



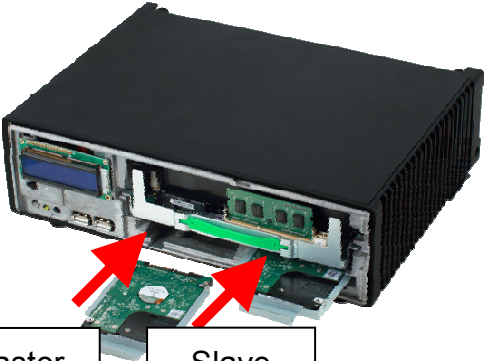
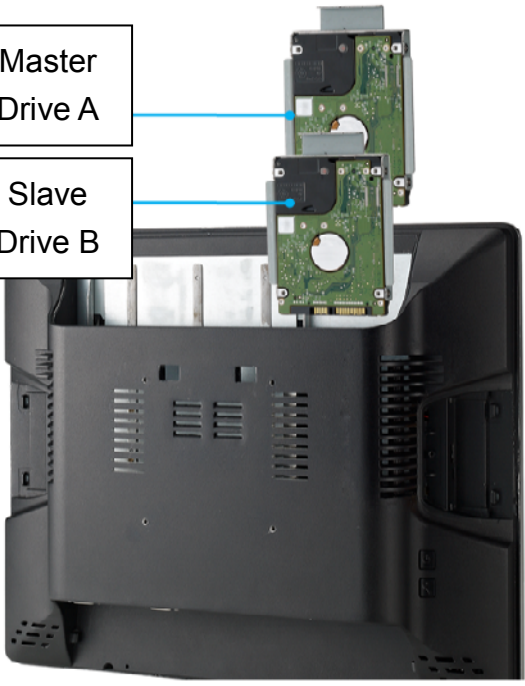
FEC H/W RAID -
User Manual V0.1
(Silcon Image Controller – CP 5923)
2013 06 22

Record of Revision			
Date	Specs Ver.	Description	Note
2013/06/22	V0.1	Initial	Vince
2013/10/30	V0.2	Add PP-9617R	Ben

FEC H/W RAID Introduction:

- 1. FEC H/W RAID Model and RAID Notification**
- 2. RAID Initialized Process**
- 3. Reading Mode and Status of RAID**
- 4. RAID LED Status**
- 5. FEC Smart RAID Monitor Utility**

FEC H/W RAID Model and RAID Notification

FEC H/W RAID Model	
(1) BP-561R	(2) PP-9617R
	
 <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Master Drive A</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Slave Drive B</div> </div>	 <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">Master Drive A</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Slave Drive B</div> </div>

RAID Notification:

FEC RAID Solution implements [Silicon Image CP-5923 MCU](#) as hard ware RAID solution. RAID Model requires two SATA drive disks working at the same time and in RAID 1 (Mirror) Mode, FEC recommends two drives in the same brand / spec and drive capacity.

RAID Function supports disks hot swap between “Master” (Drive A) and “Slave” (Drive B). However, in order to ensure stability of OS and data,

- Please Do Not remove or hot swap the source drive during RAID 1 mirroring.
- Please Do Not try with different capacity of storage drives

- Mirror will automatically start from the last written block, if there is power off or AC shut down last time.

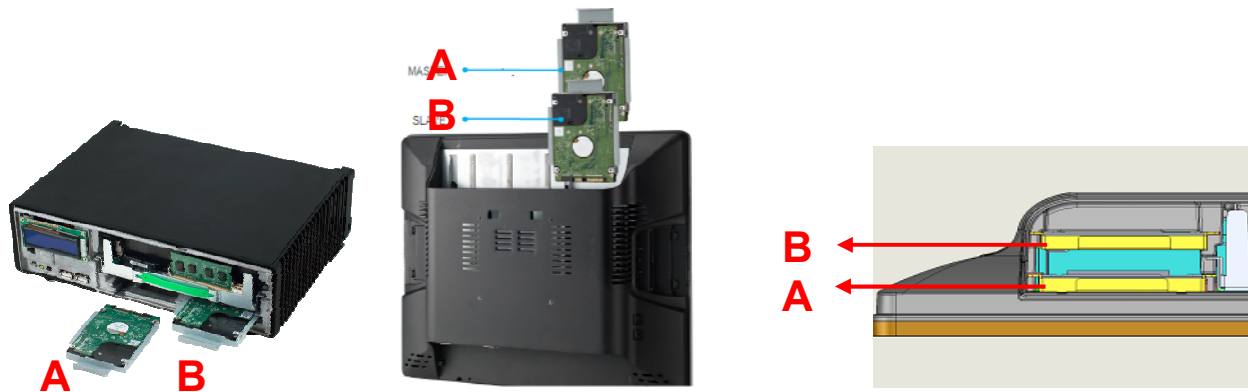
Hardware RAID is pre set as RAID 1 in FEC factory, there is no need to install RAID Driver during the installation of OS image. However, FEC provides windows RAID utility can be installed to help user experience.

