BLACK BOX

LMC5207A-R2 LMC5228A LMC5205A LMC5234A LMC5227A
LMC5208A-R2 LMC5203A LMC5206A LMC5235A
LMC5227A-R2 LMC5204A LMC5233A LMC5236A

High-Density Media Converter System II

Choose from a wide variety of chassis and modules to build a powerful media-converter solution.

Customer Support Information

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FCC and Industry Canada RF Interference Statements

Class A Digital Device. This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le Industrie Canada.

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Product Description	Version	FCC Class A	FCC Class B
20-Slot Rackmount Chassis	Dual AC		✓
	Dual DC		✓
	ACDC		✓
6-Slot Rackmount/Desktop Chassis	AC	✓	
	Dual AC	✓	
	DC		✓
	Dual DC		✓
3-Slot Desktop Chassis	AC		✓
	2AC		✓
	DC		✓
	2DC		✓
	ACDC		✓

Normas Oficiales Mexicanas (NOM) Electrical Safety Statement
Instrucciones de Seguridad

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquear la ventilación. No se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.

16. El cable de corriente deberá ser desconectado cuando el equipo no sea usado por un largo período de tiempo.
17. Cuidado debe ser tomado de tal manera que objecos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
    a. El cable de poder o el contacto ha sido dañado; u
    b. Objectos han caído o líquido ha sido derramado dentro del aparato; o
    c. El aparato ha sido expuesto a la lluvia; o
    d. El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
    e. El aparato ha sido tirado o su cubierta ha sido dañada.

Certifications

UL/CUL: Listed to Safety of Information Technology Equipment, including Electrical Business Equipment.

Class 1 Laser product, Luokan 1 Laserlaite, Laser Klasse 1, Appareil A'Laser de Classe

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste. It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.

Table of Contents

Part Numbers

20-Slot Rackmount Chassis

Part Number	Description
LMC5200A	SNMP Management Module
LMC5207A-R2	20-Slot, w/Dual AC Power
LMC5208A-R2	20-Slot, w/Dual DC Power
LMC5227A-R2	20-Slot, W/Fixed Single AC Power
LMC5228A	20-Slot, w/ACDC Power

Back Up, Spares, Sold Separately

Part Number	Description
LMC5210A-R2	Power Supply Module for LMC5207A-R2
LMC5212A-R2	Power Supply Module for LMC5208A-R2
LMM090	Serial Cable for SNMP, DB9 Male to DB9 Female

6-Slot Rackmount/Desktop Chassis

Part Number	Description
LMC5200A	SNMP Management Module
LMC5203A	6-Slot, w/AC Power
LMC5204A	6-Slot, w/Dual AC Power
LMC5205A	6-Slot, w/Dual DC Power
LMC5206A	6-Slot, w/ DC Power

Back Up, Spares, Sold Separately

Part Number	Description
LMC5213A	DC Power Supply
LMC5214A	AC Power Supply

3-Slot Desktop Chassis

Part Number	Power Supply 2
LMC5233A	3-Slot, w/AC Power
LMC5234A	3-Slot, w/Dual AC Power
LMC5235A	3-Slot, w/DC Power
LMC5236A	3-Slot, w/Dual DC Power
LMC5237A	3-Slot, w/ ACDC Power

Back Up, Spares, Sold Separately

Part Number	Description
LMC5200A	SNMP Management Module includes Black Box and View²
LMC5238A	19 inch Rackmount shelf and screws

1. Specifications

1.1 20-Slot Rackmount Chassis Specifications

Input Specifications:	Dual AC 100 to 240V AC, 50/60Hz, 3.5/1.5A Dual DC -48V DC, 5A ACDC 100 to 240V AC, 50/60HZ, 2A -48V DC, 4.4A
Operating Temperature:	0° C to +50° C (+32° F to +122° F)
Storage Temperature:	Dual AC & ACDC -20° C to +80° C (-4° F to +176° F) Dual DC -20° C to +60° C (-4° F to +140° F)
Humidity:	20 to 90% (non-condensing at +40° C [+104° F])
Shipping Weight	25 lbs (11.3 kg)
Dimensions	5.2"H x 19.0"W x 13.8"D (13.21cm x 48.26cm x 35.05cm)

