

NIPFON Vol.66

Now is the time to provide support for

carbon neutrality

Nipron's EV Solar Carport is here.

Highlights

1 Examples of power storage system installations -Vol.1-

Introducing examples of power storage system installations, such as Solar Carport EV charging stations, VPP demonstration projects, microgrid systems, and electrically self-sufficient office buildings.

[New products] UDD-240 series

DC input model for DIN-rail compatible unit type power supplies



Nipron Co., Ltd. Hanshin Dream Factory

Vol.1



Sales model completed Solar Carport EV charging station EV charging using 100% renewable energy generated in a parking lot

EV charging stations, which use renewable energy from solar panels, can be set up in any sufficiently large parking space. Surplus electricity can also be stored in battery systems and used at night.





Carport

EV charge



EV charging with 100% renewable energy at any time of the day or night

Because batteries are provided along with the solar panels, EVs can be charged with 100% renewable energy anytime without the influences of weather and time and, therefore, the system is ideal for vehicles used by businesses and public sectors, which are often busy during the day. If it is difficult to run the system with 100% renewable energy because of an extended period of bad weather, the system also allows to charge EVs and batteries using commercial AC power.



Solar-generated electricity provided in emergency.

The Solar Carport serves as a shelter, providing electricity from solar power generation and rechargeable batteries in a wide-area power failure (blackout) by natural disaster. It serves as a renewable energy power plant and EV charging station in ordinary times and as a shelter when disaster happens for the need of the country and local governments.

Blackout + Sunny weather

Power generated from the solar cells or from batteries can be supplied to EV charge and particular loads even if it is a blackout.



Quick charging of multiple EVs at the same time without a cubicle

Even for a charging operation (quick charge or simultaneous multi-unit charging) with an aggregate capacity of 50 kW or larger, a low-voltage power feed system (of capacity less than 50 kW) will suffice with the assistance of solar power and/or a stationary rechargeable battery. For the low-voltage power feed, the installation of an electrical cubicle and a contract with a licensed electrical service engineer is not required and, thus, it can be introduced and maintained easily.



Nipron EV Solar Carport which can be used as a disaster resilience bases.



Examples of power storage system installations

Vol.2

PPA business operator: Chubu Electric Power Miraiz Co., Inc. Facility owner & customer Sumitomo Metal Mining Siporex Co., Ltd.



Solar cell

Battery containe

Nipron's VPP-compatible power storage systems were adopted for a VPP construction demonstration project

With this system, Chubu Electric Power Miraiz Co., Inc. offers the service based on the PPA model (third party owned system model) to Sumitomo Metal Mining Siporex Co., Ltd.

The system also is a part of VPP Aggregation Business, one of the projects awarded the "FY2020 VPP Construction Verification Project Subsidy Utilizing Energy Resources of Customers," which is promoted by the Agency for Natural Resources and Energy under the Ministry of Economy, Trade and Industry, and the system verification started in June 2020.



Feature of Nipron VPP-compatible power storage systems

Nipron's VPP compatible power storage system is characterized by the design in which PCS is shared by linking the solar power generation system and batteries with DC circuits (DC link). The commands from the aggregator are received by the onsite gateway and used to control the PCS.



Chubu Electric Power Miraiz Co., Inc.

Chubu Electric Power Miraiz Co., Inc. tries to accelerate the sale of energies (electric power and gas) and offers new services to "enrich the customers' lives" and "solve problems in business." In addition, they undertake activities to realize the carbon-neutral society through the provision of three-in-one service of "energy saving," "energy creation" and "energy utilization."

🔷 住友金属鉱山シポレックス株式会社

Sumitomo Metal Mining Siporex Co., Ltd.

Sumitomo Metal Mining Siporex Co., Ltd. is a company that produces and sells autoclaved lightweight concrete (ALC) "Siporex" panels, which are commonly used in a variety of fields, including factories, warehouses, high-rise buildings, commercial facilities and private houses. They undertake their business under the corporate vision of creating quality buildings by offering reliable technologies and considerate services and continue to be a building material supplier indispensable to the Japanese construction industry.

