Nipron GAZE into the future

Nipron Wave

Vol.51 2018 Spring

This is the highlight!

1. **Special feature on new product HPCSA-1500P**
   Introducing a large capacity ATX power supply unit for GPU servers suitable for deep learning.
2. **Special feature on new product BS28A**
   A nickel metal-hydrate battery compatible with a wide range of products.
   Also introduced are nonstop power supply.

Power supply unit for GPU servers suitable for deep learning

HPCSA-1500P

Continuous: 1200 W Peak: 1500 W

* Image

Highly reliable design enabling 24/7 nonstop operation for ten years

As technological innovations including new areas of ICT, such as IoT, big data and AI, entering the practice phase, there is a heightened momentum to utilize them in streamlining the production and businesses in the entire world is about to change significantly.

By obtaining a large-scale and variety of factory data collected by IoT through a network and analyzing them efficiently using the deep learning technique, it will be possible to streamline systems in the factory. Deep learning, which is significantly more accurate than conventional methods, will also require a vast amount of computation in the process of learning. Because computation in deep learning is similar to those of image processing, a significant gain in the speed of processing may be expected by using GPUs in addition to a CPU. Therefore, GPU servers utilizing GPUs are gaining attention in the field of deep learning.

Features

- Supports up to four graphics boards
- Also optimum for data-mining PCs
- Heat generation reduced with a high efficiency design
- High capacity of 1200 W continuous and 1500 W Peak power supply

To be released in 2018!

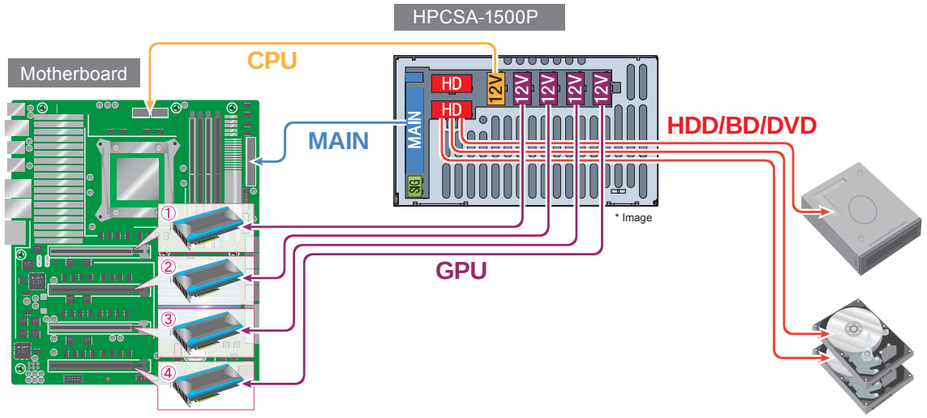
Specifications

Input specifications			
Rated input	100-240 VAC 50/60Hz	Operable input range	85–264 VAC (with a derating up to 90 V)

Output specifications										
	CH1	CH2	CH3 12V1	CH4 12V2	CH5 12V3	CH6 12V4	CH7 12V5	CH8 12V6	CH9	CH10 5VSB
Rated voltage	3.3V	5V	12V	12V	12V	12V	12V	12V	-12V	5V
Min. current	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A
Max. continuous current	25A	25A	24A	24A	24A	24A	24A	24A	1.0A	3.0A
Max. continuous power	82.5W	125W	288W	288W	288W	288W	288W	288W	12.0W	15W
	207.5W		1200W							15W
	1200W									
Peak current	30A	30A	32A	32A	32A	32A	32A	32A	1.2A	4.0A
Peak power	99.0W	150W	384W	384W	384W	384W	384W	384W	14.4W	20W
	249W		1500W							20W
	1500W									

Environmental specifications	
Operating temperature	0-60 °C (with a separate derating condition)
Conducted emission	VCCI-B compliant
Expected life	10 years or longer

Concept of GPU server configuration

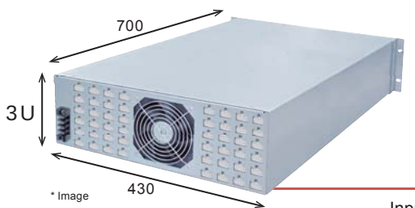


Applicable detachable output harnesses

Model	Types and length of connector
Main power cable MAIN	
WH-M2022-500	MAIN 500±10 → 20Pin
WH-M2022-300	MAIN 300±10 → 20Pin
WH-M2422-500	MAIN 500±15 → 24Pin
HD power cable HD	
WH-PP610-850	HD 550±15 → 150±15 → 150±15 → peripheral (HD)
WH-PS610-850	HD 550±15 → 150±15 → 150±15 → FD
WH-PS710-850	HD 550±15 → 150±15 → 150±15 → 850±15 → S-ATA
WH-PS810-1000	HD 550±15 → 150±15 → 150±15 → 150±15

Model	Types and length of connector
12V power cable 12V	
WH-V0808-500	12V 500±15 → 12V 8Pin
WH-V0408-500	12V 500±15 → 12V 4Pin
WH-VG208-500	12V 500±15 → 12V 4Pin + PCI-E 6Pin
WH-VV208-500-02	12V 500±10 → 12V 8Pin + 12V 8Pin
WH-VG208-500-02	12V 500±10 → 12V 8Pin + PCI-E 6Pin
WH-G0808-500	12V 500±10 → PCI-E 6+2Pin
WH-GG208-500	12V 500±10 → PCI-E 6Pin + PCI-E 6+2Pin
SIG cable SIG	
WH-S0610-500	SIG 500±15 → SIG-1
WH-S0610-500-01	SIG 500±15 → SIG-2
WH-S0310-500	SIG 500±15 → SIG-3

[Product proposal] Large capacity power supply unit for data mining



Features

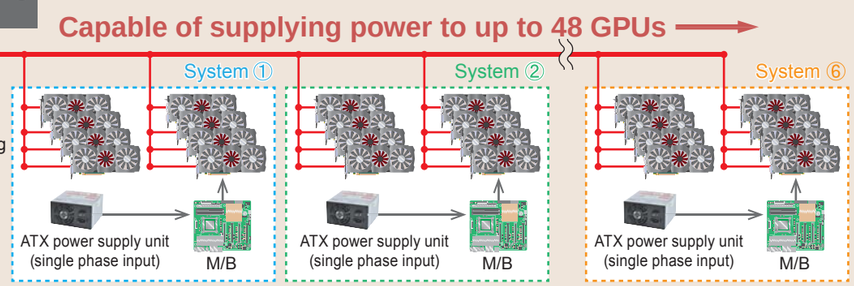
- Capable of supplying 9600W power to GPU with a single unit
- Highly reliable design enabling 24/7 nonstop operation for ten years or longer
- Safe and secure power supply unit with an over-current protection on each channel

Specifications

Input: 3P 200 VAC　Output capacity: Max. 9600 W　Output voltage: 12 V, 48 channels

Conceptual drawing of configuration

Large capacity power supply unit for data mining (3P 200 V input)



* Specifications may change without notice because this is a proposed product.

