davicom

Your Complete Remote Site Management Solution for Public Safety Repeater Networks

Dealer's Guide

Why Monitoring Matters

A network of repeater sites is much more than just radios. It includes generators, UPS systems, HVAC units, batteries and the repeaters themselves. All these components must work together to maintain reliable communications. But when sites are spread across large regions and located in remote, hard-to-access areas, every service call becomes a serious expense in time, fuel and technician availability.

This is why adopting a remote monitoring approach like Davicom's is not only smart, it is essential. With a system like ours in place, every site visit becomes an opportunity to save money. You know exactly where the problem is before anyone leaves the office. You bring the right part with you. You avoid wasted trips and fix issues faster.

In today's labor environment, this matters more than ever. Technical teams are stretched thin and must support more sites with fewer resources. Their time is valuable. Davicom's remote site management tools protect that time by turning reactive work into smart proactive service. The result is better uptime, fewer surprises and a more efficient operation.

Why choose Davicom?

Customizable

Choose the features that fit your needs

Scalable

The scalable architecture adapts to any type of deployment and allows for future expansion

Reliable

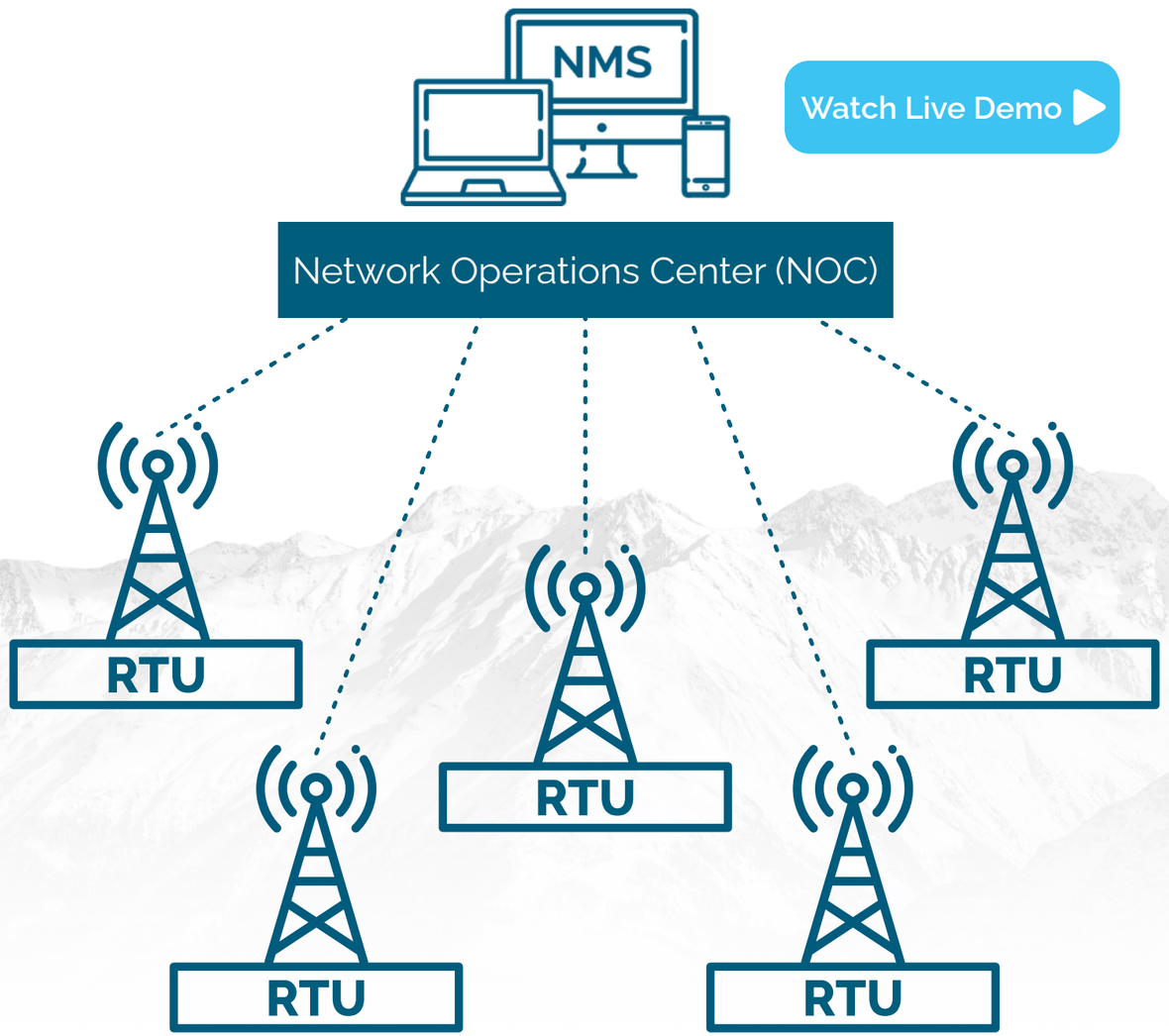
Trusted by thousands in the public safety industry