It can be used as an emergency power source during blackout.







Examples of power storage system installations

City of Ishikari, Hokkaido

Consortium of Takasago Thermal Engineering and Kita Koudensha Corp.

Vol.3

Installation



Solar cell Back: Hvdrogen tank. Center: Fuel cell container Front: Battery containe

The Ishikari City Atsuta Microgrid System utilizes Nipron GP products.

This is a system, in which solar power generation, batteries and pure hydrogen fuel cells are combined to supply electric power to facilities in the area like schools and Michi no Eki (rest stop). Although the system is ordinarily operated with a grid connection, it is capable of supplying power in a stand-alone operation to refuges in an event of a blackout due to a disaster.

Sharing the power conditioner (PCS) by establishing a DC link between solar power generation system, batteries and pure hydrogen fuel cells

The pure hydrogen fuel cells adopted in the system cannot be connected to other devices like solar power generation system because of its low voltage output. In this system, however, the output voltage of pure hydrogen fuel cells is boosted to the DC bus voltage using a step-up DC-DC converter (100TBFS/100TBFL) to supply the power to PCS.

The PV Maximizer, which controls the solar power generation, is also adopted and this makes it possible to link (DC link) the three different types of power sources, i.e. solar power generation system, batteries and pure hydrogen fuel cells.



Concept of system operation

In normal conditions, the power generated by the solar power generation is supplied to facilities and surplus electricity is stored in batteries. In addition, the power can also be stored in a tank in the form of hydrogen generated by a water electrolysis device. If there was a power shortage even if both solar power and batteries are used, the power is purchased from the grid. In an event of a blackout due to disasters, the power from the solar power generation system, batteries and pure hydrogen fuel cells is supplied to refuges by a stand-alone operation of PCS. This power is used for the lighting, lavatories and charging systems of refugees and is available for at least 72 hours. The control of overall system is done in coordination with the energy management system installed separately by a consortium.



School, rest stop, fire station, etc

Stand-alone operation at blackout



-6-City of Ishikari, Hokkaido

The city of Ishikari is directly north of Sapporo and is undertaking various activities aiming at establishing a carbon-free society without the CO2 emission after its proclamation of December 2020 to be a "zero-carbon city in 2050." Also, the city had established its SDGs and the Third Ishikari Environment Master Plan incorporating the concept of "regional circulation & symbiotic community" in March 2021. By setting up long-term targets and basic policies for activities, it provides guidelines for activities to be undertaken by the city, businesses and citizens to realize the environmental image of "Ishikari, a sustainable symbiotic city utilizing and bequeathing rich resources in the region."

👕 高砂熱学

Takasago Thermal Engineering Co., Ltd.

Takasago Thermal Engineering Co., Ltd. designs and installs air conditioning systems for a variety of facilities, expecting a centennial commemoration in 2023. The company, as the Environmental Creator®, is undertaking activities to realize global environment preservation and carbon-neutral society with the creation of comfortable and optimum environment through the technologies it has nourished the air conditioning engineering fields.

②類北弘電社

Kita Koudensha Corporation

Kita Koudensha Corporation is an electrical system integrator with its head office in Sapporo, Hokkaido, and undertakes general installations of power systems, including large-scale indoor wiring installations, laying power cables, underground cables and communication lines, system installations for power stations and substations in Hokkaido. In conjunction with the renewable energy business, it also offers a wide range of services including the installation of solar power generation systems

rogen ink INm³	Priority 1 Priority 2	If there was a blackout, the pure hydrogen fuel cells are used in the base load operation. The shortage in the pure hydrogen fuel cell power is assisted by the solar power generation.
iter iis dev n³/h	Priority 3	If there was a power shortage even with the combination of fuel cells and solar power, the batteries will assist.









Examples of power storage system installations

Daiwa House Industry Co., Ltd.

Vol.4



Japan's first electrically self-sufficient office using renewable energy has adopted our PV Oasis system.