Optimum for GPU servers!　http://www.nipron.com

IoT support

Industrial grade ATX power supply unit
HPCSA-700P-E2S

Spreading utilization of ICT

Contemporary ATX power supply unit supporting IoT

Continuous **600W**　Peak **700W**

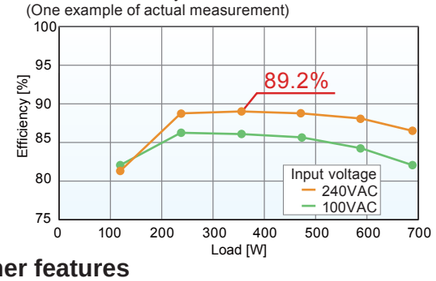
Output specifications

Output voltage	+3.3V	+5V	+12V 1	+12V 2	+12V 3	-12V	+5VSB
Maximum current/ Maximum power (continuous)	16A	16A	18A	18A	18A	1A	2A
	Total 90W		Total 600W				10W
	Total 600W						
Peak current/ Peak power (within 5 s)	20A	20A	25A	25A	25A	1A	3A
	Total 120W		Total 700W				15W
	Total 700W						
Minimum current	0A	0A	0A	0A	0A	0A	0A

Heat generation and noise reduced with high efficiency circuits

Adopting a synchronous rectification circuit and a resonant circuit, the maximum efficiency of 89% typ has been achieved. At the same time, noise has been reduced to clear Class B conducted emission with a single power supply unit, eliminating the need to add an external noise filter.

■Measured efficiency of HPCSA-700P-E2S
(One example of actual measurement)



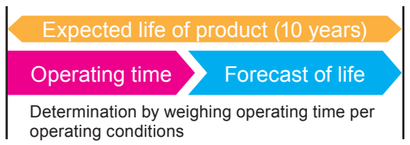
Other features

- Low noise design with a temperature controlled variable-speed fan
- Minimum load current 0A for all outputs specification
- The use of through-hole plated double-sided circuit board
- Low standby power specification, standby power of 0.1 Wtyp

IoT features

Forecast of life determination

Operating time is weighed by monitoring operating conditions including fan speed, internal temperature of a power supply unit, load condition, etc. and remaining life is forecasted.



Monitoring function

Respective input and output conditions inside a power supply unit are recorded and output to the outside by communication function.

- Respective output voltages and currents
- Input voltage and input power
- Fan speed
- Operating temperature
- State of abnormality protection operation, etc.

Uniform control of input and output conditions

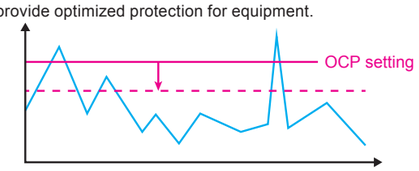
Records of failures in a system are kept

I2C telecommunication function

It supports telecommunication according to I2C standard which has rich experience as internal communication for industrial machinery, etc. It provides highly reliable high-speed telecommunication. With an additional optional telecommunication board, it can respond to various requirements including USB, RS-232C, etc.

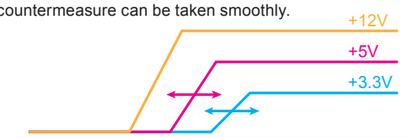
Variable setting function of overcurrent protection circuit

Standard setting for overcurrent protection (OCP) is so made as to meet with the upper limit of respective systems. For example, however, “in the case that +3.3 V system and +5 V system are seldom used,” it is possible to make setting from external PC that overcurrent protection operates with smaller current than standard. Thus, it is possible to provide optimized protection for equipment.



Output voltage rising adjustment

Against a problem of compatibility between PC and a power supply unit which may occur rarely due to difference in rising timing of output voltages, it is possible to make setting from external PC that rising timing is individually adjusted and thus cause can be examined and a countermeasure can be taken smoothly.



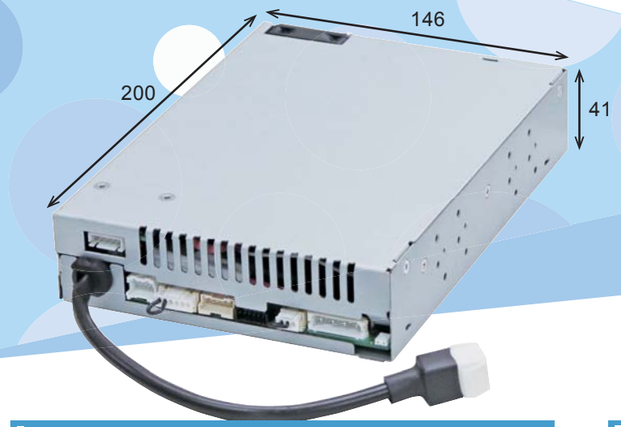
Multifunctional power supply unit HPCSA-700P supporting IoT　http://www.nipron.com

BS28A-H350/2.5L NEW

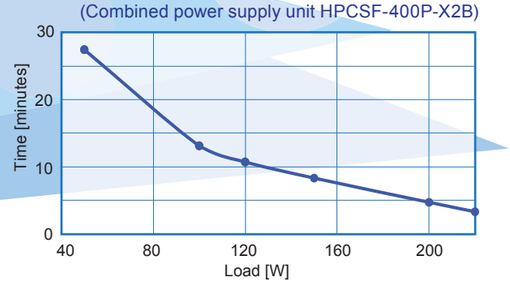
Nickel metal-hydrate battery

Highly versatile battery package

For 5″ bay installation



Battery backup discharge characteristics*
(Combined power supply unit HPCSF-400P-X2B)



* The chart is for the purpose of reference only and the values shown are not guaranteed.

