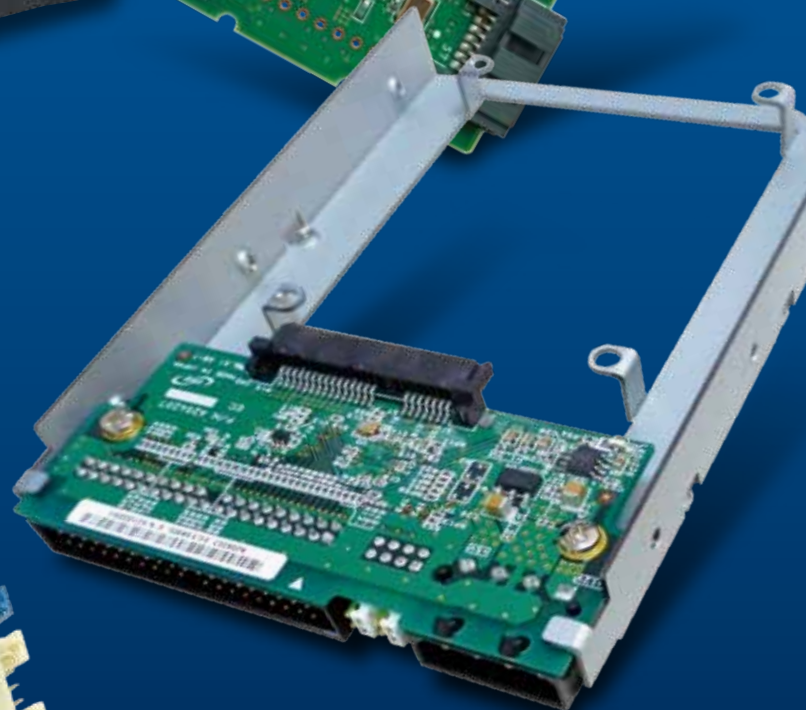




Storage Vision Co.,Ltd.

24 Hours x 365 days Reliability



Mirror Card
Mirror Drive
Converter Card

Further Leap Forward !

With a proven performance in the mission critical applications for a quarter century and technical expertise, Storage Vision will continue to provide reliable products with long time supply commitment.

High Quality

Provide a consistent development of electrical, mechanical and firmware design and after sale support by ourselves.

Stable Supply

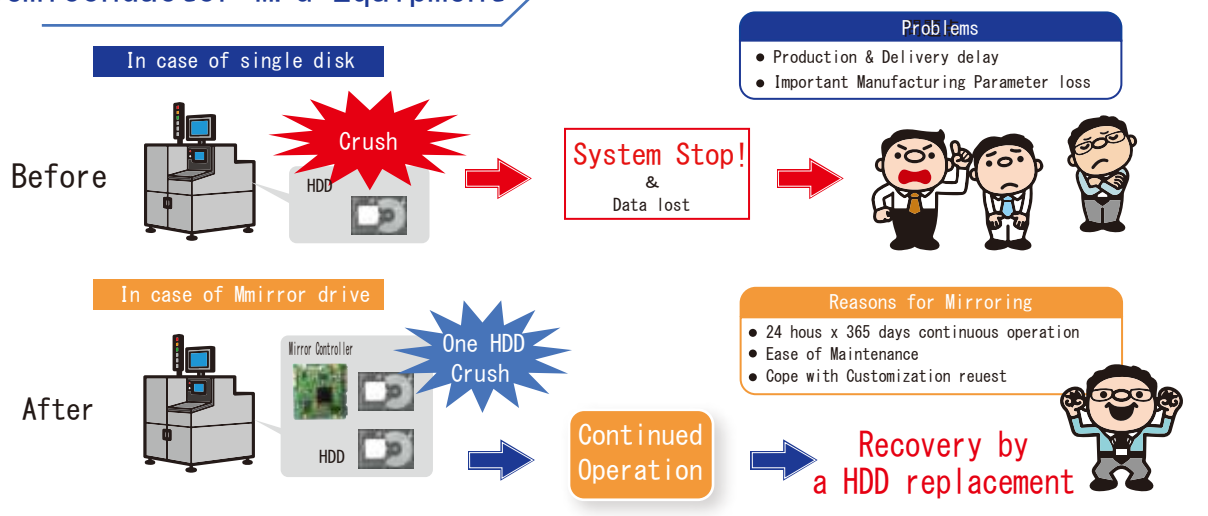
For mission critical applications, life cycle management is one of the key issues. To support such kind of long life, we commit to supply products and service parts as long as possible.

