CHENBRO

Storage Chassis
16-Port Mini-SAS Backplane

User's Manual

80H103316-001

Version A2

May / 28 / 2008

15Fl., No.150, Jian Yi Road, Chung Ho City, Taipei Hsien, Taiwan R.O.C.,
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Technical Support

Chenbro works hard to offer our customers maximum performance from our chassis. But in case you have any problem with our product you can find supports from the following resources.

Web Support

Detail information of our products is in our website. You can find technical updates, installation guides, FAQs, technical specifications and more. Our web address is: www.chenbro.com.

Email Support

You can also fill out the technical support form at our Technical Support page. You technical issue inquiries will be sent directly to our support professionals.

Phone Support

You can also contact Chenbro HQ or branch office for immediate support; contact Information is as following:

Chenbro HQ	Chenbro Europe B.V.	Chenbro Micom (USA) Inc
Tel: 886-2-8226-5500	Tel: 31-40-295-2045	Tel: 1-909-947-3200
Fax: 886-2-8226-5423	Fax: 31-40-295-2044	Fax : 1-909-947-4300

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Revision History

Date	Modifications
May / 28 / 2008	● **First release**

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Hardware Specification

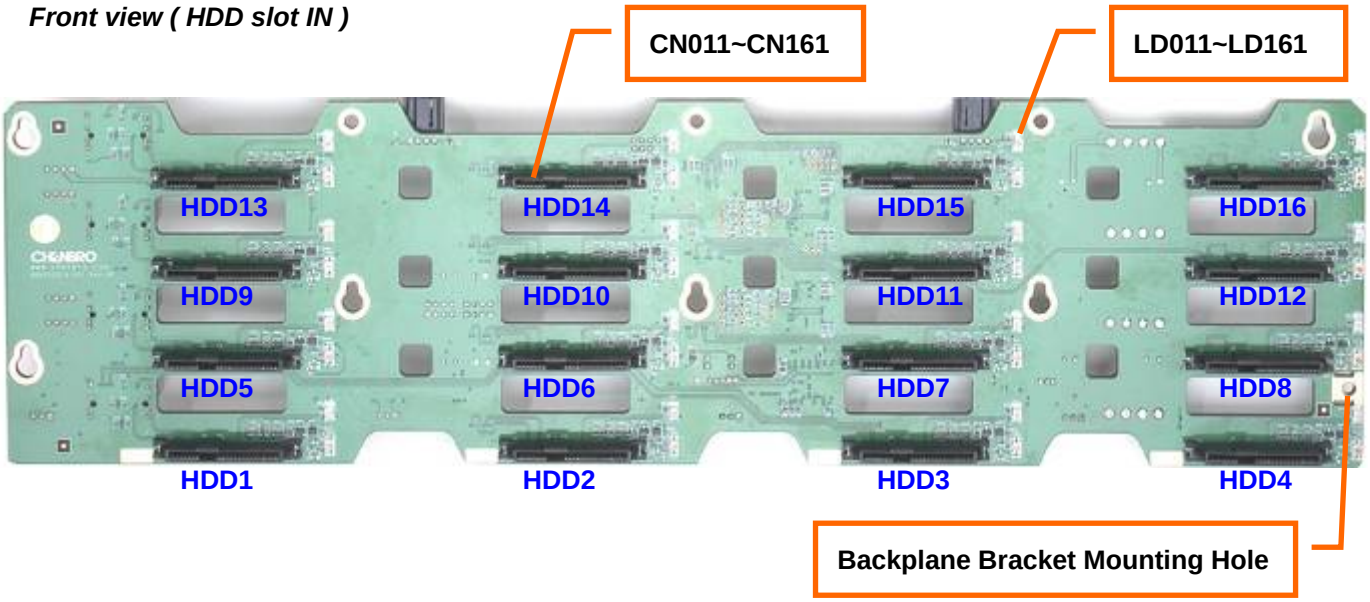
Specification	
Host Interface	Mini-SAS (SFF-8087)
HDD Interface	SATA-II / SAS
Hot-Swap	Yes, allows user to on line replace Hard Disk Drive
Display	LED indicates Hard Disk Drive status (Defined by Chenbro) Power LED – Blue (When HDD is present) Access LED –Green (When HDD is busy) Error LED –Red (When HDD is error)
Cooling	3pin Fan connector x4
Connectors	1. Mini-SAS x4 2. SAS 29pin x16 (for HDD) 3. Standard 4pin Power connector x 4 for +5V, +12V from power supply 4. 4pin Power connectors for Slim FDD & ODD 5. Switch for SGPIO & HDD Spin UP
Dimension	422.5 (Width) x 112 (Height) x 2.4 (Thickness) mm
Material	FR4 6 Layer

