

# MESH™

Multi-Media Embedded Security Hub

Automated Facility Protection  
Including HSPD-12 and FIPS 201

## Entering With Style

**The Physical Security/IT System  
That Eliminates Panel Costs**

**Convergent**

IP compliant voice, video, and physical access readers

**Enterprise Networkable**

Globally distributed central database management

**Continuous High Availability**

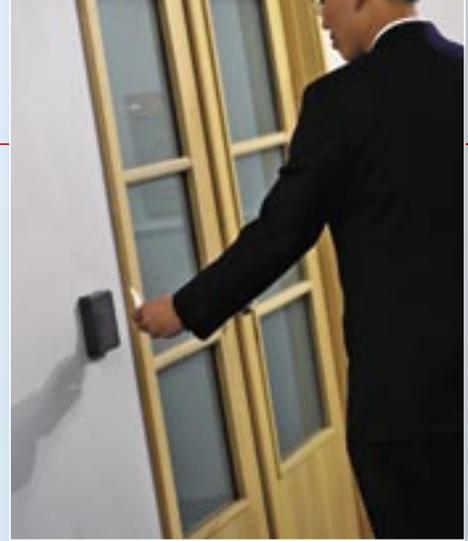
Redundant hardware, addressable fault tolerance and detection

**Eliminates Controllers, Enhanced Reliability at a Fraction of the Cost**

  
*Excellence in Facility Protection*

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Viscount Systems Inc. was an R&D affiliate of what is now Verizon Communications from 1969-1997.

Viscount's technology presently provides protection to over 35,000 facilities.

Security products developed by Viscount include hostage negotiation systems for the FBI and RCMP, money tracking systems, video switches, and security systems for facility protection.

Today, Viscount's technology provides protection to over 35,000 facilities worldwide. In 1999 the new management reinforced Viscount's mission to bring cutting edge intelligent technologies to the computer telephony and building automation and control system market.

MESH™ [Multi-Media Embedded Security Hub] is the result of this bold new initiative to rationalize building security and control systems on a convergent platform, a simple software platform that provides revolutionary functionality coupled with substantial cost benefits.



**Call 1-800-476-3774**

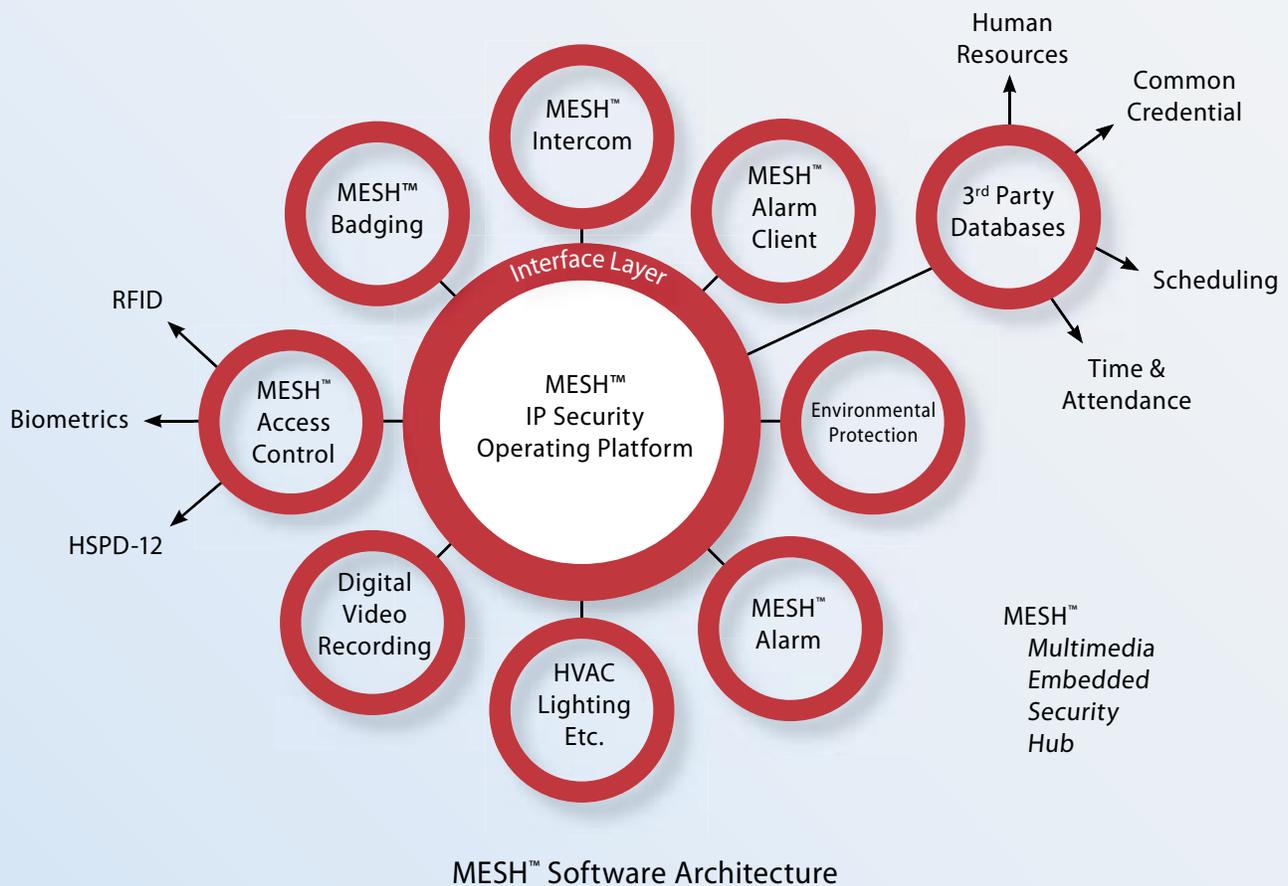
**E-mail us at [sales@viscount.com](mailto:sales@viscount.com) or visit us at [www.viscount.com](http://www.viscount.com)**

Viscount is a publicly traded company on NASDAQ:OTC. Symbol "VSYS"

The MESH™ Security Operating Platform removes complexity and cost from facility protection systems by replacing masses of traditional card reader controller hardware with standard IT servers and accessories.

MESH™ transforms the concept of physical card access into a platform that can manage an incredible array of card access, intercom, video and other devices through a common interface layer. This provides powerful features, such as:

- 1- New applications (or custom applications) can be created quickly and inexpensively
- 2- Human Resource , IT, and other database related functions are easily integrated with MESH™
- 3- Technological advancements are easily implemented, providing “future proofing”
- 4- Multiple applications can operate on one platform, one server or computer
- 5- Users, readers and devices are globally managed as an IT application