Accessibility

The flexibility of Davicom systems puts it within reach of all budgets

Network Diagram

Davicom's solution consists of installing an autonomous RTU at each repeater site with the possibility to add a centralized Network Management System (NMS) at the NOC. Each RTU continuously monitors local equipment and autonomously sends alarms and data back to the NMS, or directly to technicians via email depending on the setup. When these two systems are paired together, they offer complete visibility and control across the entire network ensuring reliable and efficient site operations even during communication link failures.



RTUs

Simple GPIO Monitoring

AXON

- Basic automation and control
- Up to 8 analog inputs, 8 digital inputs or 5 relay outputs
- Distributed and granular monitoring
- List view interface
- SNMP agent for NMS integration
- Can serve as I/O expansion for Davicom CORTEX units

Flexible & Scalable GPIO Monitoring

NEURO

- Configurable up to 40 analog inputs, 40 digital inputs or 10 relay outputs
- Uses the same intuitive interface and software core as the AXON
- Modular I/O design using NIO cards
- Serial port for radio alarms and remote commands
- SNMP agent for NMS integration
- Ideal for custom-fit deployments where a single AXON is not enough

Advanced GPIO & Network Monitoring

SERIES CORTEX

- Powerful SNMP manager and Modbus master
- Fully customizable graphical user interface
- Analog inputs, digital inputs and relay outputs
- Built-in network ping monitoring
- Fixed I/O configuration, expandable up to 256 total I/O (with expansion units)
- Full logic processing, counters, activity monitor and schedulers for smarter alarms and automation

Network Management Software

Centralized Visibility and Coordination

Mosaic

- Direct access to any Davicom RTU (AXON, NEURO, Davicom CORTEX)
- Historical data tracking and reports
- Map view with weather overlay
- Multi-user access with permission levels
- Manage unlimited number of Davicom devices
- Alarm management tools with acknowledgment features