Accommodated Chassis

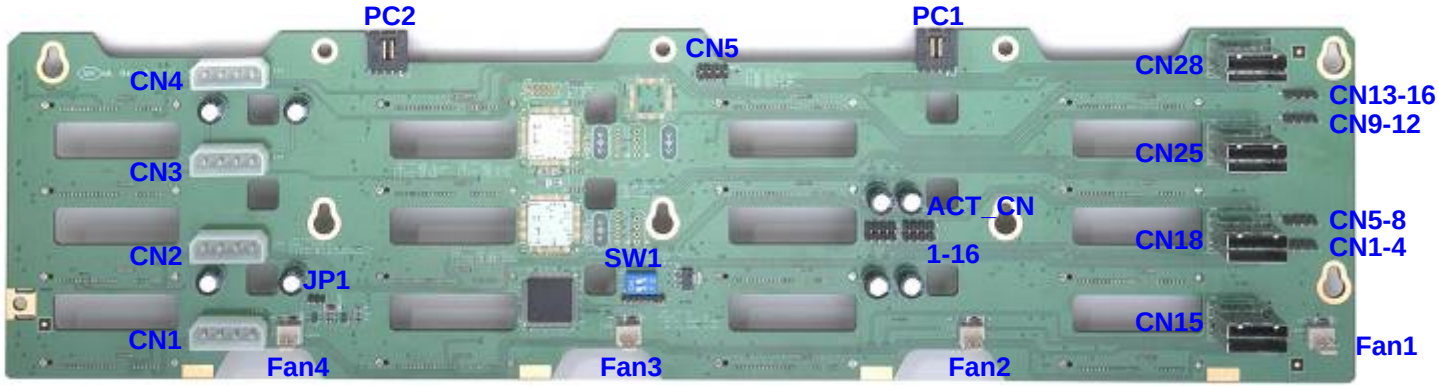
- RM31616

Backplane Layout

Front view (HDD slot IN)



Rear View (Host Connectors IN)



[CN011~CN0161] : Connect to 22-pin SATA-II or 29-pin SAS HDD 1~16

[CN1-4] : HDD 1~4 Failure Signal Pin Header

[CN5-8] : HDD 5~8 Failure Signal Pin Header

[CN9-12] : HDD 9~12 Failure Signal Pin Header

[CN13-16] : HDD 13~16 Failure Signal Pin Header

	**Connect the 4-pin HDD LED cable (26H113322-001) from CN2 to the CATHODE of the HDD failure connector on RAID card. Refer to the RAID card's user manual for the detail pin definition.**

[ACT_CN1-4 / ACT_CN5-8 / ACT_CN9-12 / ACT_CN13-16] :

HDD 1~16 Additional Activity Signal Pin Header (From RAID Card)

[FAN1 / FAN2 / FAN3 / FAN4] : 3-pin Fan connectors

[CN1 / CN2 / CN3 / CN4] : Standard 4-pin Power connectors

[PC1] : 4-pin Power connector for Optical Drive

[PC2] : 4-pin Power connector for FDD

[CN5] : Fan Signal Pin Header (connecting to LED Board)

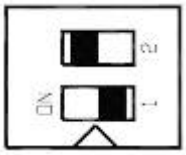
[JP1] : HDD Sequential Spin-up Enable / Disable

Spin-up Enable: Jumper set on pins 2 & 3 (Default factory setting, controlled by RAID / HBA)

Spin-up Disable: Jumper set on pins 1 & 2 (Controlled by HDD)

[SW1] : Function Switch

	ON	OFF
SW-2	HDD Failure Signal via Mini-SAS Port Enable	HDD Failure Signal via Mini-SAS Port Disable
SW-1	HDD Access Signal via Mini-SAS Port Enable	HDD Access Signal via Mini-SAS Port Disable



Default Setting

SW-1 HDD Access Signal:
When switch to OFF, HDD access LED will work if SATA-II HDD applied.
For other HDD such as SAS / SATA-I, connect ACT_CN 1~16 to RAID / HBA to active HDD access LED on backplane.