Change management is also in practice.

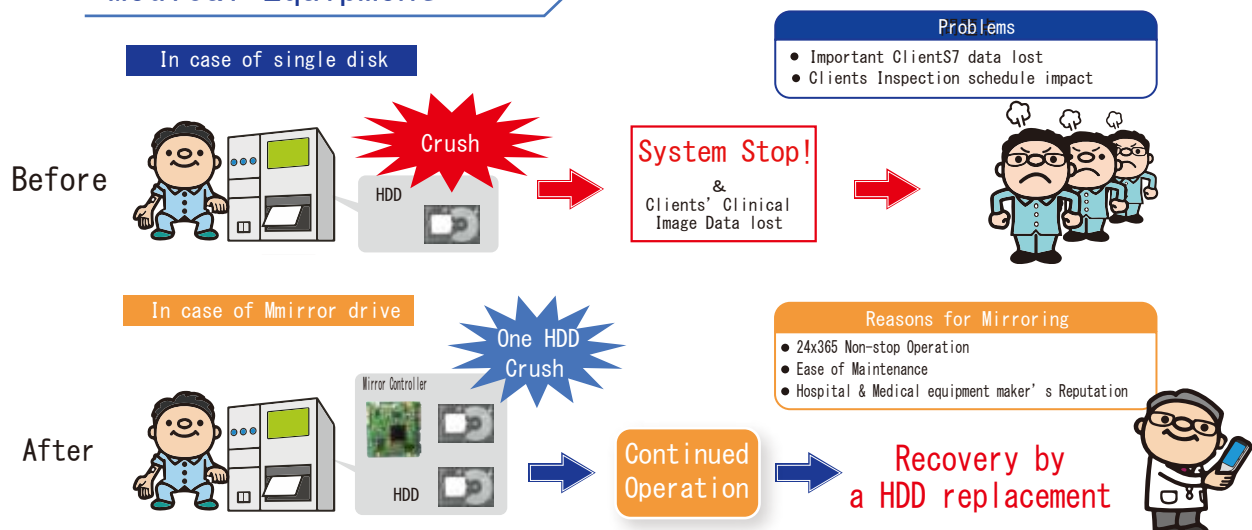
Outstanding Customer Set

Good track record in the mission critical industries, such as semiconductor manufacturing, finance and medical equipment and systems for social infrastructures, such as power & water supplies.

Semiconductor MFG Equipment



Medical Equipment



Complete hardware mirroring with ATA interface

- OS independent, with no device driver required.
- Recognized as a single drive from host computer
- No additional burden on host system by the specialized mirror controller

A Quarter century accumulated mirror technologies

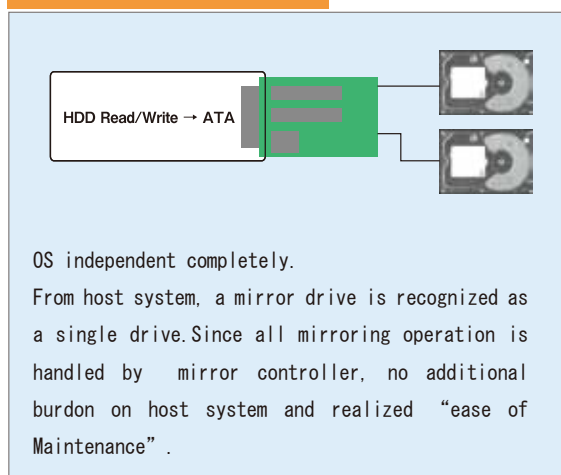
- Realized additional reliability with several key features (Background Retry, Revival Reconstruction, Background Data Reconstruction, etc)
- Ease of Maintenance (LED indication, Buzzer, Status monitoring software)
- Cope with Customization by development engineer's involvement.