1.2 6-Slot Rackmount/Desktop Chassis Specifications

Input Specifications:	Dual AC Input 90/264VAC 47-63Hz 1.8A @ 100V 0.8A @ 240V Dual DC Input 35-75VDC, 3.3A
Operating Temperature:	AC -25° C to +50° C (-13° F to +122° F) DC -40° C to +100° C (-40° F to +212° F)
Storage Temperature:	AC -40° C to +85° C (-40° F to +185° F) DC -55° C to +125° C (-67° F to +257° F)
Humidity:	5 - 95% (non-condensing); 0-10,000 ft. altitude
Shipping Weight	13 lbs (5.90 kg)
Dimensions	1.75”H x 17.35”W x 10.65”D (4.45cm x 44.07cm x 27.05cm)

1.3 3-Slot Desktop Chassis Specifications

Input Specifications:	AC 100 to 240V AC, 50/60Hz, 0.75A DC 35V DC to 75V DC Max, 1.6A
Operating Temperature:	AC 0° C to +50° C (+32° F to 122° F) DC -40° C to +50° C (-40° F to +122° F)
Storage Temperature:	AC -40° C to +85° C (-40° F to +185° F) DC -55° C to +125° C (-67° F to +257° F)
Humidity:	5 - 95% (non-condensing); 0-10,000 ft. altitude
Shipping Weight	5 lbs (2.3 kg)
Dimensions	1.73"H x 7.45"W x 8.74"D (4.4 x 19 x 22 cm)

1.3.1 Hardware Feature Matrix

Power Supply	3-Slot Desktop Chassis
Versions	AC, 2AC, DC, 2DC*, ACDC
Type	Fixed
End user replaceable	No
LEDs	Yes
Redundant upgrade on single slot chassis	No

*Trap can be set for exceeding a temperature value

2. Overview: About the High-Density Media Converter System II

2.1 The 20-Slot Rackmount Chassis

The 20-Slot Rackmount Chassis series is a modular chassis platform designed for use with Black Box Simple Network Management Protocol (SNMP) manageable series of modules. The 20-Slot Rackmount Chassis is a 3U high, Rackmountable chassis that features 20 slots for installing application series modules plus an additional slot for installing an SNMP Management Module. Some 20-Slot Rackmount Chassis models are capable of redundant power supply modules. Power supply modules are user-replaceable and hot-swappable.

20-Slot Rackmount Chassis Features

The 20-Slot Rackmount Chassis models are available in dual AC, dual DC and ACDC versions. It offers features such as end-user replaceable power supply modules, temperature monitoring, Last Gasp, and an Alarm Reset Button.

2.2 The 6-Slot Rackmount/Desktop Chassis

The 6-Slot Rackmount/Desktop Chassis is a modular chassis platform designed for use with Black Box Simple Network Management Protocol (SNMP) manageable series of modules. The 6-Slot Rackmount/Desktop Chassis is 1U high, rackmountable, and supports optional redundant power supply modules, as well as an SNMP Management Module.

6-Slot Rackmount/Desktop Chassis Features

The 6-Slot Rackmount/Desktop Chassis offers a line of models including single AC, single DC, dual AC, and Dual DC. It offers features such as redundant power supply modules, temperature monitoring, Last Gasp, and an Alarm Reset Button.

2.3 The 3-Slot Desktop Chassis

The 3-Slot Desktop Chassis series is a modular chassis platform designed for use with Black Box Simple Network Management Protocol (SNMP) manageable series of modules. The 3-Slot Desktop Chassis is a 1U high, rackmountable chassis that can use redundant power supply modules, and supports a SNMP Management Module.

3-Slot Desktop Chassis Features

The 3-Slot Desktop Chassis series offers a line of models including single AC, single DC, dual AC, dual DC and ACDC version. All contain internal fixed power supply modules that are not end-user replaceable. It offers features such as redundant power supply modules, temperature monitoring, Last Gasp, and an Alarm Reset Button.

3. Install the High-Density Media Converter System II

3.1 Installing the 20-Slot Rackmount Chassis

Install the chassis first before installing any modules into a 20-Slot Rackmount Chassis. When installing the chassis, be sure to observe the following precautions to prevent electrical or mechanical damage:

1. Protect the chassis from exposure to sunlight and electrical or magnetic fields.
2. Make sure that the equipment rack remains stable, even with the addition of the chassis and its associated cabling.