As a demonstration project to the development of novel energy-saving initiative model, the first ever electric power self-sufficient office in Japan, Daiwa House Saga Building, in which the power consumption can be managed by renewable energies without depending on the utility company, has been constructed

Concept of stand-alone power system (PV Oasis)



Environment-friendly office, Daiwa House Saga Building

Self-sufficient electric power system that does not depend on the purchase from utility companies.

In the Saga Building, the power supply system is a unique one, independent from the commercial power, with the solar power generation/battery system connected directly to the power distribution board without converting the power to AC and the commercial power supply is received by converting it into a DC power. At the heart of this system is Nipron's PV Oasis. The solar power generation system and the lithium-ion batteries are linked and the solar power (83.2 kW) supplies the power to the lighting equipment and electrical systems in the office, with surplus electricity stored in batteries (105 kWh). If the solar power drops and cannot meet the power consumption, the surplus electricity in the batteries are supplied automatically and the commercial power is utilized only if the shortage in power expands further.

The loss associated with the power conversion has been reduced by about 8%

Normally, the DC power from the solar power generation is first converted into AC and then converted back to DC to charge the batteries, while the power will be converted into AC again at the time of use, making it easy to transmit the power in AC. However, because the solar power and batteries are connected in DC by a unique power distribution system without the power conversion at Saga Building, the loss associated in the power conversion is reduced by about 8% by this scheme.

Works as an anti-disaster office with the resiliency against natural disasters (BCP measure)

In the common scheme of solar power generation, the power conditioner stops working tentatively if there was a blackout and the solar power will be available once the system is put into the blackout mode (stand-alone operation mode) manually. Since the power distribution system unique to Saga Building is running in the stand-alone mode from the start and it is not necessary to switch the operation mode, the power supply will not be interrupted even if there was a blackout. The construction of buildings that do not face the lack of power in crisis situations is indispensable for essential civil facilities like banks, hospitals, refrigeration warehouses, not to mention refuges. It is one of the priority concepts in the construction of Saga Building, searching for the way buildings should be in the future.

Daiwa House Saga Building

Site area: 5.556.33 m² Total floor area: 2,444.57 m² Number of stories: 2 stories above ground Construction: steel construction Design: Daiwa House Industry Co., Ltd.

Parking lots: 129 cars Starting construction: August 21st, 2017 Completion: February 26th, 2018 Personnel: about 100 people



nterview

An interview with the chief of development, Mr. Taniguchi, on the reasons for the system introduction and utilization after the introduction.

Mr. Kazuki Taniguchi

Will you tell us the concept of the plan and the scale of **Daiwa House Saga Building?**

The No.1 theme of the Saga Building plan was to realize ZEB for our office building for the first time. In addition, because it was right after the Kumamoto Earthquake, there was a request from the building management department to make it a "building in which the power does not fail" and we decided to aim at a building that can be sustained with the solar power generation alone. However, there was a big problem about it that the peak power consumption of the building could not be reached even if solar panels were installed on the entire roof of the building. Therefore, it became our challenge how to cut down on the peak power, not to mention how to use the solar power efficiently. In order to solve this problem, we adopted PV Oasis so that the peak power would be cut down by using the geothermal and solar power for the air conditioning, of which the power consumption is the largest, to minimize the waste of solar power and maximize the utilization of generated power.

Tell us why you introduced Nipron's system.

The biggest reason is because it made it possible to construct a system in which the power will not fail. In attempting to build a system with uninterruptible power supply instead of switching to the stand-alone operation mode after a blackout, it was the choice that made sense. Another reason was that, in making a combination of batteries, the idea of making the connections in DC for the entire system that is independent from the grid led to minimize the power loss almost to zero and we thought it interesting. Because we knew well from our experience that, in common systems the power is converted "from DC to AC" and then "from AC back to DC" again and there is a conversion loss of at least 10%, we thought it significant to be able to hold this loss. In addition, because this office also functions as a showroom, we wanted to make it an example for projects like hospitals with an advanced system like this to make the system connections in DC.

What do you think was the benefit of introducing a Nipron's product?