## MESH™ - Utilizing Recognizable Addressable Principles

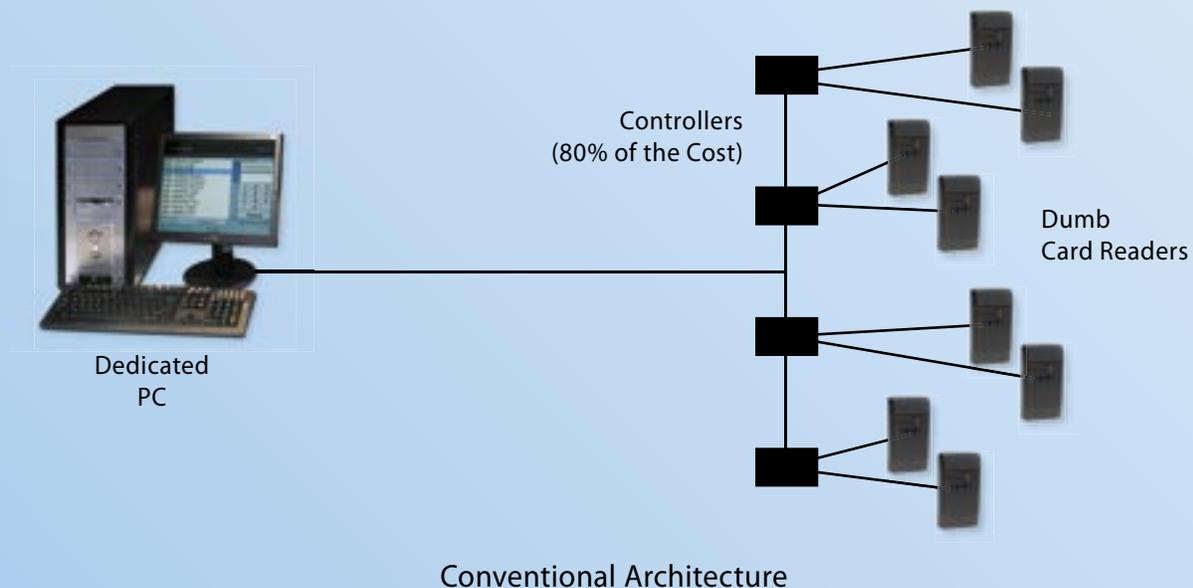
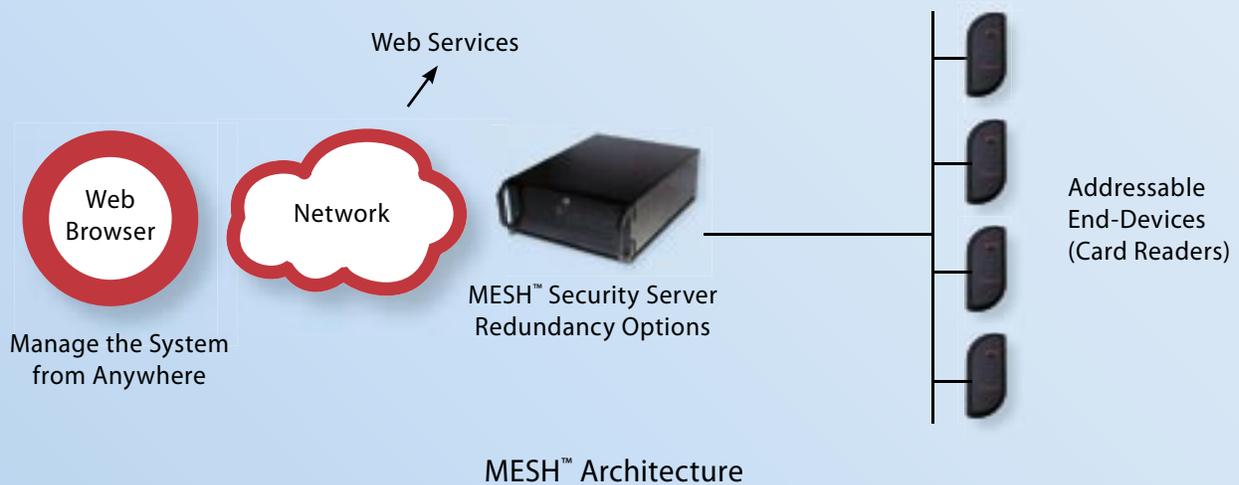
MESH™ represents new efficiencies with Access Control. The MESH™ card access network architecture is new to security but not to facility management. The benefits of MESH™ are very similar to those introduced by industrial process systems and fire alarm systems which use addressable technology to identify end devices. Increased reliability, proactive system management and lower corporate liability are benefits already proven with addressable devices.

# MESH™ Architecture | Infinitely Scalable

The MESH™ Security Operating Platform is the first Facility Protection System that embraces IT convergence and does away with proprietary control hardware. By designing MESH™ on this premise, Viscount has decreased complexity, lowered cost of ownership, and increased the reliability for Facility Protection applications. MESH™ provides customers a system that permits future enhancements without changing components or the underlying infrastructure. A single MESH™ Server supports multiple applications, such as Card Access, Voice Visitor Entry, Alarm and Video. MESH™ improves system management by eliminating the multiple databases that must be maintained with the traditional Integration approach.

MESH™ Access Control only requires card readers (end-devices) and a Server(s) (170 readers require one server). Conventional systems require “middleware”; card reader controllers (170 readers require up to 170 controllers). Controllers inject wiring complexity, reliability issues, and are the most costly component in a conventional system. By dramatically reducing system hardware and wiring requirements MESH™ is cost effective within small facilities and provides exponential savings in larger facilities.

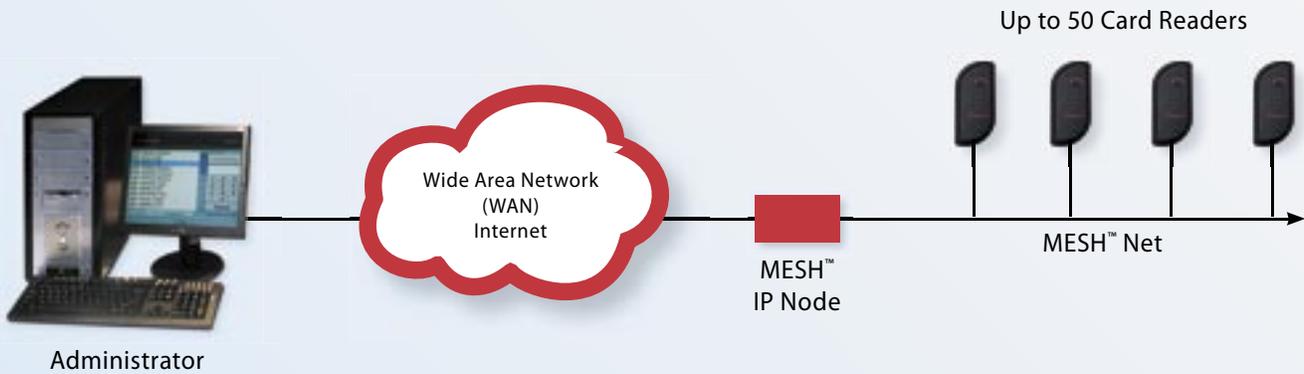
Furthermore, System Administrators can manage and monitor a MESH™ system from anywhere at any time through a standard Web Browser. For enterprise applications, this MESH™ WEB architecture creates a network of unlimited users, devices and administrative partitions while eliminating costly software license fees. Viscount’s adherence to the new WEB Services standard allows MESH™ to interact with systems, regardless of their operating system bias such as Linux, Apple, Unix, Windows. MESH™ therefore can provide operational efficiencies for facilities that was hitherto unobtainable with unlimited user and administrative scalability.



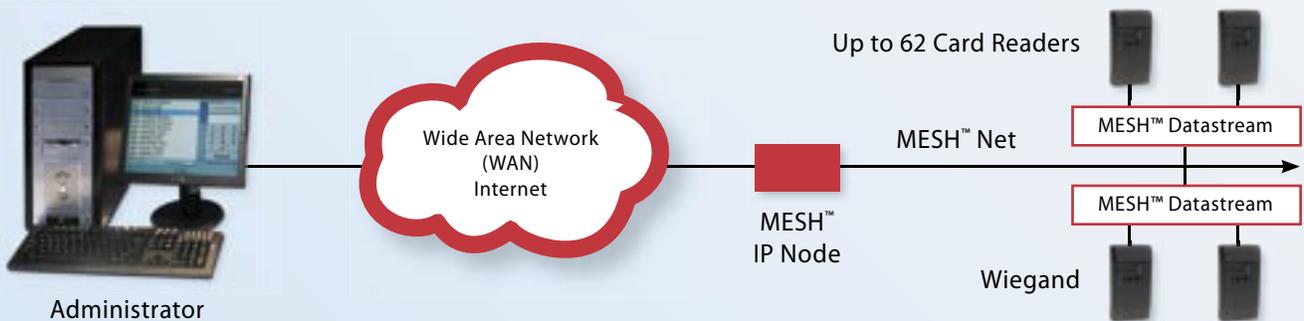
# MESH™ IP Architecture | A New Paradigm in Physical Access Control

MESH™ devices provide unique abilities to integrate with today's IT environment. MESH™ servers, readers, elevator modules, and alarm modules can be integral to structured cable networks and utilize standard IP addresses. MESH™ devices can be assigned an IP address individually or in groups. This architecture is designed to make the best flexible use of the capabilities of a MESH™ Net (refer to "MESH™ Net Basics" in this document) and existing IT infrastructure.

For a WAN or VPN it is possible to assign one IP address to a batch of up to 50 card readers. This avoids the subnet masking problems that occur when there are more devices than can be accommodated by the 255 IP address limit. In typical IP based systems a large number of routers are required to support IP addresses. This injects complexity and unnecessary points of failure. With MESH™ this complexity is eliminated.



MESH™ can enhance legacy systems by turning Wiegand Card readers into IP enabled devices, providing one IP address for up to 62 card readers. (Refer to Datastream Modules in the section called "MESH™ Supported Card Readers")



MESH™ Alarm Input and Output Modules and Elevator Control Modules also run on MESH™ Net allowing these devices to be convertible to IP addresses. They can be converted to individual IP addresses or one IP address can support batches of up to 7 modules (supporting up to 112 points or in the case of elevators, 112 floors).

