Data Sheet

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iSTAR Ultra

Access Controller for up to 32 Readers

iSTAR Ultra is a powerful, network-ready controller that supports up to 32 readers. The strong feature set answers the most demanding access control requirements of enterprise and government applications. Rack-mount and wall-mount options provide installation flexibility, while iSTAR Ultra's unique lock power management eliminates the need for separate lock power interface boards. iSTAR Ultra features a hardened Linux kernel for its operating system, improving the security and scalability of the system.

Supports up to 32 Readers

iSTAR Ultra uniquely combines support for traditional hard-wired access control doors with support for wireless lock sets, all in the same controller. Up to 32 readers are supported by the iSTAR Ultra, of which the total can be comprised of readers from ACM access control modules, IP-ACMs and/or wireless locksets.

iSTAR Ultra is ideal for areas that require many readers in close proximity to the panel. For more distributed installations, iSTAR Ultra includes up to 32 RS-485 ports, allowing the installer to run longer distances to each door.

iSTAR Ultra uses a General Controller Module (GCM) which includes standard 2GB RAM and 16GB SD card for memory, and has two onboard gigabit network ports for reliable network communications. The GCM controls up to four ACMs, with each ACM supporting up to eight Wiegand, RM or OSDP readers, along with 24 supervised inputs and 16 outputs which can be individually wet- or dry-configured.

Key features

· Powerful network-ready door controller for up to 32 readers
· Embedded lock power management lowers installation costs
· Hardened Linux embedded OS for improved security and scalability
· Includes global anti-passback and advanced peer-to-peer clustering
· Native intrusion zone functionality
· LCD provides important controller status and diagnostics information
· Manages up to 500,000 cardholders in local memory
· Dedicated input for fire alarm interlock overrides door locks during fire conditions
· Onboard 256-bit AES network encryption
· Supports OSDP Secure Channel for encrypted reader communications

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iSTAR Ultra also includes an alphanumeric LCD to provide status and troubleshooting information. Database backups and all buffered transactions are stored to non-volatile SD card memory. A real-time clock battery keeps the clock powered during a power failure.

Network Ready

iSTAR Ultra includes two onboard gigabit network ports for primary and secondary communications to the host. 256-bit FIPS 197 AES network encryption, with custom key management, secures the controller from potential network threats. iSTAR Ultra supports both static and dynamic IP addresses, IPv4 or IPv6, using DHCP and DNS to simplify network installation. In addition, the powerful iSTAR Configuration Utility (ICU) reduces startup time by allowing you to view online controllers, change configuration parameters, and download new firmware from a single interface.

Features

Embedded Lock Power Management

The iSTAR Ultra's ACM offers a unique, straightforward approach to managing the complete lock power needs of an installation. The ACM is designed to distribute power directly to each lock circuit without needing a separate fused distribution board (and the associated interconnect wiring). Each ACM has two separate lock power feeds in addition to controller power. These feeds can be used for different voltages (12 V and 24 V for example) or for battery-backed and non battery-backed power sources to comply with certain local life safety codes.

Each lock output can then be selected to use either a dry contact, lock power 1, or lock power 2, providing tremendous flexibility. In addition, each lock circuit is protected with a PTC resettable fuse and over-voltage surge protection through the extensive use of transzorbs, and includes a socketed relay for quick field replacement. Each lock circuit can be individually selected to unlock or lock based on the dedicated fire alarm input setting, meeting life safety requirements.

Ensure Reliable Communication with Clusters

iSTAR Ultra supports peer-to-peer communications across clusters meaning that the controllers communicate with one another without needing host intervention. Clusters are user-defined groups of up to 16 controllers and can be created to enhance security by separating a widely dispersed facility into different controlled areas. For example, events linking inputs on one controller to outputs on another controller will still be active without the host.

Local and Global Anti-Passback Provides Effective System-Wide Security

Anti-passback prevents cardholders from passing their credentials back to others in order to gain access to secured areas. Global anti-passback is critical for ensuring uncompromised security on a large scale. Building upon cluster based anti-passback as described above, the controllers are able to send an anti-passback violation notice to the C·CURE server. Tailgating, or following another cardholder into a secured area without presenting a separate badge, can easily be flagged within the C·CURE monitoring station.