Because the amount of power obtained by the solar power follows an arc-like curve, we thought that the excess power at the peak would be cut after the batteries were fully charged. If it was a solar power generation of 1000 kW, for example, we thought the power generation of 1000 kW was not possible because the peak power would be cut. However, after we started the operation, we saw that the power generation was almost the same as the power generation without the peak-cut. When we looked into it, we found that the power was generated from early morning and almost to the sunset and this led to the utilization of power that would be cut by the power conditioner in ordinary solar power generation systems. We were lucky because the power was generated from the early hours in which the largest power is needed to start up the office.

We heard that you made a "blackout test" to simulate a blackout in the system during the office hours. Would you tell us what happened?

Although the opinions were divided that there "will be" and "will not be" influences on the building before the blackout test, the test proved that there is no influence on the building. In fact, the lack of influence made it difficult to notice that there was a blackout and, therefore, we ended up installing a blackout detector

After the blackout test, there was a flood in the city of Saga in August 2019. Employees at the Saga branch office told us that "there was no blackout." However, actually, blackouts of three to four minutes were caused intermittently in the city for two days when the flood occurred. People working in the branch office were working normally without noticing it, asking "was there really a blackout?" That was the time when we were considering the introduction of a blackout detector and this incident made us really believe that "a building free of blackout" has been realized and in service

A reliable system that continues to deliver power even in the event of a blackout or natural disaster



There was an added installation of batteries later. Would you tell us why?

Because the building itself was energy-saving and, as explained earlier, the power generation was done longer than we expected, there was a large section, in which the generated power had been cut. We thought it was a shame that the power has been wasted and wanted to install as many batteries as the building can hold to use as much power as possible.

Was it a trouble to make an application to the utility company?

The application was handled by a local employee. We heard that there was no trouble at all although the scheme was unprecedented. Because solar power output is often limited in the area under the control of Kyushu Electric Power, even if you wanted to introduce a scheme to stop the reverse current like RPR, the discussion for the grid connection often takes long. That is why we think it an advantage of this system that the arrangement with the utility company proceeded without any problem.

We heard that there was a huge reaction to the press release. What kind of reaction was that?

Although the news was picked up by many newspapers and media, we received a lot of well-known awards in the fields of energy-saving and construction such as the Land Infrastructure Transport and Tourism Minister's Prize in the First EcoPro Award, the Japan Business Federation Chairman's Award in the 28th Global Environment Awards, the Award for Excellence in the Japan Resilience Award 2019 etc.

Also, in recent years, the policy of "independent distributed power supply" has been proclaimed as a measure to address large scale blackouts caused by natural disasters. This building is a building in which the energy is circulated manifesting the concept of "local production for local consumption" and is attracting peoples' eyes as an example of realizing the distributed power supply scheme on the building level.

Please tell us your future actions and targets for achieving ZEB and RE100.

It is now a norm for us to build a ZEB whenever new buildings are built in the company and activities are undertaken to realize the "compatibility between the environment and corporate profit" under the five priority policies of [1] achievement of SBT/EP100/RE100, [2] reduction of environment risks in the supply chain, [3] promotion of development and dissemination of environment-friendly products and services, [4] promotion of strategic environment communication for enhanced environmental brand and ESG evaluation, and [5] enhanced environmental management in an consolidated effort of the group and global organization.

Daiwa House Industry Co., Ltd.

The Daiwa House Group has developed the long-term environmental vision "Challenge ZERO 2055" and is undertaking projects aiming at reducing environmental impact to zero. They are promoting ZEB (net zero energy building) for their newly built facilities introducing innovative environment-friendly technologies.



UDD-240 Series

DIN-rail compatible unit type DC-DC power supply

Input voltage: 120 - 400VDC

Continuous: 240W Peak: 400W

DC input model

DC input model meets various safety standards

UL62368-1, CSA62368-1(c-UL) certified [Certification range: 135V to 350VDC]

UL508 certified [Certification range: 135V to 310VDC] CE marking



Wide operating temperature range from -20°C to 70°C (derating required)

Flexible mechanical design is possible even when it is installed inside a high-temperature control panel



Able to start-up at -40°C environment

Coating PCB as standard

utes to the long service life of products in harsh environments.