## Example Application

Up to fifty MESH™ remote readers can be connected to a single router through a secure WAN/VPN. While it is generally good practice to provide a remote server to support the readers, in some cases this configuration may be warranted. For example, this method may be useful as follows:

- 1- A secure small structure that requires a few card readers and is remote to the main facility
- 2- A small remote office that is part of an enterprise deployment

*Note: MESH™ readers self diagnose and therefore allow for simplified and proactive service. Only a spare card reader (not a controller and complex network devices) is required to support a remote location. Keeping a reader in the remote location will allow building management to self service their location.*

## IT Convergence & FIPS 201 Compliance

MESH™ - The PACS that meets the Intent of HSPD-12 “Interoperability within a High Security Framework”

With the added benefit of significant cost reductions and higher reliability

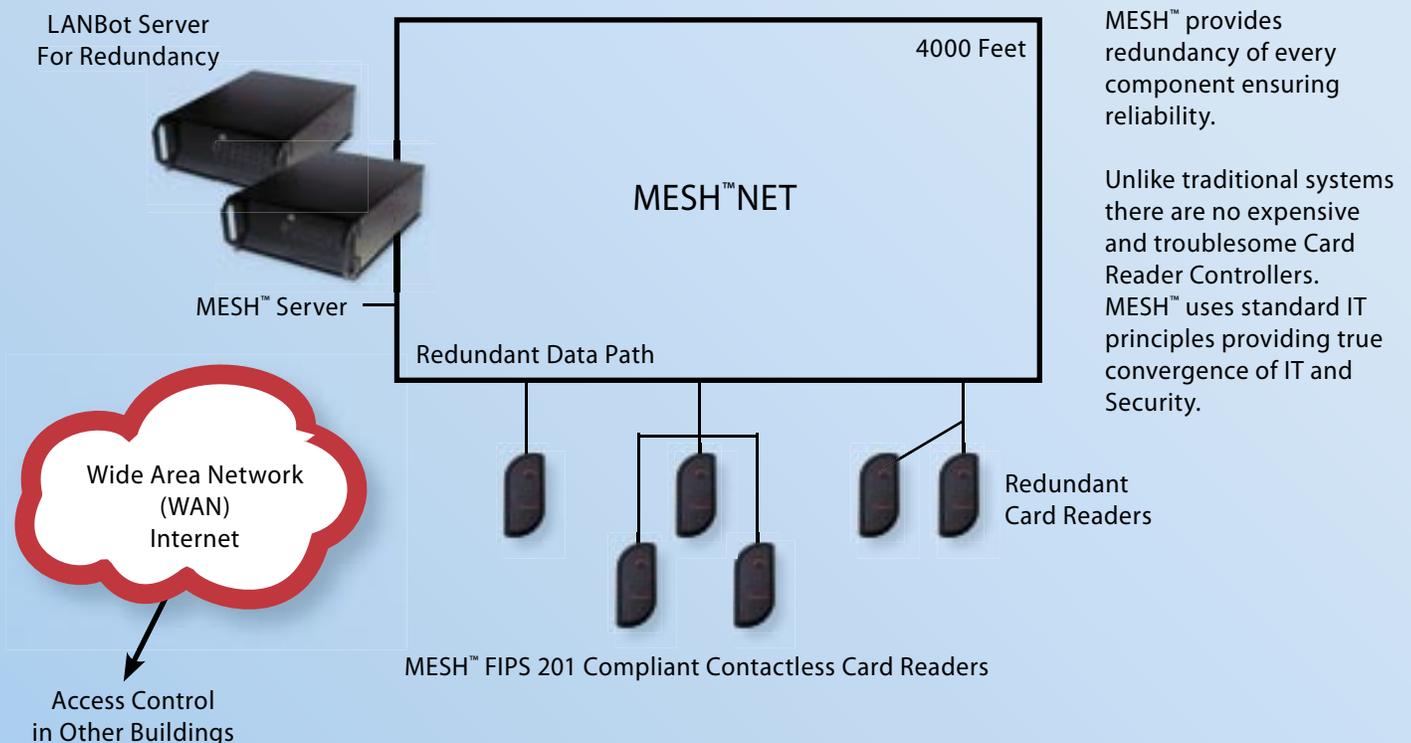
### Topics

- Budget Savings by Eliminating Costly Control Panels
- Significant Cost Reductions for FIPS 201 Physical Access Control
- “High Assurance Level” Compliant Now
- Encrypted Reader Communications
- Hardware Redundancy for Increased Reliability
- Convergence of Physical and Logical Security

### Deployment of Smart Cards for US Government Employees

The US Government has issued a Presidential Directive (HSPD-12) that mandates the issuance of one Security Card for each government employee and government contractor. Individual Agencies can then use this card to provide physical access to their facilities and logical access to their data. The initiative is supported by the Federal Identity Processing Standard (FIPS 201) which details the implementation of Smart Card Architecture and Smart Card Issuance. The standard is broad enough to include local government and commercial entities should they wish to participate. Each Smart Card will have two unique numbers, one is the users Social Security Number (SSN) while the other is a unique number based upon internet standards (IPv6), whereby each card will have a unique IP address assigned. The first (the SSN) is used to move legacy systems forward while the latter is the eventual goal and is called the Global User Identification number (GUID) as it can be used world-wide throughout government and commercial enterprises alike.

“Unlike other Physical Access Control Systems, Viscount’s MESH™ operates similar to a Logical Access Control System demonstrating true Physical / Logical technological convergence. The system can therefore immediately accommodate the Global User Identification (GUID) and be fully understandable by IT professionals”.



In addition to the new FIPS 201 standard, the Federal Government has provided guidance to Agencies who are procuring new Physical Access Control Systems (PACS) or adapting legacy PACS so as to meet the intent of the Presidential Directive. Three levels of Security have been identified; Low Assurance, Medium Assurance and High Assurance. For each case, when upgrading a system, new card readers must be installed and control panels changed or in some cases upgraded. Traditional PACS have a 3 tier architecture; Card Reader to Control Panel, Panel to Server, which makes complying with the necessary Security Levels difficult or impossible. To meet the Medium Assurance guideline the Card Reader must negotiate, in an encrypted format, with the Smart Card to assure the card has not been tampered. A basic User ID can then be sent unsecured to the Access Control decision maker. This makes for expensive card readers and the conundrum of a secured card yet unsecured system. In order to ensure a system meets a High Assurance Level, the PACS negotiates with the Smart Card directly passing back and forth high security information in an encrypted format. This cannot be done with today's typical 3 tier architecture. In order to accomplish this requires direct server to card communication.

"Viscount's MESH™ is a two tier system based upon IT principles; the server communicates directly to a Card (through the card Reader) in an encrypted format. This allows direct communication with a FIPS 201 compliant Smart Card, meeting the government's highest level of security mandate. Furthermore, because MESH™ has no Control Panels it is more stable and costs much less than traditional systems".

It is assumed that all typical requirements of a building are to be satisfied by any new installation of a PACS. Functions such as Alarming, Elevator Control and Visitor Systems must be accommodated. However, the new FIPS 201 standard does not cover these issues as it is entirely focused on highly secure Smart Cards and the assurance they are issued to government approved recipients.

"Viscount's MESH™ is a fully featured FIPS 201 compliant Access Control System and Video Surveillance System providing Alarm Functions, Elevator Control, and Visitor Management". It provides these functions in an envelope of lower capital cost, lower support cost and higher operational stability. It exemplifies Physical and Logical technological convergence.

### **Control Panel Based Systems, a Problem for FIPS 201**

Irrespective of the Security Assurance Level (Low, Medium or High) that an Agency requires, with older Panel Systems (most only support low assurance) the communications from the Smart Card Reader to the Panel will be in unsecured Wiegand protocol. Hackers can "tap" the data flow and compromise the system, an event that is certainly not the intent of Presidential Directive HSPD-12.

"Viscount's MESH™ communicates data directly to and from the Smart Card through to the Server in an encrypted format making the entire system conform to the intent of the Presidential Directive HSPD-12."

The Government's expectation is that all systems will migrate towards a system that is reading the Global User Identification Number (GUID) within three years. This is a number based upon Version 6 of Internet Protocol (IPv6) and will be resident on all newly issued FIPS 201 compliant Smart Cards. Control Panel based PACS cannot accommodate the size of this number along with the other required overhead and will have to be replaced to conform to the standard.

"Viscount's MESH™ can already accommodate the Global User Identification (GUID). MESH™ is developed on an Open Software Platform which allows for accommodation of applications and devices by simply updating software drivers and programs. There is no need to replace expensive hardware should any future functionality be required."

