March Networks

X-Series All IP Recorder
Models X32, X48, and X64

Installation Guide

MARCH® networks

A Delta Group Company

Contents

Chapter 1

Mandatory Regulations

You must be familiar with the following mandatory regulations governing the product's operations. You should also adhere to these instructions to ensure the installation meets regulatory compliance.

Regulatory Compliance Statements

Canada - Industry Canada

This Class A digital apparatus complies with Canadian ICES-003.

CAN ICES-3 (A)/NMB-3(A)

United States - Federal Communications Commission

Supplier's Declaration of Conformity

Product Name: IP NDVR
Product Model: NDVR HP
Company Name: March Networks Inc.
The Pinnacle Building
3455 Peachtree Road North East, Suite 500
Atlanta, Georgia 30326
1 800 563 5564

1   This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the installation guide, is liable to cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense. Modifications not expressly approved by the manufacturer could void the user's authority to operated the equipment under FCC rules.

2   This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Europe

This equipment complies with the following EU directives: 2014/30/EU, 2014/35/EU, 2011/65/EU, and (EU) 2015/863. A Declaration of Conformity is available upon request.

Environmental Directive Compliance

March Networks is committed to doing our part to protect the environment. March Networks is compliant with current RoHS and WEEE directives:

• RoHS 2 (2011/65/EU) with RoHS 3 (EU) 2015/863
• WEEE recast (directive 2012/19/EU) and its amendments

Further details on corporate environmental policies and on RoHS and WEEE compliance are available from March Networks customer support.

Battery Notices

CAUTION: There is risk of explosion if any battery is replaced with another battery of the incorrect type. Ensure that you only use the NiCd battery pack and lithium battery provided by March Networks.

NiCd Battery Pack Notice

The unit contains an internal NiCd battery pack that is used during power shortages. The NiCd battery pack may explode, leak, or get hot, causing personal injury if the following precautions are not followed:

• Do not remove the NiCd battery pack and use it in a device other than the recorder.
• The unit has a built-in battery charger. Do not attempt to charge the NiCd battery pack using a different battery charger.
• Replace only with a March Networks NiCd battery pack.
• Do not disassemble the NiCd battery pack.
• Do not open or try to open the individual NiCd battery pack cells.
• Do not dispose of the NiCd battery pack in fire.
• Do not short circuit the NiCd battery pack terminals.

Dispose of the NiCd battery pack in accordance with all applicable federal, state, provincial, and local regulations. Inquire with your local recycling office for recycling guidelines.

Lithium Battery Notice

The unit contains an internal lithium battery that powers the clock and other system operations. Ensure you consider the lithium battery when disposing of the unit. Dispose of the lithium battery in accordance with all applicable federal, state, provincial, and local regulations. Inquire with your recycling office for recycling guidelines.

Avis pour les batteries

ATTENTION: Il y a un risque d'explosion si une batterie est remplacée par un autre type de batterie. Assurez-vous d'utiliser le bloc de batterie NiCd et la batterie Lithium de March Networks.

Avis sur le bloc de batterie NiCd

L'unité contient un bloc de batterie interne qui est utilisé lors de pannes de courant. Le bloc de batterie NiCd peut exploser, couler ou devenir chaud, pouvant causer des blessures si les précautions suivantes ne sont pas respectées :

• Ne pas enlever le bloc de batterie NiCd et/ou l'utiliser à d'autres fins.
• L'unité a un chargeur de batterie intégré. N'utiliser pas un autre chargeur pour charger le bloc de batterie.

- Remplacer seulement avec les blocs de batterie de marque March Networks.
- Ne pas modifier le bloc de batterie NiCd.
- Ne pas ouvrir ou tenter d'ouvrir la batterie individuelle NiCd
- Ne pas jeter le bloc de batterie dans le feu.
- Ne pas court-circuiter les terminaux du bloc de batterie NiCd.

Disposer du bloc de batterie NiCd en accord avec les lois locales, provinciales ou fédérales. Renseignez-vous à votre bureau de recyclage local pour les règles de recyclage.

Avis sur la batterie Lithium

L'unité contient une batterie Lithium interne qui procure du pouvoir à l'horloge interne de l'unité et au système d'opération.

Assurez-vous de considérer la batterie Lithium lorsque vous disposer de l'unité. Disposez de la batterie Lithium en accord avec les lois locales, provinciales ou fédérales. Renseignez-vous à votre bureau de recyclage local pour les règles de recyclage.

Safety Notice

 Caution: risk of electrical shock

 Before you access any components located inside the unit, power down the unit using the power On/Off pinhole (for location, see "Hard Drives" on page 22). After the status LEDs turn off, to prevent injury, disconnect the unit from the power source by removing both power cords from the unit.

Only qualified service personnel should access the inside of the unit.

An AC power cord is provided with a grounded attachment plug. To avoid electrical shock, always use the AC power cord and plug with a properly grounded outlet (connected to earth).

To maintain safety compliance, ensure the AC power cord has the appropriate safety approvals for the country in which the equipment is to be installed. For North America, the AC power cord must be a UL listed SJT NEMA 5-15 equivalent or better.

IP cameras and networks that are directly connected to the recorder must be located indoors only (intra-building). Connect the recorder only to PoE networks without routing to the outside plant.

If you carry or move the recorder unit using the handles on the front panel, always use both handles. Do not attempt to carry or move the unit using only one of the handles.

Do not insert any foreign objects into the fan, vents, ports, or other opening in the unit.

Avis de sécurité

 Attention: risque d'électrocution

 Avant d'accéder aux composantes internes de l'unité, mettez l'unité hors tension à l'aide du trou d'épingle Marche / Arrêt (pour l'emplacement, voir « Hard Drives » à la page 22). Une fois les voyants d'état éteints, pour éviter les blessures, débranchez l'appareil de la source d'alimentation en retirant les deux cordons d'alimentation de l'unité.

Seulement le personnel de service qualifié a le droit d'accéder l'intérieur de l'unité.

Le câble de pouvoir AC est fournie avec un câble de mise à terre. Pour éviter tout choc, utilisez toujours le câble de pouvoir AC relié avec la prise de courant adéquate (contenant une mise à terre).

Pour maintenir votre conformité de sécurité, assurez-vous que le câble de pouvoir AC a obtenu les approbations de sécurité applicables pour le pays ou l'installation est faites. Pour l'Amérique du Nord, le câble de pouvoir AC doit avoir une certification UL SJT NEMA 5-15, équivalente ou meilleur.