Designed with high efficiency and long life

A significant reduction in the heating due to switching loss achieved miniaturization of built-in components, enabling a reduction in the manhours and cost involved in countering the heating of the control panel.



Support approx. 170% higher peak load

It is optimal for devices requiring an inrush current, such as motors.

Push-in terminals reduce wiring workloads and man-hours

Products specification

Model	UDD-240-HV/A24-E00		
Input voltage	120-400VDC (Derating required)		
Output voltage	+24V		
Continuous power	240W		
Peak power (within 10 s)	400.8W		
Operating temperature	-20-70°C (Derating required)		
Size (W×H×D)	41×124×117.5 (mm)		
Safety standards	UL62368-1, CSA62368-1 (c-UL), UL508, CE marking certified PSE (ordinance clause 2) compliant		

http://www.nipron.com

AC input type

Small sized, space saving design model with slim and high efficiency design





UDP-120-A24

UDP-240-A24

UDP-180-A24

Continuous: 240W Peak: 400W Continuous: 180W Peak: 200W/300W Output voltage: 24V Max. efficiency: 94%typ Output voltage: 24V Max. efficiency: 93.5%typ Output voltage: 24V Max. efficiency: 92%typ

Adopted "Soft switching" design. Enabled compact slim size and high efficiency by controlling created heat with switching loss, which is better than "Hard switching" design. It enables a reduction in the manhours and cost involved in countering the heating of the control panel.

Designed with high efficiency and long life



Arrestor against lightning surges

The built-in arrestor enhances the resistance against external surges due to lightning or other causes.



Other features

Clears VCCI Class B for the conducted emission without an external noise filter ■Wide operating temperature range from -20°C to 70°C (derating required) ■Able to start-up at -40°C environment ■Coated PCB as standard Equipped with a variable resister to adjust output voltage Life time alarm model is available Warnings of the deterioration of the electrolytic capacitor are provided by H/L signals and LEDs. ■Able to support SEMI F47 ■EN62477-1 OVC III compliant design Available for European terminal type or screw terminal type as I/O terminals







Continuous: 120W Peak: 200W/300W

DS01A-EC400/172F Capacitor unit Instantaneous power failures can be addressed by connecting the capacitor



Backup unit Blackout backup without instantaneous interruption can be achieved by connecting the backup unit.

DS02A-L24/2.5L

Capacitor unit

This product can extend the output holding time of the UDP series and take measures against abnormal input such as instantaneous power failure. (Compatible models: UDP-***-A24-*B*)



■Parallel connection of units extends the output holding time

- Electrolytic capacitors do not require frequent replacement in contrast to batteries (expected life: approx. 15 years)
- Blackout detection signal, AC_FAIL, comes as standard.
- The LED shows the battery condition.

Backup unit

Backup with no interruption is possible by connecting this product to the UDP series. (Compatible models: all 24V models of the UDP series)



- Lithium-ion battery with approximately twice as high energy density as a conventional nickel-metal hydride battery
- Able to detect and notify various battery abnormalities.
- The backup time after AC input power failure can be set through DIP switch setting. (4 patterns: 1 min, 3 min, 5 min, and until discharge cut-off voltage)
- The LED shows the battery condition of the backup unit.

Product proposals

High-voltage/large-capacity output

ideal for charger and rectifier applications An AC-DC single-output power supply in one unit

GP6UT-10K-400-PES 3**q**200-480Vac Rated input voltage **400**V Rated Supports output voltage constant Rated 10.8kW current output power * Conceptual drawing

Feature

• Support three phases four wires 400VAC system input and three phases three wires 200VAC system input (No input switching required)



- Supports 400V/10.8kW of high voltage and large capacity output
- Supports three phases harmonic current regulation (IEC 61000-3-12 compliant)
- Possible to control the output voltage (60%-100%)/output constant current (60%-100%) by external voltage input
- Possible to replace fans externally
- Possible to increase the capacity by parallel operation (2 units)
- Supports N+1 operation (requires optional N+1 operation module)
- Mountable to 19 inch rack



• 48V output type will be available (please contact us about other voltage)