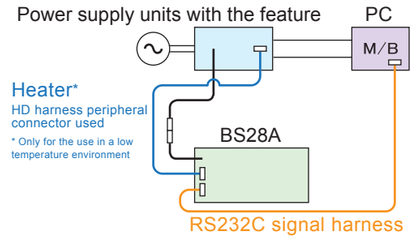
Features

- Adoption of a nickel metal-hydrate battery
- Prevents the drop in the capacity at low temperature with a built-in heater
- Status outputs (remaining capacity/battery life notification) available for the battery package
- Low standby power specification

Input AC	Standby power	
	Power supply unit alone	PSU + battery
100V	0.064W	0.19W
115V	0.065W	0.19W
240V	0.101W	0.26W

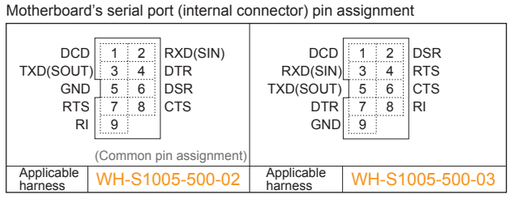
Combined power supply unit [HPCSF-400P-X2B]

Conceptual connection diagram (with an ATX power supply unit)



RS232C signal harness

Motherboard's serial port (internal connector) pin assignment



Applicable harness	WH-S1005-500-02	Applicable harness	WH-S1005-500-03

For further information on the pin assignment, refer to user's manual for the motherboard.

From single-output to ATX power supply units, many models support the feature.

HPCFL-400P-X2S*

High efficiency fanless power supply unit

Output capacity
Continuous:170W
Peak:400W

Size(W×H×D)106×37×225

UZP-120 series*

Ultra-high efficiency, ultra-thin single output power supply unit

Low noise & low leakage current achieved

Output capacity
Continuous:100-120W Peak:200W
Output voltage 12, 24V
Size(W×H×D)62×27×155

HPCSF-400P-X2B

Continuous:310W Peak:400W

HPCFX-350P-X2B

Continuous:245W Peak:346W

UZP-220 series*

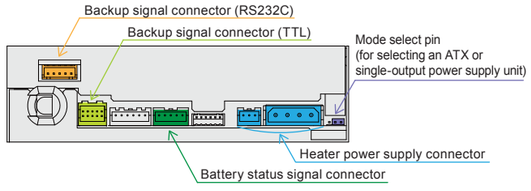
High-efficiency single output power supply unit of 94% max efficiency

Low noise & low leakage current achieved

Output capacity
Continuous:180-220W Peak:400W
Output voltage 12, 18, 24, 48V
Size(W×H×D) 75×36×160

* A separate conversion harness is required for connecting the battery package and the power supply unit. Contact Nipron for further information.

Connector pin assignment



Connector	Pin number	Output (signal) name
Battery status signal connector	1	VCC5V
	2	BATT_E0
	3	BATT_E1
	4	BATT_E2
	5	BATT_LIFE

Remaining capacity notification signal output patterns

Remaining capacity	EBATT_E0	BATT_E1	BATT_E2
Below 20%	L	OPEN	OPEN
20 to 80%	L	L	OPEN
Over 80%	L	L	L

BATT_LIFE: Sends an OPEN signal by detecting the drop in the internal resistance of the battery and errors of the charger

Connector	Pin number	Output (signal) name
Backup signal connector (SIG_T)	1	AC_FAIL_T
	2	SHUT_DOWN_T
	3	BATT_LOW_T
	4	-
	5	FAN_M
	6	-
	7	GND
	8	-
	9	-
	10	VCC5V

Connector	Pin number	Output (signal) name
RS232C	1	VCC5V
	2	GND
	3	BATT_LOW_R
	4	SHUT_DOWN_R
	5	AC_FAIL_R

Connector	Pin number	Output (signal) name
Heater power supply connector (12V)	1	12V heater power supply
	2	GND
	3	GND
	4	-

Connector	Pin number	Output (signal) name
Heater power supply connector (24V)*	1	24V heater power supply
	2	GND
	3	-

* To use the heater at 12V, connect the short piece attached.

Many power supply units support the feature! Outstanding versatility BS28A http://www.nipron.com

HPCSF-400P-X2B NEW

Product supporting the backup power for blackout with BS28A

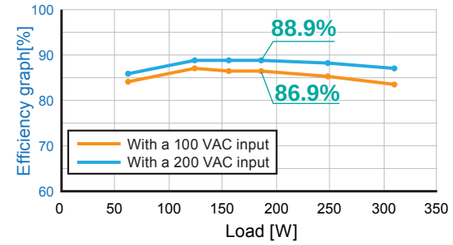
Small & large capacity SFX power supply

Continuous 310W
Peak 400W

High-efficiency

The maximum efficiency of 89% typ achieved. By reducing the current consumption when the device is running with a significant reduction of power loss, the unit reduces the environmental impact.

Efficiency graph (measurement examples with the battery fully charged)



▶ Low-noise

Conducted emission of even a single power supply unit clears VCCI Class B.
Since it is not necessary to provide a noise filter on the outside, it contributes to cost reduction and workload reduction.

▶ Low leakage current specification

▶ Low noise design with a temperature controlled variable-speed fan

▶ Minimum load current 0A for all outputs specification

▶ The use of through-hole plated double-sided circuit board

Output specifications

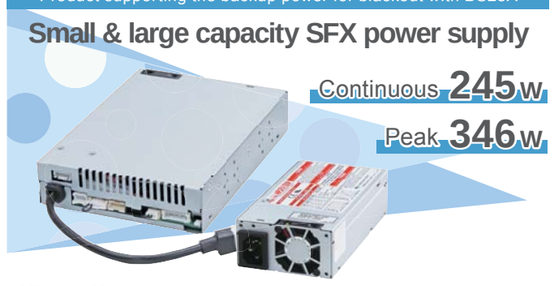
Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max continuous current/ power	16A	16A	25A	0.5A	2A
	90W		300W	6W	10W
	300W				
	310W				
Peak current/ power (within 5 s)	20A	20A	30A	0.5A	3A
	120W		360W	6W	15W
	385W				
	400W				
Min. current	0A	0A	0A	0A	0A