Superb Serviceability

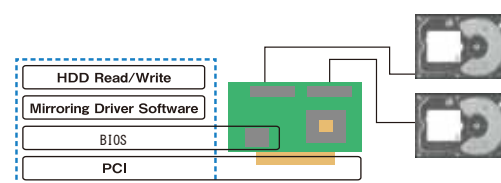
- In case of problem, only failed drive needs to be replaced and Data is rebuilt automatically. During data rebuilding, priority is given to host access.

Comparison Storage Vision vs Others

Storage Vision Mirror



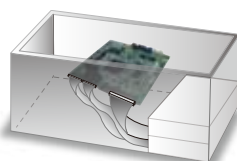
Others Mirror



How to embed Mirror Drive / Card



Mirror Card
Put into the PCI Slot to realize hardware mirror.



Mirror card
Fabricated into the box customer designed to realize space efficiency.



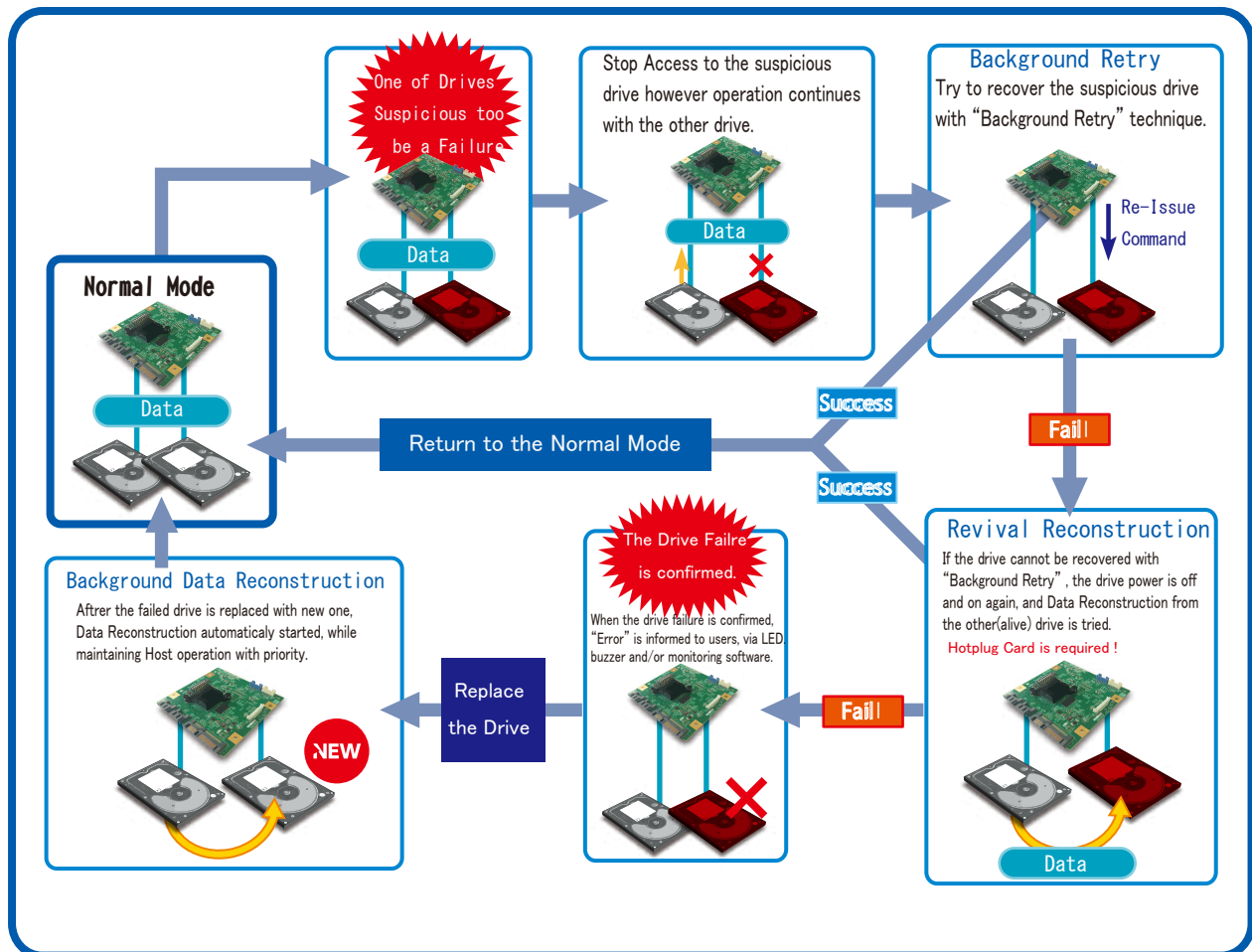
Mirror Drive
Just fit in 5.25" Open Bay with hot swap capability.