Les caméras IP et les réseaux connectés directement à l'enregistreur doivent être situés à l'intérieur uniquement (intra-bâtiment). Branchez l'enregistreur uniquement aux réseaux PoE sans acheminement vers l'installation extérieure.

Si vous transportez ou déplacez l'enregistreur à l'aide des poignées du panneau avant, utilisez toujours les deux poignées. N'essayez pas de transporter ou de déplacer l'unité en utilisant seulement une des poignées.

N'insérez pas d'objets étrangers dans le ventilateur, les évents, les ports ou toute autre ouverture dans l'unité.

Rack Mounting Safety Precautions

You must observe the following installation precautions when mounting the recorder in a rack.

- Ambient temperature: When installing the recorder in a closed rack or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than ambient temperature of the room. Airspace or airflow around the recorder unit must provide ambient air of less than 104° Fahrenheit (40° Celsius) when measured above and below the unit.
- Air flow: Installation of the recorder in a rack must allow sufficient air flow for safe operation.
- Mechanical loading: Installation of the recorder in a rack must ensure that a hazardous condition does not occur because of uneven mechanical loading.
- Circuit overloading: When connecting the recorder to the power supply circuit, ensure that you do not overload the circuit. Consider the effects of circuit overload on overcurrent protection and supply wiring. Use equipment nameplate ratings to verify the requirements.
- Reliable earthing: You must maintain reliable earthing of any rack-mounted equipment. Pay particular attention to connections other than direct connections to the branch circuit (for example, the use of power bars).

Précautions de sécurité pour une installation dans un rack

Vous devez respecter les précautions d'installation suivantes lors du montage de l'enregistreur dans un rack.

- Température ambiante: Lors de l'installation de l'enregistreur dans un rack fermé ou dans un rack comprenant plusieurs étages, la température ambiante de fonctionnement de l'environnement du rack peut être supérieure à la température ambiante de la pièce. L'espace aérien ou le flux d'air autour de l'enregistreur doit fournir un air ambiant inférieur à 40 ° C (104 ° F) lorsqu'il est mesuré au-dessus et au-dessous de l'unité.
- Flux d'air: L'installation de l'enregistreur dans un rack doit permettre un débit d'air suffisant pour un fonctionnement sûr.
- Chargement mécanique: L'installation de l'enregistreur doit garantir qu'aucune condition dangereuse ne se produise en raison d'une charge mécanique inégale.
- Surcharge du circuit: Lorsque vous connectez l'enregistreur au circuit d'alimentation, veillez à ne pas surcharger le circuit. Tenez compte des effets de la surcharge du circuit sur la protection

contre les surintensités et le câblage d'alimentation. Utilisez les spécifications indiquées sur l'enseigne du manufacturier de l'équipement pour vérifier les exigences.

• Mise à la terre fiable: Vous devez maintenir une mise à la terre fiable de tout équipement monté en rack. Portez une attention particulière aux connexions autres que les connexions directes au circuit d'alimentation (par exemple, l'utilisation de barres d'alimentation).

Anti-Static Precautions

Ensure proper use of an anti-static guard during installation to avoid damage to the unit from electrostatic discharge.

Servicing Notice

The procedures contained in this publication outline how to install or service components located inside the unit, requiring the removal of the cover. Installation and maintenance procedures requiring internal unit access are to be performed by qualified service personnel only.

Shipping Notice

Shipment of the unit and components may expose the unit to temperature extremes. We recommend you allow the unit to return to room temperature prior to operation.

Regulatory Model Definition Information

Certification regulatory model names for the X-Series All IP recorder are defined in the following table.

Recorder	Certification Regulatory Model Name
• X64 All IP recorder • X48 All IP recorder • X32 All IP recorder	NDVR HP

Chapter 2

Feature Overview

The 32, 48, or 64 channel X-Series All IP Recorders are scalable recording platforms that support high-resolution IP cameras. The models included are the X32, X48, and the X64.

The X-Series All IP Recorder offers outstanding video compression and storage, and can be managed using the March Networks Command video management platform.

Note: If you want to use an X-Series All IP Recorder in a managed environment, you must use the Command Enterprise Software (the R5 ESM is not supported). To configure the recorder, the Command Config software is required. For more information, see the *Command Enterprise Installation Guide*, the *Command Enterprise and Client User Guide*, and the *X-Series All IP Recorder Configuration Guide*, available from the March Networks Partner Portal website.

This section of the installation guide contains the following information:

Key Features

The X-Series All IP Recorder comes in three different models, the X32, X48, and X64. All models contain up to 8 hard drives and a 2U height. The following table shows the key differences between the different models.

Feature	X32	X48	X64
Total IP Inputs	32	48	64
IP Performance (aggregate)	200 Mbps	300 Mbps	400 Mbps
Hard Drives	Up to 8 hard disk drives		
Mounting	Rack mount: 2U high, 19″ 2 post rack ONLY supported with shelf kit 4 post rack (rails included)		

Some of the key features and benefits of the X-Series All IP Recorder include:

- Video compression for IP cameras — H.265, H.264, MPEG4, MPEG, MJPEG
- High-capacity internal storage — up to 8 SATA hard drives
- You can use the Command Config software application to create a RAID 1 or RAID 5 array (for details, see the *X-Series All IP Recorder Configuration Guide*). RAID 5 includes an optional spare disk. The recorder does not include RAID until you add it using the Command Config software.
- Redundant power supply: Contains two power supply modules. Each power supply module is capable of powering the entire recorder if one of them fails. This minimizes chance of a complete shutdown.
- High temperature shutdown: the recorder shuts down if it gets too hot, and restarts when the temperature drops to a safe level.
- Internal back-up battery for power brown-out protection
- Advanced networking features for unlimited scalability and dependable remote access
- Advanced health management features for centralized support and maximum up-time
- Analytics facilitated via analytics-enabled cameras
- Front panel QR code containing recorder information such as model number and serial number

Packaging/Shipment Contents

The following items are included in each system shipment, and should be located/verified before installation begins:

- X-Series All IP recorder
- AC power cord
- Hard drive caddy keys
- 4-post rack rail kit
- Instructions for downloading software and technical publications from the March Networks Partner Portal website.