Although not part of FIPS 201, the integrity and ongoing cost of a PACS is of utmost importance to every Agency. PACS Control Panels were introduced in the 1980's, when computers were not powerful enough to process card reader information. Control Panels are expensive to install, expensive to service and the proprietary hardware shortens product life while making interoperability extremely problematic. HSPD-12 only exacerbates the shortcomings of the technology in an IT environment.

"Viscount's MESH™ is a software based system and does not have Control Panels. Furthermore, redundancy is built into every component. Even the Card Readers can be paired giving a high level of availability. By providing this level of redundancy, expensive emergency service is eliminated, while downtime is essentially non-existent".

### FIPS 201 is Costly When using Traditional Technology

Traditional PACS uses Control Panels to support Card Readers. Although these come in different configurations, typically one controller will support 2 - 4 card readers. These controllers are expensive, costing from \$1500 to \$8000 per unit, about 80% of the cost of a total system. Furthermore, a Control Panel is based upon firmware that usually must be matched panel to panel. Often a simple addition of one Card Reader will require an additional Control Panel and then an upgrade of all other panels.

Furthermore, traditional systems have dedicated work stations, each of which is a chargeable item.

“Viscount’s MESH™ has no Control Panels and therefore the typical costs associated with these devices are eliminated. One Server can support up to 170 Smart Card Readers. Also MESH™ work stations (Clients) are Web based and therefore can operate on any computer (regardless of operating systems) at no charge”.

### FIPS 201 and IT Applications

The FIPS 201 initiative is based around the Smart Card and IT standards. Traditional PACS technology is encumbered by the firmware on the Control Panels making it difficult to implement the intended IT Security functionality.

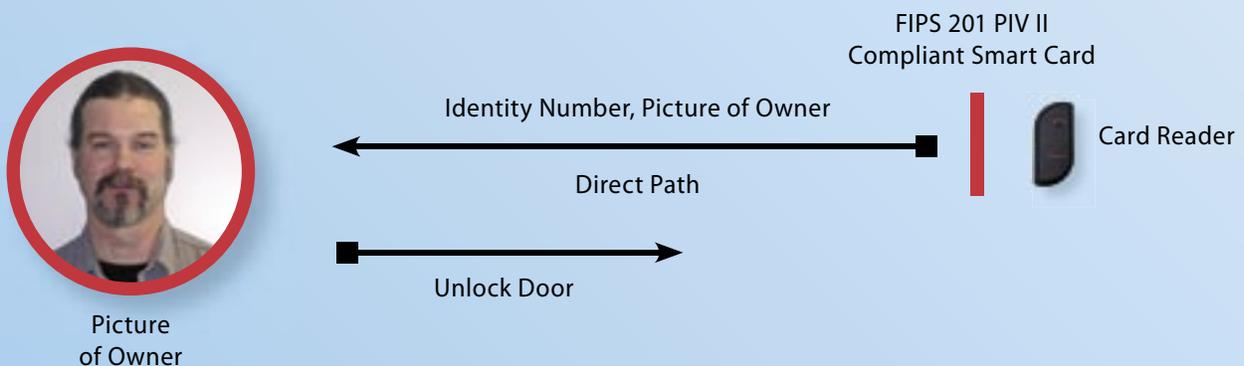
“Viscount’s MESH™ PACS is based on IT principles and understood by IT professionals. The SQL distributed database architecture is designed for no downtime and ease of operation. MESH™ Smart Card Readers are IP compliant and can operate in a remote building without onerous supporting hardware. Furthermore, additions to the system are accomplished through standard APIs eliminating the need for costly hardware upgrades”.

### Viscount’s MESH™, SUMMARY

MESH™ can interface with FIPS 201 compliant Smart Cards and issuance software, read the extremely large bit counts necessary for highly secure cards or biometric codes and deliver this capability with the high dependability that comes with redundancy on every component. Viscount provides this capability at a price that intimidates the competition, because MESH™ utilizes standard IT principles and does away with troublesome and expensive Control Panels. MESH™ fully encapsulates IT / Physical Security convergence, a strong theme of the FIPS 201 standard.

For Technical Information on MESH™ contact Viscount at 1-800-476-3774.

The image of the card owner can be transmitted to the Guard Station for high security screening. MESH™ accomplishes this using high-speed transmission. There are no bottlenecks caused by interim card reader controllers.



# MESH™ Smart Card and HSPD-12 Contactless Readers

MESH™ SC Smart Card readers are enhanced MESH™ devices for facility protection and for organizations with multi-usage requirements. MESH™ SC readers run on the MESH™ Net and have the fault detection, on-board I/O and addressable features. They provide low, medium and high assurance functionality for HSPD-12 applications at major cost savings by eliminating the panel component.

## MESH™ SC – Readers with the power of a panel

MESH™ SC readers include onboard database support to protect against data network or server failure. In degraded mode, users zoned to each door can still operate the MESH™ SC reader. For readers running over IP networks this also protects against network interruptions.

Each MESH™ SC reader comes with 4 inputs and 3 outputs for localized processing of door locking devices, exit devices and alarms. MESH™ IDR chips can be used to provide additional security for protecting door locks.

## Additional Premium Benefits

### Encrypted Data and Secure Formats

Traditional reader formats are un-secure, leaving systems open to RFID signal and data cable hacking. MESH™ SC readers and cards can be DES encrypted to properly protect people and facilities. Unlike traditional security cards with formats limited to 40 bits or less MESH™ SC cards have 2k of memory or more to provide unique user identification.

### Powerful card tools

Traditional readers rely on panels to process simple data signals. Paired with MESH™ servers, SC readers can send any specified card information for tracking and verification. For example, images of users stored and matched to prevent card sharing.

Cards can also be programmed to match MESH™ SC readers and store records. Remote readers can operate independently of a MESH™ host to save wiring and trenching.

### Read/Write Abilities

- Change expiry date
- Debit functions
- Record usage logs onto card
- Stored user groups for portability

### Applications

- Eliminate panel costs for physical security applications
- WAN/LAN IP reader requirements
- US Government HSPD-12 formats
- Single credential for security and debit (universities, hotels, recreation)
- Standalone readers for postal delivery, secured utility rooms



Contactless Reader



Biometric Option

### Specifications

Options	Surface, flush or long range
Compatibility	ISO 15963 and 14443
Outputs	2 open collector, 1 dry contact output
Inputs	4
Frequency	13.56 Mhz
Network Max.	50 per MESH™ Com Port
Approvals	UL 294
Environment	-40° to +158°F (-40° to +70°C)
Humidity	0 – 100%
Power	9VDC
Cards	ISO CR80, PhotoID, Keyfob, Pallet tag

## More... Powerful - Secure - Sustainable - Affordable

When choosing an Access Control system the key considerations include affordability, reliability and interoperability with IT and security applications. Ultimately, reliability and the cost of ongoing service are the most important factors in an operational system.

MESH™, with its high availability techniques, its use of standard IT principles, off-the-shelf PC hardware and its extremely low component count (there are no card reader controllers), provides a vitally needed solution; a new paradigm in reliability and cost of ownership.

Should a Card Reader fail in a conventional system, the first indication of this failure is a complaint from someone trying to access the door. The result is an unhappy tenant, an expensive emergency service call, and, if it is a critical door, a liability threat. Due to the fact that the card readers' supporting hardware (the Card Reader Controller) is proprietary, replacement service could take days or even weeks. MESH™ eliminates these issues. MESH™ Card Readers are addressable and therefore constantly report on their condition allowing for proactive action should there be a malfunction. Furthermore, MESH™ ensures virtually no downtime as troublesome card reader controllers do not exist.

One MESH™ Server will support 170 card readers (there can be unlimited interlinked servers across a Network). A conventional system may need as many as 170 expensive card reader controllers to support the same number of readers. Of course, cost prohibits such configurations. MESH™ delivers higher levels of system stability, less operational cost, and more integration possibilities, at a much reduced capital cost. The following provides further details of the revolutionary MESH™ technology:

### a) Access Control without limits, Expandability

MESH™ has virtually no limits for common access control parameters such as the number of Card Readers, Users, User Groups, Time Zones, and Partitions. Furthermore, the ability to partition the system allows it to cover an extensive Enterprise while being extremely manageable.

Expanding a MESH™ system is as simple as adding a card reader to the MESH™ Net network. It requires no costly real-estate to house controllers that are found in conventional systems. Clearly, for initial installation or when expanding an existing system, MESH™ represents extreme cost savings.

