MARCH networks
A Delta Group Company

X0412 Series Hybrid Recorders

12-Channel Recording Platform with optional PoE



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The **12-Channel X-Series Hybrid Recorder** — the 10th generation offering from March Networks offers a comprehensive suite of client interfaces that allow you to get your job done faster — from installation to investigation — with this appliance-based hybrid NVR as the backbone. This recording platform reinforces our reputation for manufacturing the most robust, reliable, and feature-rich recorder on the market, and allows you to migrate from 100% analog to 100% IP video at your own pace.

The X-Series Recording Firmware is the powerhouse behind the scenes that enables the efficient recording, storage, and retrieval of video for all of your organization's cameras and transaction data. A host of advanced features help to insure an easy setup, intuitive health reporting, and a fault-tolerant system.

Key Benefits

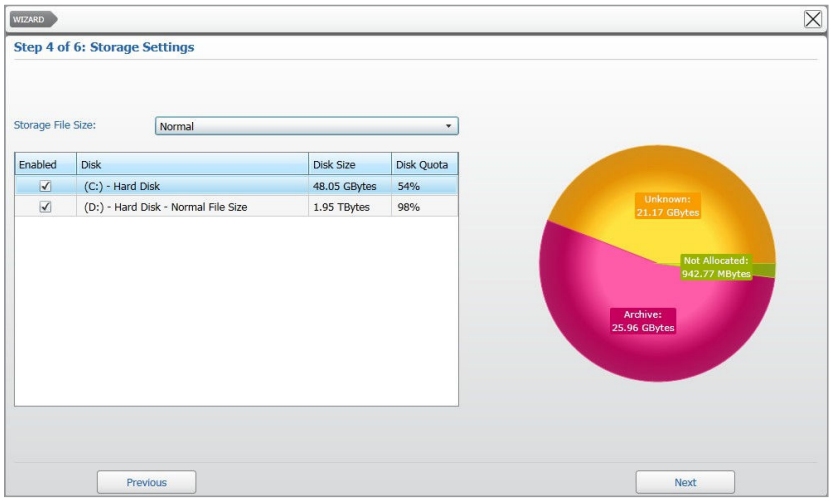
- **Powered by Nvidia System on a Chip (SoC).** SoC technology includes both the hardware and firmware, so it uses less power, has better performance, requires less space and is more reliable than multi-chip systems.
- **High capacity and performance.** The recorder supports 12 concurrent connections at 1080p (primary channel) with an aggregate bandwidth of 300 Mbps.
- **AI-enabled architecture.** A dedicated AI engine powers future analytics applications.
- **AI-powered analytics.** The recorder supports object recognition (face detection, person detection).
- **Encryption at rest.** Prevent potential cybersecurity issues from accessing the recorder's data by ensuring that data is encrypted when on the hard drive.
- **Embedded, Linux-based, and purpose-built.** Spend more time performing investigations and less time dealing with maintenance issues that can plague a COTS-based recorder.
- **All camera licenses included.** No need to pay for separate channel licenses; benefit from a full-featured recording platform right out of the box.
- **No external switch required.** An optional 4-port PoE network eliminates the need for external switching hardware
- **Configurable recording policies.** Record video based on user-definable variables, including schedule, motion, analytics, etc.
- **Real-time health monitoring.** Be alerted to camera, recorder and network issues within seconds.
- **Network policies for bandwidth protection.** Maximize system performance with features like max retention settings, multi-sector archiving, and selective video recording.
- **Front panel QR code.** Use March Networks' free GURU Smartphone App to scan the recorder's QR code to check warranty status and serial number.
- **Powerful video management software.** With March Networks Command™ Enterprise Software, you'll be equipped with the features and tools you need to easily manage your video surveillance system.

The X0412 Series Recorders are compliant with the National Defense Authorization Act (NDAA) FY19.

Configure basic functions in six easy steps

Command Config is an intuitive tool that allows you to quickly configure the basic functionalities of your recorder's firmware in just six steps. No training or user manual required...the wizard guides you through the process so you're able to record, stream live video, and play back archived video evidence in minutes.