To install the 20-Slot Rackmount chassis:

1. Have four #10 screws and four clip nuts available (hardware may vary depending on rack type). The rest of the hardware is supplied with the unit.
2. Locate a suitable location in the rack for installation and secure the clip-nuts onto the mounting rails. Use screws to attach the chassis to the rack.
3. Plug the chassis into a reliable, filtered power source.
4. Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Install the equipment in an environment that is compatible with the maximum ambient temperature (Tma) specified by Black Box.
5. Reduced Air Flow - Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
6. Mechanical Loading - Mount the equipment in the rack so that a hazardous condition does not occur because of uneven mechanical loading.
7. Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring.
8. Reliable Grounding - Maintain reliable grounding of rackmounted equipment. Give particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).
9. All AC and DC versions are intended for use in a Restricted Access Location (RAL).

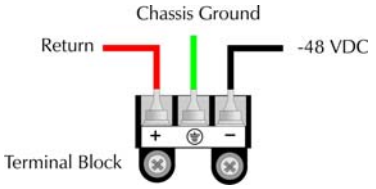
3.1.1 Wiring Instruction Guidelines for DC Module in 2DC and ACDC

1. Connection of a suitable grounding conductor to the grounding terminal at each power supply module (a minimum 14AWG copper conductor should be suitable based on a 15A circuit breaker requirement).
2. Connection of suitable supply wiring to the plus and minus terminals at each power supply module (a minimum 14AWG copper conductors is considered suitable based on the 11A input maximum). The input terminal block at the power supply module is suitable for 22-14 AWG copper wire.

3. A suitable listed circuit breaker shall be provided in the building installation as the unit's disconnect device. The branch circuit rating (i.e. minimum 15A listed circuit breaker, etc.).

DC Power Supply Module Wiring Instructions

The following diagram shows the wiring configuration for a -48 VDC power supply module for the 20-Slot Rackmount Chassis 2DC and ACDC.



NOTE
The chassis is protected against incorrect wiring configurations. When wired incorrectly, the chassis will not function, but no damage will occur.

3.1.2 Installing SNMP Management and Application Modules

To install a module:

1. Remove the blank bracket (if present) covering the slot where the module will be installed. Black Box recommends installing blank brackets in unused module slots.
2. Slide the module into the chassis using the card guides.
3. Secure the module to the chassis by tightening the captive screw. (Refer to the documentation shipped with the module for configuration information.)
4. When installing modules, observe ESD precautions (refer to Chapter 7, Electrostatic Discharge Precautions).

To manage a 20-Slot Rackmount Chassis, install the SNMP Management Module in the appropriate slot of the chassis.

- Install the 20-Slot Rackmount Chassis SNMP Management Module into the first slot of the chassis.

NOTE
This slot is ONLY for the Management Module; do not install Application Modules such as media conversion and mode conversion modules in this slot.

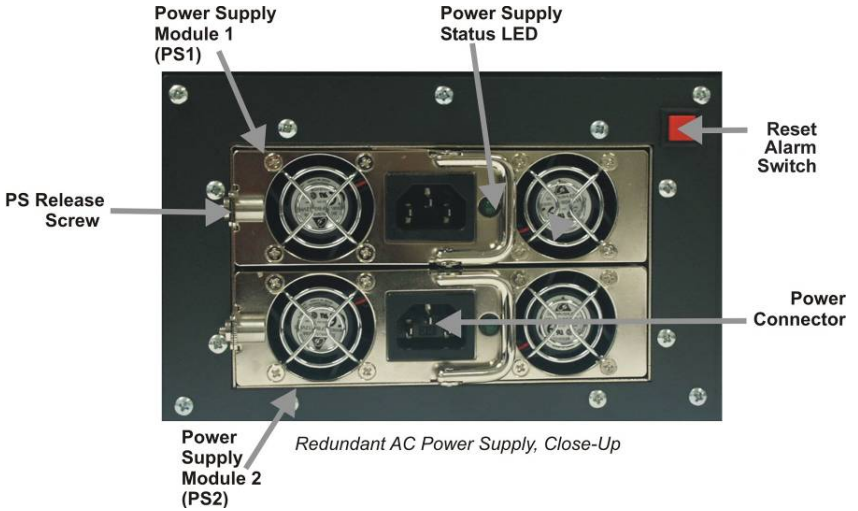
3.1.3 Replacing Power Supply Modules

User-Replaceable Power Supply Modules
While power supply modules are redundant, you should promptly replace failed power supply modules to maintain network integrity and prevent data loss.

