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PRIMERGY®

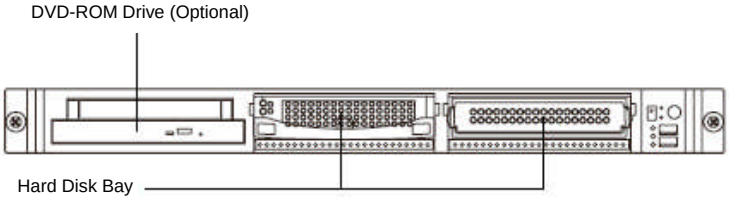
# System Configuration and Order-information Guide

## RX100 S5

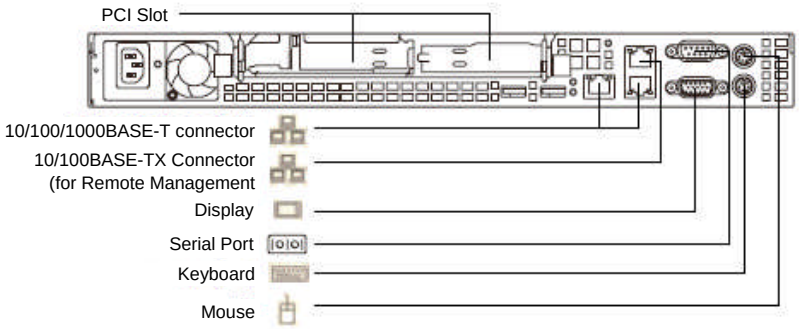
**March 2009**

**PRIMERGY RX100 S5**

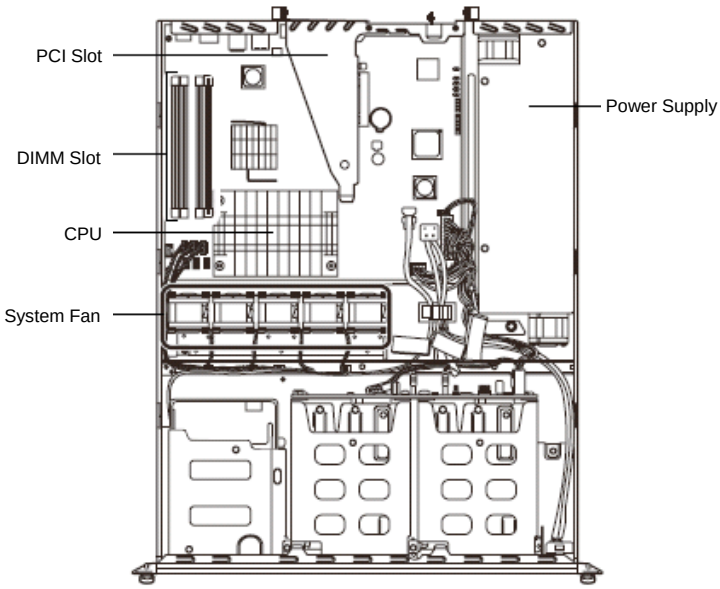
## Front View




## Back View




## Inside View



**PRIMERGY RX100 S5**

Instruction

This document contains basic product and configuration information that will enable you to configure your system.

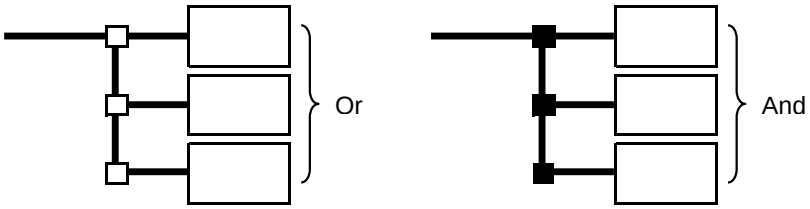
Only these tools will ensure a fast and proper configuration of your PRIMERGY server or your complete PRIMERGY Rack system.

You can configure your individual PRIMERGY server in order to meet your specific requirements.

Please follow the lines. If there is a junction, you can choose which way or component you would like to take.
Go through the configurator by following the lines from the top to the bottom.

The color of the junction means as follows.