- Specify the system name and change the administrator password
- Add IP video channels
- Enable/disable the cameras, and specify video settings
- Add storage disks and configure archive settings
- Configure recording settings (continuous and programmed recording)
- Create and customize local user profiles



Use Command Config to add the system disks (including external USB drives) for video storage

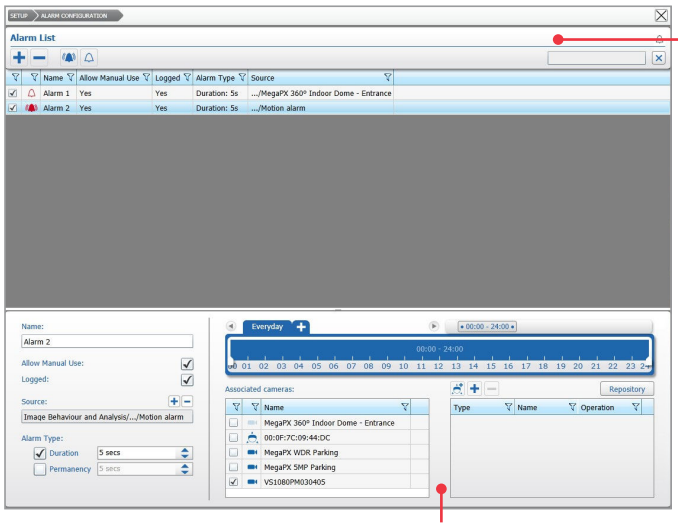
Infrastructure-friendly storage and management

The X-Series firmware is equipped with a myriad of built-in features to help maximize overall system performance, including the ability to manually select parameters that significantly save on storage space, use less bandwidth, and cut CPU usage.

- **Maximum retention settings.** You can specify policies for how long a drive will store video before that video is overwritten, for example 30 days. By putting limits on the maximum retention time, you can ensure you are compliant with your recording and retention policies.
- **Multi-sector archiving.** Save storage space and preserve video quality where it's needed most. Accommodate different recording conditions on different sectors, and select the parameters required for specific scenarios. For example, sector one could have a group of cameras recording 24/7 at low resolution with 90 days' worth of retention, while sector two could have a group of cameras recording for 30 days at high-res, but only when motion is detected.
- **Selective video recording.** Instead of continuously recording video from all cameras 24 hours a day, seven days a week, you can restrict the amount of video being recorded and stored. For example, you can indicate the specific dates and times you want to record. Or you can record only when an event happens. Additionally, you can specify pre- and post-recording parameters.
- **Video removal.** If you no longer need a specific part of the archived video evidence, or need to purge it for legal reasons, you can delete all video evidence recorded in the specified time interval and free up storage space.

Sophisticated alarm and event configuration

You can create and customize alarms using a variety of parameters, e.g., motion, schedule, analytics, or combinations of multiple parameters. You can also select which cameras are triggered after an alarm/event, launch PTZ actions, and automatically send email notifications. These powerful and customizable alarm policies, which include pre- and post-alarm recording, can be programmed even in an unmanaged environment (no Command Enterprise Software required).



Alarm List Panel

- *Create, filter, select and turn on/off the available alarms*
- *Create alarms based on any condition in the condition tree*

The Alarm Configuration page allows you to create and customize alarms.

Settings Panel — *Manage and configure the available alarms and their schedules*

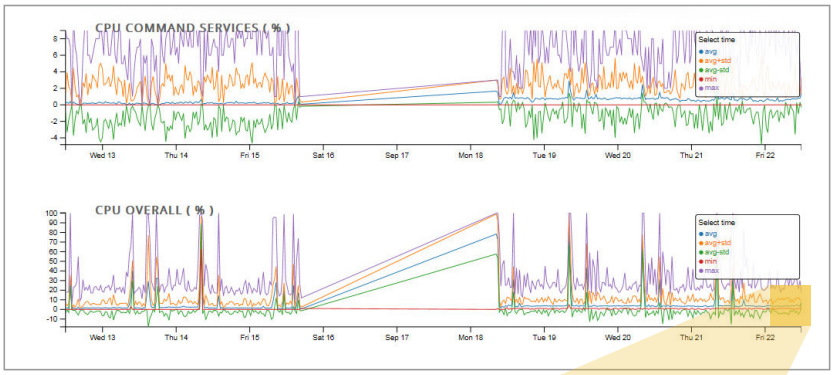
Assess your system's performance at-a-glance