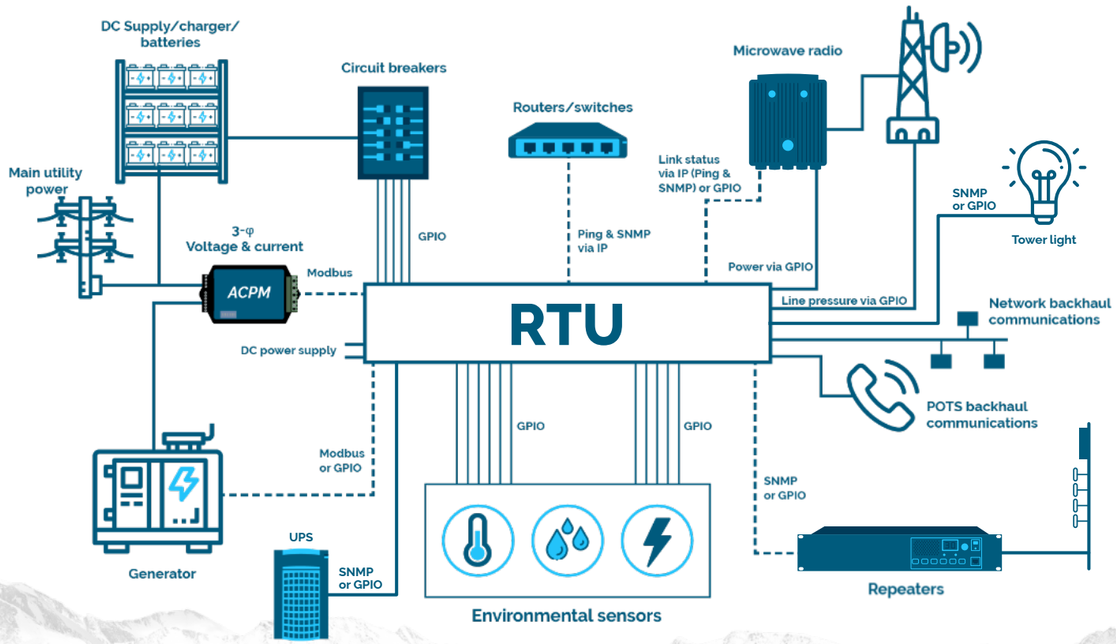
The Role of the NMS in an RTU-Based Monitoring Network

Mosaic by MNC Software is a pre-integrated Network Management System (NMS) designed specifically for Davicom RTUs: AXON, NEURO and Davicom CORTEX. It brings all site data into one interface, allowing operators to monitor network conditions and access detailed site information quickly. Alarms and logic are defined at the RTU level, making deployment simple and consistent. While Mosaic provides a centralized view with maps, alarm summaries and real-time site data, each RTU continues to operate independently, even without IP connectivity. This ensures that automation and alarm responses remain local, reducing bandwidth use and avoiding data loss.

Already have an NMS? No problem! Davicom RTUs support SNMP and can be integrated into your existing monitoring system.

Why an RTU at Each Site?

An RTU connects all your on-site equipment and sends alarms and data to you and/or the NMS. It is the intelligence at the site, working 24/7 to monitor, detect alarms, log events and execute automations. Even if the link to the NOC is lost, it continues to operate and take action locally.



Repeater System

Monitoring repeaters, such as those from TAIT, MOTOROLA, KENWOOD, ICOM, and EF JOHNSON, is essential to ensure uninterrupted mission-critical communications. Davicom RTUs can interface directly with these systems via SNMP (when supported) or through RF Power Sensors and PTT qualifiers. This allows for precise tracking of forward and reflected power, enabling early detection of antenna issues, signal degradation, or equipment failures, before service is disrupted.

Tower Lighting System

Aviation safety rules often require constant awareness of tower light status. Davicom monitors light status, photoresistor sensors, and current flow to detect bulb failures, day/night transition issues, or system faults. When a fault is detected, alarms are sent instantly, helping you maintain compliance and reduce liability.

AC Power

Monitor utility power status and independently verify that switchover to backup sources (like UPS or generators) has occurred. This dual-check approach ensures no blind spots during outages. Moreover, Davicom monitors generator runtime, fuel levels, start signals, and transfer switch status. Through local inputs, SNMP, or Modbus (if the generator controller supports it), our RTUs confirm proper operation, flag unexpected runtime, and give alerts on issues immediately so you're never left in the dark.

Uninterruptible Power Supplies (UPS)

With SNMP support, Davicom RTUs integrate effortlessly with network-enabled UPS systems. You can monitor battery charge, voltage, load percentage, runtime, and fault states, without adding extra hardware. Whether using SNMP polling or traps, Davicom provides a full picture of UPS readiness, ensuring critical systems are always protected.

Microwave Links

Microwave backhaul is the backbone of many communication networks. Davicom RTUs can monitor microwave radios using SNMP or GPIO, depending on equipment capability. Received signal strength (RSSI), Bit Error Rate (BER), link status, and radio health are tracked in real time, enabling preemptive maintenance and fast response to outages.