HPCFX-350P-X2B To be released

Product supporting the backup power for blackout with BS28A

Small & large capacity SFX power supply

Continuous 245W
Peak 346W



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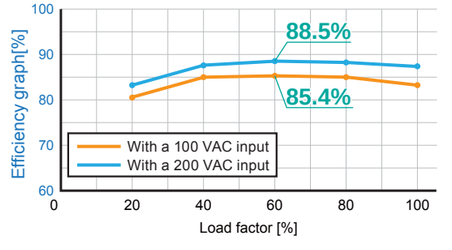

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▶ Minimum load current 0A for all outputs specification

▶ The use of through-hole plated double-sided circuit board

Output specifications

Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max continuous current/ power	12A	12A	20A	0.5A	1A
	66.4W		240W	6W	5W
	240W				
	245W				
Peak current/ power (within 5 s)	16A	16A	28A	0.5A	2A
	83W		336W	6W	10W
	336W				
	346W				
Min. current	0A	0A	0A	0A	0A

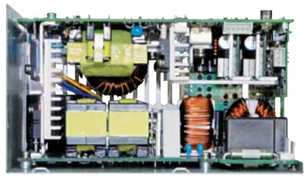
Count on Nipron for backup power for blackout! http://www.nipron.com

Does not break, does not collapse & does not stop

Nipron's nonstop power supply

Produced in Japan, the high quality & highly reliable Nipron PSU does not break or collapse.

All Nipron power supply units are designed with a layout ensuring high quality and high reliability to protect customers' machines and data and produced in Japan renowned for its high standard of manufacturing operation.
In addition, in order to provide answers to various demands of global customers on power supply units, severe validation tests are performed thoroughly to expose and correct weaknesses and deliver power supply unit that are tough and hard to break.



HPCSA-700P-E2S

The design includes an arrangement with room between components, avoiding stresses on neighboring parts.

Highly reliable double sided through-hole printed circuit boards are used for every circuit to prevent cracking on solder joints.

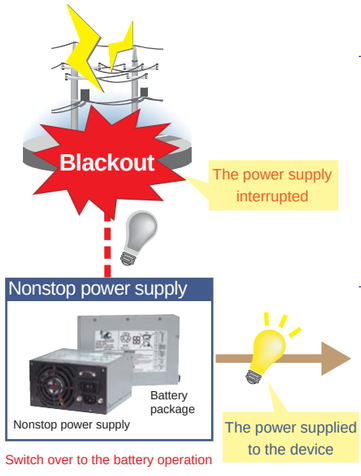
Considerations are given to avoid interference between leads and wires and, if they come in contact, to provide safety measures.

Components with a low rated temperature are not arranged in the perimeter of high temperature components, realizing a safe power supply unit.

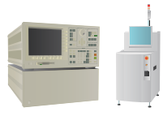
Use a nonstop power supply to build a secure system that does not stop running with a blackout.

While Nipron's nonstop power supply takes the power from the AC power supply line in normal condition, whenever the AC power supply voltage drops or fails, it switches to the battery power with no instantaneous interruption to enable a secure backup system without damaging the system.

Nonstop PSU enables a secure backup system even with a blackout.



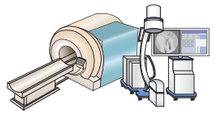
Industrial devices
- Testing equipment
- Semiconductor production machinery
- Emergency power generator, etc.



Financial terminals
- ATM
- Ticket vending machines, etc.

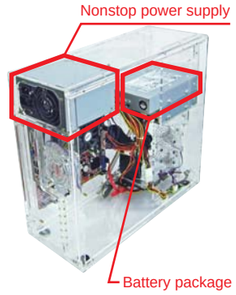
Industrial machinery/robots
- Robot arms
- Robot palletizers
- Automated conveyers, etc.

Medical devices
- MRI
- Ultrasonic diagnostic devices
- C arms, etc.



Also serves to save space.

Because the battery package can be contained in the PC housing, more space can be saved compared to commonly found UPS.



Nonstop PSU protects devices from blackouts and instantaneous power failures.

http://www.nipron.com

Nonstop PSU lineup

HNSP4-1000P series

Large capacity ATX PSU with 1000 W peak power

Output capacity
Continuous **822W**
Peak **1000W**

Applicable battery package
BS25A-H350/2.5L

eNSP3-450P series

ATX PSU with the No.1 track record both in Japan and the world

Output capacity
Continuous **350W**
Peak **450W**

Applicable battery package
BS11A-P24/2.3L
RBS02A-P24/2.3L
BS10A-H24/2.0L
BS22A-H24/2.0L

HNSP9-520P series

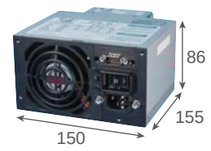
ATX PSU with +24 V & +48 V outputs

Output capacity
Continuous **400W**
Peak **520W**

Applicable battery package
BS11A-P24/2.3L
RBS02A-P24/2.3L
BS10A-H24/2.0L
BS22A-H24/2.0L

eNSP-300P series

The bestseller with outstanding reliability and track record



Output capacity
Continuous **200W**
Peak **300W**

Applicable battery package
BS05A-P24/2.2L
RBS01A-P24/2.2L
BS06A-H24/2.5L
BS06B-H24/2.5L

NSP6F-220P-S10

Palm-size PSU of SFX12V form factor

Output capacity
Continuous **160W**
Peak **220W**

Applicable battery package
BP03A-H16/2.5L
BS03A-H16/2.5L

eNSP4-500P series

1-sec backup PSU for instantaneous power failures

Output capacity
Continuous **350W**
Peak **500W**

Applicable capacitor pack
BS13A-EC400/422F

mHNSP4-1000P series

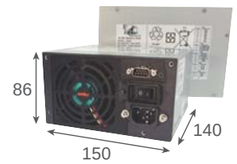
Medical standard compliant large capacity ATX PSU

Output capacity
Continuous **822W**
Peak **1000W**

Applicable battery package
BS25A-H350/2.5L

mNSP3-450P series

Medical standard compliant large capacity ATX PSU with outstanding track record



Output capacity
Continuous **300W**
Peak **450W**

Applicable battery package
BS11A-P24/2.3L
RBS02A-P24/2.3L
BS10A-H24/2.0L
BS22A-H24/2.0L