Additional Optional Items

- 2-post shelf kit available for purchase from March Networks (part number 34916).
Do **not** install the recorder in a 2-post rack unless you are using this shelf kit.

WARNING: The procedures contained in this guide outline how to install or service components located inside the unit, requiring the removal of the cover. Installation and maintenance procedures requiring internal unit access are to be performed by qualified service personnel only.

When working inside the unit, ensure you take anti-static precautions.

Any attempt to service components of the recorder that are not considered field replaceable will invalidate your warranty. The list of field serviceable parts includes:

- Hard drive with caddy
- Back-up battery
- Fans
- Power supply

Do not power up or operate the unit with the cover removed. The cover ensures the safe operation of the unit. Operating the unit without the cover can expose you to live electric current and can cause the hard drives to overheat.

ATTENTION : Les procédures contenues dans ce guide décrivent comment installer ou réparer les composants situés à l'intérieur de l'unité, nécessitant le retrait du capot. Les procédures d'installation et de maintenance nécessitant un accès interne à l'unité doivent être effectuées uniquement par du personnel de maintenance qualifié.

Lorsque vous travaillez à l'intérieur de l'appareil, assurez-vous de prendre des précautions antistatiques.

Toute tentative de réparation de composants de l'enregistreur qui ne sont pas considérés comme remplaçables sur site annulera votre garantie. La liste des pièces réparables sur site comprend:

- Disque dur avec caddy
- Batteries de sauvegarde
- Ventilateurs
- Source de courant

N'allumez pas et ne faites pas fonctionner l'appareil avec le couvercle retiré. Le couvercle garantit le fonctionnement sûr de l'unité. Faire fonctionner l'appareil sans le couvercle peut vous exposer à un courant électrique sous tension et entraîner une surchauffe des disques durs.

Specifications

This section contains the dimensions, weight, temperature ranges, and power ratings of the unit.

Dimensions
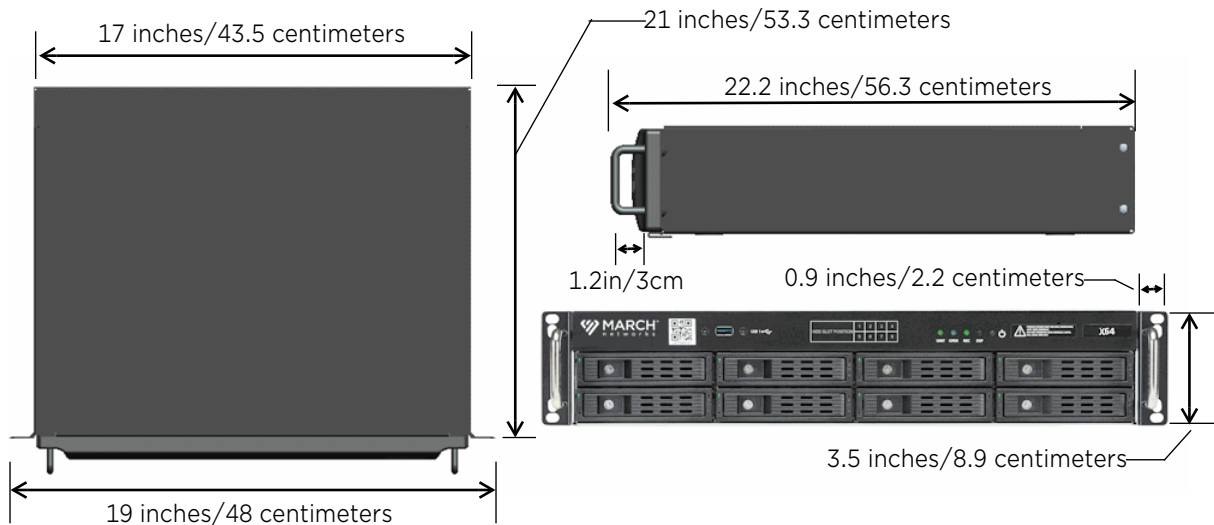
Weight

Recorder unit — 25.64 pounds / 11.63 kilograms (without hard drives)

Each hard drive (HDD) — 1.7 pounds / 0.8 kilograms

Operating and Storage Temperature

Operating temperature: 32 to 104° Fahrenheit / 0 to 40° Celsius

Storage temperature: -40 to 158° Fahrenheit / -40 to 70° Celsius

WARNING: The recorder must be mounted in accordance with the mounting guidelines in this publication to ensure the unit remains within the recommended operating temperature range. For more information, see "Mounting the Recorder" on page 26.

ATTENTION : L'enregistreur doit être monté conformément aux directives de montage de cette publication pour garantir que l'unité reste dans la plage de températures de fonctionnement recommandée. Pour plus d'informations, voir « Mounting the Recorder » à la page 26.

High Temperature Shutdown

This feature ensures that the recorder shuts down if it gets too hot, and restarts when the temperature drops to a safe level. If this occurs, a critical software alert is triggered.

Power Ratings

Power input: 100-240 volts AC input (auto-sensing)

Current rating: 2.5 A

Frequency range: 50-60 Hz

Power consumption: 100 W typical, 150 W maximum

Video Capture Rates

The IP camera input capture rate is dependent on the resolution and quality of the images captured. The X-Series All IP recorders accommodate a total recording rate of up to:

- 400 Mbps for the X64 model
- 300 Mbps for the X48 model
- 200 Mbps for the X32 model

There is no set limit per camera channel.

Front Panel LEDs

The colored LEDs (Light Emitting Diodes) on the front panel of the unit indicate status. Each tricolor LED is marked to indicate which component the LED displays information about. The color of the LED and whether the light is on solid, flashing, or off, gives you information about the recorder.