DC Distribution Panels

Davicom RTUs can connect to DC panels through analog metering, status inputs, or directly via SNMP if supported. This enables monitoring of individual breaker states, current levels, and bus voltages. Early detection of anomalies like tripped breakers or voltage drops helps avoid service interruptions and simplifies power diagnostics.

Environmental Sensors

Davicom integrates with a wide range of environmental sensors including temperature, humidity, smoke, water intrusion, lightning detection, and more. By collecting and correlating these readings, Davicom RTUs enable true situational awareness and trigger alarms or automated actions to protect equipment and maintain optimal conditions.

Discover Our Sensors!

davicom.com

AXON

Davicom's AXON intelligent product line is specifically designed for smaller remote telemetry applications. These products provide users with autonomous devices for alarm, monitoring & automation functionalities at a very competitive price, while also implementing distributed intelligence at each location. Thanks to their SNMP agents, these products are the perfect remote telemetry companions to report to any SNMP Manager, including the Davicom CORTEX Series and Mosaic NMS.

Choose the Module that Best Fits Your Needs

8-Channel Analog Input Module

The AXON-8A's flexible analog inputs are bipolar & differential. They can accept signals from various sensors thanks to their numerous input ranges, starting at ±0.5 V all the way up to 40 V and including the 4-20 mA industrial sensor standard.

8-Channel Digital Input Module

The AXON-8D's inputs are available for reading logic levels or wet/dry relay contacts, with programmable active high or active low settings.

5-Channel Relay Output Module

The AXON-5R comes with 5 Form-C Relays that can be used to control other on-site equipment. Relays can be pulsed or forced-ON/forced-OFF, and also controlled by multiple sources.

Versatile SNMP Agent

AXON units include a built-in SNMP agent that supports SNMP versions v1, v2c and v3. When enabled, this agent allows external SNMP managers such as a Davicom CORTEX unit or the Mosaic NMS to perform GETs, SETs and receive TRAPs or INFORMs from the AXON. This makes it easy to integrate AXON into a larger SNMP-based monitoring system. It is also a practical way to add SNMP capability to legacy equipment that lacks it. By wiring dry contact outputs from older devices into the AXON's GPIO, those devices can be monitored and managed through SNMP as if they were fully SNMP-enabled. AXON provides a compact, cost-effective and easy-to-deploy SNMP agent to expand the reach of your NMS.

SNMP v1/v2c/v3

Flexible Alarm Configuration

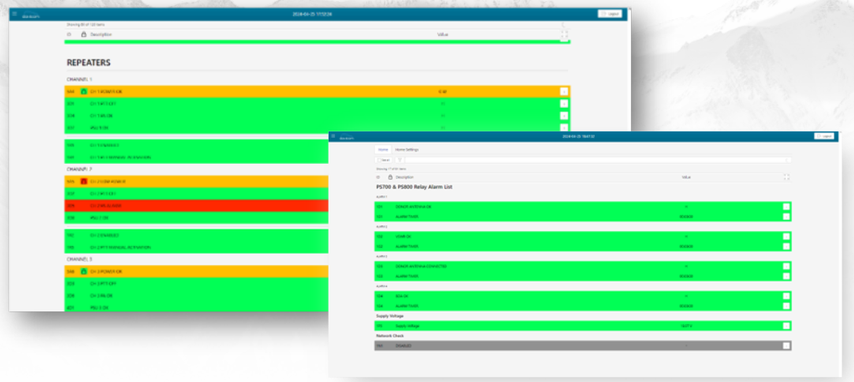
Users can set threshold alarms on any sensor reading, like temperature, voltage or signal strength. When a reading goes outside the expected range, the unit can send notifications by email, Syslog or to an external SNMP manager using SNMP TRAPs or INFORMs.

You can also create up to five alarm call lists. This lets you send alerts to different teams depending on the type or severity of the alarm to make sure the right people are notified quickly so issues can be handled without delay.