[Any detail of Silicon Image CP-5923 MCU, please refer to the user guide and data sheet of Silicon Image](#)

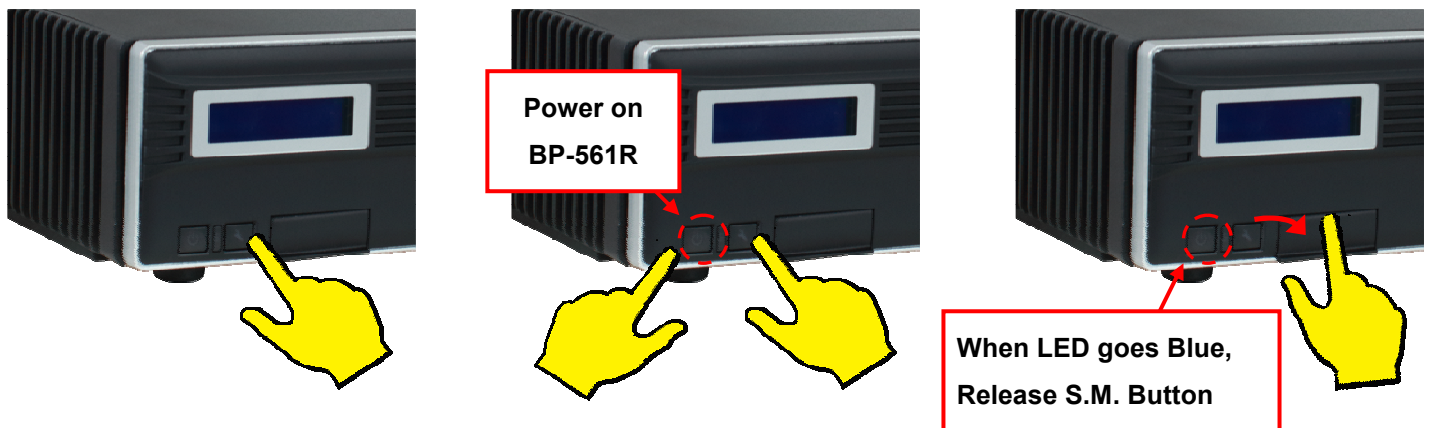
RAID Initialized Process

RAID Initialized:

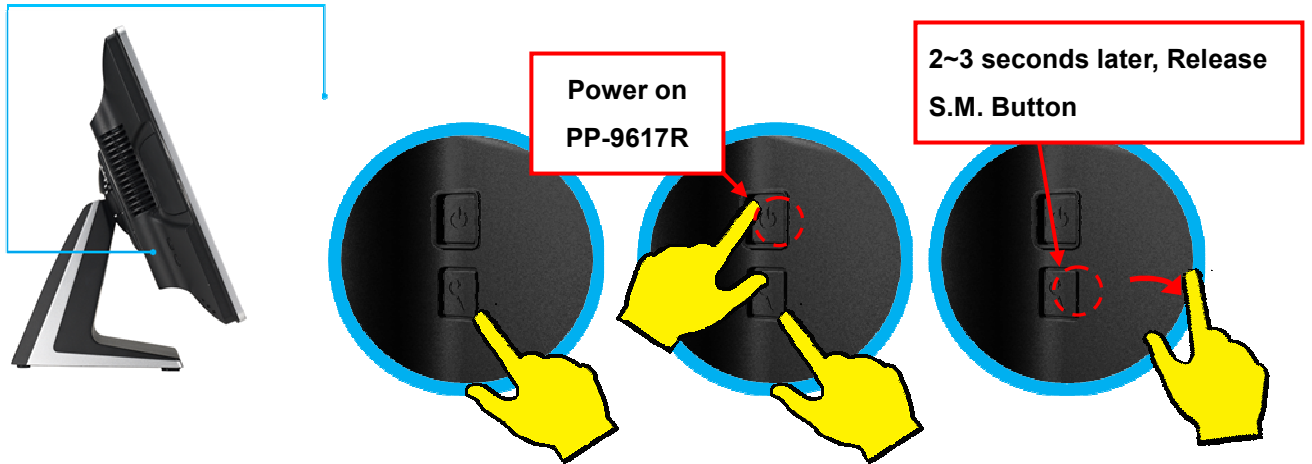
1. RAID function has to be initialized every time when first time receive a brand new BP-561R / PP9617R, or have a new OS image in a drive.
2. Place a HDD with image as source into "Master" (Drive A), and install an empty (clean) drive into "Slave" (Drive B).



