pqcanvass *Quickstart Guide*

Overview

Cloud-BasedPower Quality Data Platform

PQ Canvass isacloud-nativeplatform designed to provide real-time access, storage, sharing, and advanced reporting of power quality (PQ) data. Whether you're in the office, on-site, or remote, PQ Canvass connects you to your data—instantly and securely. It supports both Revolution series and legacy PQ recorders (Eagle, 2SX, etc.), making it a versatile solution across all deployments.

Getting Started

Accessing PQ Canvass

- Visit: canvass.powermonitors.com
- Log in with your Power Monitors credentials -*Contact Tech Support if you do not have login access.*

Connecting Devices

PQ –Canvass worksin tandem with PMI recorders connected via:

- Revolution Wi-Fi/LTE enabled devices (real-time sync)
- Legacy recorders (manual uploads via ProVision)

Input Configuration Options

Real-Time Data Flow

Revolution recorders stream data directly to the cloud.

- No need to download PQ data manually—data appears in PQ Canvass as it's recorded.

Uploading Data from ProVision

Forlegacy recorders(e.g., Eagle,2SX):

- Use ProVision software to download and view data.
- Upload recordings from ProVision to PQ Canvass for centralized cloud access and sharing.
- Navigate to the Upload to PQ Canvass feature within ProVision's export options.

Key Benefits of PQ Canvass

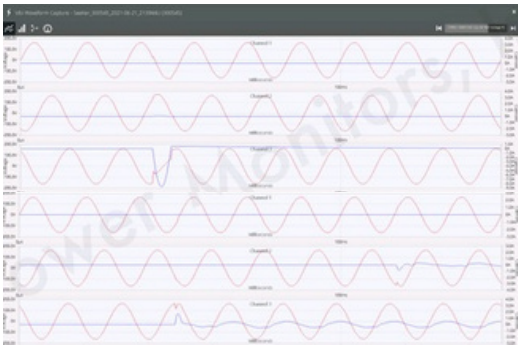
Real-Time Access	View data as it's captured—no delays, no manual downloads.
Cloud Storage	Data is stored in the cloud, removing memory limits and eliminating file storage concerns.
Remote Access	Access your data from any device with internet access—no physical connection needed.
Auto-Notifications	Configure email/SMS alerts for power events, PQ violations, or interruptions.
Data Sharing	Easily generate and share charts, reports, and datasets with others.
No Software Updates	No local software to manage or update—always the latest features.
Unlimited Accounts	Create as many internal user accounts as your team needs—no added cost.
Customer Accounts	Provide secure, read-only access for clients so they can view their own data in real time.

pqcanvass *Data Views Guide*

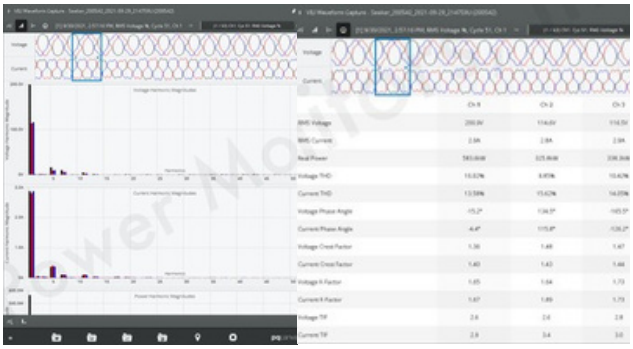
Data Views and Tools

Stripcharts
Visualizevoltage, current, THD, and other parameters over time.

Waveforms
Analyze detailed waveform captures for transient events and disturbances.

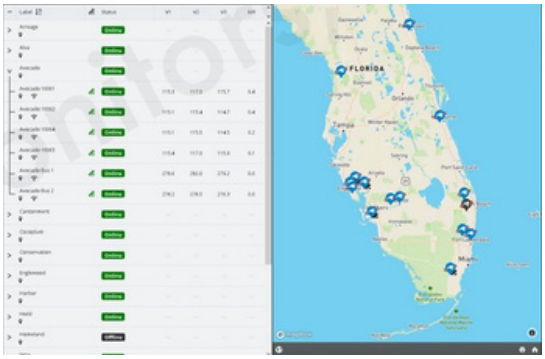


Harmonics Viewer
Identifyand assessharmonic distortion using bar graphs and frequency plots.

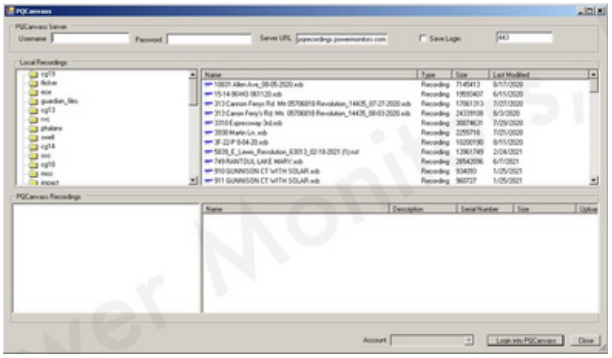


Event Log
Timeline ofall power quality events (sags, swells, interruptions, transients, etc.).