Mirror Drive
Just replace conventional 3.5" HDD with a mirror drive.

Storage Vision expertise to pursuit system level reliability and data integrity !

- Even with one drive failed, system level operation continues
- Data integrity is secured
- Best effort to recover to normal operation



Background Retry

- When a single drive failure detected, host operation with the other drive starts 1 second after, and recovery attempted in the background.

Revival Reconstruction

- If the failed drive cannot be recovered with "Background Retry" above, power of the failed drive is compulsory turned off then on again to try to do data recovery with the other drive(max twice).
 ※ Hotplug card is required.

Background Data Reconstruction

- After the failed HDD is replaced with new drive, "Background Data Recovery" - automatically starts, while maintaining Host operation with priority.

Hardware Mirror Card

SVRC-C Series

Substantial performance with 6.0Gbps SATA controller.
NCQ(depth:32) improves performance more.
With high speed SSD, higher speed than HDD to be realized.

SVRC-C632SA SVRC-C600SA



- Complete Hardware Mirroring
- NCQ(Depth:32) supported (SVRC-C632SA) *1
- Trim commands supported
- Can obtain SMART information from HDD
- Status Monitoring by Software
- Status Reporting feature
- High Speed data transfer with cache
- Operation or Monitoring mode selected by DIP switch
- RoHS compliant
- Sector size 4K Native to be supported *3



SVRC-C632SA
SVRC-C600SA

Model			SVRC-C632SA	SVRC-C600SA
RAID level			1 (Mirroring)	
Capacity			Based on capacity of the HDDs to mount	
Cache Size			100MB	1MB
NCQ (Queing Depth)			32	1
Host Interface			Serial-ATA	
HDD Interface			Serial-ATA	
Max Data Tansfer Rate			6.0Gbps or 3.0Gbps *2	
No.of connected HDDs			2	
Voltage			+5VDC (+4.75V - +5.25V)	
Current			0.8A (typ.)	
Dimension			W98.2 x D96.0 x H17.2 (mm)	
Weight			Approximately 51g	
Environment	Temperature	Operation	+0 - +70 °C (@Heat Sink Surface)	
		Non-Operation	-40 - +65°C	
	Humidity	Operation	8 - 90%RH (No Condensation)	
		Non-Operation	5 - 95%RH (No Condensation)	

*1 : NCQ supported only Host side
*2 Fixed Rate (6.0G or 3.0G) determined by DIP switch
*3 4K Native Model : SVRC-C604SA



SVHP-SA (Hot Plug Card)

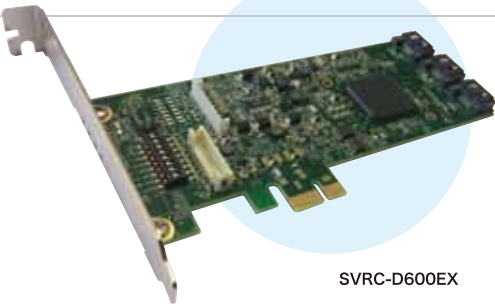
SVRC-D Series

Newly developed 7th generation 6.0Gbps SATA Controller
Superb performance with high speed SSDs
Insert to PCI Express slot