SW-2 HDD Failure Signal:
When switch to OFF, connect CN1~16 to RAID / HBA to active HDD failure LED on backplane.

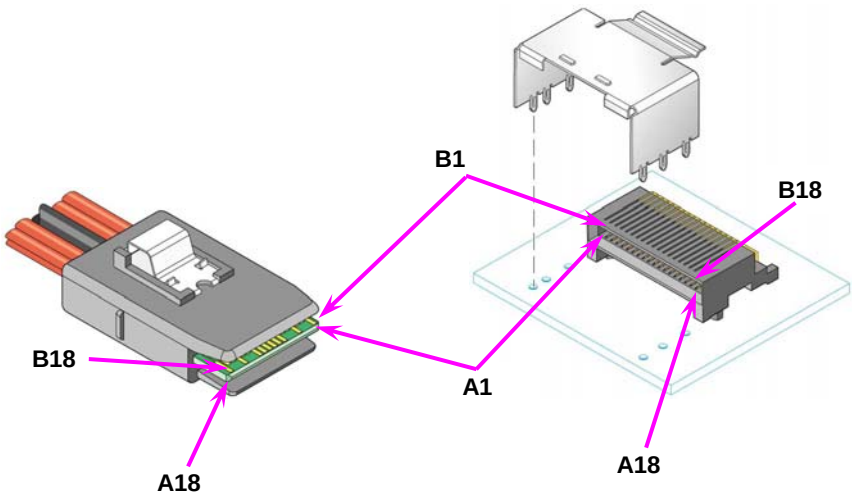
[CN15] : Mini-SAS Connector 1 (HDD1~4) -- Connecting SAS / SATA-II Host

[CN18] : Mini-SAS Connector 2 (HDD5~8) -- Connecting SAS / SATA-II Host

[CN25] : Mini-SAS Connector 3 (HDD9~12) -- Connecting SAS / SATA-II Host

[CN28] : Mini-SAS Connector 4 (HDD13~16) -- Connecting SAS / SATA-II Host

Mini-SAS Pin Definition: SFF-8087 Mini-SAS 36-pin cable plug and receptacle connectors



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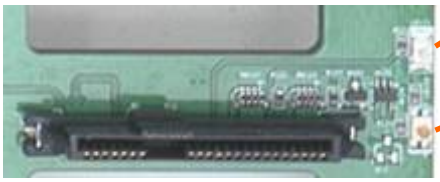
Sideband Definition : The following table defines the SGPIO signal assignments for the Mini-SAS receptacle connector

Pin Number	Pin	Signal
A8	Sideband 0	SClock
A9	Sideband 1	SLoad
A10	Sideband 2	Ground
B9	Sideband 3	Ground
B10	Sideband 4	SDataOut
B11	Sideband 5	SDataIn
A11	Sideband 6	Reserved
B8	Sideband 7	*SGPIO Enable / Disable

*** The following table shows the SGPIO function which is related to the setting of SW1.**

SW-1	SW-2	SGPIO	Pin B8 Signal
On	On	Enable HDD failure and access signal via SGPIO	Low
On	Off	Enable HDD access signal via SGPIO	Low
Off	On	Enable HDD failure signal via SGPIO	Low
Off	Off	Disable HDD failure and access signal via SGPIO	High