To replace a power supply module:

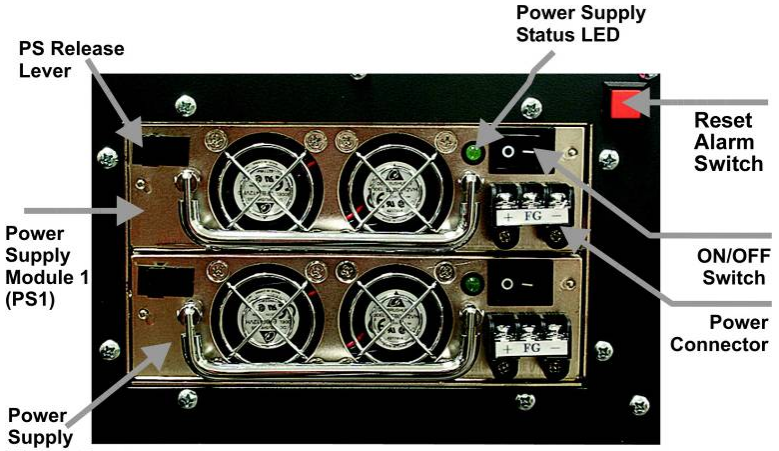
1. Disconnect the power source from the power supply module.
2. Remove the screws of the retainer plate (on some AC modules).
3. Move the Power Supply Release switch toward the right or unscrew captive release screw.
4. Before grasping the power supply module by the silver handle, press the release screw and then slide out of the chassis (Power supply modules are hot-swappable).
5. Install a new power supply module. If module is equipped with an ON/OFF switch install the module with the switch in the OFF position.

Dual AC, Part Number LMC5207A-R2



Redundant AC Power Supply, Close-Up

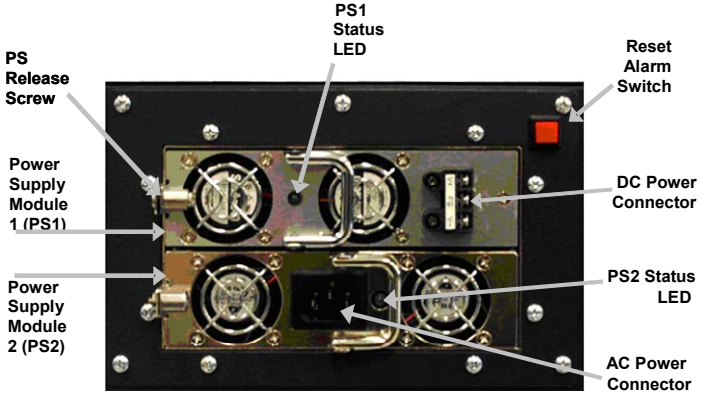
Dual DC, Part Number LMC5208A-R2



Redundant DC Power Supply, Close-Up

NOTE
Do not mix AC and DC power supply modules.

ACDC, Part Number LMC5228A



Redundant ACDC Power Supply, Close-Up

NOTE
For LMC5228A 20-Slot Rackmount Chassis, all models in that model number series can support Dual AC, Dual DC or ACDC. The power supply modules for that model number series are interchangeable.

3.2 Installing the 6-Slot Rackmount Chassis

Install the chassis first before installing any modules into a 6-Slot Rackmount/Desktop Chassis. When installing the chassis, observe the following precautions to prevent electrical or mechanical damage:

1. Protect the chassis from exposure to sunlight and electrical or magnetic fields.
2. Make sure that the equipment rack remains stable, even with the addition of the chassis and its associated cabling.

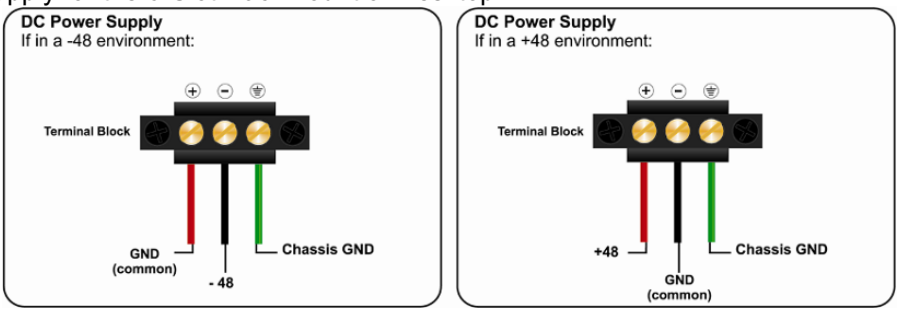
To install a 6-Slot Rackmount/Desktop Chassis:

1. Have four #10 screws and four clip nuts available (hardware may vary depending on rack type). The rest of the hardware is supplied with the unit.
2. Locate a suitable location in the rack for installation and secure the clip-nuts onto the mounting rails. Use screws to attach the chassis to the rack.
3. Plug the chassis into a reliable, filtered power source.
4. Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Install the equipment in an environment that is compatible with the maximum ambient temperature (Tma) specified by Black Box.
5. Reduced Air Flow - Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
6. Mechanical Loading - Mount the equipment in the rack so that a hazardous condition is not achieved due to uneven mechanical loading.
7. Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over current protection and supply wiring.
8. Reliable Grounding - Maintain reliable grounding of rackmounted equipment. Give particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).
9. All AC and DC versions are intended for use in a Restricted Access Location (RAL).

3.2.1 DC Power Wiring, Replacing Power Supply and Fans

DC Power Supply Module Wiring Instructions

The following diagram shows the wiring configurations for -48 VDC power supply for the 6-Slot Rackmount or Desktop.



User-Replaceable Power Supply Modules

The 6-Slot Rackmount/Desktop Chassis ships from Black Box with one or two power supplies installed depending on the model. Chassis ordered with one power supply come with a filler tray installed in the second slot.

To install a second power supply:

1. Remove the filler tray.
2. Slide the power supply module into the chassis and click into place.
3. Attach the power cord.

To remove a power supply module:

1. Disconnect the power source from the power supply.
2. Move the Power Supply Release switch toward the right and hold while grasping the power supply module by the silver handle.
3. Slide out of the chassis. (Power supply modules are hot-swappable.)
4. Install new power supply module.

Fans

Users can define a threshold for fan operation via SNMP (when installed in a managed environment). If a fan's speed falls below the specified level, SNMP sends a trap (configured in iView²) to the administrator. There are also two LED indicators on the SNMP Management Module for fan failure.

The red Alarm Reset Button also functions as a Fan Test button. To verify fan functionality, hold the button down for several seconds; the fans should engage. The fans will turn off when the button is released.

SNMP Management Modules include two twisted pair ports, one for management and one reserved for future use. The Management Module also features a DB9 serial port, and supports SNMP V1/V2c.

3.2.2 Installing Management and Application Modules

Installing Applications Modules

To install a module:

1. Remove the blank bracket (if present) covering the slot where the module will be installed. Black Box recommends installing blank brackets in unused module slots.
2. Slide the module into the chassis using the card guides.
3. Secure the module to the chassis by tightening the captive screw. (Refer to the documentation shipped with the module for configuration information.)
4. When installing modules observe ESD precautions; refer to Chapter 7, Electrostatic Discharge Precautions.

To manage a 6-Slot Rackmount/Desktop Chassis, install the SNMP Management Module in the appropriate slot of the chassis.

- Install the 6-Slot Rackmount/Desktop Chassis SNMP Management Module into the first slot on the far left of the chassis.

NOTE
This slot is ONLY for the Management Module; do not install Application Modules such as media conversion and mode conversion modules in this slot.

3.3 Installing the 3-Slot Desktop Chassis

Install the chassis first before installing any modules into a 3-Slot Desktop Chassis.

When installing the chassis, be sure to observe the following precautions to prevent electrical or mechanical damage:

1. Stay within the chassis' power rating to prevent overload of supply circuits or damage to any overcurrent protection and supply wiring.
2. Maintain reliable ground, especially when connecting to a power strip instead of directly to a branch circuit.
3. Protect the chassis from exposure to sunlight and electrical or magnetic fields.
4. Make sure that the equipment rack remains stable, even with the addition of the chassis and its associated cabling.

Use the 3-Slot Desktop Chassis. as a table-top chassis, mount in a Rackmount shelf, or mount it to a wall surface.

1. Install the 3-Slot Desktop Chassis by placing it on a flat surface.

2. Make sure to leave adequate space on the sides of the unit to accommodate cooling.
3. If mounting on a Rackmount shelf, align holes of the chassis to the shelf and secure with screws.