▲ Conventional Systems have limits because the Card Reader Controllers (which control one, two or four readers) have limited memory and processing power. Since there are many of these in any system, individual computer processors would make a system too costly and out of reach for most owners. Card Reader controllers are also troublesome because the firmware must match the software at the host computer. Upgrading often requires the changing of all controllers or at least the time consuming task of changing each controller's chip set. To support hundreds of readers, MESH™ uses the latest PC processors and large disk drives (minimum 80 Gig) found in one powerful cost effect PC. MESH™ is in a different league when it comes to cost, reliability, functionality and expandability.

### b) Serviceability and Reduced Liability

#### Use of Standards

MESH™ uses easily obtained, and easily serviced off-the-shelf PC and IT related hardware. MESH™ Servers (each supporting up to 170 card readers) work in unison with each other under a standard IT architecture, and are supportable with personnel already trained to support other IT applications.

▲ Conventional Systems use proprietary card reader controllers. It is not uncommon to wait weeks for a replacement part. IT professionals have no idea how these devices operate and therefore specially trained technicians must be called for all support requirements.

#### Elimination of Failure Prone Components

MESH™ eliminates the need for card reader controllers and therefore the number of system components is drastically reduced. There is one server per 170 card readers.

▲ Conventional Systems are card reader controller dependant and therefore most service requirements are focused on these devices. A service technician will waste valuable time finding these items and then often requires a ladder to get into ceiling spaces, disrupting the customer's operations. Once found, replacement is often difficult because these are proprietary devices obtainable from only one manufacturer. Furthermore, replacement can be problematic because new versions often do not match older versions, making the replacement of all controllers, or at least the costly changing of all chipsets, likely.

### Proactive Service for Reduced Liability and Cost

MESH™ provides the unique ability of ensuring service before a catastrophic event occurs. Proactive service is due to addressable card readers that are constantly reporting on their condition.

▲ Conventional Systems use what are called “dumb readers” that do not report. The first sign of trouble comes when a tenant cannot access a door. Of course, this causes an unhappy tenant, an expensive emergency service call, and a possible liability issue.

### High Availability, Fault Tolerance, and Redundancy

MESH™ provides unparalleled stability as it provides standard IT recognized Fault Tolerant techniques. These techniques, such as RAID 5, Mirrored Drives, Uninterruptible Power Supplies, Redundant MESH™ LAN Bot Servers and Redundant MESH™ Net wiring loops, allow continued operation during a malfunction, eliminating downtime and the need for costly emergency service. For example, a MESH™ LAN Bot Server will sit idle until a server fails. It will then automatically support up to 170 card readers until the remote server is repaired. With MESH™, unlike any other system, it is also cost effective to provide card reader redundancy, providing two readers at any critical door. MESH™ also adds redundancy to the wiring architecture by providing two paths of communication from a reader to a server. Unlike any other system, the cutting of a wire will not cause any component failure.

▲ Conventional Systems can not cost effectively provide redundant card readers or card reader controllers and therefore have very poor Fault Tolerance ratings. A failure of a controller, reader or a cut wire to the reader will cause a complete failure requiring immediate service.

### c) Integration for Greater Efficiencies

The MESH™ architecture is based upon standards that have converged across many applications and across many industries. MESH™ offers integration and database sharing through the accepted standards of WEB Services and through the recognized method of Application Programming Interfaces (APIs). This allows simplified integration between applications such as Human Resources and standard IT Security Software. MESH™’s ability to utilize a plethora of devices that are now inexpensive commodities greatly enhances the power of the system. For example, off-the-shelf routers and wireless devices can be connected to remote card readers allowing the deployment of card readers across the internet without the typical cost of Controllers and Network cards.

▲ Conventional Systems have essentially no way to use accepted standards to provide effective integration with card reader controllers as these devices are based upon proprietary technologies (firmware and hardware). The ability to provide the necessary firmware to accomplish this is severely limited because the Memory and Processors are constrained due to cost. Any attempts at integration are done with proprietary coding which is difficult to service and upgrade.

### d) Future Proofing

Every facility manager recognizes that they are at risk of investing in technology that will be, or is already obsolete. MESH™ provides the comfort that the investment can be utilized and built upon well into the future.

#### WEB Browser Interface

The MESH™ user interface is powered by a Standard WEB Browser and therefore is supported by any computer based upon any operating system. (There is no charge for an unlimited number of clients) Should a corporation change all of its computers the Access Control User Interface will still be 100% functional.

▲ Conventional Systems have proprietary user interfaces that are based upon one operating system. (Extra client screens are costly). If a corporation changes their main computer standard they will likely have to change their entire access control system.

#### Architecture

The MESH™ architecture is IP/Ethernet based. Interconnections with devices and software are entirely understandable to the IT department. Wireless connections are done by simple off-the-shelf devices.

▲ Conventional Systems use proprietary devices needing specialized technicians and specialized parts.

#### Platform

MESH™ is a platform allowing for convergence of Facility Protection Software including other Viscount Applications or 3rd party applications. Simple changes to the interface layer will accommodate future technologies.

▲ Conventional System’s proprietary nature (especially the Card Reader Controllers) requires firmware or software rewrites in order to accommodate future interfaces. Obsolescence is the norm in conventional access control systems.

# MESH™ ACCESS | Simply Sophisticated

MESH™ represents a new paradigm in Access Control systems. It is built from the ground up on Information Technology (IT) principles. It scales from a single small building to 100's of buildings and 1000's of entry points. Its strong appeal is due to its attractive cost of ownership, reduced complexity (no card reader controllers), IP compatibility, WEB user interface, and the ability to operate harmoniously with other Viscount and 3rd party facility protection applications.

MESH™ is designed with the property owner in mind. The database can be partitioned, allowing individual tenants or property managers to control their own areas from anywhere through a common WEB browser, a true benefit. MESH™ ACCESS can also accommodate customers that span the globe, as multiple languages are available at the sign-on screen.



The MESH™ ACCESS Web based application provides security for individual buildings or groups of buildings. Each tenant or manager can control their own space, in their own language from anywhere via the Internet.

## FEATURES

- Servers and End Devices such as Card Readers are the only hardware components. (there are no interim card reader controllers)
- Supports mirrored hard drives, dual processors, and RAID arrays. Further enhanced with Uninterruptible Power Supplies.
- Uses Standard WEB Browser as a user interface

## Associated BENEFITS

- Software enhancement is cost effective and simple as it is performed only on Servers  
Note: with controller based system sometimes controllers need to be replaced with a software change
- Attractive cost of ownership
  - No complex service requirements
  - No real-estate required for Controllers
  - Never have to replace a Controller
- Virtually bullet proof system stability  
Every device in the system can have a redundant component (even the card reader). Conventional systems cannot back-up controllers or Card Readers
- Administer and monitor from anywhere at any time using a standard Web Browser. Special software is not required on Clients. No extra license fees for additional clients.



Browser based Graphical User Interface. Manage security from anywhere anytime on a network enabled PC or handheld device.

## FEATURES

- The database can be partitioned by tenant or building
- Unlimited number of users and groups can be programmed for access to all Entry Portals
- Standard IT principles deployed simplifying integration with 3rd party programs. Interface layer (API) available for deep integration. SQL database is utilized. WEB services including XML and SOAP are implemented
- Anti-pass back is provided, including hard, soft, timed and rules based
- Card Access activities such as, who entered and alarms are logged and can be emailed
- Wiegand Readers as well as MESH™ Readers are supported
- A built in report generator is provided The reports are built from an SQL database
- Provides Elevator Control
- Digital Alarm inputs
- Provides rules based ( and / or )outputs based upon the state of multiple inputs
- Supports redundant card readers with the simple addition of a card reader
- Multiple Languages supported, including double byte characters. Language is selected at sign-on

## Associated BENEFITS

- Tenants, be it a commercial enterprise or an apartment, can have full control of areas they manage
- No restriction on who is programmed through a door, gate or elevator (Conventional systems have restrictions due to the controller's limits)
- Integration with 3rd party programs and databases is simple and quick Custom integration is available at a reasonable cost
- Cards cannot be used for re-entry to an area if they have not been used to exit the area
- Individual managers (or even tenants) receive emails upon alarm events
- Existing systems are easily retrofit to become part of an Enterprise-wide system (card reader controllers in existing systems or buildings are bypassed)
- Reports are available for most management needs For complex reporting the customer can easily deploy Crystal Reports
- Control access to individual floors
- Provide security alarms for door open, window break or other digital alarm condition
- Set-up complex rules for alarm purposes
- Provides extreme "high availability" (redundancy). Conventional systems do not support redundant readers
- Each administrator can operate the system in their own language by simply selecting from list



Administrators are provided individual rights



Adding a user, assigning them to User Access Groups and assigning expiry dates is quick and simple.