SVRC_D600EX



- PCI Express Slot insertable
- Complete Hardware Mirroring
(PCI slot supplies only power)
- TRIM commands supported
- Hot swappable
- Improved Data Reconstruction Time (compared with predecessors)
- Can obtain SMART information from HDD
- Status Monitoring by Software
- RoHS compliant



SVRC-D600EX

Model			SVRC-D600EX
RAID level			1 (Mirroring)
Capacity			Based on capacity of the HDDs to mount
Host Interface			Serial-ATA
HDD Interface			Serial-ATA
Max Data Tansfer Rate			6.0Gbps or 3.0Gbps *1
No.of connected HDDs			2
Voltage			3.10V - 3.50V, 11.2V - 12.5V
Current			0.8A (typ.)
Dimension			W121.2 x D163.3 x H21.6 (mm)
			W80.2 x D163.7 x H23.1 (mm) *2
Weight			Approximately 77g
			Approximately 71g *2
Environment	Temperature	Operation	+5 - +55 °C
		Non-Operation	-40 - +65°C
	Humidity	Operation	8 - 90%RH (No Condensation)
		Non-Operation	5 - 95%RH (No Condensation)

*1 : Fixed Rate (6.0G or 3.0G) determined by DIP switch
*2 : Available "Low Profile Model" : SVRC-D600EXL

Hardware Mirror Card

SVRC-D Series

Ultra small form factor Mirror Card good for BOX PCs/Panel Computers
Equivalent functionality and performance within approximate 50 mm square

SVRC-D600CM

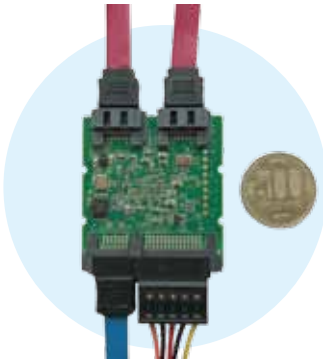


•Ultra small form factor suitable for very compact systems.	
•Sophisticated error handling	
•Several features for Maintainability	
-Background Auto-reconstruction	-Background Surface Verify
-Background Retry	-Enhanced Error Logging
	-Skip Reconstruction
•Can obtain SMART information from HDD	
•Status Monitoring by Software	
•RoHS compliant	

Model		SVRC-D600CM	
RAID level		1 (Mirroring)	
Capacity		Based on capacity of the Drives to mount	
Host Interface		Serial-ATA	
HDD Interface		Serial-ATA	
Max Data Tansfer Rate		6.0Gbps or 3.0Gbps *1	
No.of connected HDDs		2	
Voltage		3.3VDC +/- 5%	
Current		0.8A (typ.)	
Dimension		W47.0 x D52.0 x H9.2 (mm)	
Weight		Approximately 14g	
Environment	Temperature	Operation	0-80°C (@ center of the Card)
		Non-Operation	-40 - +65°C
	Humidity	Operation	8 - 90%RH (No Condensation)
		Non-Operation	5 - 95%RH (No Condensation)



SVRC-D600CM



Ultra compact mirror card : 5cm square

*1 : Fixed rate (6.0 G or 3.0G) determined by DIP switch

SVRC-B Series

Realize high reliability Mirror Drive with HDD or SSD
Complete hardware mirroring independent to OS of the Host system

SVRC-B 300SA
SVRC-B 300EX/SVRC-B 300PCI

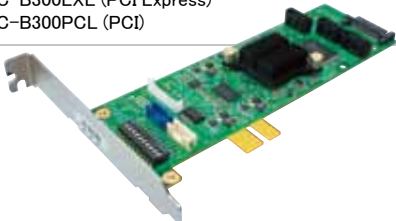
- Hot swappable
- Can obtain SMART information from HDD
- Status Monitoring by Software
- Mirror Status Reporting
- RoHS compliant