Rackmounting requires a Rackmount shelf for mounting up to two units side by side. The Rackmount shelf is sold separately. To purchase the Rackmount shelf (part number (LMC5238); visit the Black Box Product Accessories page:

http://www.blackbox.com/Store/Results.aspx/search-LMC5238%5e%5e%5e/p-0

4. Attach the cables between the chassis and the device that will be interconnected, and then plug the unit into a reliable, filtered power source.
5. If mounting the chassis on a wall, place two #10 panhead screws (not supplied) on the wall according to the distance of the holes on the chassis, and then hang the unit on the screws.
6. All versions are intended for use in a Restricted Access Location (RAL).
7. A readily accessible disconnect device shall be incorporated in the building installation wiring.
8. A suitable listed circuit breaker shall be provided in the building installation as the unit's disconnect device. The branch circuit rating should be 15A, and should be listed on the circuit breaker.

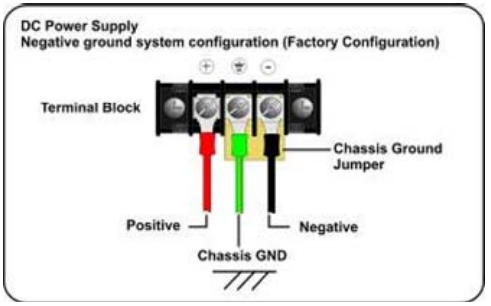
3.3.1 DC Power Wiring, Replacing Power Supply and Fans

DC Power Supply Wiring Instructions

The following image shows the wiring configuration for a 48-VDC power supply in a negative ground system application. For positive ground system applications remove the chassis ground shorting jumper and connect it between the positive terminal and the chassis ground terminal. Alternatively, the chassis grounding jumper can be eliminated and the chassis ground connected at the power source. The ground terminal and the negative terminal are not connected inside the iMediaChassis/3.

DC Power Supply

Negative ground system configuration (default position)



NOTE
Incorrect wiring will result in chassis malfunction. *The 3-Slot Desktop Chassis is compliant with Isolated Grounding Plane practices. The POSITIVE and NEGATIVE terminals are isolated from chassis ground and must have a ground reference at the power-sourcing equipment.*

Power Supply Modules
Power supplies in all models of the 3-Slot Desktop Chassis are fixed, and not end-user replaceable.

Fans
The 3-Slot Desktop Chassis includes temperature-triggered fans. When the temperature of the chassis reaches +104° F (+40° C), the two fans activate to cool the chassis. To test the fans' operation, hold the Alarm Reset Button down for 4 to 5 seconds. The fans will activate and then they will turn off when the button is released. If the fans do not activate, contact Black Box. Fans are not end-user replaceable.

The red Alarm Reset Button also functions as a Fan Test button. To verify fan functionality, hold the button down for several seconds; the fans should engage. The fans will turn off when the button is released.

3.3.2 Installing Management and Application Modules

SNMP Management Modules include two twisted pair ports, one for management and one reserved for future use. The Management Module also features a DB9 serial port, and supports SNMP V1/V2c.

Installing Applications Modules

To install a module:
1. Remove the blank bracket (if present) covering the slot where the module will be installed. Black Box recommends installing blank brackets in unused module slots.
2. Slide the module into the chassis using the card guides.
3. Secure the module to the chassis by tightening the captive screw. (Refer to the documentation shipped with the module for configuration information.)

To manage a Desktop Chassis, install the SNMP Management Module in the appropriate slot of the chassis.

- Install the 3-Slot Desktop Chassis SNMP Management Module into the bottom left slot.

NOTE
This slot is ONLY for the Management Module; do not install Application Modules such as media conversion and mode conversion modules in this slot.

4. Operation

4.1 The 20-Slot Rackmount Chassis

4.1.1 Alarm Reset, Last Gasp, and Temperature Gauge

The 20-Slot Rackmount Chassis series supports power supply modules, so that worn parts can be replaced without having to send an entire unit in for repair.

Reset Alarm Button

When one power supply module malfunctions, an audible alarm sounds indicating the loss of the power module. To silence the alarm, press the Alarm Reset Button, located next to the power connector on the power supply module. If this occurs, remove and replace the power supply module immediately. (LEDs on the Management Module and the power supply module itself also indicate power supply module failures.)