Rack-Mount Flexibility

iSTAR Ultra is available in a modular rack-mount configuration, reducing the space requirements and costs associated with installing a panel on the wall. Separate GCM and ACM modules can be arranged in the rack to optimize your server room installation. For example, the GCM can be mounted in the front of a four-post rack, while the ACM and field wiring can be located in the rear of the rack. Field wiring on the ACM is easily routed through the top and/or bottom of the enclosure, with the ACM board mounted front and center for convenient servicing.

iSTAR Ultra is easy to configure in its convenient rack-mount model

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Keypad Commands Provide the Ultimate in Control

iSTAR Ultra supports custom keypad commands which provide a powerful way to easily activate events in C·CURE. These commands include anything from triggering a duress call and sounding an alarm, to locking and unlocking doors directly from an RM reader keypad. Commands can be configured to require a card presentation and/or a card and PIN to validate the command. Keypad commands can also be used to arm and disarm intrusion zones.

Improves Life Safety

A dedicated input for a fire alarm tie-in automatically locks or unlocks selected door lock outputs in the event of a fire condition. The fire input may be unsupervised or supervised, and the release circuit does not require software programming for operation. In addition, a second input for a manual keyswitch is provided, such that the door lock outputs will not re-lock unless authorized safety personnel confirm the safety of the building via the keyswitch. The keyswitch functionality is enabled via an onboard DIP switch.

Extended Card Formats Enhance Security

iSTAR Ultra supports extended card formats of up to 256 bits, providing the utmost in flexibility when configuring custom card formats. iSTAR Ultra supports the full 200-bit FASC-N format for compliance with the US Government's FIPS 201 initiative, as well as the 128-bit GUID format for PIV-I credentials. These extended cardholder formats are stored locally in iSTAR allowing the controller to make the access decision even when it is offline from the host. Each format supports multiple data fields such as card number, site code, issue code, parity, agency code, system code, plus up to four custom card integer fields. Longer card numbers and formats offer greater protection against card duplication, and are especially valuable to customers who require card numbers that exceed 10 digits.

Cardholder Flexibility

Used with C·CURE 9000, iSTAR Ultra allows administrators to assign up to five active cards per cardholder record rather than having to create a separate record for each card. This simplifies the management and maintenance of personnel records. For additional flexibility, iSTAR Ultra can support up to 128 card formats system-wide and ten card formats per reader, including smart cards. This expanded ability to use multiple card types (such as 26-bit, 37-bit, or Corporate 1000) at a single reader frees customers from having to consolidate or re-issue new cards.

Built-in Diagnostics to Easily Test and Troubleshoot

iSTAR Ultra includes both built-in web diagnostics pages and a local LCD to test and troubleshoot inputs, outputs, reader ports, and last card read. In addition, via the network, you can retrieve real-time status and diagnostics of:

· controller time/boot time

· total/available memory

· connection status

· firmware and OS versions

· hardware (MAC) and IP addresses

· downloaded clearances and cardholders

Fully Integrated and Managed Lock Solution

Utilizing iSTAR Ultra, wireless locks from ASSA ABLOY or Schlage communicate with C·CURE 9000, providing a fully integrated and managed lock solution. Up to 32 ASSA ABLOY Aperio or Schlage AD300, AD400, NDE and LE locksets can be managed by a single iSTAR Ultra. In addition to traditional locksets, the ASSA ABLOY Aperio line also includes cabinet and data center locks, allowing you to extend the breadth of your access control system to non-traditional openings. Each lockset communicates using AES 128-bit encrypted wireless technology to the wireless hub, which is then connected to the iSTAR Ultra with a simple RS-485 communications bus. Each hub can accommodate up to eight Aperio wireless locks or 16 Schlage wireless locks.
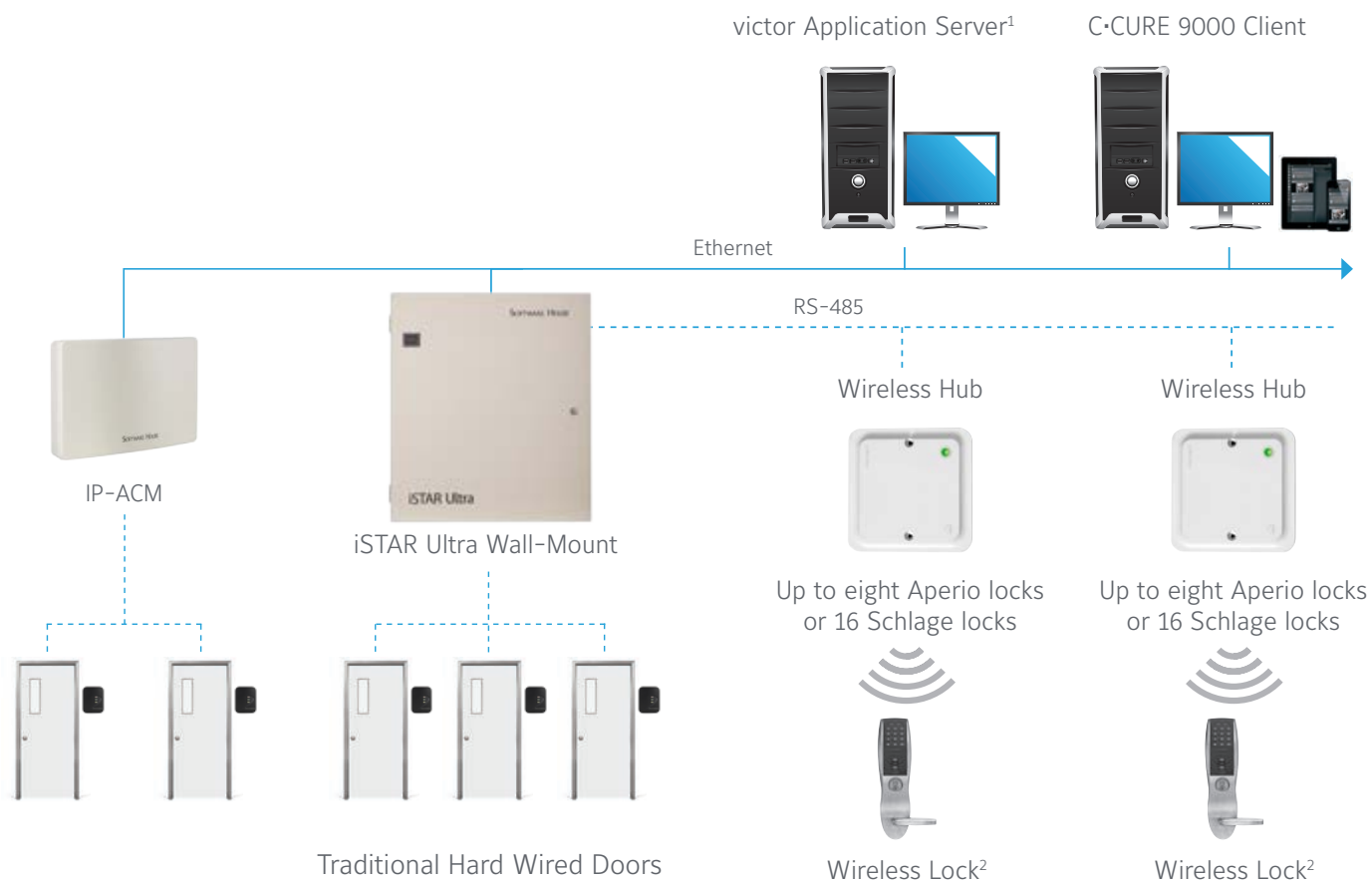
All activity and alarms from each wireless device are sent to the iSTAR Ultra and then up to the C·CURE 9000 in real time, guaranteeing a high level of control and visibility of door actions. Besides standard card access transactions, each device also communicates low battery, tamper, and communications status to the system.