Extensive sorting and reporting of events for security and system performance audits.

# MESH™ ACCESS Comparison | Simply Superior

MESH™ ACCESS' architecture differs significantly from conventional Access Control systems in that there is not a plethora of card reader controllers performing the key access control functions. With MESH™, this task is efficiently performed with a Server or Servers. The following comparison is presented from the perspective of the key processing component residing in the different architectures; the Card Reader Controller or the MESH™ Server.

Feature	MESH™	Conventional System
<b>High Availability</b>		
Redundancy for Every Device	Yes	No
Redundant Readers	Yes	No
Redundant "Reader Control"	Server Based	No (Controller Based)
*Mirrored Drive	Yes	No (Controller Based)
*RAID	Yes	No (Controller Based)
*Reboot Server	Yes (Viscount Power Boot)	No (Controller Based)
Remote (WAN) Server Back-up	Yes (BOT Server)	No
Uninterruptible Power Supply	Yes	No (Typically a battery)
Self-healing Bus	Yes (Redundant MESH™ Net)	No
Redundant Servers	Yes (To support Readers)	Yes (to support Controllers, Reader not supported)
<b>Installation and Service</b>		
Reader Fault Monitoring	Yes( addressable Readers)	No (user reports trouble)
Structured Cabling	Yes (CAT 5 throughout)	No
Virus Free Operating System	Yes (Linux)	No (typically Windows)
One Step Software Upgrade	Yes	No
*Remote Clients	Yes (Web Browser Based)	No (typically Windows)
*"Reader Controllers"	Yes (Server Based)	No (Controller firmware)
Direct Interface to Elevators	Yes (Relay Controller + Rdr)	No(also Reader Controller)
Direct WAN connectivity	Yes	No(not supported at Controller)
Wi-Fi connectivity	Yes	No(not supported at Controller)
Free Topology Wiring	Yes	No (home run only)
One "Rdr Cntrl" per 170 readers	Yes (Server)	No (200 controllers per 200 Rdrs)
4000 foot per wiring run	Yes	No (500 feet)
Digital Inputs and Outputs on Rdr	Yes	No
Firmware Support Required	No	Yes (Version must match host)
<b>Additional Features</b>		
Communication Speed	128,000 baud	9600 baud
Cost of Key Hardware	1 Server per 170 Rdrs	200 Controllers per 200 Readers
Number of Cards	Unlimited	Limited by Controller
Number of Card Readers/ System	Unlimited	Limited by Number of Controllers
Administration Users	Unlimited - No extra Licenses	Limited- License fees
Groups	Unlimited	Limited by Controller
Supports Intercom Functions	Yes	No
Supports Voice over IP	Yes	No
Supports On-Board Video	Yes	No
Supports Voice Visitor Entry	Yes	No

# MESH™ Server | A Powerful Security Software Platform

At the heart of a MESH™ Facility Protection System is the MESH™ Server (or an array of synchronized servers). The MESH™ Server provides outstanding new benefits while eliminating the masses of expensive Card Reader Controllers that are found on conventional systems. Each MESH™ Server is an IP enabled platform that provides core software routines required by Facility Protection Applications and improves security management by ensuring that these applications operate in “Hub” harmony.

The core MESH™ architecture includes a distributed SQL database and an open source JAVA based Security Software Platform operating in a Linux™ environment for a stable, virus free operation. Since MESH™ programming is WEB based the system is compatible with any end user environment including LINUX, UNIX™ or Windows™ environments and requires limited IT department involvement. For enhanced system integrity, Viscount offers a full range of redundancy features, including LANBot, RAID and mirrored drives. (Refer to the next page for affordable high availability options.) For simple card reader only applications, an entry level MESH™ Reader Server is available. For applications requiring more complex functionality a Security Server is required. Specialized MESH™ LANBot Servers can be added for reader, device and alarm processing redundancy.

## FEATURES

- Optional choices for Server Hardware; Tower, Rack Mount
- Supports mirrored hard drives, dual processors, and RAID 5 arrays. Uninterruptible power supplies are supplied
- Operates in the Linux Environment
- Communication directly from Server to Card Readers. (no interim card reader controllers)
- Synchronized and distributed LAN/ WAN MESH™ server networks
- The Server supports unlimited Browser based clients  
Software enhancements are performed at one location; the server
- Supports MESH™ Net Self-healing Communication Bus
- Supports Redundant Card Readers
- Supports Anti-Pass Back

## Associated BENEFITS

- Fits single building or enterprise security requirements
  - Virtually bullet proof system stability (refer to the next page for enhanced availability functions)
  - Virus free operation.
  - Software enhancement is performed only on servers. (no controllers to update)
- Attractive cost of ownership
- No complex service requirements
  - No real-estate required for Controllers
  - Never have to replace a Controller
- An unlimited number of buildings can be managed as a single MESH™ System
  - Administer and monitor from anywhere at any time using a standard Web Browser. Special software is not required on Clients. There is no extra license fees for additional clients
  - Should there be damage on the communication bus there is a redundant path for communications. Communications will not fail
  - In areas requiring very high availability a second card reader can be supplied. The system will automatically revert to the second card reader should the first fail
  - Provide extra protection at highly secured areas  
List who is in an area (Muster Reports)

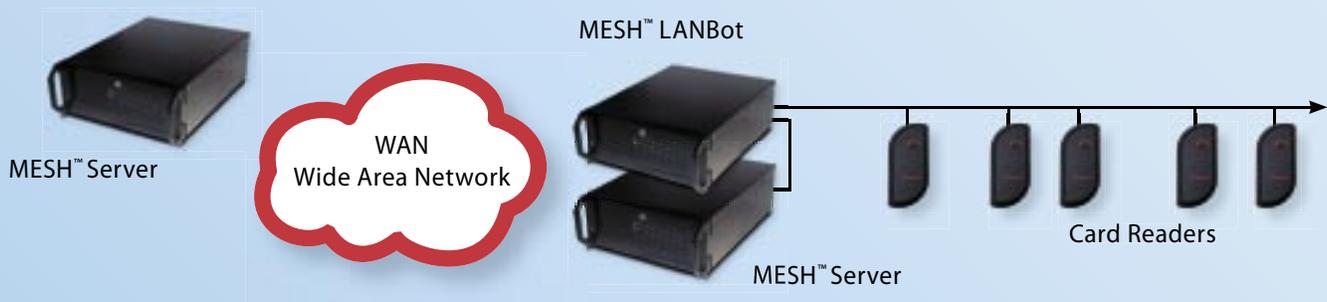
With MESH™, for the first time the Access Control Industry has a practical redundancy solution. The elimination of troublesome Card Reader Controllers from a system not only increases reliability but makes redundancy affordable. Viscount has gone to extreme lengths to ensure that critical Security applications continue to operate irrespective of disruptive factors. LANBot servers, RAID, Mirrored drives, and redundant card readers provide stability. Combined with the MESH™ Self-healing Communication Bus for devices and servers, makes MESH™ the most reliable Facility Protection system in the Industry.

## Manage Security Across an Enterprise as a Single Harmonious System

An Enterprise level MESH™ Security deployment can consist of a single server or an array of synchronized servers. These servers can reside in one building on the Local Area Network (LAN) or in numerous buildings connected via the corporate Wide Area Network (WAN) or VPN. Satellite buildings can have MESH™ devices connected to routers with no on-site server. The MESH™ Host security server is utilized for centralized configuration and master database administration while others support local processing. Remote servers can have site specific partitioned databases for localized management. Since MESH™ uses WEB browsers, administration and configuration can occur at any terminal across the corporate WAN through a secure logon.

## LANBot Redundancy and Power Boot

Any MESH™ Server can be paired with a LANBot Server. Each holds all the data required to operate the system, while any changes are auto-synchronized. The MESH™ LANBot sits latent until a primary server fails. The MESH™ LANBot then takes over all processing. In areas where extremely high availability measures are mandatory, systems can be divided into smaller clusters of devices or redundant devices, each managed by a redundant MESH™ LANBot Server. LANBot Servers provide a similar functionality to RAID 5 but at a greatly reduced cost. A MESH™ LANBot will synchronize all primary server data and sits latent and attached to the primary server. The difference between a LANBot and a RAID 5 is that activity logs are unavailable until the primary unit is repaired. In a further high availability measure, Viscount provides Power Boot drives, additional Disk Drives which hold all original settings and can be swapped into servers. The Server is instructed to boot from this drive to allow default operations to continue during the time needed to establish normal operations.