Last Gasp Alarm

The 20-Slot Rackmount Chassis includes the Last Gasp trap feature, "Remote Chassis Down", which sends a Trap when the following occurs:

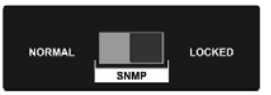
- Both power supply modules malfunction
- Both power supply modules are powered down
- When the AC line fails

Temperature Gauge

The 20-Slot Rackmount Chassis includes a temperature monitoring gauge with a heat sensor on the backplane of the chassis. Users define a threshold for chassis temperature via SNMP. If the chassis' temperature rises above the specified level, the SNMP agent sends a trap (configured in iView²) to the administrator. There is also an LED indicator on the SNMP Management Module for chassis temperature.

4.1.2 SNMP Write Lock

There is an SNMP Write Lock switch located below slot #3 on the front of the 20-Slot Rackmount Chassis. The SNMP Write Lock switch prevents a new management



board from re-configuring the application module settings (e.g., the status of features such as LinkLoss, FiberAlert, Force mode, etc.) made via SNMP on any previous Management Modules.

NOTE
Leave this switch in the NORMAL position during day-to-day operation; the LOCKED position should only be used when changing the SNMP management board.

The SNMP Management Module can be removed and replaced as necessary. Refer to the SNMP Management Module manual for complete instructions about configuration and operation. If an SNMP Management Module is installed, refer to the LED panel below for indicators of Link, Temperature, Power supply modules and other functions.

4.1.3 SNMP Management Module LEDs

The SNMP Management Module features several LEDs. The LED functions are:

LNK/ACT	Glows green when a link is established on port. Blinks green when data activity occurs.
FDX/COL	Glows yellow when port is in Full-Duplex mode. Blinks yellow when port is operating in Half-Duplex mode and collisions occur.
TEMP	Glows yellow when temperature of unit surpasses a user-defined level.
PS	Glows yellow when one module malfunctions.
FAN A / FAN B	Glows yellow when a fan malfunctions.

4.2 The 6-Slot Rackmount/Desktop Chassis

4.2.1 Alarm Reset, Last Gasp, and Temperature Gauge

The 6-Slot Rackmount/Desktop Chassis supports modular power supply modules, so that worn parts can be replaced without having to send an entire unit in for repair. Keeping fans functional ensures that the modules will operate within their temperature specifications.

Alarm Reset Button

When one power supply module malfunctions, an audible alarm sounds indicating the loss of the power supply module. To silence the alarm, press the Alarm Reset Button, located next to the power connector on the power supply

module. If this occurs, remove and replace the power supply module immediately. (LEDs on the Management Module and the power supply itself also indicate power supply failures.) After stopping the alarm, remove the power supply and replace the power supply module.

Last Gasp Alarm

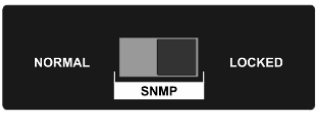
The 6-Slot Rackmount/Desktop Chassis includes the Last Gasp trap feature, "Remote Chassis Down," which sends a Trap when the following occurs:

- Both power supply modules malfunction
- Both power supply modules are powered down
- When the AC line fails

Temperature Gauge

The 6-Slot Rackmount/Desktop Chassis includes a temperature monitoring gauge with a heat sensor on the backplane of the chassis. Users define a threshold for chassis temperature via SNMP. If the chassis' temperature rises above the specified level, the SNMP agent sends a trap (configured in iView²) to the administrator. There is also an LED indicator on the SNMP Management Module for chassis temperature.

4.2.2 SNMP Write Lock



There is an SNMP Write Lock switch located above the SNMP module slot on the front of the 6-Slot Rackmount/Desktop Chassis. The SNMP Write Lock switch prevents a new management board from re-configuring the application module settings (e.g., the status of features such as LinkLoss, FiberAlert, Force mode, etc.) made via SNMP on any previous Management Modules.

NOTE
Leave this switch in the NORMAL position during day-to-day operation; the LOCKED position should only be used when changing the SNMP management board.

The SNMP Management Module can be removed and replaced as necessary. Refer to the SNMP Management Module manual for complete instructions about configuration and operation. If an SNMP Management Module is installed, refer to the LED panel below for indicators of Link, Temperature, Power Supply modules, and other functions.