Front Panel LEDs

UNIT Unit LED The status of the unit.	Green	**Solid:** The unit's software and hardware are operating correctly. **Flashing:** The power On/Off pinhole has been pressed or the AC power has been removed — the system is waiting for software to complete the shutdown of the unit.
	Blue	**Solid:** The operating system is loaded but the unit's software application is still loading. **Flashing:** The unit is booting up after power has been applied, or after a software reboot.
	Red	**Solid:** The hardware watchdog timer has expired and reset the system. **Flashing:** The unit's temperature is too hot for startup. The flashing red unit LED indicates that startup is delayed until the fans cool the unit to an acceptable temperature.
OPER Operation LED The status of the unit's operation.	Green	**Solid:** The software in the unit is operating correctly, and the unit is powered and running.
	Blue	**Solid:** Software is loaded, waiting for confirmation that all required recorder subsystems have started successfully. If blue remains solid, indicates that a recorder subsystem non-critical error has been detected. For non-critical errors use the Command Config or Command Client software to review the health alert and determine a possible resolution. **Flashing:** The operating system is available but the software is still loading.
	Red	A critical error has occurred. Use Command Config or Command Client software application to review the health alert and determine a possible resolution. For more information, see the *X-Series All IP Recorder Configuration Guide* or *Command Enterprise and Client User Guide*, available from the March Networks Partner Portal website.

REC Recording LED The status of the unit's recording.	Green	Actively recording as configured (the recorder may be configured to record continuously or only configured to record when triggered by an alarm or a schedule).
	Blue	There is a recording problem unrelated to the recorder. One or more cameras may be disconnected or offline, or one or more storage groups may be disconnected, offline, or removed.
	Red	A recorder-level problem has occurred which is affecting current recording or will affect future recording.
	Off	The recorder is starting up or is not currently configured to record.
EXP Export LED The status of an export to an external media device.	Green	**Solid:** Media transfer is complete. **Flashing:** Media transfer is in progress.
	Blue	**Solid:** External media device detected. **Flashing:** • A request to export media clips to an external media device has been initiated but the recorder is still logging the media. Exporting will not start until the recorder finishes logging the media. • Media clips are ready to be exported to the external media device but no external device is detected. • The external media device is full. Empty the device or insert a new one.
	Red	Failure of media transfer.
	Off	No external media device is connected or the external device is not usable.

Note: Information about operation and recording errors (indicated by the Operation or Recording LED) can be retrieved using the Command Config or Command Client software.

For more information, see the *X-Series All IP Recorder Configuration Guide* or the *Command Enterprise and Client User Guide*, available from the March Networks Partner Portal website.

Hard Drive Caddy LEDs

Each hard drive caddy has a green and a red LED on the front to provide information about the hard drive.

Hard drive presence indicator LED (green)   Hard drive error LED (red)

Green LED

Indicates that a hard drive is present in the caddy and has power.

Red LED

Indicates that there is a problem with the hard drive in that caddy.

Use the Command Config or Command Client software application to review the health alert and determine a possible resolution. For more information, see the *X-Series All IP Recorder Configuration Guide* or *Command Enterprise and Client User Guide*, available from the March Networks Partner Portal website.

USB Ports

There is one USB 3.0 port on the front of the unit, and two USB 2.0 ports on the back of the unit.

Front USB

There is one USB port on the front of the unit for connection of external peripherals.

The front port provides up to 1 A to power peripherals with a USB cable.

The port supports USB version 3.0 and is USB version 2.0 compatible.

USB 3.0 Port on front (USB 1)

Back USB

Two more USB ports are available at the rear of the unit.

These ports provide connections for external peripherals, provide up to 0.5 A per port to power peripherals with a USB cable, and support USB version 2.0.

Two USB 2.0 Ports on back (USB 2 and USB 3)

Ethernet Ports

There are three Ethernet ports available on the back of the unit.

3 Ethernet Ports and LEDs

Three Ethernet Ports and LEDs

The gigabit Ethernet ports are on RJ-45 connectors, with LEDs to indicate the status of the connection. They each provide a 10/100/1000 BaseT auto-negotiated Ethernet connection on a standard network pinout.

There are three Ethernet ports. The **0/1 Camera** port is for IP camera networks.

The **0/0 Network** is the primary network port and the **0/2 Network** port is redundant.

All network communication defaults over the primary network port. If the connection on the primary port is lost, network communication switches to the redundant port and a health alert is sent.

While using the redundant network port, the recorder monitors the primary port. When the primary port becomes available again, the system reverts back to the primary port.

Important: If managing this recorder with Command Enterprise, when setting up the Network tab of the Enterprise Console, you must ensure that the primary network address is listed first in the Published Addresses list (at the top of the list). For more information, see the *Command Enterprise Installation Guide*, available from the March Networks Partner Portal website.
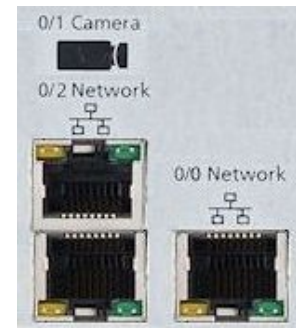
Ethernet port LEDs

Each Ethernet port has colored LEDs that indicate the connection status.

- Amber LED (on solid): A link is established with the point of presence (POP).
- Amber LED (flashing): There is activity on the established link.
- Green LED (on solid): A 1000 BaseT link is negotiated on the port.
- Green LED (off): A 10/100 BaseT link is negotiated on the port.

Default Network Configuration

- 0/0 Network - DHCP (Dynamic Host Configuration Protocol) and LLA (Link-Local Address)
- 0/1 Camera - Static IP: 192.168.0.1/24
- 0/2 Network - DHCP

HD Video Monitor Output

There is an HD video monitor output available on the back of the unit.

HD Video Monitor Output
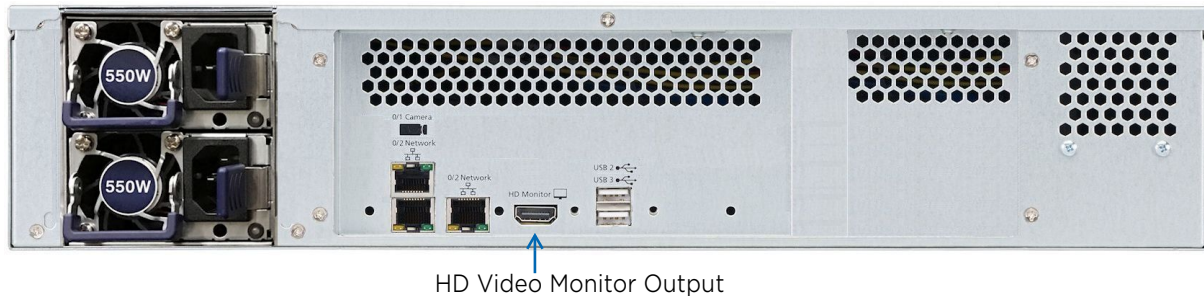
The HD monitor output port incorporates HDMI® technology and allows you to connect an HDMI monitor.