Key to



**PRIMERGY RX100 S5**

# Data Sheet

| Type | | Mono-Processor Rack Server | |
|---|---|---|---|
| Model | | 3.5inch SAS model | 3.5inch SATA model |
| Base Unit | Celeron® 430(1.80GHz) | PGUR1051A2 | PGUR1051B2 |
| CPU | Frequencies | Intel® Xeon® X3320(2.50GHz) *5 / X3220(2.40GHz) *6 / Intel® Xeon® E3120(3.16GHz) *7 / E3110(3GHz) *8 / Intel® Core™ 2 Duo E7300(2.66GHz) *9 / Intel® Celeron® 430(1.80GHz) | |
| | Second-Level-Cache | 2x4MB (Intel® Xeon® X3220(2.40GHz)) / 6MB (Intel® Xeon® X3320(2.50GHz) / E3120(3.16GHz) / E3110(3GHz)) / 3MB (Intel® Core™ 2 Duo E7300(2.66GHz)) / 512KB (Intel® Celeron® 430(1.80GHz)) | |
| | Number of processors | 1 (max. 1) | |
| | Number of cores | 4 per processor ( Intel® Xeon® X3320(2.50GHz) / X3220(2.40GHz) ) / 2 per processor ( Intel® Xeon® E3120(3.16GHz) / E3110(3GHz) / Intel® Core™ 2 Duo E7300(2.66GHz) ) / 1 per processor ( Intel® Celeron® 430(1.80GHz) | |
| Front-Side-Bus | | 1333MHz (Intel® Xeon® X3320(2.50GHz) / E3120(3.16GHz) / E3110(3GHz)) / 1066MHz (Intel® Xeon® X3220(2.40GHz) / Intel® Core™ 2 Duo E7300(2.66GHz)) / 800MHz (Intel® Celeron® 430(1.80GHz)) | |
| Chipset | | Intel® 3210 | |
| TPM (Trusted Platform Module) | | standard (onboard) *10 | |
| Memory | Standard | 1GB (1GB ECC DDR2 SDRAM DIMM x 1) | |
| | Maximum *1 | 8GB (2GB ECC DDR2 SDRAM DIMM x 4) | |
| Graphics Controller | | incl. Remote Management Controller, VRAM : 8MB | |
| Resolution *2 | | 640x480/800x600/1024x768/1280x1024 dot | |
| Internal Bays | Number of bays | 2 (hot plug) | |
| 3.5 inch HDD (SAS / SATA) | Available HDD *3 | 3.5inch, SAS, 15krpm, 73.4GB (PG-HDB75A)<br>3.5inch, SAS, 15krpm, 146.8GB (PG-HDB45A)<br>3.5inch, SAS, 15krpm, 300.0GB (PG-HDB35A)<br>3.5inch, SAS, 15krpm, 450.0GB (PG-HDB55A) | 3.5inch, SATA, 7.2krpm, 80.0GB (PG-HDF87B)<br>3.5inch, SATA, 7.2krpm, 160.0GB (PG-HDF67B)<br>3.5inch, SATA, 7.2krpm, 500.0GB (PG-HDF57B) |
| | Maximum *3 | 900.0GB ( 450.0GB x 2 ) | 1.0TB ( 500.0GB x 2 ) |
| DVD-ROM | | optional (Max 8 DVD-ROM / Max 24 CD-ROM (SATA) ) *11 | |
| PCI Slots | PCI Express (x8) [x8] | 1 : Full Height PCI Express Card or LowProfile PCI Express Card | |
| | PCI Express (x8) [x8] | 1 : LowProfile PCI Express Card Only | |
| RAID | | Onboard SAS Controller, with RAID1 function | Software RAID |
| SAS / SATA Interface | | SAS x 2ports | SATA x 2ports |
| FDD | | - *12 | |
| Network Interface (onboard) | | 2 ports (1000BASE-T/100BASE-TX/10BASE-T) | |
| Interfaces | | Display (Analog RGB), Serial Port (D-SUB 9pins)<br>Keyboard (PS/2type Mini DIN 6pins), Mouse (PS/2type Mini DIN 6pins), USB x 4 (ver. 2.0) | |
| Server Management Software | | ServerView (standard) | |
| Remote Service function | | standard (onboard, Remote Management Controller) | |
| | connector | 1 port (100BASE-TX/10BASE-T) | |
| Power supply | Voltage | AC 100-127V (50/60Hz) / AC 200-240V (50/60Hz) x 1 (max. 1) | |
| | Power consumption | 210W /756kJ/h (max.) | |
| | Redundant power supply | - | |
| Redundant Fan | | - | |
| Dimensions (mm) | | 429 (482 incl. protruding parts)(W) x 562 (596 incl. protruding parts)(D) x 42 (1U) (H) | |
| Weight | | 12.5kg (15.2kg incl. rack rails) (max.) | |
| Environmental Conditions | | Temperature10-35°C / Humidity 20-80% (non condensing ) | |
| OS Support *4 | | Windows Server® 2008 Standard (32-bit) / Windows Server® 2008 Standard (64-bit)<br>Windows Server® 2003 R2, Standard Edition (SP2) / Windows Server® 2003, Standard Edition (SP2)<br>Windows Server® 2003 R2, Standard x64 Edition (SP2) / Windows Server® 2003, Standard x64 Edition (SP2)<br>Red Hat Enterprise Linux ES (v.4 for x86) *13 / Red Hat Enterprise Linux 5 (for x86) *13 *14<br>Red Hat Enterprise Linux ES (v.4 for EM64T) *13 / Red Hat Enterprise Linux 5 (for Intel64) *13 *14 | |
| Attached tool (Standard) | | ServerStart (Setup Support tool) *15 | |