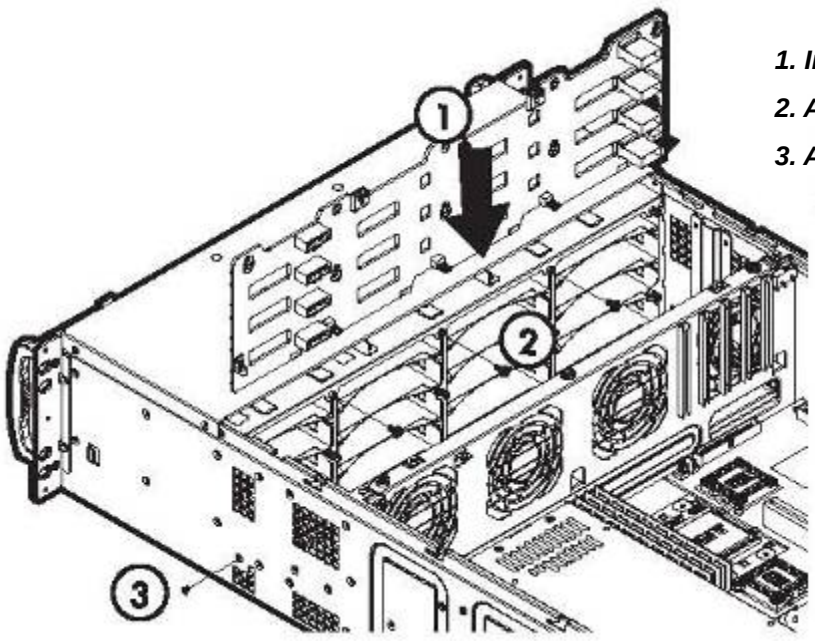
[LD011~161] : HDD Status Indictor LED



Blue LED On - HDD Power On

Green LED On - HDD active
Red LED On - HDD failure

Backplane Assembly



1. Insert backplane into chassis
2. Attach 3 screws on back.
3. Attach 1 screw on side.

Mini-SAS Cables

The Mini-SAS backplane provides most benefits to users using the same backplane to support various SAS/SATA HBA or RAID card via different conversion cables. Chenbro provides various cables for different interfaces which include the followings:

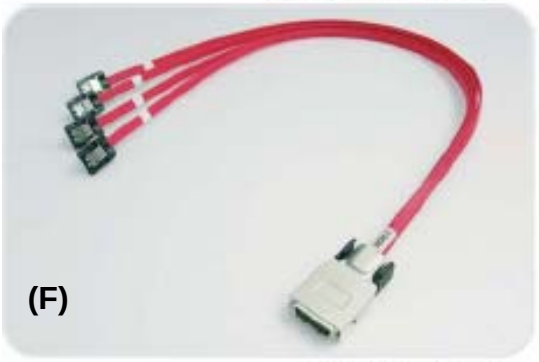
SFF8087 to SFF8470
(36 Pin to 4X Squeeze Type)

SFF8087 to SFF 8484
(36 Pin to 32 Pin R/A)

SFF 8087 to SFF 8087
(36 Pin to 36 Pin w/Side Band)

SFF 8087 to SFF 8484
(36 Pin to 32 Pin 180°)

SFF 8087 to 4 SATA
(36 Pin to 4 SATA w/o Side Band)



SFF8470 to 4SATA
(4X Squeeze to 4 SATA Latch Type)

Table of Mini-SAS cable solution

Cable Type	Connector		P/N	Length
	BP side	Host side		
A	Mini-SAS (SFF-8087 36pin)	Infiniband / Multilane (SFF-8470)	26H113215-011	600 mm
B1	Mini-SAS (SFF-8087 36pin)	Mini-SAS (SFF-8087 36pin)	26H113215-012	600 mm
B2	Mini-SAS (SFF-8087 36pin)	Mini-SAS (SFF-8087 36pin R/A)	26H113215-019	600 mm
B3	Mini-SAS (SFF-8087 36pin)	Mini-SAS (SFF-8087 36pin)	26H114612-001	350 mm
C1	Mini-SAS (SFF-8087 36pin)	SATA-7Pin x4	26H113215-010	600 mm
C2	Mini-SAS (SFF-8087 36pin)	SATA-7Pin x4 R/A	26H113215-017	600 mm
C3	SATA-7Pin x4	Mini-SAS (SFF-8087 36pin)	26H113215-009	450 mm, 500 mm 650 mm, 750 mm
D	Mini-SAS (SFF-8087 36pin)	Wide-Port SAS (SFF-8484 R/A)	26H113215-013	600 mm
E	Mini-SAS (SFF-8087 36pin)	Wide-Port SAS (SFF-8484)	26H113215-016	600 mm
F	SATA-7Pin x4	Infiniband/Multilane (SFF-8470)	26H113215-015	450 mm, 500 mm 650 mm, 750 mm
G	Mini-SAS (SFF-8087 36pin)	Mini-SAS (SFF-8087 26pin)	26H113215-018	600 mm
H	SATA-7Pin x4	Wide-Port SAS (SFF-8484)	26H113215-020	450 mm, 500 mm 650 mm, 750 mm