SVRC-B300SA

Model		SVRC-B300SA	SVRC-B300EX(PCI Express) SVRC-B300PCI(PCI)
RAID level		1 (Mirroring)	
Capacity		Based on capacity of the Drives to mount	
Cache Size		1MB	
Host Interface		Serial-ATA	
HDD Interface		Serial-ATA	
Max Data Tansfer Rate		3.0Gbps (Fixed)	
No.of connected HDDs		2	
Voltage		+5VDC (+4.75V - +5.25V)	
Current		0.8A (typ.)	
Dimension		W98.2 x D96.0 x H17.2 (mm)	W121.1 x D178.4 x H21.6 (mm)
			W79.2 x D178.8 x H23.1 (mm)
Weight		Approximately 49g	Approximately 73g
			Approximately 65g *1
Environment	Temperature	Operation	+0 - +70 °C (@Heat Sink Surface)
		Non-Operation	-40 - +65°C
	Humidity	Operation	8 - 90%RH (No Condensation)
		Non-Operation	5 - 95%RH (No Condensation)

*1 : Low Profile models available
SVRC-B300EXL (PCI Express)
SVRC-B300PCL (PCI)



SVRC-B300EX
SVRC-B300PCI

Mirror Drive

SVRE-D Series

2.5"
SSD/HDD

Newly Developed 7th generation 6.0Gbps SATA Controller

Complete hardware mirror drive

Tremendous performance with high speed SSD

Mountable on 5.25 Open Bay (Half Height)

Front accessible

Supply with drives or without is customer's choice

NEW



- Customer can select drives as own requirement. *1
- Model with drives : SVRE-D032SA
- Hotswappable
- 3.5" HDD form factor (1 inch height)
→ Easy to replace, especially good for space conscious PC
- RoHS compliant

SVRE-D032SA



Comparison with 3.5" HDD

SVRE-D032SA-B

Model	3.5" HDD Bay Type	5.25" Open Bay Type	SVRE-D600SA	SVRE-D600SA-B
Capacity (Mirrored)	Based on capacity of the Drive to mount			
RAID level	1 (Mirroring)			
Host Interface	Serial-ATA			
Maximum Transfer Rate	6.0 or 3.0 Gbps *2			
Voltage	+ 5VDC(+4.75V ~ +5.25V)			
Current	0.8A(typ.) excluding drives			
Environment	Temperature	Operation	+5 ~ +45°C *3	
		Non-Operation	-40 ~ +65°C	
Humidity	Humidity	Operation	8~90%RH (No Condensation)	
		Non-Operation	5~95%RH (No Condensation)	
Weight	3.5" HDD Bay Type		Approximately 270g (w/o drives)	
	5.25" Open Bay Type		Approximately 470g (w/o drives)	
Dimension	3.5" HDD Bay Type		W101.6 x D147.0 x H25.4 (mm)	
	5.25" Open Bay Type		W146.0 x D147.0 x H43.0 (mm)	

*1 Maximum thickness of drive to mount is 9.5mm

*2 Fixed rate (6.0 G or 3.0G) determined by DIP switch

*3 To keep this, sufficient Air Supply/Circulation required as Host system

320GB

Model	3.5" HDD Bay Type	5.25" Open Bay Type	SVRE-D032SA	SVRE-D032SA-B
Capacity (Mirrored)	320GB			
RAID level	1 (Mirroring)			
Host Interface	Serial-ATA			
Maximum Transfer Rate	6.0 or 3.0 Gbps *2			
Voltage	+ 5VDC(+4.75V ~ +5.25V)			
Current	1.4A (Idle), 2.2A (Startup)			
Environment	Temperature	Operation	+5 ~ +45°C *3	
		Non-Operation	-40 ~ +65°C	
Humidity	Humidity	Operation	8~90%RH (No Condensation)	
		Non-Operation	5~95%RH (No Condensation)	
Weight	3.5" HDD Bay Type		Approximately 450g	
	5.25" Open Bay Type		Approximately 655g	
Dimension	3.5" HDD Bay Type		W101.6 x D147.0 x H25.4 (mm)	
	5.25" Open Bay Type		W146.0 x D147.0 x H43.0 (mm)	

*2 Fixed rate (6.0 G or 3.0G) determined by DIP switch

*3 To keep this, sufficient Air Supply/Circulation required as Host system

PATA-SATA Bridge Card

SVPS Series

PATA Host
→ SATA

Bridge card to connect Serial-ATA interface HDD or SSD to the Host which has conventional Parallel-ATA interface.