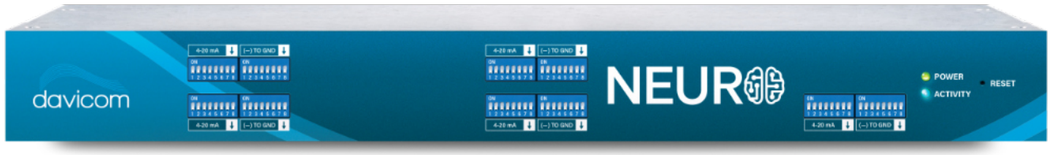
HTML 5 Web GUI for Easy Configuration & Status List View

Clean • Modern • Easy-to-Use

The AXON's customizable HTML5-based GUI list view will help you and your system operators/technicians to quickly get a picture of the situation at the remote site. User levels can be configured to grant/restrict access to different users.



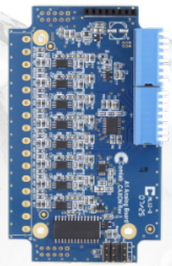
NEURO



Using the same core and user interface as the AXON series, the NEURO offers a flexible way to scale GPIO monitoring. It is a 1U 19-inch rack-mountable unit with five independent slots that accept NIO cards. These include the NIO-8A for analog inputs, NIO-8D for digital inputs and the NIO-5R for relay outputs.

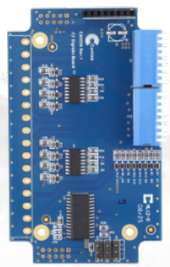
The shared interface and logic engine mean NEURO units are configured and operated the same way as AXON units. This makes it easy to combine both models across a network without needing new tools or training. With over 100 configuration possibilities, the NEURO is ideal for sites that require more I/Os than a single AXON can provide.

Choose the I/O Cards that Best Fit Your Needs. Install Up to Five per Unit.



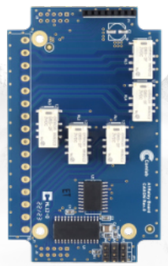
8-Channel Analog Input Module

The NIO-8A adds 8 flexible bipolar & differential analog inputs that can accept signals from various sensors thanks to their numerous input ranges. (±0.5 V to 40 V, including the 4-20 mA industrial sensor standard.) You can add up to 5 NIO-8A in a NEURO.



8-Channel Digital Input Module

The NIO-8D adds 8 digital inputs that are available for reading logic levels or wet/dry relay contacts, with programmable active high or active low settings. You can add up to 5 NIO-8D in a NEURO.



5-Channel Relay Output Module

The NIO-5R adds 5 Form-C Relays that can be used to control other on-site equipment. Relays can be pulsed or forced-ON/forced-OFF, and also controlled by multiple sources. Maximum of 2 NIO-5R in a NEURO, with mix of 8A or 8D in other slots.

Onboard Automations & Smarter Alarming

The AXON & NEURO systems provide local automation and command capabilities that support complex decision-making at the site. Using Jobs, also known as State Machines, you can create advanced conditions that trigger specific actions or combinations of actions. Math functions can calculate values such as averages, decibels, and VSWR. Schedulers and activity monitors allow events to be triggered based on time of day or elapsed time. Counters can tally how often an event occurs and trigger alarms if thresholds are exceeded.

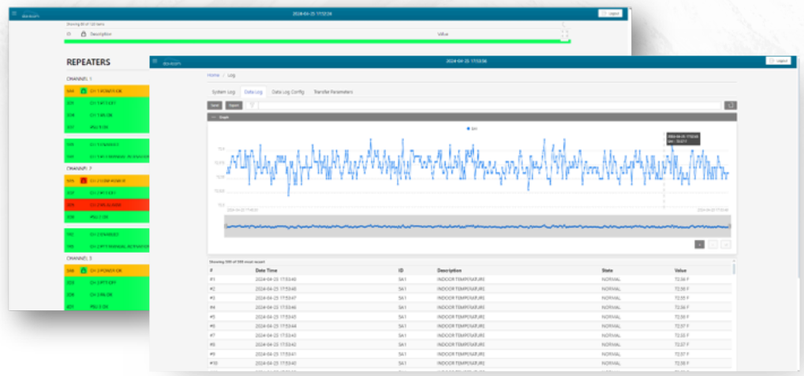
These operations can also be combined or cascaded to build powerful, work-saving automations. With remote command capabilities, one AXON or NEURO unit can even send instructions to another; for example, an input module can remotely activate a relay on another AXON unit, expanding your control across multiple devices.