HPCSF-400P-X2B

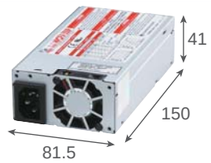
Small & large capacity SFX power supply

Output capacity
Continuous **310W**
Peak **400W**

Applicable battery package
BS28A-H350/2.5L

HPCFX-350P-X2B

High-efficiency Flex ATX size PSU for PCs

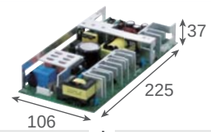


Output capacity
Continuous **245W**
Peak **346W**

Applicable battery package
BS28A-H350/2.5L

HPCFL-400P-X2S

High-efficiency 1U size fanless PSU for PCs



Output capacity
Continuous
Natural air cooling **170W**
Forced air cooling **305W**
Peak **400W**

Applicable battery package
BS28A-H350/2.5L

Excellent track record! A product line with a variety of models available

http://www.nipron.com

Nipron Renewable Energy Solution

An essential item for photovoltaic power generation

PV Maximizer

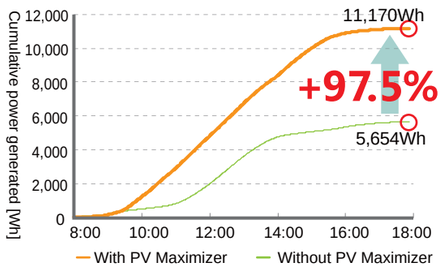
PV Maximizer

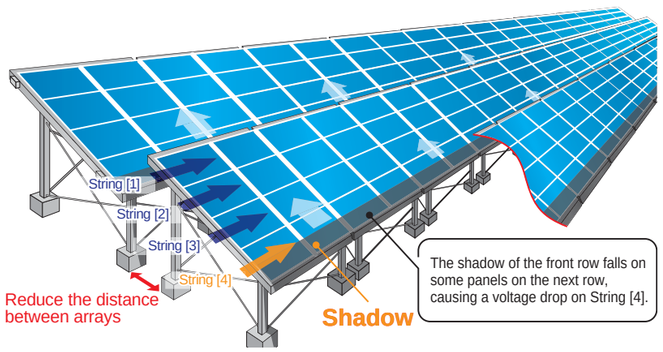
The PV Maximizer maximizes amount of power generation by performing MPPT control for each string.
The string voltage may drip due to panels under the shades of utility poles and/or trees, uneven orientation of arrays, uneven number of panels in series connection, mixing of different panels, etc. If this happens, it will have a negative impact on other normal strings, pulling down their voltage and, thus, reducing the power generation.
The PV Maximizer boosts a drop in the string voltage to the voltage of other strings while maintaining the maximum power point, eliminating differences in the voltage between strings and making it possible to extract the maximum power from panels available for power generation. This results in increased revenue in the electricity sales.

Concentrated installation of panels

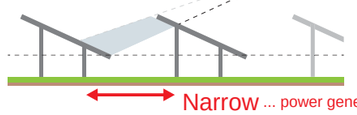
Concentrate panels by installing them with a shorter interval of arrays. This type of installation is enabled by the PV Maximizer (PVM), which increases the power generation even if shadows were cast on the arrays. By installing a larger number of panels than expected, the power generation per unit area can be increased. Shown below is the chart of power generation measured at a power station with conditions similar to the right figure. It can be observed that the power generation is doubled with the presence of PV Maximizer.

Power transition





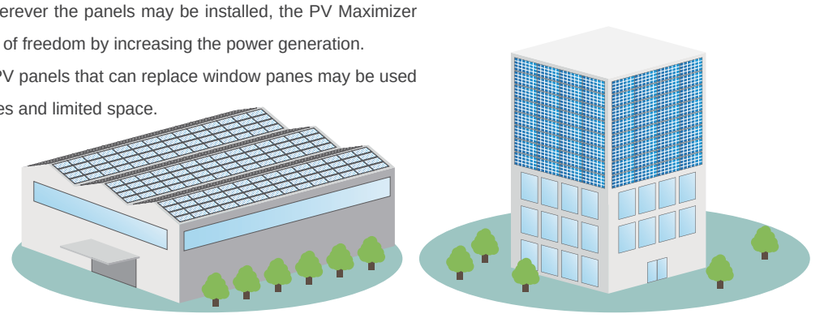
Concentrated arrangement
(conceptual drawing)



Narrow ... power generation per unit area increases
Even with shadows, the efficiency can be improved by PV Maximizer.

Enables panel layout with a high degree of freedom.

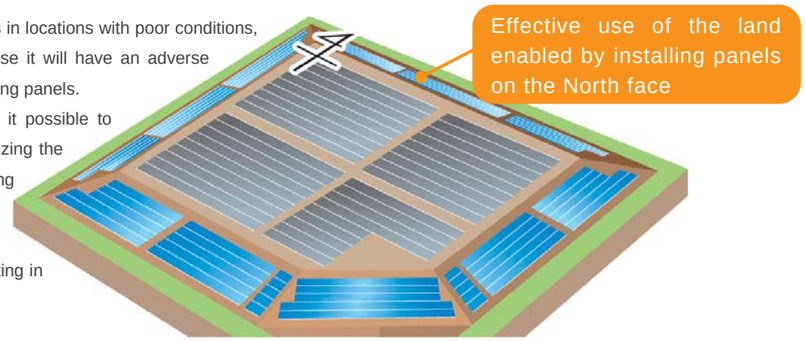
From factory roofs to building walls, wherever the panels may be installed, the PV Maximizer enables panel layout with a high degree of freedom by increasing the power generation.
For example, wall-hanging panels and PV panels that can replace window panes may be used to maximize the utilization of dead spaces and limited space.



PV Maximizer, an essential item for PV power generation *http://www.nipron.com*

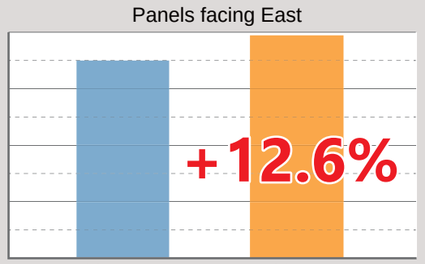
[Installation examples]Adding panels on the slope in all sides

The common sense is not to install panels in locations with poor conditions, such as a slope facing the North, because it will have an adverse effect on the power generation in the existing panels.
The connection of PV Maximizer makes it possible to maximize the power generation by minimizing the power loss on existing panels. Depending on the condition, the number of panels may be increased by 50% to 100% from the conventional design, resulting in a significant gain in the power output.