*1. Available memory capacity will be changed by the type of OS. Please find more details in Notes[Memory OS Compatibility List].

*2. Resolution is determined by functions of the display monitor and OS.

*3. HDD capacity is calculated according to the formulas 1GB=$1000^3$ byte and 1TB=$1000^4$ byte.

*4. Drivers for Linux are not attached. Please download and use drivers of the following URL.

http://www.fujitsu.com/global/services/computing/server/ia/driver/

*5. CPU Conversion kit: Celeron 430(1.80GHz) -> Xeon X3320(2.50GHz) (PGBFU317) is available for upgrading to Intel® Xeon® X3320(2.50GHz).

*6. CPU Conversion kit: Celeron 430(1.80GHz) -> Xeon X3220(2.40GHz) (PGBFU318) is available for upgrading to Intel® Xeon® X3220(2.40GHz).

*7. CPU Conversion kit: Celeron 430(1.80GHz) -> Xeon E3120(3.16GHz) (PGBFU319) is available for upgrading to Intel® Xeon® E3120(3.16GHz).

*8. CPU Conversion kit: Celeron 430(1.80GHz) -> Xeon E3110(3GHz) (PGBFU316) is available for upgrading to Intel® Xeon® E3110(3GHz).

*9. CPU Conversion kit: Celeron 430(1.80GHz) -> Core 2 Duo E7300(2.66GHz) (PGBFU31G) is available for upgrading to Intel® Core™ 2 Duo E7300(2.66GHz).

*10. TPM is available for BitLocker™ Drive Encryption of Windows Server® 2008.

*11. One DVD-ROM is required as a minimum in multiple servers.

If DVD-ROM SATA (PG-DV106 / PGBDV106) is not ordered, it is necessary to procure USB-DVD-ROM separately.

*12. One USB-FDD is required as a minimum in multiple servers.

It is necessary to procure USB-FDD separately.

*13. Regarding supported kernel versions of Linux, please refer to the following list.

http://www.fujitsu.com/downloads/PRMRGY/linux-os-kernel-compatibility-list.pdf

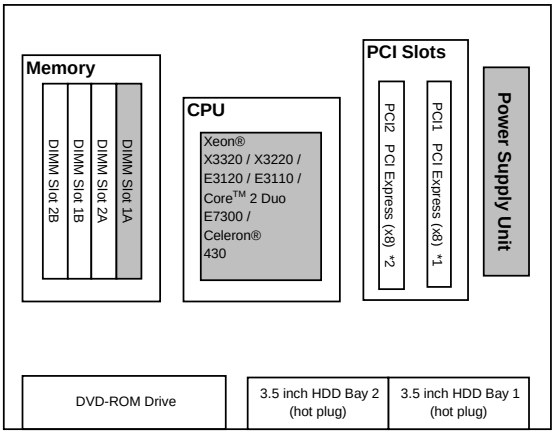
*14. VM (Virtual Machine) function is not supported.