Serial Interface

The NEURO includes a serial interface to support communication in remote or IP-limited environments. It can send alarm messages through a base station or repeater to reach portable radios, providing a reliable backup path when IP connectivity fails. It also supports sending commands over serial to other NEURO or Davicom CORTEX units, making it possible to control relays or share alarm data between isolated and IP-connected sites. This makes it a practical option for hard-to-reach locations where radio communication is more dependable.

Data Logging

AXON and NEURO units include onboard memory to store sensor readings and event logs locally. Data loggers can be configured to track readings over time, and logging can be triggered by logic conditions using Jobs. This ensures that important site data is never lost, even if network connectivity is interrupted. Each unit can store up to 4096 data samples and 1024 events. Reports can be sent automatically by email at scheduled times or when memory buffers start to fill, giving you access to historical data when you need it most.



SERIES

CORTEX

The Davicom CORTEX Series is our flagship and most powerful RTU platform. Available in 320 and 360 models, it offers everything found in the AXON and NEURO, with added flexibility, advanced logic functions and greater monitoring capacity. Designed for large sites, it connects easily to remote equipment via SNMP, Modbus and GPIO. With its built-in SNMP Manager and Modbus Master, the Davicom CORTEX monitors networked devices directly at the site, reducing reliance on the NOC and making it adaptable to evolving needs thanks to its processing power and capability.

Sense Site Status & Environment

Connect to almost any type of analog or digital sensors to add environmental awareness to your Davicom CORTEX. Low-cost and widely available MODBUS sensors can also be used. Any I/O can be assigned to an activity monitor that checks for too much, or too little activity on the input. Daily cumulative runtimes are stored and logged.

Advanced User Access Control

The Davicom CORTEX allows detailed customization of user access. Each user account can be assigned specific permissions and tailored views, limiting access to only certain parts of the site or specific functions. Whether it's isolating alarm visibility to a specific system or restricting control access entirely, you can build user profiles that match each team's responsibilities. This keeps operations secure and ensures users see only what they need.

Smarter Alarming with Virtual Logic

Davicom CORTEX units include powerful virtual tools to help you build smarter alarm conditions. Using logic gates, math functions, schedulers, and counters, you can combine multiple inputs into meaningful alarms that reduce false alerts and improve response accuracy. For example, you can create alarm rules that trigger only when temperature and current both exceed thresholds, or when a condition persists over time. These tools help ensure that alarms are relevant and actionable, cutting through the noise and helping technicians focus on what matters.

SNMP Agent

Davicom CORTEX units have a built-in SNMP agent to allow monitoring and control from a central SNMP manager. When activated, this agent allows remote SNMP management systems to perform GETs, SETs and to receive traps from Davicom CORTEX units.

Network Monitoring and SNMP Manager

The Davicom CORTEX includes a built-in SNMP Manager that can monitor, control and receive alarms from SNMP-enabled devices on the network. It supports SNMP GETs, SETs and TRAPs over a standard TCP/IP connection, reducing wiring complexity while expanding your monitoring reach. In addition to SNMP, the Davicom CORTEX can also monitor devices using pings, allowing it to detect when critical equipment loses connectivity.

*Available SNMP Manager Packages

Included	Cortex 320	Cortex 360
GETs	8	128
SETs	8	128
TRAPs	8	128

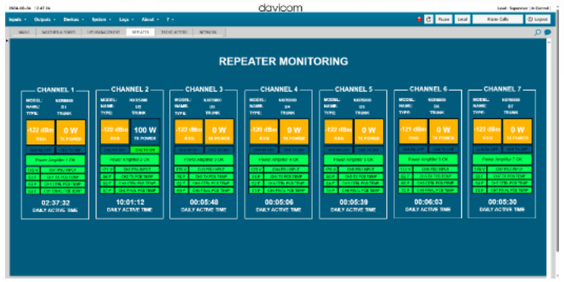
Plus	Cortex 320	Cortex 360
GETs	64	256
SETs	64	256
TRAPs	64	256