Embedded Support for FICAM High Assurance

Used with the Innometriks suite of High Assurance ID Management software, iSTAR Ultra supports PKI-based authentication at the door, including CAK and PAK, card plus PIN, and biometric match in panel. Unique cardholder PKI information and biometric templates are stored and authenticated directly in the iSTAR Ultra, on the secure side of the door, for reliable stand-alone operation. High Assurance PKI-based authentication is required to comply with the U.S. Government's FICAM standards and is ideal for commercial and non-government customers as well.

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System diagrams

iSTAR Ultra and Wireless Lock System Layout

victor Application Server[1]   C·CURE 9000 Client

Ethernet

RS-485

Wireless Hub   Wireless Hub

IP-ACM

iSTAR Ultra Wall-Mount

Up to eight Aperio locks   Up to eight Aperio locks
or 16 Schlage locks   or 16 Schlage locks

Traditional Hard Wired Doors   Wireless Lock[2]   Wireless Lock[2]

[1] The C·CURE 9000 Server component is called the victor Application Server.

[2] ASSA ABLOY Aperio or Schlage AD300/AD400/NDE/LE but not both. Schlage locks are sold in North America only.

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Specifications

Physical	
Dimensions (H x W x D)	
Wall-Mount	635 x 560 x 127 mm (25.0 x 22.0 x 5.0 in)
Rack-Mount GCM	86 x 445 x 252 mm (3.4 x 17.5 x 10 in) (2U rack height)
Rack-Mount ACM	175 x 445 x 125 mm (6.9 x 17.5 x 4.9 in) (4U rack height)
GCM Board	165 x 266 x 26 mm (6.5 x 10.5 x 1.02 in)
ACM Board	115 x 397 x 36 mm (4.5 x 15.7 x 1.4 in)
Weight	
Wall-Mount	12.3 kg (27 lbs)
Rack-Mount GCM	4.3 kg (9.5 lbs)
Rack-Mount ACM	4.1 kg (9.0 lbs)
Enclosure Material	16 gauge carbon steel, with tamper switch
Environmental	
Operating Temperature	0-50°C (32-122°F)
Operating Relative Humidity	5-95% RH non-condensing
Storage Temperature	-20-60°C (-4-140°F)
Electrical	
Power Requirements, GCM	12 VDC +/- 20%, 0.5 A plus up to 1.5 A per RS-485 port
Power Requirements, Each ACM	ACM board: 12 VDC +/- 20%, 0.5 A min, up to 12 A max depending on power required of connected devices (readers, door modules, PIRs). ACM lock power (optional): 0-30 VDC, up to 12 A max (two lock power inputs per ACM)
Heat Dissipation	GCM: 61 BTU/hr, each ACM: 20.5 BTU/hr
Memory and RTC Backup	CR 2032 lithium battery provides RTC backup; database and buffered transactions stored in non-volatile memory

System and Network	
CPU	Freescale i.MX6 1 GHz dual core Cortex-A9
System Memory	2 GB RAM
SD Storage	16 GB SD card
Primary Network Port	10/100/1000 Mbps, full duplex, auto-negotiate
Secondary Network Port	10/100/1000 Mbps, full duplex, auto-negotiate
Network Encryption	AES 256-bit, with custom key management
Port Authentication	802.1X port authentication protocol
Indicators and Switches	LCD for diagnostics, LEDs for power, LAN activity, serial port activity, output status, encryption-enable switch
Memory Capacity[3]	
Ten clearances, five cards/ person, 40-digit card	500,000 cardholders
Offline Transaction Buffer Size	10,000 minimum, 500,000 maximum
Inputs/Outputs, GCM	
Dedicated Inputs	Cabinet tamper, AC fail, low battery
Distance, GCM to ACM	Up to 1.83 m (6 ft)

[3] Memory allocation is dynamic and shared between cardholders, event storage, and configuration information.

