# PACKETPOWER



Seamlessly integrates monitoring hardware, wireless networking, analysis and reporting into a ready to run system.

**MONITORING AND ANALYSIS MADE EASY:** The EMX energy portal makes it easy to access detailed power and environmental information. Using any web browser, you can quickly see your top level or detailed power and environmental data, available power infrastructure, examine usage trends across time and more. EMX also simplifies energy cost allocation and reporting with an array of standard and customizable reports.

**CLOSELY INTEGRATED HARDWARE AND SOFTWARE:** Packet Power provides a true end to end "plug and play" experience with a self configuring wireless network that effortlessy integrates with the EMX monitoring system. From the moment you energize monitors the EMX portal will automatically recognize new devices and make the data available.

**THE SMART ALTERNATIVE:** EMX can be online and commissioned in fraction of the time and cost of conventional BMS and DCIMs while still delivering the critical information you need to operate and optimize your data center. EMX can run as a cloud application or locally as well as operate simultanuously with conventional building management systems. See why so many enterprise customers choose EMX.

# Information that delivers real value and operating efficiencies:

- Optimize available power per circuit without the risk of tripping circuits
- Generate energy savings by increasing ambient temperature while safely knowing your peak rack temperature
- ▶ Monitor and optimize air flow using low cost strategically placed pressure sensors
- ▶ Ensure compliance with customer contracts using easy to run reports
- ▶ Maintain uptime by setting policies that ensure safe operating parameters
- Accuracately allocate costing by user and improve billing accuracy
- ▶ Increase PUE resolution to better gauge operating efficiency efforts
- ▶ Automate reporting and time consuming manual measurements

### **FEATURES**

- Real-time power and environmental information from facility wide to device resolution
- Ready to run no costly commissioning and integration expenses
- Supports thousands of monitoring points across multiple facilities
- Multi-company support; separate access to information for different parts of your company or customer sets
- Use as-is or customize reports, dashboards, languages and alerts
- Accessible from any web browser
- Cloud based or locally installed
- Proven globally in enterprise and co-location environments

## **FUNCTIONS**

- Set policies and receive alerts via email or SMS
- Create custom dashboards viewable as web pages
- ▶ 3D thermal maps
- Detailed reporting capabilities
- Dynamic charting and trending functions of real time and historical data

Export data in universal formats

- Track energy usage, costing and C0<sup>2</sup> emissions
- Create realistic data center diagrams and view information from a facility to device level

#### **SYSTEM OVERVIEW**

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100,000			by phase		by phase		by phase	-		Past 24 hours			
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100,0000,0000,0000   44%   12.08   38%   1430.0   140.0   107.7   1.00   22.9	F900-0000-0000-000F	42%	12.73	38%	1434.9	1434.9	112.7	1.00	28.3		Past I flour		
		43%	12.85	38%	1431.4	1431.4	111.4	1.00	25.9		Past 24 hours		
\( 9000000000000000000000000000000000000	2100-0000-0000-003A	44%	13.28	38%	1430.5	1430.5	107.7	1.00	22.9		Township or		
D09-000-000-000-000-000-000-000-000-000-		42%	12.62	38%	1428.9	1428.9	113.2	1.00	28.2		inactive		
COM/CC         COM/CC<	4000-0000-0000-0000	44%	13.22	38%	1420.1	1420.1	107.4	1.00	22.4				
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C00-000-0004E 49% 12:93 38% 1407:1 1407:1 108:8 1:00 24:7 Message Channel * Available						*******				message Availability			
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**Easy to see system wide overviews:** View all devices being monitored by type, location, or grouping along with system status from a central dashboard.

Layout 6	Policy name		Policy description			Desired condition	Timeout [s]	Level	Ema
Demo Corporation	A/B Cabinet Test					rent A1/B1 shall be < % of its rating	300	4	no
Demo Corporation	Inflow Temperature Lower Limit		stances where temperatu SHRAE recommended mi		Inlet tempera	ature shall be >= 18.0	3600	3	no
Demo Corporation	Inflow Temperature Upper Limit		nflow temperatures in exc naximum temperature gui		Inlet tempera	ature shall be <= 27.0	900	2	no
Demo Corporation	Maximum Circuit Load		hen a reading exceeds th n a circuit for it to remain guidelines.		PDU current s	shall be <= 80.0% of ib rating	300	4	no
Demo Corporation	Maximum Circuit Load - Redundant Power	level at which t	en the maximum load in a the full load could be supp still remain within code of	ported on that circuit		shall be <= 40.0% of it rating	3600	2	no
Demo Corporation	Maximum RH	Indicates a Rei	lative Humidity reading in recommended maximu		Humidity	y shall be <= 60.0	300	2	no
Demo Corporation	Total Cabinet Current	Keep the sum	of the current of all circuit 80% of their total capac		Cabinet curren	it shall be < 80.0% of it rating	s 3600	1	no
Policy vio	lations								
Policy name 0	Room	Cabinet	Violating node	Violating channel	Violating value	Policy limit value	Margin vs. limit	Most recent violation	Leve
A/B Cabinet Test	Minneapolis	Cab. D-6		CurrentA	20.4	6.0	14.4	2014-05-07	4

**Set Policies to ensure your operating parameters:** Define your policy parameters to keep your operating environment in check; any violations are logged and also can trigger email or text alerts.