- Variety of card size to cope with HDD or system requirement.
- With HDD models are also available
- Master/Slave/Cable • Select

3.5" Attachment Type



SVPS-35A000



HDD mounted

3.5" Replacement Type



SVPS-35R000-1



SVPS-35R016

Product Type			3.5" Attachment Type	3.5" Replacement Type
Model	w/o HDD		SVPS-35A000	SVPS-35R000-1
	with 160GB HDD			SVPS-35R016
	with 320GB HDD			SVPS-35R032
Host Interface			Parallel-ATA	
Max Data Transfer Rate			133MB/sec (Ultra DMA mode 6)	
HDD Interface			Serial-ATA	
Voltage			+5VDC (+4.75V ~ +5.25V)	
Current			0.2A	0.2A(SVPS-35R000-1)
				1.5A(SVPS-35R016)
Dimension			W100 x H25 x D23 (mm) between the connectors(HDD & Host)	W101.6 x H17.3 x D146.0 (mm)
				In case of 2.5" HDD with 6.8 mm
Weight			Approximately 20 g	Approximately 105g(SVPS-35R000-1)
				Approximately 200g(SVPS-35R016)
Environment	Temperature	Operation	+5 ~ +55℃	
		Non-Operation	-40 ~ +65℃	
	Humidity	Operation	8 ~ 90%RH (No Condensation)	
		Non-Operation	5 ~ 95%RH (No Condensation)	

Market to serve

SVRE-D Series

Mirroring of 2.5" SSD or HDD
Mounted in 3.5" HDD Bay ro 5.25"
Open Drive Bay (Half Height)



SVRC-D Series

Mirroring of 2.5" SSD or HDD
Slot in PCI Express
50mm Square Ultra Compact Card available