## Self-healing Communication Bus and Redundant Card Readers

Viscount has extended availability measures to the system devices by the MESH™ Net Self-healing Communication Bus. The communication cable for card readers and other security modules is connected in a loop. Should it be cut or damaged, communication continues through an alternate route. In addition, the server supports redundant readers. These readers may be needed in areas where high availability is mandatory. The server will recognize a failed reader and instantaneously shift communications to the redundant device. A separate fault tolerant bus can be provided for LAN connected MESH™ servers.



Viscount provides a variety of MESH™ Server choices from basic in-building kits to high availability (redundant) LANBot or RAID systems. Networks of buildings may employ combinations of server types depending on the requirements of the customer and risk assessments at each site.

## **MESH™ Reader Servers**

MESH™ Reader Servers are designed for basic installations for up to 50 doors. Reader options are limited to MESH™ devices or Wiegand devices with the Datastream Interface Modules. Alarm functions are limited.

## **MESH™ Security Servers**

MESH™ Security Servers are designed for larger buildings, or those requiring elevator control, enhanced alarm functions, built-in Pro-Output functionality and extensive redundancy (some high availability techniques). They are also required for sites with mixed reader devices (i.e. MESH™ readers at doors and long range vehicle readers at gates). Each MESH™ Security Server can control up to 170 MESH™ Readers in 4 banks.

## **MESH™ Reader Server and Security Server Kits**

These servers have the same architecture as the associated MESH™ Server but are designed for on-site programming without remote programming. A keyboard, mouse and monitor is included for these applications.

## **MESH™ Host Servers**

MESH™ Host Servers are for Enterprise deployments where an isolated Web Server is desired for database, programming and log hosting. MESH™ Host Servers do not include device connectivity options.

## **MESH™ Custom Servers**

MESH™ can be used with a range of specialized customer specified and Viscount supplied Linux compatible servers. Some of these are, Milspec, Mobile and industrial Nema rated Servers.

## **Optional High Availability Techniques Within MESH™ ...Defined**

Each MESH™ Server has numerous capabilities for the elimination of downtime or "high availability". These requirements can be tailored to each customer's specific needs.

### **Mirrored Drives**

A second disk drive is installed in one or all servers with mirrored data of the main disk drive. Should the main drive mechanically fail the second drive will automatically continue operations.

### **Power Boot Drives**

A third drive with all the original settings is shipped with each server should all available drives fail to quickly re-establish door security.

### **RAID 5**

RAID 5 includes both a mirrored drive(s) and a back-up mother board. Should any server hardware fail the system will continue to operate.

### **LANBot Servers**

LANBot servers provide similar functionality to RAID 5 but at a greatly reduced cost. A MESH™ LANBot will synchronize all primary server data and sits latent and attached to the primary. The difference between a LANBot and a RAID 5 is that activity logs are lost until the primary unit is repaired.

MESH™ open standards protocols provides end-users the value that comes from integration of disparate systems. For example, it may be advantageous to set a light path based upon a particular card presentation or to obtain sophisticated analytics of entry patterns from a dedicated report generator. MESH™ provides integration by use of today's accepted Web Services standard, with extensive use of XML and SOAP. In cases where tight integration is required (usually a customer driven request), MESH™ provides an Application Program Interface (API). And in cases where integration is required to legacy equipment such as Alarm Panels, MESH™ provides an ability to communicate with discreet digital inputs and outputs.

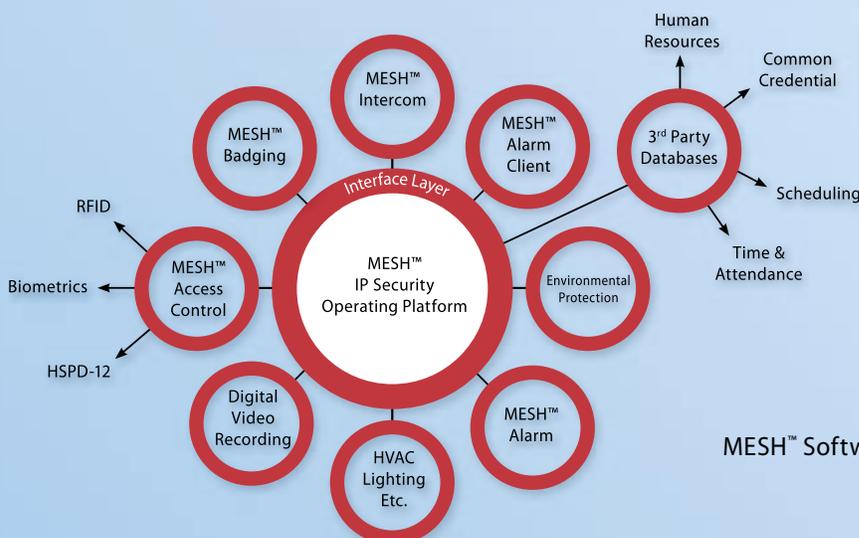
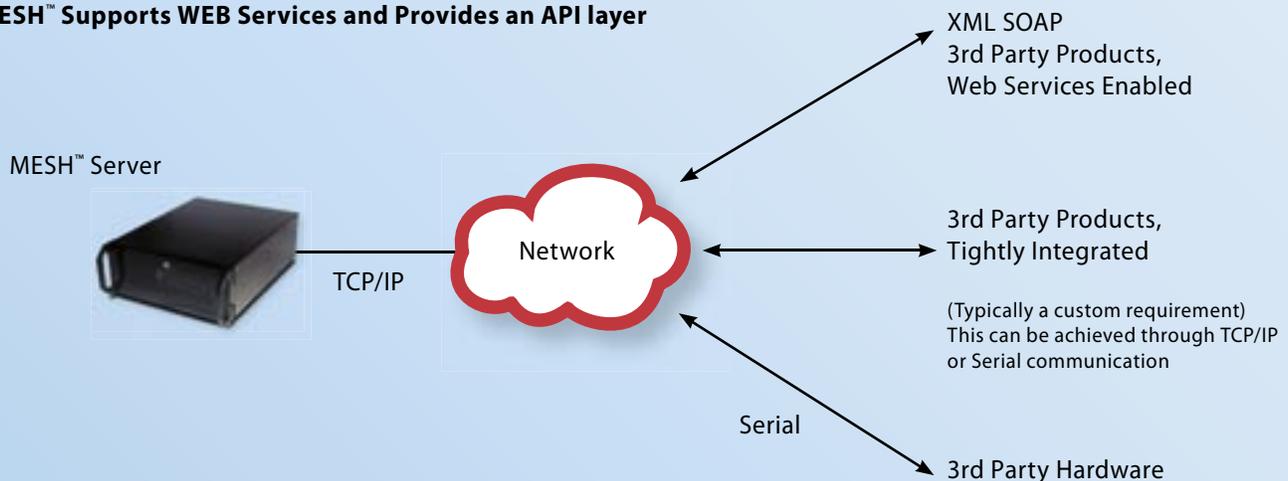
## MESH™ - Customized Human Resources Management of Security

Enterprise users of many traditional systems (with card reader controllers) have fears. Have the access permissions of suspended employees been changed in all buildings? Has security performed these duties in a timely fashion? An Enterprise MESH™ system consists of a partitioned distributed database. A MESH™ Host can be designed to communicate to an existing HR database and provide system override tools so any HR database change can automatically update security permissions. Attempts to use a restricted card can also be communicated to both HR and security personnel.

## MESH™ - Customized IT Security Applications

IT security often logs attempts at certain security breaches but does not take proactive measures. MESH™ application tools allow bi-directional feedback for specialized applications. Examples include an attempt to logon to a computer when the MESH™ system shows the computer user should not be in the building. MESH™ is designed to support custom IT logon procedures that use a common credential for physical security and IT applications.

### MESH™ Supports WEB Services and Provides an API layer



MESH™ Software Architecture

# MESH™ Elevator | Secured Floors for Peace of Mind

MESH™ Elevator allows floor access to users with authorized credentials or to visitors who are granted access by a tenant via a MESH™ Entry Panel. Low security elevator control consists of a lobby reader used to open elevator doors for full floor access. Most commonly, MESH™ Readers are mounted within the elevator by the call button panel. A user presents their card to the reader and then selects a floor. Individual user cards can have access to a single floor or any combination of floors. The most sophisticated version of elevator control includes an override function to turn off active floor buttons in elevator cabs once a floor button has been pressed.

