of daily, weekly or monthly reports). If you want to change reports or interrogate the PPT to view parameters and waveforms, simply send it a command by email.



Easy Access to Data

Access all data from PQube3-Pass-Thru from your cell phone, tablet or PC. No special software is needed. Just open your email! Setup and operational commands are also sent via the unit's restricted email address.

PQube3-Pass-Thru Specifications

Input Voltage	120/240VAC, 50/60 Hz
Measurement Channels	Line-to-Neutral, Line-to-Line, Neutral-to-Earth
Maximum Current Load	16A
Power Quality Measurements	Sags, swells, interruptions, impulses, flicker, rapid voltage changes, harmonics to 63rd, THD, TDD, interharmonics, unbalance Watts, VA, VAR, true pF, kWh
Frequency Measurement Range	13.3 Hz to 23.3 Hz, 40 Hz to 70 Hz, 320 Hz to 560 Hz
Sampling Rates	512/256 Samples per cycle for RMS and power, user-selectable. 4 MHz for impulses
Conducted Emissions	2 kHz-150 kHz, ± 60 V
Accuracy	$\pm 0.05\%$ rdg $\pm 0.05\%$ FS typical (10% ~ 150% of nominal).
RMS measurement method	True single-cycle RMS, phase-locked to each channel, updated every 1/2 cycle.
Reporting	Sends emails on every event with data attached in the form of GIF graphs, CSV spreadsheet files, PQDIF, HTML and XML summaries. Similarly, daily, weekly and monthly trends are sent by email. On demand, user can request real-time meters and reports. Control is via e-mail messages to change setups and get snapshots of power values and waveforms. Firmware upgrades via USB drive.
Communications	Ethernet cable, or via wireless cell modem. Cell modem is ideal for remote locations, or where connecting to a hardwired IP network is not practicable.
Cellular Communications	Verizon 4G for rental units. For purchased systems we can supply appropriate modems for most cell service providers, US and International. It is equipped with internal/external quadro-diversity antennas. Isolation > 7500 VDC isolation to Earth. UL/IEC 61010 reinforced insulation
Security	Secure FTP-FTPS, HTTPS
Environmental Monitoring (Optional)	Combines temperature/humidity/barometric pressure/shock & vibration in a USB sensor, up to two can be connected via USB cables