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Specifications per ACM Board[4]

Readers	
Number of Readers Supported, per ACM Board	8
Types of Readers Supported	OSDP v2 encrypted (RS-485), Wiegand and RM (RS-485)
Reader Technologies	
Supported	Multi-Technology, Proximity, Smart Card (incl. PIV II & TWIC), Wiegand, and Magnetic Stripe (RM only)
Maximum Distance to Door	RM and OSDP: 1,219 m (4,000 ft); Wiegand: 150 m (500 ft)
Reader Power Available (dependent on power supply)	12 VDC, 1.5 A max per reader (including aux power and RM port power)
Reader Power Status Indication	On/off indication per port, through C·CURE 9000
OSDP and RM Bus Communications	Eight ports, RS-485 half duplex, two wire, plus optional two wires for device power
OSDP Support	Secure Channel encryption, AES128
Maximum Readers per RS-485 Port	8, either OSDP or RM. (You cannot mix OSDP and RM on the same port.)
Maximum readers per RS-485 port, in High Assurance Mode	2
Inputs	
Number of General Purpose Inputs per ACM	24, configurable supervision per input
Additional Dedicated Inputs	Cabinet tamper, fire alarm interlock, fire alarm keyswitch override (supervision supported)
Input Expansion	Up to 128 additional inputs using I8 modules on RM bus

Outputs	
Number of Relay Outputs per ACM	16 (eight for locking devices, eight for local annunciation)
Output Power Feeds	Two per ACM (L1 and L2), 0-30 VDC, 12 A max. Voltage value of each feed displayed through C·CURE 9000
Output Power Selection	Individually configurable via jumper as power sourcing (wet, L1 or L2), or dry contact relay
Output Power (Wet)	Up to 0.75 A per lock. Voltage follows selection of power feed (L1 or L2)
Primary Lock Output Rating, Dry Contact	0 to 30 VAC/DC, 5 A max
Secondary Output Rating,Dry Contact	0 to 30 VAC/DC, 1 A max
Output Protection	Individual PTC resettable fuse, snubber, transzorb, reverse polarity protection (primary lock outputs use socketed relays)
Output Expansion	Up to 128 additional relay outputs using R8 modules on RM bus
Regulatory	
Access Control	UL 294, CSA C22.2 No. 205 (Canada)
Burglar Alarm	UL 1076, ULc 1076 (Canada)
CE	EN 55022 (EMI), EN 55024 (EMC), EN 60950-1 (Safety)
Safety	IEC 60950-1
EMI	FCC Part 15 Class A, EN 55022, ICES-003 (Canada), VCCI Class A ITE (Japan), C-Tick (AS/NZS CISPR 22 - Australia/New Zealand)
EMC	EN 55024, EN 50130-4, IEC 62599-2, EN 61000-6-1
Encryption	FIPS 197, AES256
Seismic Certification	OSHPD Certification File # OSP-0425-10

[4] iSTAR Ultra supports 32 readers (ACM, IP-ACM and/or wireless) total of which 16 may come from ACMs. With C·CURE 9000 v2.90 SP2/ FW 6.8.2 a total of 32 may come from ACMs.
[5] iSTAR Ultra supports 32 readers (ACM and/or wireless)
[6] Up to four ACM boards per iSTAR Ultra. Note that ACMs are not required if only using wireless locks and/or IP-ACMs

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Specifications for Wireless Lockset Support[5]

Wireless Lockset	
Technologies Supported	ASSA ABLOY Aperio (Ultra Mode only), Schlage AD300 and AD400, WA Series, Schlage NDE/LE[6]
GCM RS485 Ports to Connect Wireless Hubs	2
Max # of Locksets per RS485 Port	16
Max # of Wireless Hubs per RS485 Port	15 (Aperio), 16 (Schlage)
Max # of Locksets per Wirless Hub	8 (Aperio), 16 (Schlage)

Ordering information

Model number	Description
USTAR008	iSTAR Ultra, 8 readers with enclosure, no PSU
USTAR016	iSTAR Ultra, 16 readers with enclosure, no PSU
USTAR-GCM	iSTAR Ultra GCM board
USTAR-ACM	iSTAR Ultra ACM board, 8 readers
USTAR-CAN	iSTAR Ultra enclosure
USTAR-GCM-2U	iSTAR Ultra GCM with rack enclosure
USTAR-ACM-4U	iSTAR Ultra ACM, 8 readers with rack enclosure

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