The **HD Monitor 1** port offers up to 4K resolution of 3840 x 2160 @ 30 FPS.

Display Monitor

You can connect a monitor to the HD Output, and use Command Config to configure how the video is displayed (no video is displayed by default). You can configure the display time, choose which cameras to display, add IP cameras, show the cameras in various size grids, and change the order that the cameras display.

For more information, see the *X-Series All IP Recorder Configuration Guide*.

Power Connections for Redundant Power Supply

The power connections for the redundant power supply are located on the back of the unit.

The redundant power supply contains two power supply modules. Each power supply module is capable of powering the entire recorder, if necessary. If one module fails, the other module powers the recorder alone until the failed module is replaced. The switch between the power supply modules is seamless, so that normal use of the recorder is not affected.

2 Redundant Power Supply Modules
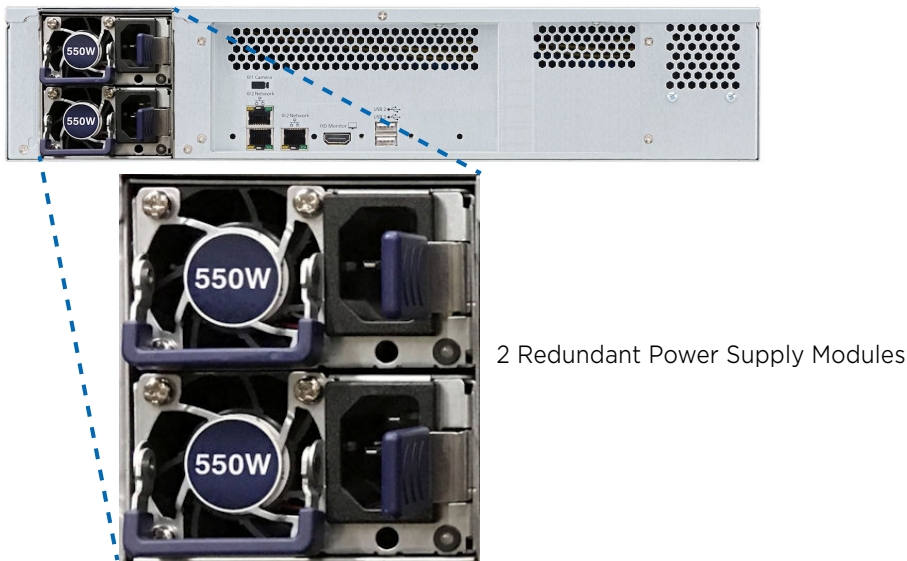
You must connect the unit to two power outlets using two connected AC power cords. If one of the power supply modules is not connected, an alarm sounds and an alert is generated.

- An alarm sounds and a software alert is generated if one of the power supply modules fails or is not connected.
- You can silence the alarm by reconnecting the cable or replacing the failed module.
  See "Replacing a Redundant Power Supply Module" on page 29.
- The LED on the back of the failed power supply module is solid amber. (The LED on a correctly functioning power supply module is solid green.)

Important: Ensure that you only use the AC power cords supplied with your recorder unit. Failure to use the correct power cords can result in damage to the power supply or unexpected power loss.

For the unit's power ratings, see "Specifications" on page 13.

For information on powering the unit, see "Turning the Recorder On and Off" on page 30.

Power Supply Module LEDs

Each power supply module has an LED to indicate status.

Note: The following photo does not show the power cords.

Power supply module

← Status LED

The following table lists the details of the LEDs for the power supply module.

Power Supply Module LED Status

LED State	Power Supply Condition
Off	No AC power available.
Flashing Green	AC power on standby - the system is in the process of shutting down after using the power On/Off pinhole to safely shut down the recorder unit.
Solid Green	AC power available, module is functioning correctly.
Flashing Amber	Power supply warning, but the power supply continues to operate. (Temperature too high, current too high, fan too slow.)
Solid Amber	AC cord unplugged, AC power lost from this module, or module failure. Power supply critical event.

Hard Drives

You can install up to eight hard disk drives (HDD) in the unit.

A table with the HDD slot position numbers is printed on the front of each recorder for easy reference.
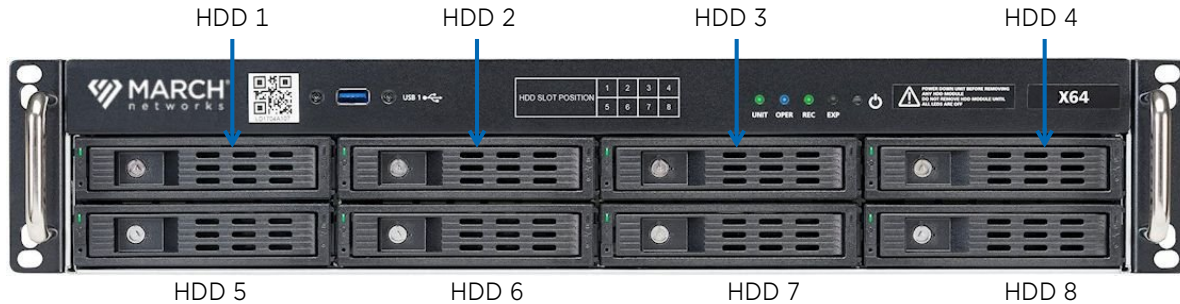
The unit uses Serial ATA (SATA) hard drive technology and SMART monitoring for hard drive health status and early detection of possible faults.

Each hard drive is located inside a lockable caddy which opens with a key, so that you can remove or replace the hard drive. The recorder must be powered off before you open a hard drive caddy.

Hard drive caddy open

Power On/Off pin hole
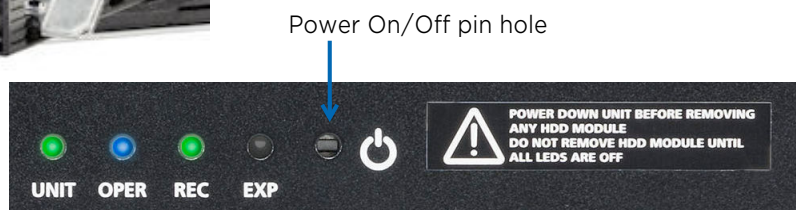
There is a power On/Off opening at the front of the recorder, with a pin accessible button. This power On/Off is only intended for use when you must shut down the recorder to replace a hard drive.