3. Pressing Smart Management Key, then power on the BP-561R when the power LED status from **RED** goes **BLUE**, 2~3 seconds later (when HDD "yellow" LED goes off), release the Smart Management Button.



3.1 Pressing Smart Management Key, then power on the PP-9617R, 2~3 seconds later, release the Smart Management Button.



4. After the previous step has been done, the RAID 1 is initialized and Drive A (Master) is mirroring the image data to Drive B (Slave).

5. The duration for mirroring:

	Capacity	Device	Reference Mirroring Time Duration
1	160G	HDD	Approx 40 ~ 60 minutes
2	320G	HDD	Approx 80 ~ 120 minutes
3	128G	SSD	Approx 25 ~ 40 minutes

The RAID 1 performance is also depending on the OS, SW app, system computing consumption deference and storage spec and performance.

6. After initialized and finished RAID 1 mirror, the rebuilt will be automatically execute if any one of Device be removed and place a new drive.

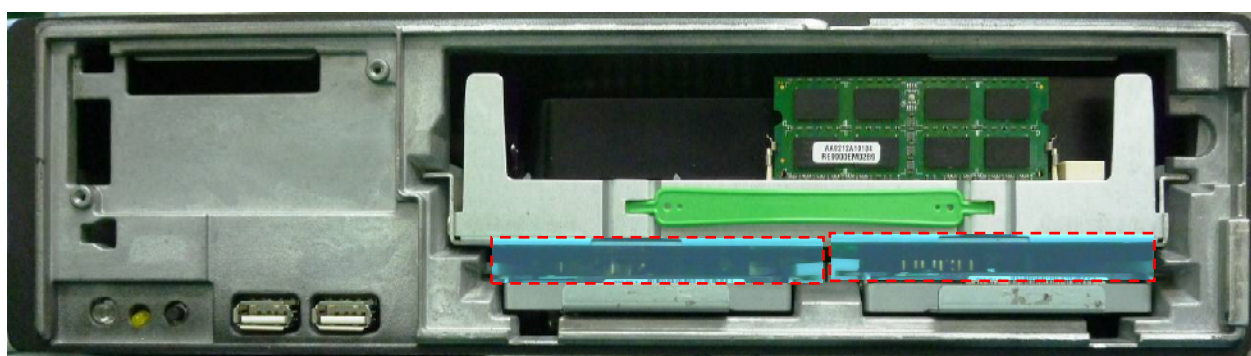
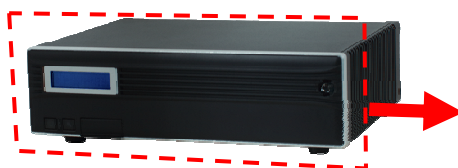
Reading Mode and Status of RAID

The setting of FEC RAID Solution is always on the RAID 1 Mirror Status. There are two different methods to read the current status of RAID function:

- (A) LED Status
- (B) FEC Smart RAID Monitor Utility

(A) RAID LED Status

There are two **BLUE** LED indicators are locate at the each side of Drive A & Drive B. It can obviously see the **BLUE** LED status from the outside when remove the door of BP-500.