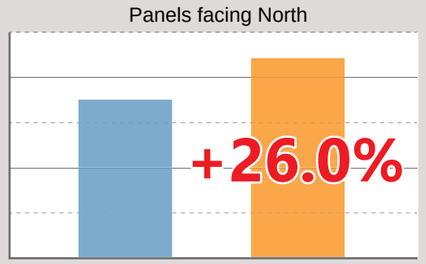


Shown below are the charts of power generation measured at two different types of installations, one with the PM Maximizer (PVM) and another without it while panels are installed on the East and North fronts in both cases.
It is observed that the power generated is increased by 12.6% and 26% on the East and North faces, respectively, with the PVM.

Comparison of generated power - 1



Comparison of generated power - 2



Improving the power generated by existing power stations

Today, it is a common practice to install an even number of panels and arrange panels so that shadows may not be cast on the panels in building a solar power station. However, it is often heard that people saying “we found that shadows are cast on panels after the operation had started” or “there are uneven numbers of panels.” These situation can lead to a drop in the string voltage and, ultimately, a decrease in the generated power.
The PV Maximizer can be installed in any existing power stations and minimizes the effects of shadows and uneven number of panels to improve the power generation. For example, it is also possible to introduce the PV Maximizer only for a string that is shadowed by objects.

Reduction of O&M cost with a precision monitoring

Although the photovoltaic power generation was known to be maintenance-free, the revised FIT law prescribes the obligation of O&M for the operator. The PV Guardmyan (PVG), a precision remote string monitoring system, enables a precision remote monitoring while restraining the cost. With the PVG, it will be possible to make an early restoration of the system and perform preventive maintenance to reduce the loss of sales of electricity and limiting the O&M cost.

With the PV Guardmyan ...

- Fully automated diagnosis utilizing AI
- In-depth inspections made easy by the remote and automatic characteristic curve diagnosis
- Daily diagnosis with the remote inspection
- Features an automatic mailing system in case of an emergency

PV Maximizer & PV Guardmyan enhance the value of existing power stations. *http://www.nipron.com*

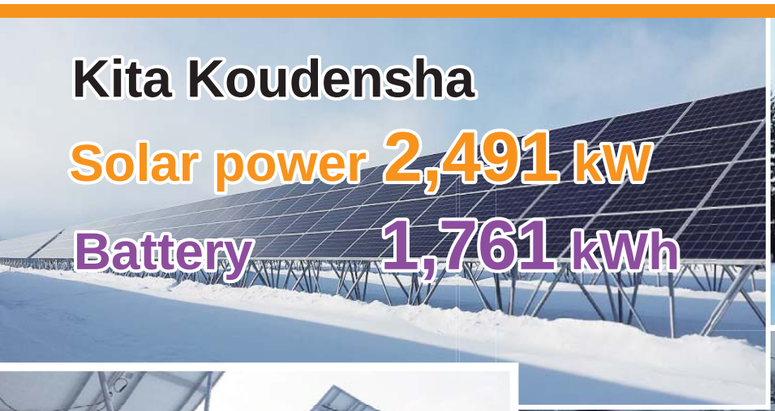
It's awesome! "Mega-power storage" operation started

Simultaneous startup of three installations in Hokkaido

Kita Koudensha

Solar power 2,491 kW

Battery 1,761 kWh



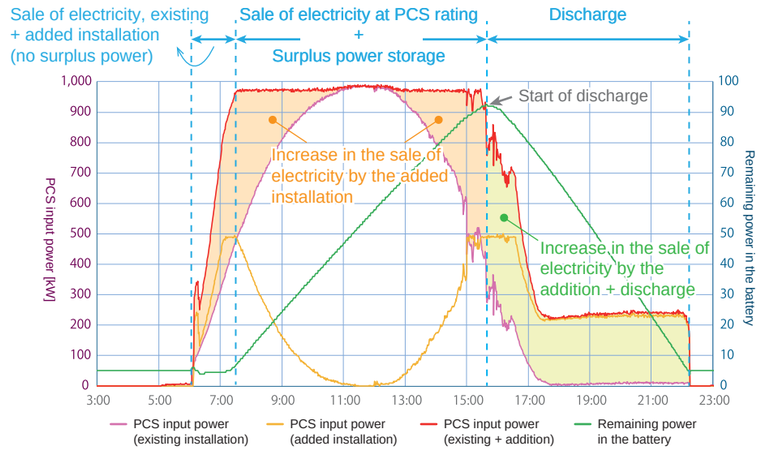
"E" Company

Solar power 280kW Battery 134kWh PV eXpander 3units

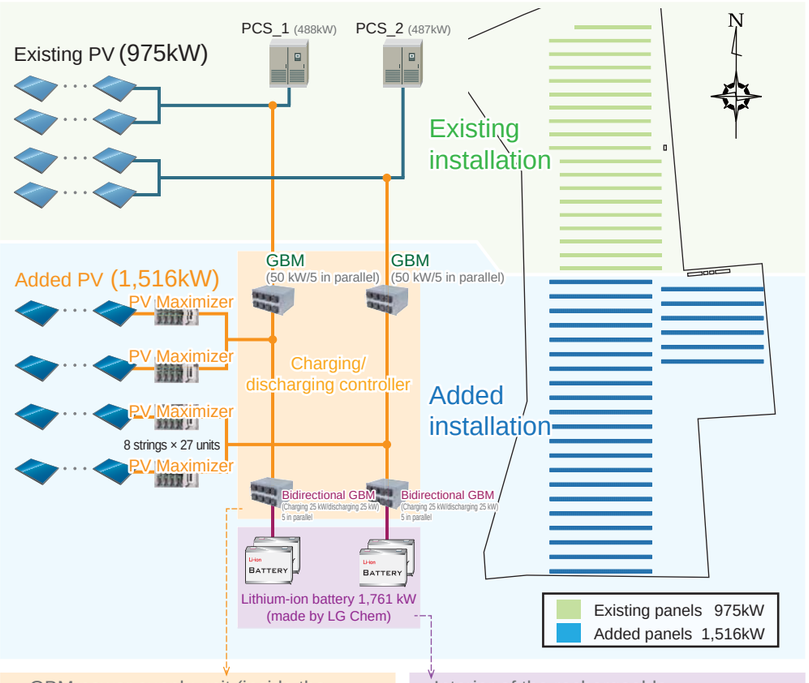
Real Estate Management Center Co., Ltd.