For information about installing hard drives, see "Removing or Replacing Hard Drives" on page 27.

Hard Drive Error LED Status

Hard drive error
LED (red)

When the recorder is operating, the hard drive error LED has the following states:

- **Off**
  Drive is functioning normally.
- **On solid (red)**
  Problem with the drive.
  Use the Command Config or Command Client software application to review the health alert and determine a possible resolution. For more information, see the *X-Series All IP Recorder Configuration Guide* or the *Command Enterprise and Client User Guide*, available from the March Networks Partner Portal website.
- **Flashing**
  If you have configured an optional RAID array using the Command Config software, the hard drives in the RAID array flash while RAID is rebuilding, until the rebuild is complete and stable.

Hard Drive Array - Important Considerations

The following considerations only apply if you have configured an optional RAID array using the Command Config software. The recorder does not include RAID by default.

- When replacing a hard drive in the array, if there is any data on the replacement hard drive, it is wiped before the RAID rebuild starts.

- If you are creating a RAID array, each of the drives in the recorder must be the same capacity to support RAID.
  Note: You cannot rebuild the RAID by replacing a hard drive with a smaller size hard drive. For example, in a RAID configuration with four 12 TB hard drives, you cannot replace one of the drives with an 10 TB hard drive.

- If a health alert informs you that a RAID hard drive has failed for any reason, replace or fix the hard drive as soon as possible to avoid losing any data. RAID Health alerts are monitored using the Command Config software.

- Do not attempt to replace more than one hard drive at a time. Attempting to replace more than one drive at a time can produce unpredicted results and may cause data loss.

- Do not switch drives in the RAID array to different slots, even when replacing a failed drive. This can produce unpredicted results and may cause data loss.

- Do not interrupt the recorder while RAID is in the process of rebuilding. For example, do not attempt to upgrade the recorder while RAID is rebuilding. Wait until the rebuild has successfully completed and RAID is back online.

NiCd Battery Pack and Lithium Battery

There is a NiCd battery pack and a lithium battery inside the unit.

Rear of recorder
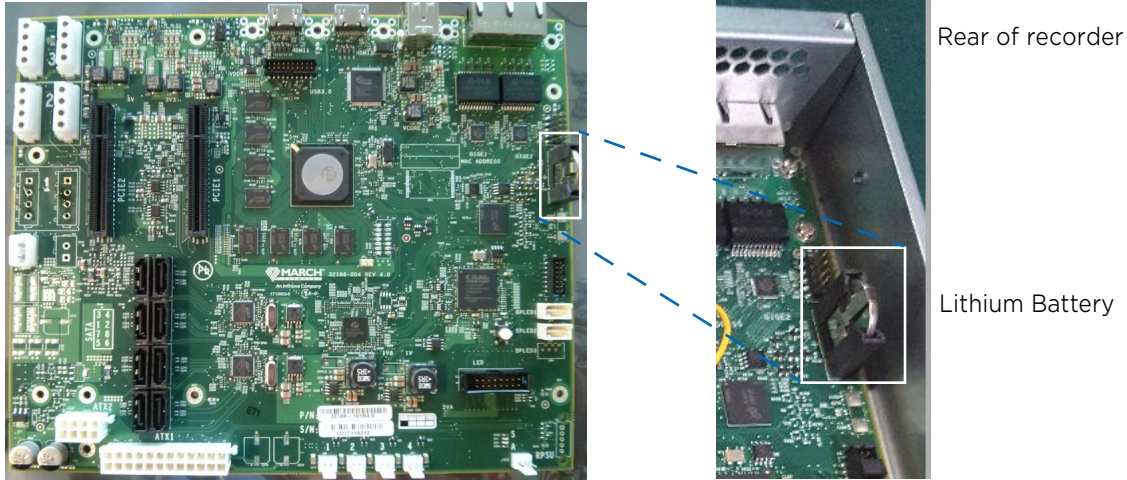
Lithium Battery
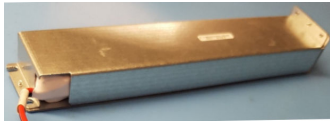
NiCd Battery Pack

Used by the unit to allow graceful shut down during power outages. The unit will perform a graceful shut down if power is removed for more than 15 seconds.

Custom NiCd battery pack supplied by March Networks.

Lithium Battery

Provides backup power for the unit's RTC (Real Time Clock).

WARNING: Before you replace the batteries, read the "Battery Notices" on page 6. Only use approved batteries in the unit. Before you replace the batteries, power down the unit. Ensure the LEDs at the front of the unit are all off before you remove the cover.

ATTENTION : Avant de remplacer les piles, lisez les « Avis pour les batteries » à la page 6. Utilisez uniquement des piles approuvées dans l'appareil. Avant de remplacer les piles, éteignez l'unité. Assurez vous que les voyants LED à l'avant de l'unité s'éteignent avant de retirer le couvercle.

Chapter 3

Unit Setup

This section of the guide provides instructions for setting up the unit. It includes the following tasks:

- "Mounting the Recorder" on page 26
- "Removing or Replacing Hard Drives" on page 27
- "Replacing a Redundant Power Supply Module" on page 29
- "Turning the Recorder On and Off" on page 30

Once the preliminary setup is complete, specify the recorder's initial configuration using the Command Config software, downloaded directly from the recorder. For initial setup instructions, see the *X-Series All IP Recorder Quick Start Guide*.

Then, specify basic device configurations using the Command Config application software. For more information, see the *X-Series All IP Recorder Configuration Guide*, available for download from the March Networks Partner Portal website.

Note: The All IP X-Series recorder does not support management by an ESM. If you want to use an All IP X-Series recorder in a managed environment, you must use the Command Enterprise Software. For more information, see the *Command Enterprise Installation Guide* and the *Command Enterprise and Client User Guide*.

Mounting the Recorder

Rack-mount the unit in a standard 19-inch 4-post server rack. The mounting rack rails are included with the recorder.

WARNING: Do NOT attempt to mount the recorder in a 2-post server rack unless you are using the March Networks server shelf (part number 34916).
If you do not have the server shelf, you must mount the recorder in a 4-post server rack.