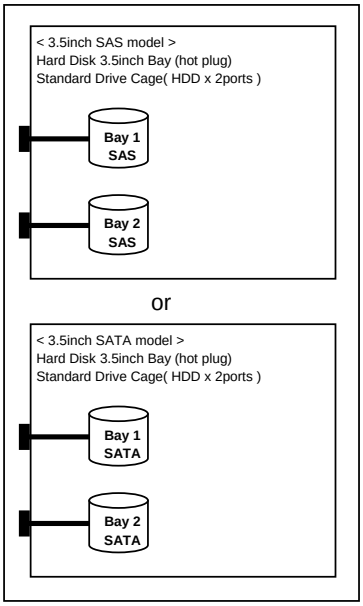
*15. ServerStart doesn't support Linux.

*. Noise level is 45dB.

**PRIMERGY RX100 S5**

## Configuration Diagram




*1. PCI1 : for Full Height PCI Express card and LowProfile PCI Express card
*2. PCI2 : for LowProfile PCI Express card ( Full Height PCI Express card cannot be installed. )

*Components installed as standard configuration marked in grey.

## Mountable I/O Options

**[ 3.5inch SAS model / 3.5inch SATA model ]**

| Mount Priority | Mountable Cards | | Bus | PCI Slot 1 PCI Express x8 lane Full Height / Low Profile | PCI Slot 2 PCI Express x8 lane Low Profile | Max No.of Mount | | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | x8 socket | | | | |
| High | SAS Ctrl ( 4ports ) | PG-228BL | PCI Express (x4) | [2] | [1] | 1 | 2 | External SAS Controller |
| | Eth. Ctrl 2x1Gbit PCI-E 1000-BASE-T lp | PG-2861L | PCI Express (x4) | [2] | [1] | 1 | | External SCSI Controller |
| | Eth. Ctrl 2x1Gbit PCI-E 1000-BASE-T lp | PG-2861L | PCI Express (x4) | [2] | [1] | 1 | | |
| | Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T lp | PG-289L | PCI Express (x1) | [2] | [1] | 1 | | |
| | Eth. Ctrl 1x1Gbit PCI-E 1000-BASE-T lp | PG-285L | PCI Express (x1) | [2] | [1] | 2 | | No AFT/ALB Support |
| Low | Eth. Ctrl 1x1Gbit PCI-E 1000BASE-SX lp | PG-288L | PCI Express (x4) | [2] | [1] | 1 | | |

* [n] : Installation Priority
* - : cannot be installed

## Notes on SATA HDD

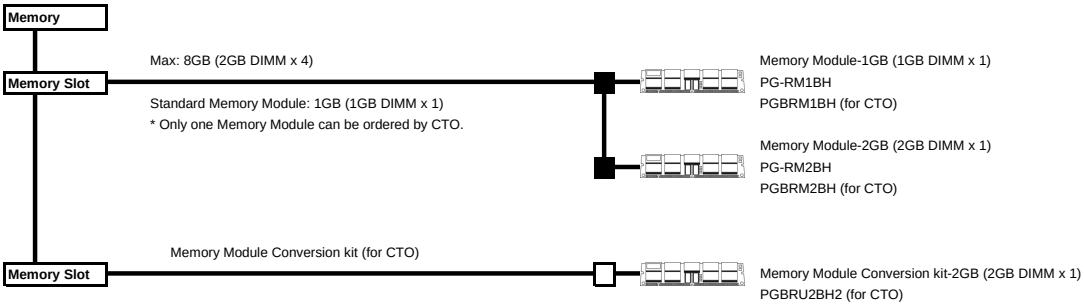
1. RX100 S5 (3.5inch SATA model) can be used on a small scale without frequent data access about eight hours a day, for five years.
2. If you would like to use server 24 hours a day, every day, or for database with frequent data access, or for mission-critical tasks which require high reliability, please purchase another SAS model.
3. Please backup data on a regular basis to prevent loss of data.
4. Dump function of Linux is not available for RX100 S5 (3.5inch SATA model). If you would like to use dump function of Linux, please purchase another SAS model.