Pro	Cortex 320	Cortex 360
GETs	128	512
SETs	128	512
TRAPs	128	512

Ultra	Cortex 320	Cortex 360
GETs	256	1024
SETs	256	1024
TRAPs	256	1024

Advanced GUI and Visualization

The Davicom CORTEX series' web-based workspaces are completely customizable. Each unit includes a customizable graphical user interface, allowing operators to build intuitive dashboards that display real-time values, alarm statuses, and historical performance trends. All events and alarms are logged with time stamps and can be exported as reports for compliance audits or incident analysis.



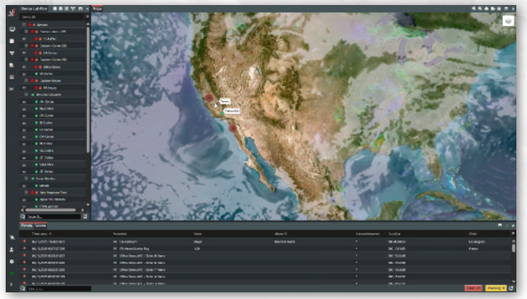
Mosaic Network Management Software

Built with flexibility and scalability in mind, Mosaic offers a real-time, customizable dashboard that delivers instant visibility into system health, alarms, and key performance metrics. Whether you're managing a handful of repeaters or an extensive public safety network, Mosaic streamlines operations by consolidating data, enhancing situational awareness, and enabling faster decision-making from a single, intuitive interface.

Mosaic can also be installed onto any server that supports Windows or Linux. Therefore, you can install the software on an internal server from your organization, or on a cloud-based server.

Interactive Map View

Quickly visualize all your sites and their status with intuitive alarm color-coding and symbols. Add layers such as precipitation, cloud coverage, wind speed, and more to gain a global view of weather conditions. Access any Davicom site RTU instantly by clicking its location on the map and opening a direct connection to the unit's web GUI from within Mosaic for detailed monitoring and control.

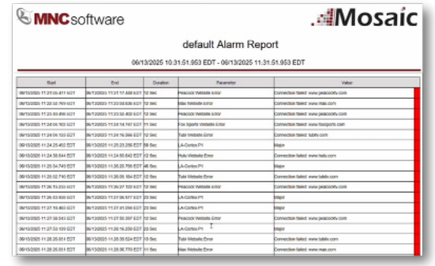


Advanced Alarm Management

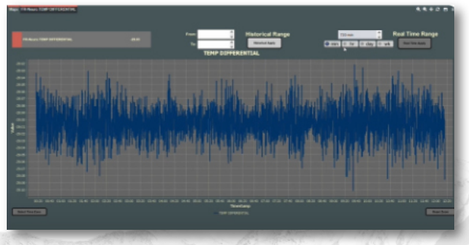
View, acknowledge, filter, and sort alarms in real time, making it easy to prioritize responses. You can configure alarm thresholds, set custom rules, and define escalation procedures to ensure the right people are notified at the right time. Audio signals also allow you to be made aware of unacknowledged alarms when you are not looking at the screen. With its intuitive dashboard, and annotation and logging capabilities, Mosaic gives you full control over alarm handling, helping streamline site management and improve overall situational awareness.

Reports

Generate detailed reports from default or pre-defined templates in a variety of formats (PDF, HTML, DOCX, XLSX, CSV) for easy sharing and documentation. These give you a comprehensive list of every alarm that occured in the specified time-frame, as well as the duration of the alarm. Reports can be scheduled or generated on demand to best fit your needs.



Data Analysis



Aggregate, correlate, and interpret information collected from multiple Davicom monitoring units across your network. Mosaic acts as a centralized dashboard where you can view real-time statuses, generate historical trend graphs, and create customized alarms or reports based on specific parameters. By consolidating data from AXON, NEURO, and Davicom CORTEX series units, Mosaic enables deeper insights into network performance, helping you identify patterns, detect anomalies, and make informed decisions to improve reliability and operational efficiency.