Map View *(for Revolution devices)*
Visualize device deployments and active alerts geographically.



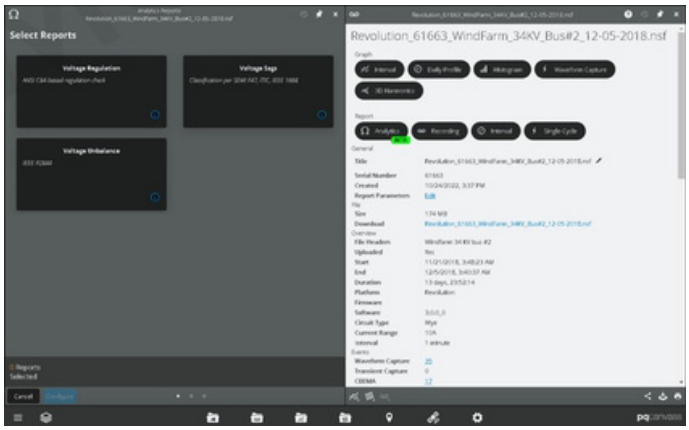
Import Provision Recordings
Upload PQrecordings fromProVision to PQ Canvass.
Use for Revolution and legacy recorders (Eagle, 2SX, etc.)



pqcanvass *Advanced Reports*

Standards-based recording analysis, focused on specific issues

- Voltage regulation (ANSI C84)
- Voltage Sags (IEEE 1668, ITIC, SEMI F47)
- Voltage Unbalance (IEEE 2844, ANSI C84)
- Harmonic Distortion (IEEE 519)
- Distributed Generation (IEEE 1547, 2800)
- Flicker (IEEE 1453)



Voltage Regulation per ANSI C84

Analysis - Range A Testing Results

This section shows the results of the Range A testing. Table 1 shows the results per channel. The "% Time in Tolerance" column shows the percent of time that voltage was within Range A limits. The "% Time Out of Tolerance" column indicates the percent of time that voltage was outside of the specified Range A limits. The "Mean" and "Median" columns show the statistical mean and median values for the voltage traces under analysis. Finally, the "Count" column indicates the total number of excursions during the time under analysis.

	% Time In Tolerance	% Time Out of Tolerance	Mean	Median	Count
Channel 1	48.1	51.9	114.0V	114.0V	35
Channel 2	83.5	16.5	114.8V	114.8V	14
Channel 3	55.0	45.0	114.2V	114.2V	24

Table 1: Range A Results

Range A Excursion Graph

The following graph is a combined graph with all channels together, showing all excursions over all channels on a single plot.

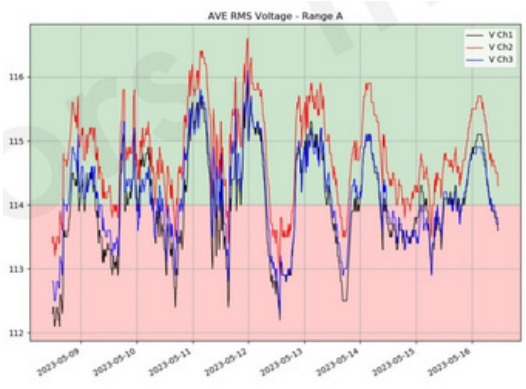


Figure 1: Combined Plot Average RMS Voltage

Table 2 provides the results for all channels combined. In this section, if one phase is outside of the Range A tolerances, then the recorded data for all channels during that period is considered "Out of Tolerance." The "% Time In Tolerance" column shows the percent of time that all voltage phases were within the specified Range A limits. The "% Time Out of Tolerance" column shows the percent of time that any phase was outside of Range A limits. The "Count" column is a count of the total number of excursions where any phase was outside of the Range A limits during the time under analysis. The count is the number of excursions, not the total time in excursions.

	% Time In Tolerance	% Time Out of Tolerance	Count
All Phases	44.3	55.7	30

Table 2: Combined Range A Results

Daily Profiles

The daily profile graph breaks down the recording into 15-minute bins, each bin corresponding to a 15-minute period in a 24-hour day. There are a total of 96 bins. Each bin is the average value of that fifteen minute period over the duration of the recording.