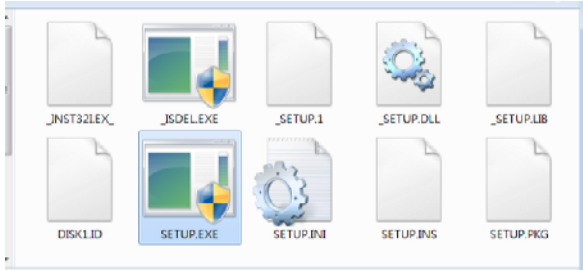


BLUE LED Behaviors	Device A	Device B
OFF	No link	No link
ON	Link Established (Good)	Link Established (Good)
Flashing	Activity	Activity
Slow Blink (500ms On / 500ms Off)	Replace HDD	Replace HDD
Fast Blink (125ms On / 125ms Off)	Target Rebuilding	Target Rebuilding


(B) FEC Smart RAID Monitor Utility

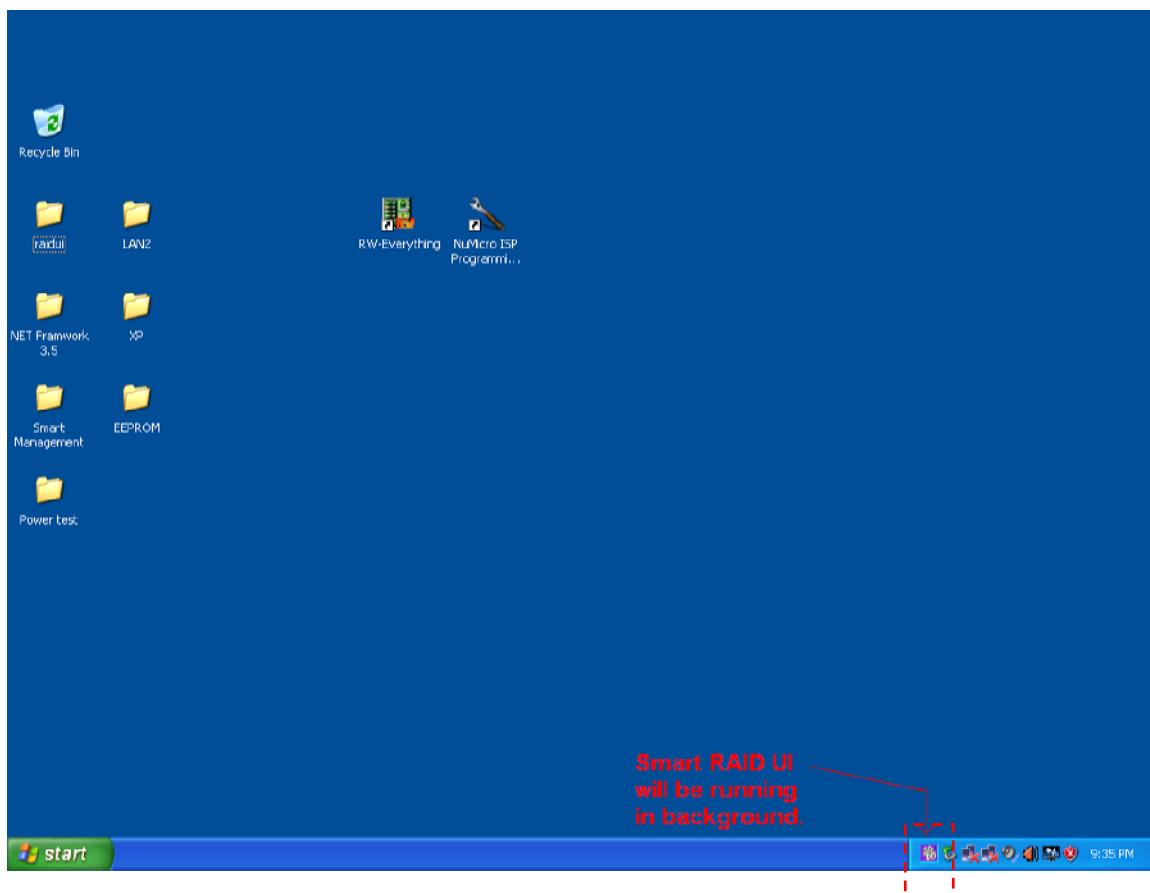
FEC also provides a windows (XP or 7 32bit) base RAID Utility, which can indicate the detail information and status. This RAID utility has to install and run in administrator.