ATTENTION : N'essayez PAS de monter l'enregistreur dans un rack de serveur à 2 montants, sauf si vous utilisez l'étagère de serveur March Networks (numéro de pièce 34916).
Si vous ne disposez pas de l'étagère du serveur, vous devez monter l'enregistreur dans un rack de serveur à 4 montants.

Important: Ensure that you read the "Rack Mounting Safety Precautions" on page 8 before you mount your recorder in a rack, and conform to all the safety precaution instructions.

Important : Assurez-vous de lire les « Précautions de sécurité pour une installation dans un rack » à la page 8 avant de monter votre enregistreur dans un rack, et conformez-vous à toutes les consignes de sécurité.

To rack-mount the recorder in a 4-post rack

1   Position the recorder in the appropriate position.

2   Using the included rack rails, attach the recorder to the rack. For details, consult the documentation accompanying the rack rails.

To rack-mount the recorder in a 2-post rack using the shelf

Instructions for mounting the recorder using the server shelf are available from the March Networks Partner Portal website.

Note: You can optionally desk mount the recorder. To ensure the unit meets the recommended operating temperature, the unit must be desk-mounted in a location that ensures that it is unobstructed on all sides.

Removing or Replacing Hard Drives

This section describes how to remove the hard drives from the main unit and how to replace them. The unit can support up to eight hard drives.

Note: Do not insert a hard drive from a recorder other than an All IP X-series. The All IP X-series does not support hard drives from an 9000 series recorder (or any other recorder series).

WARNING: Power down the unit using the power On/Off pinhole before removing any hard disk drive module. Do not remove the HDD module until all LEDs are off.

ATTENTION : Mettez l'unité hors tension à l'aide du trou d'épingle On / Off avant de retirer tout module d'unité de disque dur. Ne retirez pas le module HDD tant que tous les voyants LED ne sont pas éteints.

Important if you have configured a RAID array:

The following considerations only apply if you have configured an optional RAID array using the Command Config software. The recorder does not include RAID by default.

- When replacing a hard drive in the array, if there is any data on the replacement hard drive, it is wiped before the RAID rebuild starts.
- If you are creating a RAID array, each of the drives in the recorder must be the same capacity to support RAID.
  Note: You cannot rebuild the RAID by replacing a hard drive with a smaller size hard drive. For example, in a RAID configuration with four 12 TB hard drives, you cannot replace one of the drives with an 10 TB hard drive.
- If a health alert informs you that a RAID hard drive has failed for any reason, replace or fix the hard drive as soon as possible to avoid losing any data. RAID Health alerts are monitored using the Command Config software.
- Do not attempt to replace more than one hard drive at a time. Attempting to replace more than one drive at a time can produce unpredicted results and may cause data loss.
- Do not switch drives to different slots, even when replacing a failed drive. This can produce unpredicted results and may cause data loss.
- Do not interrupt the recorder while RAID is in the process of rebuilding. For example, do not attempt to upgrade the recorder or place the recorder in investigation mode while RAID is rebuilding. Wait until the rebuild has successfully completed and RAID is back online.

Installation Requirements

The following are included in the packaging with the hard drive:

- four (4) screws for each hard drive (used to secure the hard drive to the bracket)

To remove or replace a hard drive

1 Power down the unit using the power On/Off pinhole. Insert a paper clip into the hole and press gently to power down the recorder safely. Using the power On/Off pinhole ensures a graceful shutdown.

   Important: Wait for the front panel LEDs to turn off completely before you open a caddy.

Power On/Off pin hole

LEDs are off

2   If you are replacing an old hard drive, identify the caddy that contains the hard drive you want to replace and insert the key into the door lock.

Turn the key and pull the caddy door open. You can now slide the caddy out of the unit.

Unit with open hard drive caddy

3   Loosen the four screws at the sides of the caddy hard drive bracket (two each side) and remove the hard drive from the caddy.

Note: Set the screws aside - you will use them to re-attach the hard drive.

screw   Side view of caddy   screw
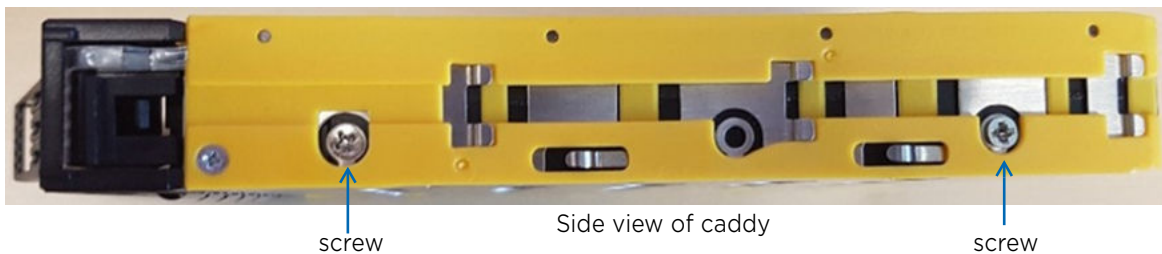
4   Insert the new hard drive into the caddy bracket using the provided screws (four for each hard drive).

The side of the hard drive with the exposed electronics must be facing down (the label facing up).

Install and tighten the two screws on one side of a hard drive before installing and tightening the two screws on the other side. When tightening the screws, use 4.3 in-lbs (inch pounds) of torque.

5   Slide the caddy back into the recorder unit, close the door, and turn the key to secure the hard drive.

6   Use the power On/Off pinhole to restart the recorder. Insert a paper clip into the hole and press gently to power up the recorder safely. The front panel LEDs allow you to monitor the recorder as it starts up.

Replacing a Redundant Power Supply Module

On each unit, the power supply has two modules. Each power supply module is capable of powering the entire recorder, if necessary. If one module fails, the other module powers the recorder alone until the failed module is replaced. You must replace a failed power supply module as soon as possible in order to ensure that the unit does not lose power completely.

Replacing a Redundant Power Supply Module

The power supply modules have a lever at the right side of each module to unlock the module from the recorder unit. The functioning power supply module remains plugged in so that the recorder never loses power during the replacement process.