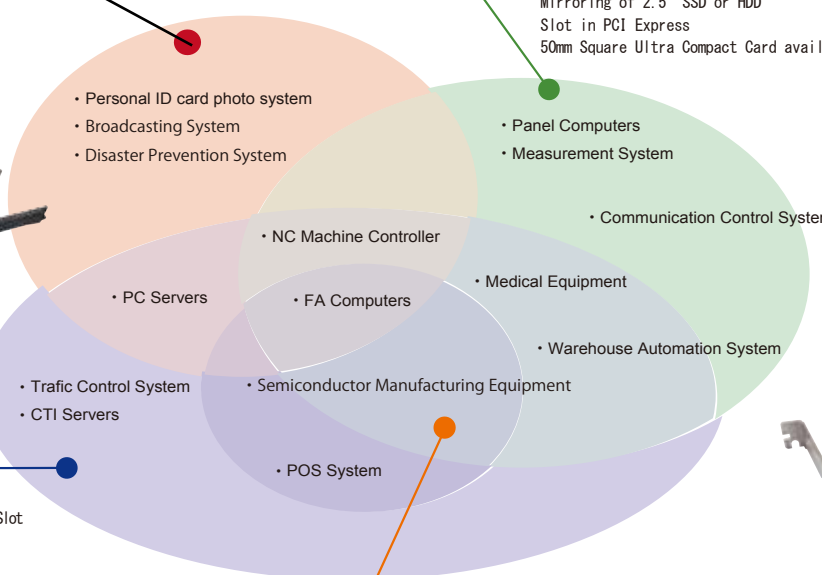
SVRC-B Series

Mirroring of x2 SSDs or HDDs
Mountable to PCI Express/PCI Slot



SVRC-C Series

Mirroring of x2 SSDs or HDDs
NOQ supported



Company Profile

■Established

January.09 2007

■Capital

20 Million Japanese Yen

■Borad of Directors

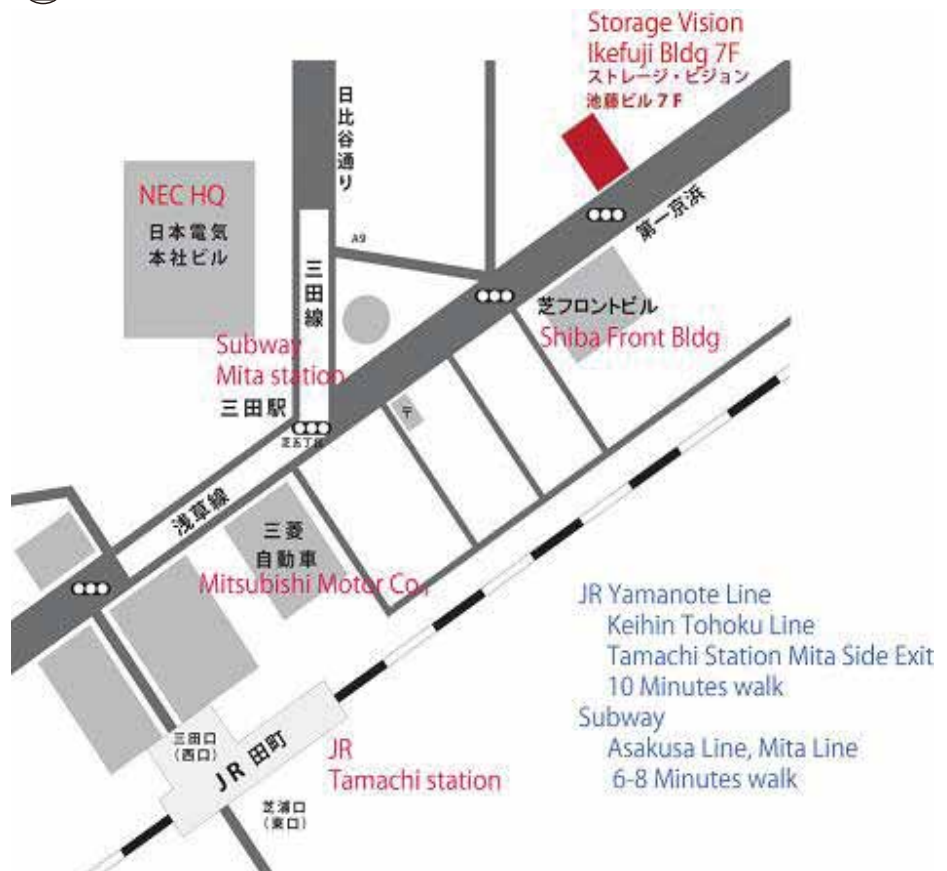
Yo Kobori (President & CEO)
Hideyuki Wada (CTO)
Katsuya Kurose (Oversea Sales)
Hiroshi Ikeda (Domestic Sales)

■Business Area

Develop, Manufacture, Sell and Maintain
Mirror drives, Mirror cards and Peripheral Products

■Major Customers

AMADA CO., LTD. / Azbil Corporation /
CANON MEDICAL SYSTEMS CORPORATION / CONTEC Co., Ltd. /
Daifuku Co., Ltd. / DISCO corporation / DUX Inc. / Fukuda denshi Co., Ltd. /
HAGIWARA TECHNO SOLUTIONS CO., LTD. / Hitachi, Ltd. /
Hitachi High-Tech Solutions Corporation / Kokusai Electric Inc. /
INNOTECH CORPORATION / Interface Corporation /
MEIDENSHA CORPORATION / MISUMI Corporation /
MITSUBISHI ELECTRIC CORPORATION /
MITSUBISHI Electric Control Software Corporation / MIS Corporation /
NEC Corporation / NIHON KOHDEN CORPORATION / PFU Limited /
RICOH Industrial Solutions Inc. Sanritz Automation Co., Ltd. /
SCREEN Semiconductor Solutions Co., Ltd. / SolNac Corporation /
Tokyo Electron Limited / Toray Engineering Co., Ltd. /



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