1. Install the RAID utility. This Utility can be only installed in BP-561R or PP-9617R

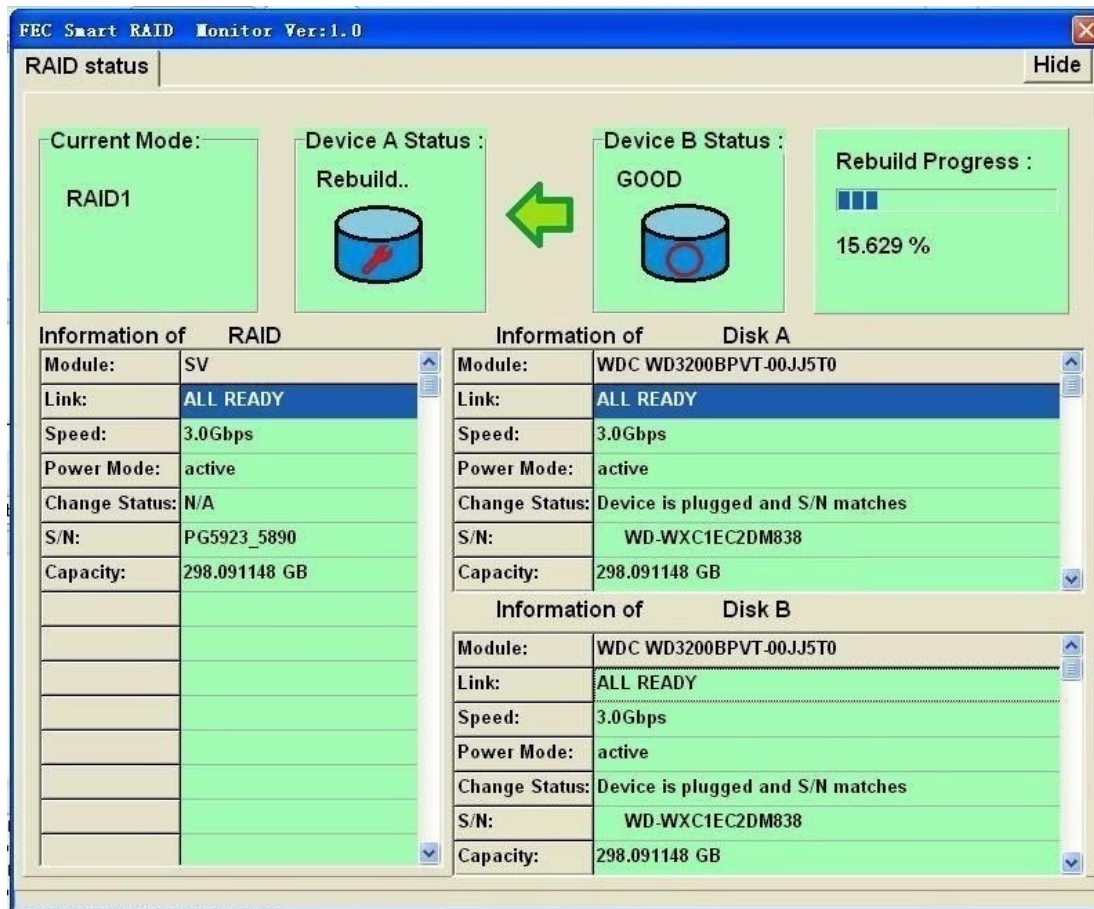


2. After the installation process finished. There is the “FEC Smart RAID Monitor” Utility.

3. After install the utility, , this AP will run in the background and stay in tool bar



FEC Smart RAID Monitor



The Utility contents:

1. Current RAID is on RAID 1 Mode



2. the Status Between Device A & B; arrow shows the direction of mirror.



3. Rebuild Progress %



4. General RAID information

Information of RAID	
Module:	SV
Link:	ALL READY
Speed:	3.0Gbps
Power Mode:	active
Change Status:	N/A
S/N:	PG5923_5890
Capacity:	298.091148 GB

5. General information on Device A and Device B

Information of Disk A	
Module:	WDC WD3200BPVT-00JJ5T0
Link:	ALL READY
Speed:	3.0Gbps
Power Mode:	active
Change Status:	Device is plugged and S/N matches
S/N:	WD-WXC1EC2DM838
Capacity:	298.091148 GB
Information of Disk B	
Module:	WDC WD3200BPVT-00JJ5T0
Link:	ALL READY
Speed:	3.0Gbps
Power Mode:	active
Change Status:	Device is plugged and S/N matches
S/N:	WD-WXC1EC2DM838
Capacity:	298.091148 GB

Important Notice

1. When system boot up, NEVER Place an EMPTY HDD as source into “Master” (Drive A), and install a HDD with image into “Slave” (Drive B). Then, both HDD will be EMPTY.