To replace a redundant power supply module

1   The LEDs on the back of the power supply modules indicate which module has failed and requires replacing. Only unplug the power cord from the failed module. DO NOT unplug the functioning module.
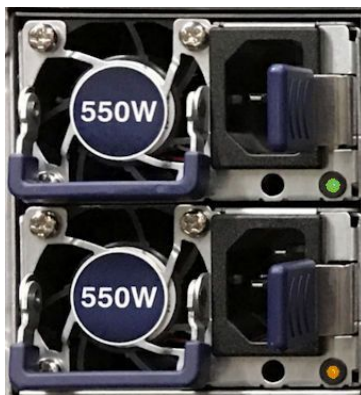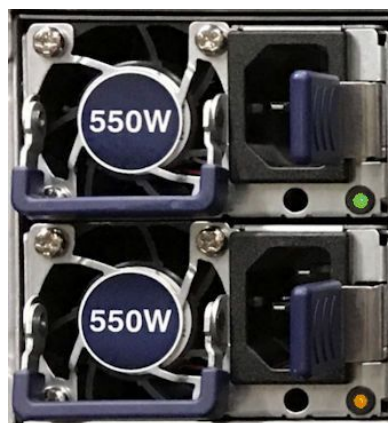

Note: Photo does not show power cords. Do not unplug functioning module.

Green LED indicates this module is functioning correctly

Amber LED indicates failure

2   On the module that you want to replace, move the lever at the right of the module to the left to unlock the module from the recorder unit.


Move this lever to the left

Handle of module

3   Lift up the handle of the module and use it to pull the module out of the recorder.

4   Insert the new power supply module into the recorder until it clicks into place.

5   Plug the AC power cord into the new power supply module.

The LED on the new module turns green to indicate that it is functioning correctly.

Turning the Recorder On and Off

The unit has power connectors on the back of the unit to plug in the two AC power cords (for the redundant power supply).

There is a power On/Off pinhole on the front of the recorder.

Power connectors

Power On/Off pin hole

LEDs are off
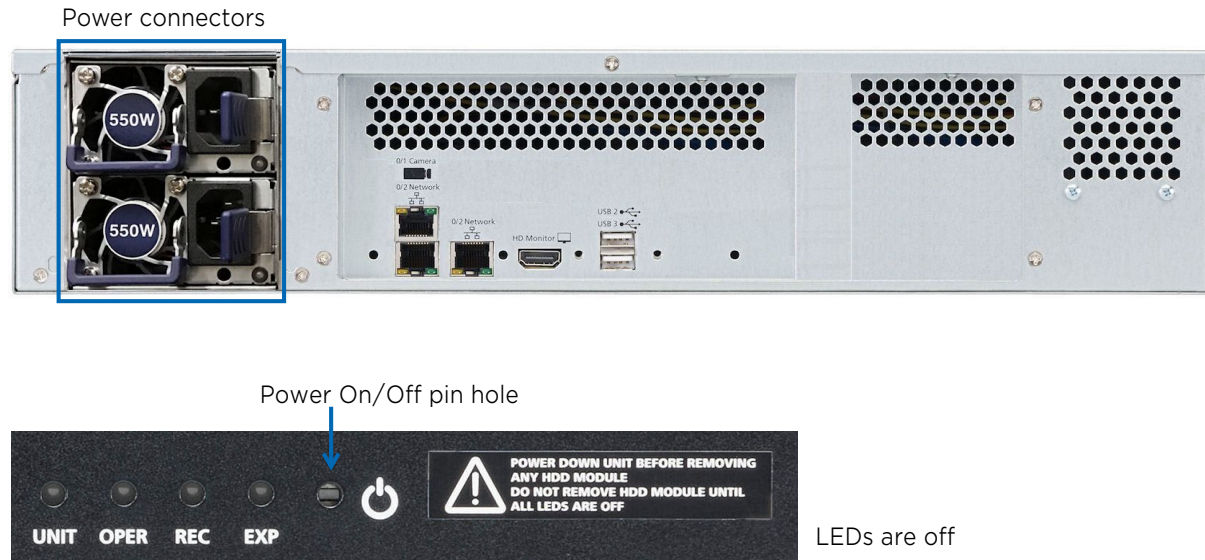
To turn the recorder off and on gracefully

1   Insert a paper clip into the power On/Off pinhole and press gently to power down the recorder safely. Using the power On/Off pinhole ensures a graceful shutdown.

    Important: Wait for the front panel LEDs to turn off completely. This indicates that the recorder is safely powered off.

2   To turn the recorder back on, insert a paper clip into the power On/Off pinhole and press gently to power up the recorder safely.

    The front panel LEDs allow you to monitor the recorder as it starts up.

Glossary

Command Config

A configuration and management software tool that allows you to customize and maintain recorders. This tool can be downloaded directly from the X-Series All IP recorders.

FPS

Frames per second. A measurement of the streaming rate, at which the video is recorded.

LED

Light emitting diode. Indicates the recorder's status.

NiCd battery

Nickel-Cadmium battery. Provides backup power during power shortages.

PCBA

Printed Circuit Board Assembly.

RAID

Redundant Array of Independent Disks. A data storage method that combines multiple physical disk drives into one or more logical units for data redundancy and performance improvement.

Recorder

Devices at your site that capture, store, and stream audio, video, and text data from connected devices.

SATA

Serial ATA (Serial Advanced Technology Attachment). A standard for connecting hard drives to a motherboard. The SATA standard is based on serial signaling technology.

SMART

Self-Monitoring Analysis and Reporting Technology. An interface between the recorder and the hard drive.

USB

Universal serial bus. An interface between the recorder and add-on devices.

Company Overview

March Networks® helps organizations transform video into business intelligence through the integration of surveillance video, analytics, and data from business systems and IoT devices. Companies worldwide use our software solutions to improve efficiency and compliance, reduce losses and risk, enhance customer service and compete more successfully. With deep roots in video security and networking, March Networks is also recognized as the leader in scalable, enterprise-class video management and hosted services. We are proud to work with many of the world's largest financial institutions, retail brands, cannabis operators and transit authorities, and deliver our software and systems through an extensive distribution and partner network in more than 70 countries. Founded in 2000, March Networks is headquartered in Ottawa, Ontario, Canada. For more information, please visit *www.marchnetworks.com*.

Customer Support and Assistance

Certified partners can telephone our Technical Support team Monday to Friday during business hours or email at any time.

North America, South America, & Asia Pacific

Telephone – 1 613 591 1441
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Email – techsupport@marchnetworks.com

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Email – supporteurope@marchnetworks.com

If you have purchased a March Networks solution through one of our Certified Partners, please contact your representative directly for first level technical support and assistance with RMA services.