Specifications

	Items	Specification	Notes
	Rated voltage	3φ 200 - 480Vac	No input switching required (input voltage range: 3\u00c6180-528VAC)
Input	Input frequency	50 / 60Hz	Frequency range: 47-63Hz
	Efficiency	91.5%typ / 93.5%typ	240VAC / 480VAC at rated output power
	Rated voltage	400VDC	Equipped with 12V 0.4A auxiliary power supply to common GND
Output	Rated current	24Amin / 27Atyp	Max. current (Vin≧340VAC)
	Rated power	9.6kWmin / 10.8kWtyp	Max. power (Vin≧340VAC)
	Adjustable voltage range	240 - 400V	1V→240V / 5V→400V
Protection	Over current protection	27A±10%	Shut down by constant current droop / UVLO
	Adjustable constant current point	16.2 - 27A	1V→16.2A / 5V→27A
EMS	Conducted emission	VCCI Class A compliant	
	Harmonic current	IEC 61000-3-1 compliant	
Others	Parallel operation	Available	
	Size (W×H×D)	255×146×460mm	Except for terminal blocks, screws, fan guards and other protrusions
	Safety standard	UL/CSA62368-1 compliant	

Outline drawing











* Since the product is under development, the specifications and appearance shown here may change without notice

Invitation to Exhibition

12th INT'L SMART GRID EXPO



To be held for three days from March 16 to 18 at Tokyo Big Sight. Nipron will participate in the INT'L SMART GRID EXPO Spring. This exhibition is a general exhibition for power systems attracting exhibitors of technologies to realize VPP, devices for the energy management and batteries.

The move towards the carbon neutrality by 2050 is intensifying. At the Nipron booth, multiple products and solutions suitable for the achievement of carbon-neutral society will be proposed. In addition to the core products like the PV Maximizer, which realized the repowering of power stations by limiting deterioration of panels and influence of shadows, the PV

Guardmyan, which enables automatic one-shot remote diagnosis 365 days a year without the need to visit the installations, and the non-grid-connected in-house PV power consumption system with batteries PV Oasis, various solutions will be proposed according to customers' budget and building restrictions, including the EV Solar Carport System (photovoltaic power station, power storage & EV chargers at a carpark), for which many inquiries are received from corporations and local governments, the Zero Energy Room (an autonomous power supply system that can be introduced room by room using renewable energy). Please do visit the Nipron booth



INT'L SMART GRID EXPO Osaka last ve

Updating the Solar Carport Demonstration Test Facility

Updating the guick chargers installed at Nipron head office/factory



Towards the start of accepting orders for the Solar Carport with EV chargers. the quick chargers installed at the Nipron Head Office and factory have been upgraded from the demonstration model to the sales model.

In comparison with the test model, the size has been reduced significantly for the new chargers by making their capacities more practical. Also, the display has been remodeled to a touch panel, which allows for more intuitive operation. There are two installation methods, i.e. self-standing and wall mount, to make it possible to install them in a variety of locations.





other PC power supply unit manufacturers?

When we had problems with foreign PSUs, we took a look on the circuit board design and soldering on the capacitors and some products made us feel "is this product OK?" In that sense, Nipron's products are neat. For example, in Nipron's products, the parts layout is designed properly to enhance the cooling efficiency within the unit. In products of foreign manufacturers, arrangement of parts is disorderly and makes us feel it difficult for the air to flow and wonder how it can be cooled. As such products are tested, we often reach a conclusion that they cannot be used in our PCs.

Have you ever compared the product quality with

Will you tell us what are the priorities in choosing the PSUs for high performance PCs for applications of deep learning and AI?

One of the keys is the capability of supplying a stable power offsetting the fluctuation of voltage and current at the startup. Although Nipron's PSUs have no problem in tracing the fluctuation, some foreign-made PSUs make the power to fail because of the inrush current. Other conditions are about the temperature. We think the operable temperature range of Nipron's PSU was 0 to 60°C. On large power supply units of 1300 W or 1500 W for consumer products, the maximum operable temperature is almost always set at 50°C. Although there is a question if the PSU really breaks down if the temperature exceeds 50°C, we cannot choose the product if the temperature around the air intake port of the PSU exceeded the guaranteed temperature in our test for the adoption in our products. We are thankful to Nipron because the maximum temperature is 60°C. Since the generated heat radiates to the air intake of PSU if the GPU and CPU were run at the highest power, the fact that the maximum temperature is set at 60°C is huge.