## Connection Table

*CPU Conversion Kit (available only as a Configure To Order (CTO) option; no separate shipment is possible)

| Type | Product ID | Remarks |
|---|---|---|
| CPU Conversion kit:<br>Celeron 430(1.80GHz)<br>-> Xeon X3320(2.50GHz)<br>(for CTO) | PGBFU317 | Intel® Celeron® 430(1.80GHz/512KB) -> Intel® Xeon® X3320(2.50GHz/6MB)<br>Convert the CPU installed as standard in the base unit to the other.<br>(Note: This option can be ordered only as coupled with the base unit.<br>A separate shipment is not possible.) |
| CPU Conversion kit:<br>Celeron 430(1.80GHz)<br>-> Xeon X3220(2.40GHz)<br>(for CTO) | PGBFU318 | Intel® Celeron® 430(1.80GHz/512KB) -> Intel® Xeon® X3220(2.40GHz/2x4MB)<br>Convert the CPU installed as standard in the base unit to the other.<br>(Note: This option can be ordered only as coupled with the base unit.<br>A separate shipment is not possible.) |
| CPU Conversion kit:<br>Celeron 430(1.80GHz)<br>-> Xeon E3120(3.16GHz)<br>(for CTO) | PGBFU319 | Intel® Celeron® 430(1.80GHz/512KB) -> Intel® Xeon® E3120(3.16GHz/6MB)<br>Convert the CPU installed as standard in the base unit to the other.<br>(Note: This option can be ordered only as coupled with the base unit.<br>A separate shipment is not possible.) |
| CPU Conversion kit:<br>Celeron 430(1.80GHz)<br>-> Xeon E3110(3GHz)<br>(for CTO) | PGBFU316 | Intel® Celeron® 430(1.80GHz/512KB) -> Intel® Xeon® E3110(3GHz/6MB)<br>Convert the CPU installed as standard in the base unit to the other.<br>(Note: This option can be ordered only as coupled with the base unit.<br>A separate shipment is not possible.) |
| CPU Conversion kit:<br>Celeron 430(1.80GHz)<br>-> Core 2 Duo E7300(2.66GHz)<br>(for CTO) | PGBFU31G | Intel® Celeron® 430(1.80GHz/512KB) -> Intel® Core™ 2 Duo E7300(2.66GHz/3MB)<br>Convert the CPU installed as standard in the base unit to the other.<br>(Note: This option can be ordered only as coupled with the base unit.<br>A separate shipment is not possible.) |

## PRIMERGY RX100 S5




*. Notes on installing memory

1. Memory is installed by one or more DIMMs.
2. The memory capacities of the slots should be in ascending order in the following sequence:
   1A -> 1B -> 2A -> 2B
3. Available memory capacity depends on the type of OS and some memory area is used for PCI resource management.
   The following table shows installed memory capacity and available memory capacity.

| OS | Installed Memory Capacity | Available Memory Capacity |
|---|---|---|
| Windows Server® 2008 Standard (32-bit)<br>Windows Server® 2003 R2, Standard Edition (SP2)<br>Windows Server® 2003, Standard Edition (SP2) | ~2.0GB | Same as installed memory capacity |
| | 2.0GB~4.0GB | 2.0GB *1 |
| Windows Server® 2008 Standard (64-bit)<br>Windows Server® 2003 R2, Standard x64 Edition (SP2)<br>Windows Server® 2003, Standard x64 Edition (SP2)<br>Red Hat Enterprise Linux ES (v.4 for x86)<br>Red Hat Enterprise Linux 5 (for x86)<br>Red Hat Enterprise Linux ES (v.4 for EM64T)<br>Red Hat Enterprise Linux 5 (for Intel64) | ~8.0GB | Same as installed memory capacity |

*1. If installed memory capacity is more than 2.0GB, it is necessary to set "PAE (Physical Address Extension)" of OS.
The following (1) and (2) are the ways to set "PAE" of OS, and Fujitsu recommends (1).