4.2.3 SNMP Management Module LEDs

The SNMP Management Module features several LEDs. The LED functions are:

LNK/ACT	Glows green when a link is established on port. Blinks green when data activity occurs.
FDX/COL	Glows yellow when port is in Full-Duplex mode. Blinks yellow when port is operating in Half-Duplex mode and collisions occur.
TEMP	Glows yellow when temperature of unit surpasses a user-defined level.
PS	Glows yellow when one module malfunctions.
FAN A / FAN B	Glows yellow when a fan malfunctions.

4.3 The 3-Slot Desktop Chassis

4.3.1 Alarm Reset, Last Gasp, and Temperature Gauge

The 3-Slot Desktop Chassis ships with one or two AC or DC power supply modules, depending on the model. Fans are included in all models.

Alarm Reset Button

When one power supply module malfunctions, an audible alarm sounds indicating the loss of the power supply. The alarm can be silenced by pressing the Alarm Reset Button, located next to the power connector on the power supply module. If this occurs the unit needs to be returned to Black Box for repair.

Last Gasp Alarm

The 3-Slot Desktop Chassis includes the Last Gasp trap feature, “Remote Chassis Down”, which sends a Trap when the following occurs:

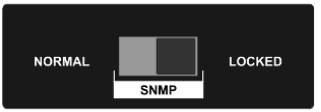
- Both power supply modules malfunction
- Both power supply modules are powered down
- When the AC line fails

Temperature Gauge

The 6-Slot Rackmount/Desktop Chassis includes a temperature monitoring gauge with a heat sensor on the backplane of the chassis. Users define a threshold for chassis temperature via SNMP. If the chassis’ temperature rises above the specified level, the SNMP agent sends a trap (configured in iView²)

to the administrator. There is also an LED indicator on the SNMP Management Module for chassis temperature.

4.3.2 SNMP Write Lock



The SNMP Write Lock switch is located on the back of the 3-Slot Desktop Chassis. The SNMP Write Lock switch prevents a new management board from re-configuring the application module settings (e.g., the status of features such as LinkLoss, FiberAlert, Force mode, etc.) made via SNMP on any previous Management Modules.

NOTE
Leave this switch in the NORMAL position during day-to-day operation; the LOCKED position should only be used when changing the SNMP management board.

The SNMP Management Module can be removed and replaced as necessary. Refer to the SNMP Management Module manual for complete instructions about how to configure and operate. If an SNMP Management Module is installed, refer to the LED panel below for indicators of Link, Temperature, Power Supply modules and other functions.

4.3.3 SNMP Management Module LEDs

The SNMP Management Module features several LEDs. The LED functions are:

LNK/ACT	Glows green when a link is established on port. Blinks green when data activity occurs.
FDX/COL	Glows yellow when port is in Full-Duplex mode. Blinks yellow when port is operating in Half-Duplex mode and collisions occur.
TEMP	Glows yellow when temperature of unit surpasses a user-defined level.
PS	Glows yellow when one module malfunctions.
FAN A / FAN B	Glows yellow when a fan malfunctions.

5. Contacting Black Box

Black Box Customer Service

Order toll-free in the U.S.: Call 877-877-BBOX
(outside U.S. call 724-746-5500)

Free technical support, 24 hours a day, 7 days a week.
Call: 877-877-2269 or Fax: 724-746-0746

Mail order: Black Box Corporation
1000 Park Drive, Lawrence, PA 15055-1018

Web site: www.blackbox.com

E-mail: info@blackbox.com

WARNING	
	Disconnect all power supplies before servicing.

6. Fiber Optic Cleaning Guidelines

Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1. Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2. Dust caps are installed at Black Box to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. If you need to disconnect the fiber device, reinstall the protective dust caps.
3. Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol to remove particles of dirt.

7. Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to any product, add-in modules or stand alone units, containing electronic components. Always observe the following precautions when installing or handling these kinds of products.

1. Do not remove unit from its protective packaging until ready to install.
2. Wear an ESD wrist grounding strap before handling any module or component. If the wrist strap is not available, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold the units by the edges; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static-free surface, ESD pad or in a proper ESD bag. Do not slide the modules or stand alone units over any surface.

WARNING! Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

About Black Box

Black Box provides an extensive range of networking and infrastructure products. You'll find everything from cabinets and racks and power and surge protection products to media converters and Ethernet switches all supported by free, live 24/7 Tech support available in 30 seconds or less.

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