If you are having trouble with your power supply, please contact Nipron. http://www.nipron.com

Customer Interview: Reason to have adopted a Nipron power supply



Please tell us the background for the adoption of our power supply units.

It was more than ten years ago when there were frequent troubles among the customers using foreign PSUs caused by the use of foreign capacitors in the primary power circuit. While establishing the rule for the adoption of power supply units, there was a talk like "the capacitors on the primary power circuit must be made in Japan, while it is not a must on the secondary circuit." Because we were using Nipron products back then, we reached a conclusion that "there is no problem as far as Nipron's PSUs are used." Since then, we made it a rule to make Nipron's products as a first candidate in choosing the PSU. Also, manufacturers of foreign PSUs seldom perform failure analyses when the PSU fails. Because many customers in Japan often seek for a failure analysis, with an idea to use PSUs that enables support to such customers, we are using products of Nipron, whose customer support and the product quality are reliable.

A wide range of power supply units is available. Call us to find out more.

We do have a feeling that PCs with Nipron's PSUs built-in exhibit stable performance.

Many Nipron products have been adopted by HPC Systems Inc., the world-leading visionary company of 21st century founded on computer science.

> Mr. Koichi Sasamori, General Manager of CTO Division and Manager of Engineering Department Mr. Rvoji Kivota. Manager, Engineering Group

HPC Systems Inc.

What is condition concerning the failure rate?

Probably, we never had a problem of PSU failure after stopping the use of foreign PSUs by switching to Nipron products. Because of the proven track record, many of our customers request to continue the use of Nipron products with no question asked whenever they have a model change

We think many of our customers also face problems of PSU. Since troubles on the PSU lead to the suspension of operation on the entire system, there are many customers who have seen the worst with PSU troubles and thus we do have a feeling that PCs and workstations with Nipron products built-in exhibit stable performances. We often hear the comment "Nipron's PSU never fails to satisfy us" from our customers.

After selling a product with Nipron's PSU, what is the reputation and satisfaction level of the end user?

We think Nipron's PSUs are well-recognized in the market. There are many customers who say "the PSU has to be made in Japan" and customers with such a feeling would designate Nipron's PSU. We think a lot of people have the image of "Japanese PSU = Nipron." In the industrial PC application, we often hear the comment that there is no Japanese PSU supplier other than Nipron and we also receive orders for our products from customers who recognize us as "a vendor of PCs with Nipron's PSU," As explained earlier, almost all customers want us to keep using Nipron's PSU for newly designed products and successor models. Naturally, it means that the customers do not face any problem using Nipron products since such a comment will not be heard if there were problems with the PSU.

Also, on our website, the PSU field in our product specification page for each model is described as "Nipron PSU." We find that this line is very effective for the customers as some customers mention that they want a quotation because they found the description of "Nipron PSU" on our website. Experiences like that makes our employees responsible for the marketing and website keep using the phrase "Nipron PSU built-in" in the product specifications.



IPC-R590TIC-T Accommodates up to two NVIDIA RTX/GeForce TRX 30 series graphics boards. Industrial tower PC for image processing and machine vision

HPCSA-1500P-E2S

1500W peak power large capacity ATX PSU Highly reliable design with an expected ife of 10 years or more



Our Moral Obligation: Rights vs Responsibilities

Happy new year, everyone.

According to the Chinese zodiac, 2022 comes as the "mizunoe tora," which represents "growing new buds." Hoping that it will be a "start" of new daily life after the COVID-19 pandemic, I would like to embark on the new year.

I have chosen "義(gi)" as this year's one-letter Chinese character for Nipron.