(1) Set "PAE" of OS.
Regarding setting "PAE" of OS, please refer to website of Microsoft.

(2) Set "DPE (Data Execution Prevention)" of CPU.
If "DPE" of CPU is set as "available" by executing the following procedure, "PAE" of OS is set automatically.

[1] Execute "BIOS setup utility".
[2] Select "Advanced" menu.
[3] Select "Advanced Processor" submenu.
[4] Set "NX Memory Protection" as "Enabled".

## Connecting Internal HDD and Internal Backup Devices

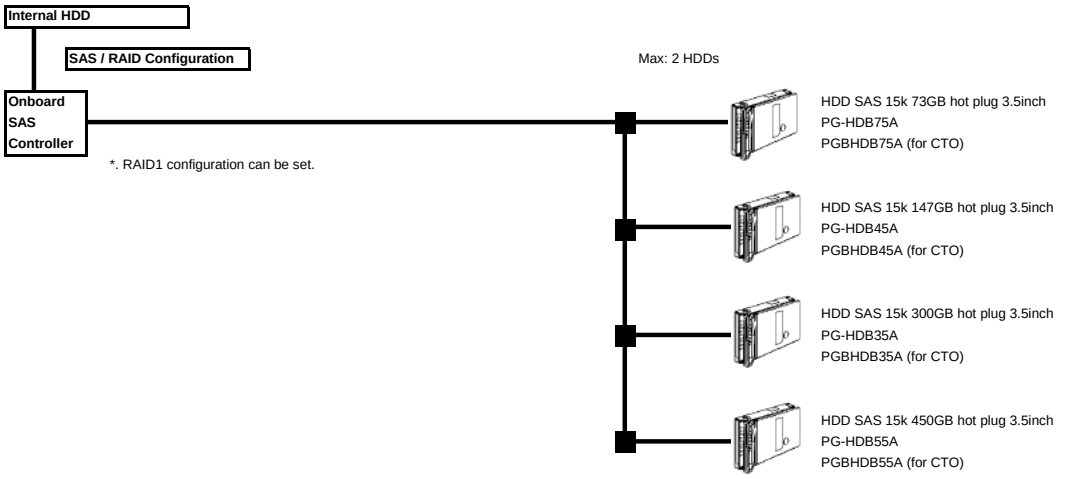
If you would like to order internal HDD and internal backup devices, please order optional cards/cables according to the following table.

| Type of HDD connection | | PRIMERGY SX10 S2 Internal Backup Devices |
|---|---|---|
| Connection | Interface | SCSI Wide (*1) Backup Devices Connection |
| SAS / RAID | Onboard SAS Controller | SCSI Card (PG-2281L/PGB2281L)<br>SCSI Cable (PG-CBLS034/PG-CBLS035) |
| | Onboard SATA Controller | |

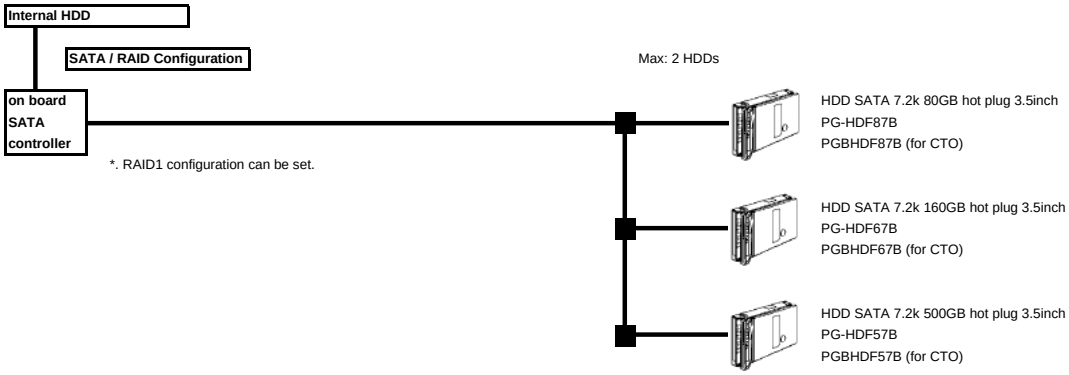
(*1) SCSI Wide Backup Devices: PG-DT501/PG-LT302 /PG-LT201/PG-LT102