You've configured your cameras to stream at .5 Mbps, but the bitrate is now mysteriously at 2 Mbps. Is this because there's more activity in the scene? Is the bitrate spiking during the day, then going back down at night? Or is the bitrate slowly creeping up, which can sometimes happen with older cameras, and perhaps you need to automatically initiate a camera reboot once a month?

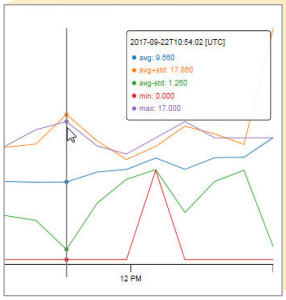
The statistics dashboards provide comprehensive data on things like system performance, recording performance, and ingress/egress bitrate, presented in easy-to-read, color-coded charts and graphs.

The ability to evaluate this data over the last 30 days allows you to uncover trends and potentially pinpoint root causes before technical support needs to intervene.

- Scroll through, and zoom in on, a chart to get a more granular look
- Modify a chart's scale
- Export the data to an excel file
- Download the charts for offline reviewing
- Send data to technical support for quicker resolution



Sample dashboard showing statistics about CPU usage



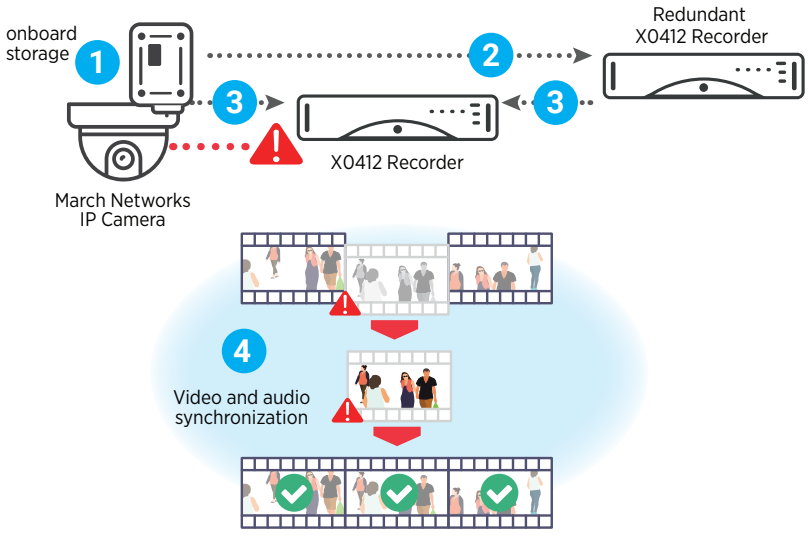
Move the mouse on the chart to display the values corresponding to the cursor position

Complete fault tolerance minimizes risk of losing video

Your video will always be available, even when your network and/or your recorder aren't. The innovative Shadow Archive feature allows for seamless access to recorded video for total fail-safe management. Here's how it works.

If the primary recorder goes down, backup recording immediately kicks in, in one of two ways:

1. The camera can automatically record to its internal storage. ***OR***
2. The redundant recorder can start recording in place of the offline recorder.
3. When the primary recorder comes back online, the video is transferred back to it, from either the camera or the redundant recorder.
4. That "missing" video and audio are reintegrated into the recorded video in the exact appropriate spot.