Customizable Dashboards

Group specific readings from multiple sites into one screen to get a network-level overview of your equipment status. For example, create a dashboard to display the status of the generators or VSWR antennas at all your sites.

Multi-User Support

Allow simultaneous connections with defined user access levels.

Backup Server

Keep Mosaic operating with no interruptions in case of primary server failure.

Brief RTU Comparison Table

View Full Table

Specifications	AXON	NEURO	CORTEX 320	CORTEX 360
Analog Inputs	**AXON-8A**: 8, bipolar, differential, 12 bit resolution, ±0.5. ±2.5. ±5, ±10, ±20, ±40 or -40 V, 1 MΩ, 4-20 mA mode.	Up to 40, see AXON specs	**12 Versatile Inputs**: Single-ended, 12 bits resolution, 0-5 or 0-60VDC, Can be used as Audio Rectifier or status input (Jumper selectable):	**8, bipolar, differential**, 12 bit resolution, ±0.5. ±2.5. ±5, ±10, ±20, ±40 ±80 or -80 V, 1 MΩ, 4-20 mA mode
Digital Inputs	**AXON-8D**: 8 with separate internal or external grounds. Max input : ±65 V, 10 kΩ.	Up to 40, see AXON specs	**4 inputs**, with separate internal or external grounds. Max input : ±65 V, 22 kΩ.	**16 inputs**, see Davicom CORTEX 320 specs
Outputs (Relays)	**AXON-5R**: 5, Form C. 70 VAC @0.4 A, 30 VDC @2A	Up to 10, see AXON specs	**6 Relays** (3 Form C and 3 Form A/B Relays with individually-selectable NO/NC dry contacts)	**8 Relays**, Form C. 70 VAC @0.4 A, 30 VDC @2A
Expandable?	No	No	Yes (up to 256A, 256D, 256R additional I/Os)	Yes (up to 256A, 256D, 256R additional I/Os)
Alarms	Email/SNMP TRAP/ INFORM/Syslog	Email/SNMP TRAP/INFORM/ Radio/Syslog	Voice/SMS/E-Mail (with TXT & XML attachments)/ SNMP TRAP/Smartphone Notification/Pager/ DavNet(Dial-up & IP)/ Syslog	Voice/SMS/E-Mail (with TXT & XML attachments)/SNMP TRAP/Smartphone Notification/Pager/ DavNet(Dial-up & IP)/ Syslog
Backhaul Modules	Ethernet, Cellular-data, Satellite	Ethernet, Cellular-data, Satellite	Dial-up, Ethernet, Cellular-data, Satellite, 2-way radio link	Dial-up, Ethernet, Cellular-data, Satellite, 2-way radio link
Virtual Logic Functions	4 Jobs and 8 Math Functions, Schedulers, Counters & Activity Monitors	4 Jobs and 8 Math Functions, Schedulers, Counters & Activity Monitors	16 Math Functions, Counters & Activity Monitors, plus 128 Virtual Gates and Virtual Relays	32 Math Functions, Counters & Activity Monitors, plus 128 Virtual Gates and Virtual Relays
Network Pings	1	1	Yes, 32 included	Yes, 64 included (Optional up to 128 pings)
SNMP Agent	Yes (v1/v2c/v3)	Yes (v1/v2c/v3)	Yes (v1/v2c/v3)	Yes (v1/v2c/v3)
SNMP Manager	No	No	Yes, 8 included (Optional up to 256 GET/ SET/TRAP Commands)	Yes, 128 included (Optional up to 1024 GET/ SET/TRAP Commands)
Modbus Master	No	No	Yes, 8 included (Optional up to 32 Slaves)	Yes, 8 included (Optional up to 32 Slaves)
Dimensions (WxHxD)	3" x 6" x 2"	19" x 12" x 1.75"	9.5" x 1.75" x 12"	1 RU 19" x 1.75" x 12"

Get in Touch

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