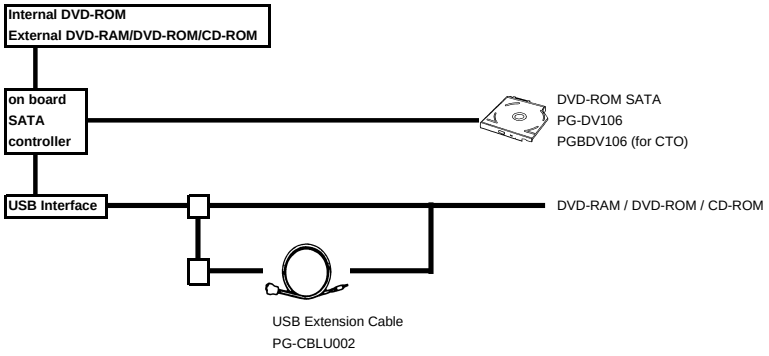
## PRIMERGY RX100 S5

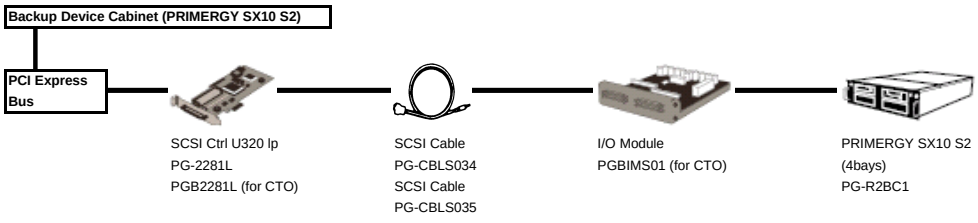
**[ 3.5inch SAS model ]**




**[ 3.5inch SATA model ]**

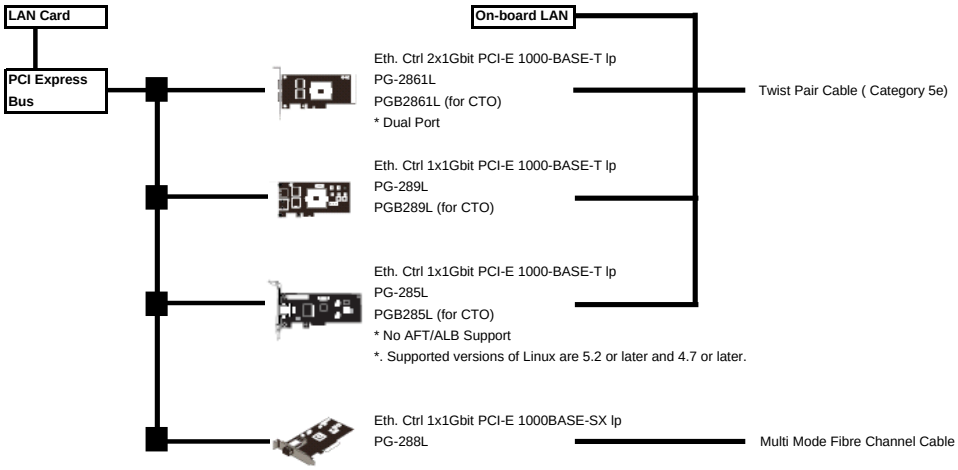


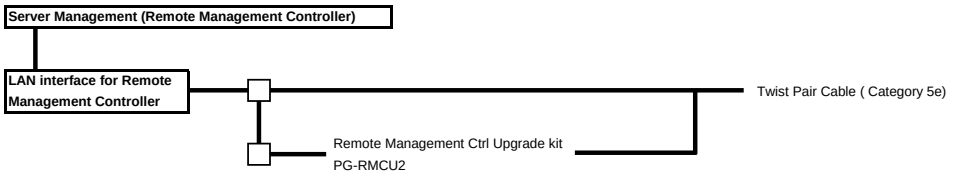




*. Please find more details in Rackmount [Backup Device Cabinet (PRIMERGY SX10 S2)].

## PRIMERGY RX100 S5

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