X0412 Series Recorders with optional PoE

VIDEO

Channel Capacity	30fps at up to 1080p primary channel; 15fps at D1 secondary channel
Video Compression	H.265, H.264, up to 4K resolution
Max Analog/ IP Camera Inputs	4/12
IP Camera Performance	300 Mbps
Video Output	HDMI, display port
HD Analog Supported Formats	TVI, CVI, AHD

AUDIO

Analog Audio Inputs	4, unbalanced, 10kΩ, 1Vp-p typical
Analog Audio Outputs	2, unbalanced, 600Ω, 1Vp-p
Analog Audio Codec	Linear PCM (LPCM), uncompressed, 16 bit/128kbps

NETWORK

Network 1	GigE port for connection to corporate network
Network 2	GigE port for connection to camera network
4-Port PoE	Optional
Security	Industry standard TLS 1.2 with strong AES encryption, HTTPS encryption, strong hashing algorithms SHA256, continuous security vulnerability assessment
Interface	10/100/1000Base-T Ethernet (3 x RJ-45)

SYSTEMS / NETWORK MANAGEMENT

Bandwidth Scheduling	Yes
Adaptive Bandwidth	Yes
Remote Connection	TCP/IP (IPv4)
Concurrent Remote Connections	No set limit
Internal Battery	Enables systematic shutdown; no external UPS connection required

ANALYTICS

Included	Motion detection, face detection, person detection
Optional	Camera obstruction

STORAGE

Internal Hard Drives	1-2 2.5" HDDs
Individual Drive Capacity	Up to 2 TB
Total Storage Capacity	With/Without RAID: Up to 4 TB With RAID/RAID1: 2 TB usable
Drive Type	Serial ATA (SATA)
Mirroring	Yes

HARDWARE

SOC	Nvidia Jetson Platform
CPU	4 ARM core 64 bit processors
GPU	Up to 128 GPU cores

ALARM INPUTS/OUTPUTS

Alarm Inputs	6 current loop inputs, supporting open and closed detection
Relay Outputs	4 relay switch outputs (30 Vdc, 1 A); programmable event driven

PHYSICAL

Dimensions (LxWxH)		20.9 x 17.8 x 6.7 cm (8.2 x 7.0 x 2.6 in)
Mounting		Wall mount, desktop
Weight:	**Recorder**	1.5 kg (3.13 lb)
	Hard Drive	Add 0.11 kg (0.25 lb) per HDD

ENVIRONMENTAL

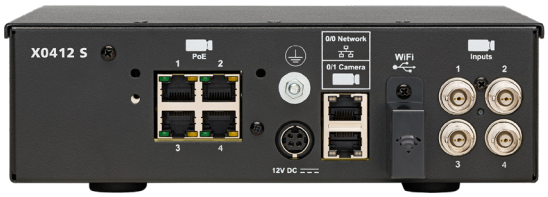
Operating Temperature	+5 ºC to +40 ºC (+41 ºF to +105 ºF)
Heat Dissipation	Maximum 255 BTU per hour (system plus 2 hard drives)
Humidity	5-95% RH, non-condensing
Storage Conditions	-40 ºC to +70 ºC (-40 ºF to +158 ºF)

ELECTRICAL

External Power Supply	no PoE: 100-240 Vac (auto-sensing) 50/60 Hz 1.7 A 65 W PoE: 100-240 Vac (auto-sending) 50/60 Hz 2.0 A 120 W
Power Consumption	no PoE: max. 40 W PoE: max. 100 W

REGULATORY

Regulatory Model	HDVR LS
Safety	IEC/EN62368-1, UL/CSA62368-1
EMC	FCC 47 CFR Part 15, Subpart B, ICES-003, EN55032, CISPR 32, AS/NZS CISPR 32, EN61000-3-2, EN 61000-3-3, EN50130-4, EN55035
Environemental	RoHS, WEEE
Compliance Marking	CE, cULus, UKCA, RCM, WEEE, NOM



3-year warranty on all recorders:

- Options for Repair & Return or Advance Replacement
- March Networks incurs all shipping costs—both ways—for AR's
- All recorder components are covered, including HDDs

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