"Gi" is a concept defined as "good" and "righteous" in human behavior, thought, and morality, and it means "being reasonable and devoted to the public interest beyond self-interest." It is used in idioms such as "義気(morality), 義侠心(chivalrous spirit), 義挙 (righteous act), 義勇(courage), 義憤(righteous rage), and 情義 (humanity and justice). It also means "the right track that we should get on as a human." In this sense, idioms include 義務 (obligation), 義理 (sense of duty), 情義 (humanity and justice), 仁義 (ethics), 恩義 (debt of gratitude), 正義 (justice), 大義(cause), 忠義 (loyalty), and 徳義 (virtue)." This time I would like to talk about "obligations" and "rights."

Obligations and rights are opposite to each other like front and back. The same applies to the relationships between nation and people, parent and child, labor and management, and so on. It seems to me that a conflict often occurs when we insist on rights without fulfilling obligations and lose compassion for others. Applying "the right track that we should get on as a human" to the relationship of a nation and its people, people's basic human rights must be respected, and in return, they must fulfill their obligations to pay taxes and work. Their rights are guaranteed even if they do not fulfill their obligations to pay taxes and work. Even so, if many of them fail to observe their obligations, a society will fall apart. What it takes for each and every individual of a nation is "being reasonable and devoted to the public interest beyond self-interest."

In the parent-child case, parents are obliged to provide their children with education, and children are endowed with their own rights. That said, unless children respect their parents and are grateful for their performing duty of supporting children, a conflict may arise even between then.

In the labor-management case as well, workers are supposed to fulfill their obligations to work and be thankful for receiving promised salary, while managers should be grateful for the work of the workers in order to build a good relationship to exercise (claim) their obligations and rights to each other in a well-balanced manner.

What is important for a married couple is to talk about the feelings when they decided to marry and humbly discuss whether they are fulfilling their roles while exercising obligations and rights to the promises made to each other.

I believe respecting and talking to each other logically in this way will eliminate ugly conflicts.

From here on, continuing from the previous issue, Nipron Wave Vol. 65, I'm going to write about our challenge of achieving sales of 7 billion in the 41st term. Orders received remained at an exceptionally high level, achieving a monthly average of over 700 million yen, and order backlog at the end of the 41st term exceeded 7.4 billion yen. Additionally, our sales target of 8 billion yen for the 42nd term, the next fiscal year, is presumed to be achieved. However, the availability of electronic parts has further deteriorated since last December to the worst situation with the production line stopped for 4 to 5 days in January. Furthermore, prices of parts are still increasing. The rise in costs and delays in product delivery, which is now exceeding one month, are heightening a sense of crisis. If we cause inconvenience to our customers, we will lose their trust and confidence in Nipron. With this in mind, we are united as one and putting solutions into practice every day with the understanding of our customers.

Sometimes distributors buy up overseas-made (mainly US-made) semiconductors (especially ICs) on the market, driving up the price more than 10 times. When I hear something like that, I suspect that the price is intentionally inflated. When I hear that the price of even a simple part, not a high-tech one, is surging and the part manufacturer has a high market share, I have the same suspicion.

If such a situation is neglected, how should we see it as a manufacturer's manager? A relationship of trust through continuous business transactions is based on "義 (gi)." If we sell a product in a way that undermines trust, even if sold at a high price, it is an act contrary to "義 (gi)." Economic security is being discussed as a policy of the Kishida administration, and I think measures should be taken urgently.

Under such circumstances, inflation is accelerating worldwide (7 to 10%) due to the disruption of logistics amid the global impact of the COVID-19 pandemic, natural disasters, fire accidents at semiconductor factories, high crude oil prices plotted by oil-producing countries to raise prices, a series of food price increases, coupled with the impact of increased demand for electronic components associated with the major shift of conventional automobiles to EVs, and it seems that now price increase has become an everyday affair.

The Bank of Japan's 2% inflation target has not been achieved for a long time, but I'm worried that the inflation rate may soar to about 10% at once, leading to a "Reiwa panic." In any case, there is concern that the fiscal policy issues brought about by long-lasting monetary easing may lead to a move to step up the monetary tightening policy. With the financial situation deteriorating globally, a financial panic could occur in any country at any time. I believe that we should steer Nipron so we can address these risks promptly.

> Setsuo Sakai January 2022

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