Japont  Different An Vagus Colo Sitr'  Chineth AO  Chineth AO  Chineth AO  Chineth AO  Chineth BO  Chineth BO	229	182	25.8	152
Cabinat C.2 Cabinat C.3 Cabinat C.5 Cabinat D.5 Cabinat E.5 Cabinat E.5 Cabinat E.5 Cabinat E.5 Cabinat E.5	Cabinet A-3	250 Cabinet B-3	240 Cabinet C-3	23.1 Cabinet B-3  24.9 19.2  33.6
Cabinst F-0 Cabinst F-2 Cabinst F-3 Cabinst F-5 V Cabinst F-5 V Cabinst F-5 V	22.8	30.7 30.7 27.3 Web Store Project	25.6  Z4.6  Web Store Project	30.8 27 9 © Nieb Store Propost   6.5 kw

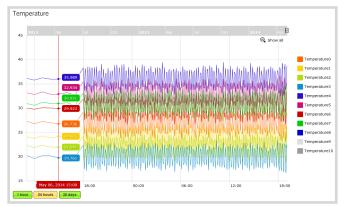
**Active Facility Maps:** Create accurate facility maps to mimic data center layouts and get detailed information down to the cabinet level including 3D temperature maps, rack and device level power consumption and more.

		Energy used			1				Energy used	
Monitoring node	OK?	last 24h by phase [kWh]	Energy used last 24h total [kWh]	Energy cost last 24h [\$]	Energy used last 30d [kWh]	Energy used last 30d total [kWh]	Energy cost last 30d [\$]	Energy used last 1yr [kWh]	last fyr A+B+C [kWh]	Energy cos last 1yr [\$]
SERVER AX1	OK	2.7	2.7	0.27	79.4	79.4	7.94	967	967.0	96.70
SERVER A3	OK	14.1	14.1	1.41	400.4	400.4	40.04			
0A00-0000-0000-3A27	OK				1023.9	1023.9	102.39	12553	12553.0	1255.30
0B00-0000-0000-39F4	OK	48.2	48.2	4.82	1498.9	1498.9	149.89	16594.9	16594.9	1659.49
0F00000000002203	OK		34.5	3.45	A: 403.9 B: 297.9 C: 335.2	1037.2	103.72	A: 5457.0 B: 3600.6 C: 4638.9	13696.6	1369.66
	OK	20	20.0	2.00	602.2	602.2	60.22			
140000000000449C	OK	A: 10.9 B: 10.9 C: 8.6	30.4	3.04	A: 308.8 B: 323.9 C: 244.9	877.6	87.76	A: 3466.3 B: 3685.5 C: 3100.2	10252.1	1025.21
1500-0000-0000-2134	OK	6.9	6.9	0.69	224.2	224.2	22.42	288.8	288.8	28.88
1700-0000-0000-2094	OK	24.1	24.1	2.41	719.2	719.2	71.92	11049.9	11049.9	1104.99
1700000000003027	OK				A: 187.1 B: 293.7 C: 108.8	589.5	58.95	A: 2431.0 B: 3868.1 C: 1876.1	8175.0	817.50
1800-0000-0000-3544	OK	11.5	11.5	1.15	377.8	377.8	37.78	4730.1	4730.1	473.01
	OK	50.8	50.8	5.08	1514.2	1514.2	151.42	19042	19042.0	1904.20
1900-0000-0000-304F	OK	44.5	44.5	4.45	1292.3	1292.3	129.23	14307.3	14307.3	1430.73
1900-0000-0000-3A20	OK	35.9	35.9	3.59	1078.7	1078.7	107.87	13237.6	13237.6	1323.76
1000-0000-0000-3565	OK	0.2	0.2	0.02	89.1	89.1	8.91	1370.7	1370.7	137.07
2000-0000-0000-3A38	OK	5.7	5.7	0.57	171.1	171.1	17.11			
2100000000004495	OK	A: 6.4 B: 3.9 C: 0.0	10.4	1.04	A: 178.8 B: 110.6 C: 0.1	289.5	28.95	A: 1869.9 B: 1185.2 C: 1.6	3056.7	305.67

**Simplify your reporting:** Create energy usage and environmental reports by user, location or device along using the many standard reports or create a custom report. Report information can also be exported into universal formats.



**Create custom dashboard web pages:** Any information can be assigned to a custom dashboard which will have a unique URL and can be viewed as a web page for "at a glance" status checks.



**Charting and Trending:** Any parameter can be presented graphically to show historical or real time data and assist in data analysis.

#### **Packet Power**

2716 Summer St. NE, Minneapolis, MN 55413 USA Tel: 877-560-8770 - Fax: 866-324-2511 www.packetpower.com