Solar power 317kW Battery 89.4kWh PV eXpander 2units

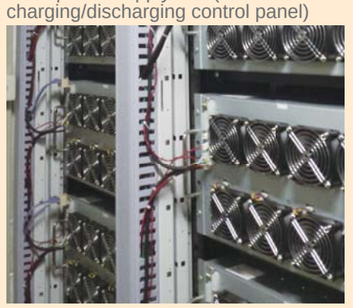
Power generation data [March 21, 2018]



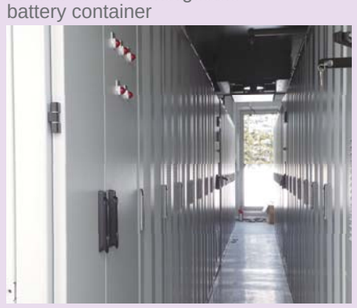
System configuration (concept)



GBM power supply unit (inside the charging/discharging control panel)



Interior of the rechargeable battery container



Save and utilize the generated power without a loss http://www.nipron.com

GBM power supply unit (inside the charging/discharging control panel) http://www.nipron.com

Invitation to exhibition

Invitation to Exhibition of Power System Japan 2018

テクノフロンティア Advanced Electronic & Mechatronic Devices and Components Exhibition

TECHNO-FRONTIER 2018

POWER SYSTEM JAPAN 2018

Event date: April 18 (Wed)–20 (Fri), 2018
Venue: International Exhibition Hall 6, Makuhari Messe
Booth number: 6B-12

Nipron will participate in the 33rd Power System Japan 2018, which will be held for three days from April 18 to 20 at Makuhari Messe.
This is the only and the largest exhibition specializing in the power supply introducing the latest technologies in power conversion, including switching power supplies and power conditioners, and stable supply of power utilizing UPS, capacitors, etc.
At the Nipron booth, the new ATX power supply unit HPCSA-1500P for GPU servers suitable for deep learning and the large capacity power supply unit for data mining, which has recently become a trendy topic of conversation, are scheduled to be presented for the first time. Other displays include ATX power supply units, medical standard compliant power supply units and various switching power supply units. Please do come visit us as the booth will be filled with highly recommended products.
We are ready to offer the optimum proposal for each customer.

To be introduced for the first time in this exhibition

NEW HPCSA-1500P

NEW HPCSF-400P-X2B & BS28A-H350/2.5L

A prototype to be presented in this exhibition
Large-capacity power supply unit for data mining

* Since it is a product under development, external appearance and specifications are subject to change.

Invitation to IoT/M2M Expo

Held inside Japan IT Week Spring

7th IoT/M2M EXPO IoT/M2M Spring

Event date: May 9 (Wed)–11 (Fri), 2018
Venue: West 4 Hall, Tokyo Big Sight
Booth number: West 16-10

Nipron will participate in the 7th IoT/M2M Expo held from 9th to 11th of May at Tokyo Big Sight.
This exposition offers business opportunities by bringing together a variety of solutions including wireless communication technology, sensors, applications for remote monitoring and production control, data analysis systems utilizing AI, etc.
At the Nipron booth, demonstration sample of IoT model of HPCSA-700P and the ATX power supply unit HPCSA-1500P for GPU servers suitable for deep learning, where data collected through IoT are analyzed, will be displayed.
Nipron hopes to serve the industry in the new area of IoT based on the perspective of “power supply units”. Should you plan to visit the exposition, please do not forget to visit our booth.

NEW HPCSA-700P(IoT Model)

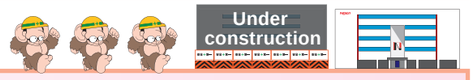
NEW HPCSA-1500P

* Since it is a product under development, external appearance and specifications are subject to change.

* We are pleased to send invitation to the exhibition to customers who are interested in it. Please do not hesitate to contact us. Our contact: WEB Support Office, Nipron Co., Ltd.

(TEL) +81-6-6487-0611 (FAX) +81-6-6487-0523
(E-MAIL) support1@nipron.com

Notice



A notice on an expansion of Hanshin Dream Factory

An expansion of Hanshin Dream Factory has been decided to build a 5-story factory of 7,682 m2 total floor area connected to the existing factory building within the current premise of the factory. The construction has already started in March aiming at the completion in October this year.
Although industrial PC power supply units, unit type power supply units, power supply units for machin tools and PV relates system products are produced at Hanshin Dream Factory, the demands for PSU for machine tools and PV related system products have been increasing in recent years. The expansion is aimed to increase the production capacity of those products.
Taking this opportunity, Nipron will enhance the production efficienty and supply system and is determined to offer products and services better than those in the past. Your continued support will be appreciated.

Image of factory after completion

Overview of annex building

Address	2-57 Ohama-cho, Amagasaki city, Hyogo, 660-0095	
Total floor area	Annex	Existing building
	7,696-square-meter	9,570-square-meter
Structure	5-story steel beam building	
Construction period	Start of construction: March 2018, Completion: October 2018 (plan)	

A diversity of power supply unit is available. First of all please telephone us. *http://www.nipron.com*

President talks! TOP sales corner.

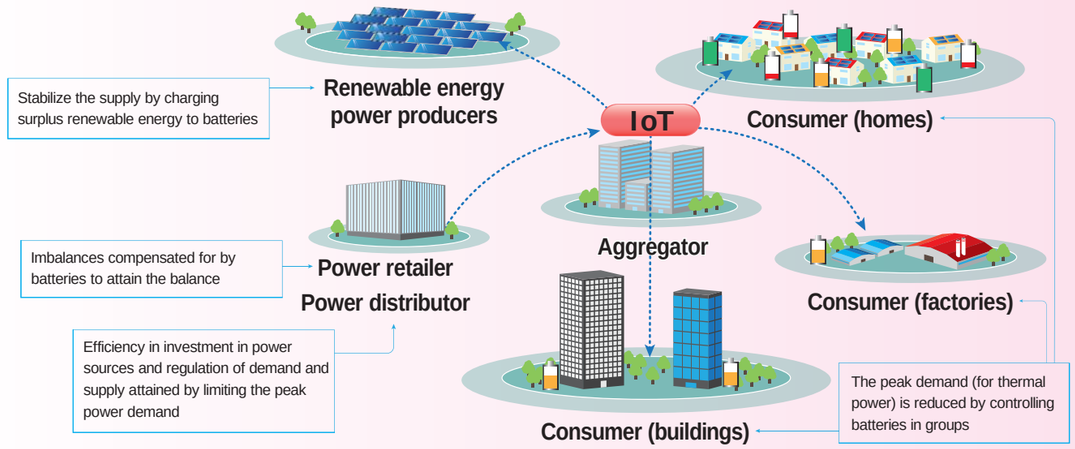
28th The Coming RE100 (100% Renewable Energy Rate) Age What might we expect after the high-rate FITs (¥40/32) end?