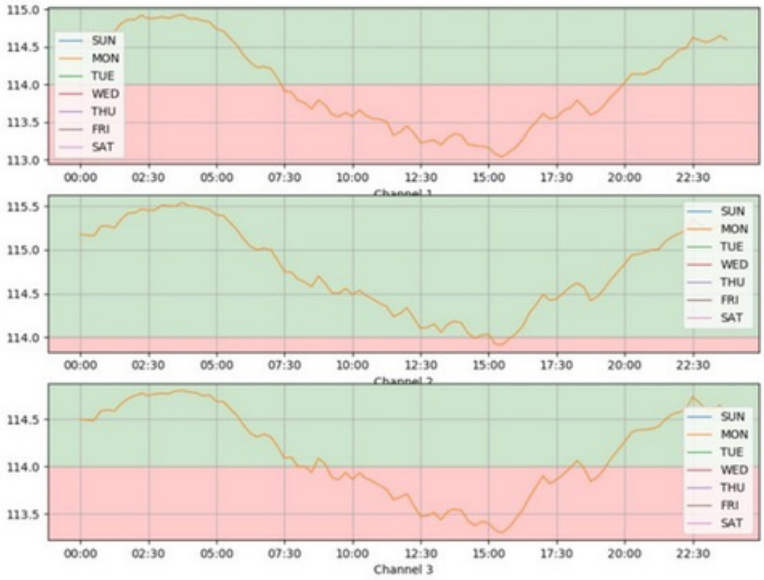


Figure 3: Daily Profile Graph Range A

Voltage Sags

Wavform Number	Type	Time	Cycle	Channel	Duration	% Steady State Retained Voltage	Angle of Inception
1	2	06-03-2023 01:55:52	52	1	32ms	87.7	-59
				2	27ms	87.9	187
3	1	06-09-2023 16:38:57	7	1	9ms	80.5	37
4	1	06-14-2023 14:56:56	45	3	88ms	62.4	112
5	1	06-14-2023 14:56:56	4	2	35ms	86.0	128
7	1	06-27-2023 18:01:19	20	2	95ms	75.6	-67
8	1	06-27-2023 18:01:19	39	3	106ms	79.5	215
14	2	07-01-2023 15:57:33	15	1	106ms	76.6	71
				2	44ms	74.6	-6
16	2	07-01-2023 15:57:33	34	1	92ms	67.0	111
				2	38ms	79.7	-47
17	1	07-02-2023 07:28:14	1	1	96ms	9.8	53
19	2	07-02-2023 07:28:15	20	2	95ms	62.2	-66
				3	55ms	82.2	0
23	2	07-02-2023 07:30:04	3	1	36ms	84.9	196
				3	90ms	72.4	-41
24	2	07-02-2023 08:48:22	42	1	96ms	70.5	-70
				2	48ms	66.0	-89
26	1	07-02-2023 08:48:22	1	1	19ms	87.8	134

Table 1: Voltage Sag Summary

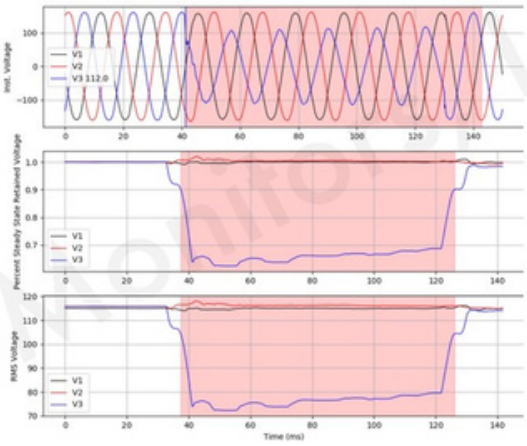


Figure 5: Sag in Waveform 4

Time	Cycle	Channel	Duration	% Steady State Retained Voltage	Angle of Inception
06-14-2023 14:56:56	45	3	88ms	62.4	112

Table 4: Sag Table Waveform 4

pqcanvass *Security*

Periodic security testing of Bolt/Seeker/Tensor/Guardian

Analyst Details -

Darren Manners
Offensive Security Manager
SANS Cyber Guardian (Red /Blue), SANSGSE (#42), CCIE (#18929), OSCP (#5897), CISSP (#85782), CISA (#13106732) S.E.P.P, SANS GCIH, GCIA, GPEN, GCFA, GAWN, GWAPT, GCUX, GCWN, GWAPT, CREST CPSA, CCNA
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Red Spy 365 will use all or some of the following tools:

- Offensive Security Kali
- Metasploit Pro/Express
- Metasploit Express
- Netsparker
- Paros Proxy
- Nessus/Nexpose Vulnerability Scanner
- w3af

The risks identified are based upon the likelihood and potential impact on systems.

Continuous Testing by InterVision

- Continuous scans of PQ Canvass
- Network vulnerability and port scanning
- External penetration testing of all public-facing servers
- Customized scans based on design review
- Automatic addition of new threats

InterVision
INNOVATION DELIVERED

Bolt Cybersecurity Training

https://powermonitors.vids.io/videos/7091d0bf101fe5c6f9/bolt-cybersecurity-testing

AWS Security

NERC CIP Standards for BES Cyber System Information on AWS

aws