Note: (1) Each Mini-SAS BP requires one of cables above (A)~(E)

(2) Cable-C3, F & H are for 4port SATA2/SAS BP with Multilane RAID card

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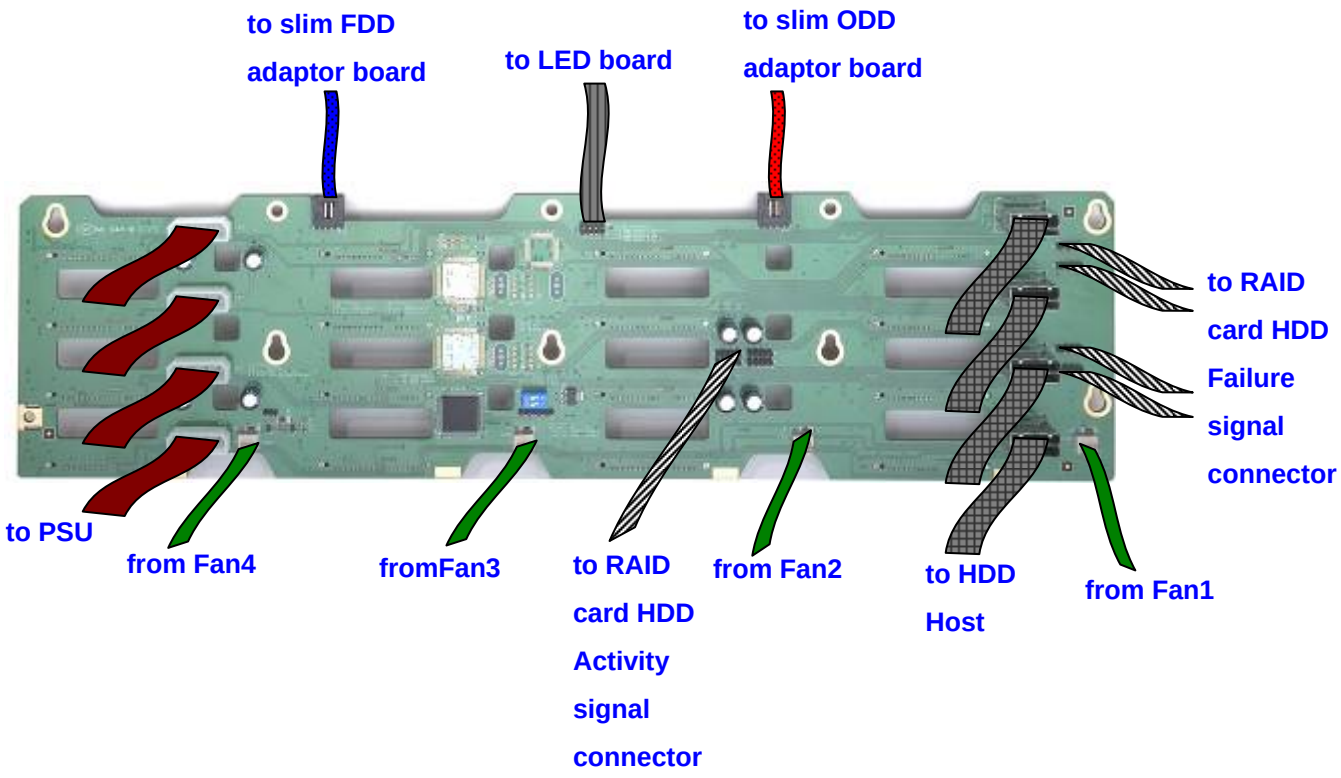
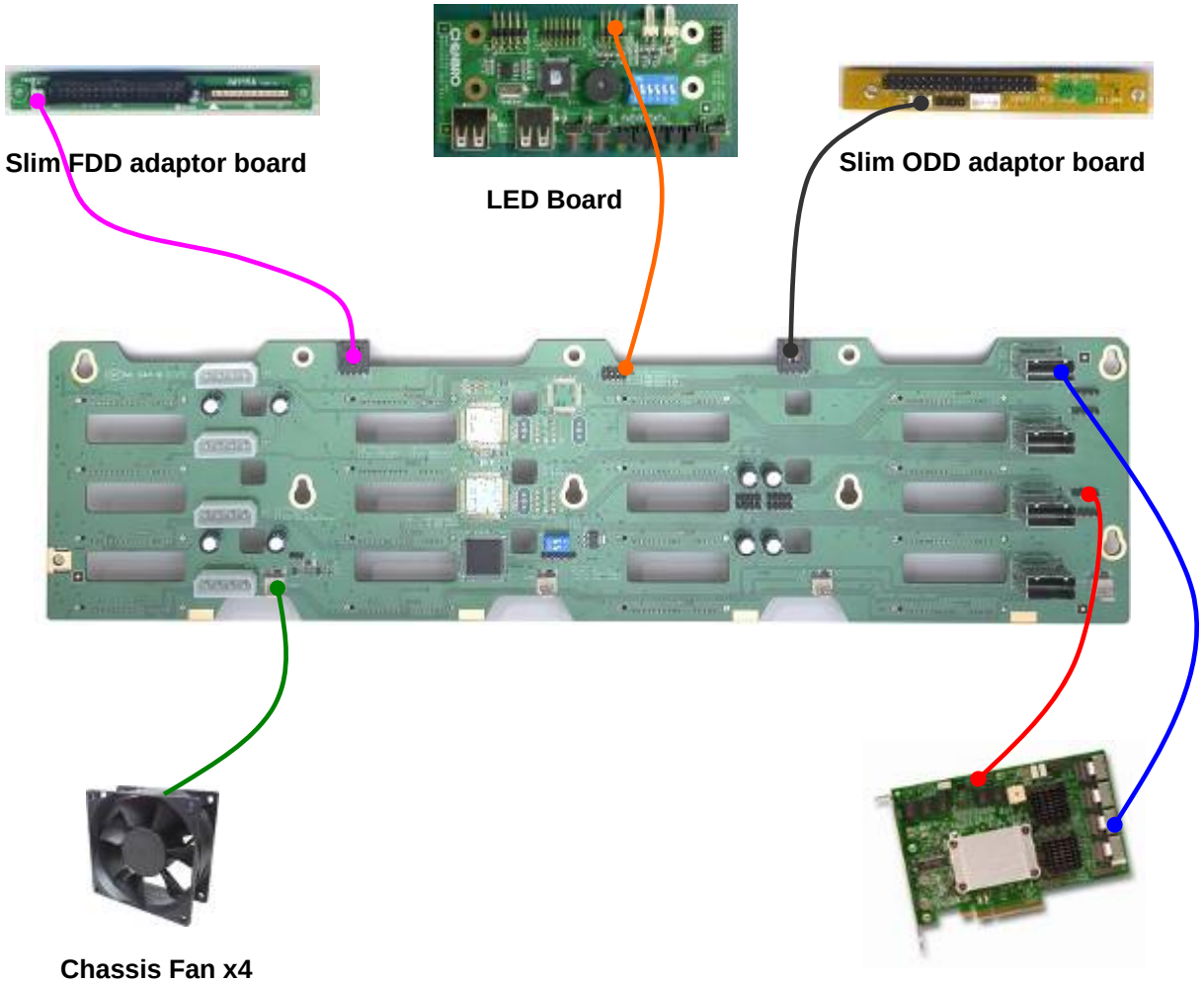
Backplane Wiring



	Mini-SAS Cable
	Discrete HDD failure / activity signal cable
	Fan cable
	Slim ODD power cable
	Slim FDD power cable
	Fan Signal cable
	Standard 4pin power cable

Example for RM31616 Wiring



- *Mini-SAS cable (BP to Host Adaptor)*
- *HDD Failure Signal cable (if RAID controller support HDD failure signal)*
- *Chassis fans wiring*
- *Fan Signal cable (BP to LED board)*
- *Slim ODD power cable*
- *Slim FDD power cable*