<Possible scenario 1>
After the FITs end, the systems will imaginably continue operating as safe, stable and sound solar power station infrastructure. This will thinkably require regular equipment upgrades to increase power output, additional investment to strengthen facilities against natural disasters (typhoons, storms, etc.) and other investment to maintain asset value.
Also, easier and more effective O&M (preventative maintenance) will likely be requested.

<Possible scenario 2>
Sites with a solid power production record could be sold to power companies or leasing companies even during the FIT period because of their investment potential. For these sites to be sold for their investment potential, they will require investment aimed at improving power output and maintaining asset value.

<Proposal>
Planned sequential equipment updates to existing power stations (e.g., PV Maximizer, PV Guardmyan monitoring system and PV eXpander power storage system, etc.) would be a smart way to both maintain and increase profit and maintain and enhance asset value for possible resale.
Nipron proposes reinvesting 10–30% of the annual profit earned from power generation every year in maintaining and managing power stations, keeping equipment up-to-date and increasing output, as this will result in very high returns.
We strongly urge owners to let us put together a plan and run a financial simulation.

VPP concept



Setsuo Sakai
Representative Director & President, Sales General Manager

“When you are in trouble with power supply,” please consult with Nipron *http://www.nipron.com*

The Nipron Story, by Our President

育 (iku)

We scheduled this year's induction ceremony with which we officially welcome our new recruits (8 college graduates and 10 high school graduates) to the company for April 2 when the cherry blossoms should be in bloom. With the youth population in decline today, today's youth are tomorrow's treasure.
To turn them into valuable human resources, we need to put our heart and soul into "training and development".

At Nipron, it is an established practice to select a single kanji character as a theme every year. We then bear the meaning of that character in mind throughout the year. For 2018, we chose 育(iku), which means to "foster, cultivate and raise", or, in a business context, to "train and develop".
The reason for choosing that character has to do with the "work style reforms" advocated by Japanese Prime Minister Shinzo Abe. These reforms have been put forth in the public domain because the general consensus is that Japan lags behind the West in the ways we go about work, with a mindset regrettably comparable to a developing nation. Well, I figured that, since everyone will be instituting the same reforms, why not accomplish the task before everyone else; therefore, I myself will be taking the lead on this. And, after giving it some thought as to what process could successfully achieve true reform, I concluded that we should commit ourselves to training and developing our workforce. If you look at our operations calmly and objectively, you'll see that a lot of things are not done right. That is unacceptable, so we need to reeducate and change the mindset of our current workforce. Similarly, we need to improve the decision-making of management because of the wasteful work it is causing. This and more are necessarily part of the work style reforms I want us to implement by directing time and efforts to human resource development.

For starters, the way that we have been bringing up new recruits in just the past 5 years regrettably seems no more than "leaving them to learn on their own". Job training is imparted by assigning work based on years of service with the company (vestiges of seniority rule); we are not adequately putting to use the valuable talents of our young employees. And, the situation is more or less the same whether in engineering, administration, sales or some other capacity. I imagine things are probably similar at many Japanese companies, as well.
Fresh out of school, young people have dreams and high aspirations, and are ready and willing to take on challenges when they join a company, but, in our present-day world, rather than have them do high-level tasks, they are often assigned grunt work for 1–3 years as part of corporate discipline. Their superiors and predecessors that instruct them on what to do learned how to do their jobs and grew by way of the same process, therefore it will be undeniably hard to change those traditions and practices. That is why reforms are necessary.
We should start by breaking down and analyzing the grunt work in order to find ways to go about it without wasting time, effort and resources. Unless grunt work is conducted efficiently, wasteful useless tasks will rapidly multiply. Having people who have been with the company only a short while handle the grunt work is a mistake and sacrifices our productivity.

Considering the time that students put into a college education, in many cases, it seems like they are just going through the motions and come out with very little combat skills. A handful of them are exceptional, curious and aspire to greater things, but it's hard for midsize businesses to recruit them. Human resources like these are self-sufficient and learn on their own, therefore a business needs only to put them in a motivating environment. Nevertheless, perhaps because life has become easy and comfortable, waiting to be told what to do is the norm with many young people today, plus because the needs of he/she who uses and he/she who is used do not line up, and because bosses are too busy, the tendency is to have new recruits learn how to do their job by giving them grunt work. Work style reforms make no headway because these practices are accepted.

Going forward, assigning motivated or promising individuals, no matter how wet behind the ears they are, mission-like work in specialized fields they aspire to and giving them the opportunity and time to take on "new and difficult challenges" will be tantamount to developing them as human resources. As a part of that, it will be important to talk to the individual about his/her being suited or unsuited for certain things in order to steer that person's development and, at the same time, assess his/her performance.
A business cannot afford to train its employees in such a way when not making money. Heaven knows, we were pressed by the tasks at hand for the longest time. But, we learned on our own what was important towards doing business, little by little made realistic changes and improvements on a number of fronts, and built up confidence in ourselves as a profitable business.

To keep building Nipron, I'm thinking that, from this point forward, we should divert profit reinvestment to our workforce and human resource development.
This human resource development I speak of is not just for our newly hired young recruits but equally for our midlevel managers, seniors and seasoned veterans. Recently, I've read about life design based on living to 100. The idea entails encouraging people to study so that they continue to be useful to their company and society, by pushing back retirement and providing retraining opportunities. It is thinkable that the current practice of paying wages based on the number of hours worked will change and the importance of properly evaluating the results of an assigned mission and the evaluation system itself will grow.

Having foreseen the coming of times like these, at Nipron, we have been questioning, contemplating and improving by trial and error how to best evaluate and remunerate work for more than 20 years now. As a result, we have GREAT system for evaluating personnel performance.

As we move forward, I want make these "work style reforms" happen and tune our systems in concert with everyone on the workforce so that "Nipron maintains its vim and vigor".
I ask for your continued commitment and hard work.

Setsuo Sakai
April 2018

Nipron Co.,Ltd. ***http://www.nipron.com***

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