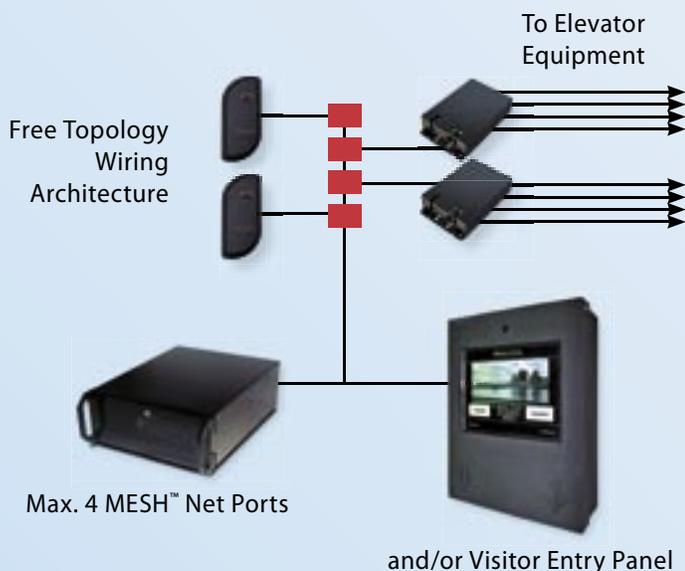
For visitors who are granted access via the visitor panel, the tenant's authorization sends the elevator to the lobby with only the tenant's floor button active. For most elevator systems MESH™ Elevator will report on the floor that was actually accessed. This differs from many elevator control systems which allow authorized users to a number of floors, but the actual floor they accessed remains elusive.

## FEATURES

- Restricts Access to floors by group or individual user
- Provide Tenant Control of Visitors to individual floors
- Maintain a log of actions performed by tenants, users, and managers
- The Elevator mounted card readers communicate directly via MESH™ Net to the server
- Packaged in 16,32,48 and 64 floor versions
- Extremely tolerant of differing wiring types. Opto-isolation is provided for extremely electrical noisy environments.

## Associated BENEFITS

- Provide effective yet manageable building security
- Provide flexibility for Visitors yet maintain security
- Provide comprehensive reporting of history for security or system maintenance purposes
- No need for interim Controllers  
Attractive cost of ownership
  - No complex service requirements
  - No real-estate required for Controllers
  - Never have to replace a Controller
- Accommodates the requirements for all sizes of buildings
- In virtually all cases, the existing elevator Riser Cable will provide the required MESH™ communications



### MESH™ Elevator Module Specification

Outputs	16 Form C Relays
Relay Ratings	7 amps @ 28 VDC
Oper. Voltage	110 Volts
Oper. Current	64 ma (all relays active)
Max. Inrush Surge	636 ma
Communication Bus	MESH™ Net
Floors	16 per module
Server Capacity	320 Floors
Module Sizes	16, 32, 48 or 64
* Data Inputs Require Optical Isolation	

# MESH™ ALARM Client | Monitor Alarms from Anywhere

MESH™ ALARM Client allows for monitoring of one or a number of facilities from a central command center or from anywhere via the internet. MESH™ ALARM Client allows the monitoring of System Faults, Door Contacts, Window Break Sensors. As well as the real-time alarm monitoring at remote locations, MESH™ will email alarm notifications to an individual or a group. The alarms can be filtered so that only events of concern are sent to any one email address. Alarms can also trigger output events, triggering sirens or signaling Digital Video Recorders to start recording video.



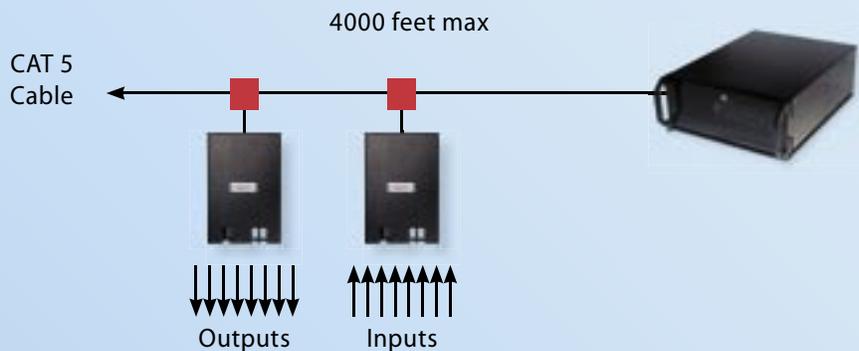
Alarm Client Screen

## FEATURES

- Monitor digital inputs/ outputs
- Alarm Events are pushed to Receiving Station over the internet or intranet
- Alarm Events can be emailed based upon filters
- Nuisance alarms can be cleared with one key stroke

## Associated BENEFITS

- Door contacts, Window Sensors, Motion Sensors can be monitored
- Alarms can be monitored from any terminal via the internet or internal network. These arrive in real-time. No screen refresh is necessary
- Monitor Alarm events from mobile devices such as PDAs. Only the events of interest will be received
- There is no need to individually handle troublesome or nuisance alarm events



Protection Officers or Service Companies can receive Alarm Notification emails. MESH™ sorts and sends these emails by Alarm Type allowing them to be routed directly to the correct service personnel.

### MESH™ Input /Output Module Specification

Oper. Voltage	110 Volts
Outputs	Form C Relays
Relay Ratings	7 amps @ 28 VDC
Inputs	Dry contact Inputs
Oper. Current	Max. Inrush Surge
Communication Bus	MESH™ Net
Alarm Devices	16 per module
Server Capacity	320 devices
* Data Modules require optical isolation	

MESH™ Readers are smart addressable devices that can communicate with a MESH™ Server, or MESH™ Panel directly, via the internet or via corporate wide area network (WAN). An on-board relay controls doors, gates, elevators, lobby buttons and exit devices. Unlike traditional readers, fault detection software notifies management of any device problem, prompting proactive corrective action. Up to 50 card readers can “daisy chain” on a single CAT 5 cable. A unique MESH™ Net “Redundant Data Path” allows continued communication regardless of a cut or tampered cable. For simplified installation the Readers support free topology wiring, which permits tapping off the main bus. Standard read range is 5 inches, however longer read ranges are available. Associated MESH™ cards have a 64 bit architecture to provide more security and unique customer customization than that of conventional proximity cards.



**Mullion or Wall Mount**  
Part # 416-MS-MM



**Single Ganged Mount**  
Part # 416-MS-SGBLK



**Vandal Proof**  
Part # 416-MS-BP  
Anti-tamper rear mount  
Ballistic stainless housing  
For high security portals



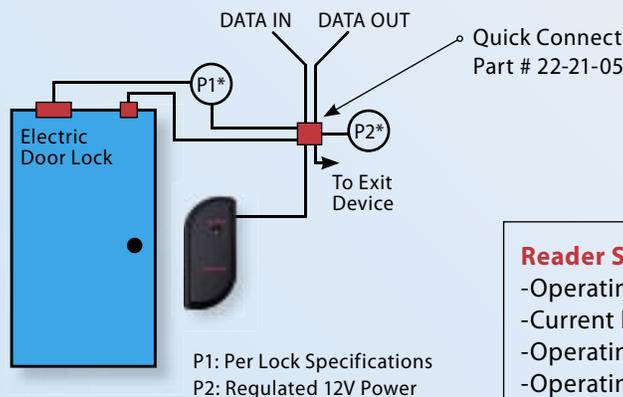
**Flush Mount**  
Part #46-23-02  
Steel housing.  
(Choice of colors)  
Smoked lens

## FEATURES

- On-board electric lock or gate control relay. Off-board supported relay for highly secure locations.
- Two on-board inputs
- Addressable devices with built-in fault detection and reporting. Reports locally or remotely for on or off-site management.
- Redundant Data Path option allows communication to server in two directions
- A card reader can be directly connected to the LAN or WAN with a simple converter
- Homerun (Star), Daisy Chain wiring or a mixture for true Free Topology
- High speed communication via CAT 5 cable

## Associated BENEFITS

- No need to homerun door strike wire
- Output to 3rd party applications, such as lighting or intrusion detection systems.
- Monitor stuck or broken intelligent door strikes.  
No need to homerun cable for door status or exit device.
- Management (on or off-site) can proactively respond to reader problems. (conventional methods rely on users to identify a problem)
- Card Reader will communicate even if a line is cut or tampered, providing maximum fault tolerance
- Add readers to remote sites with no need for a local Server
- Save on wiring costs. Place readers where they are needed without the need for controllers. Adding future readers is as easy as tapping anywhere off the original cable.
- Use existing backbone for adding readers throughout a building. No proprietary cable to support.



\*Refer to Power Section in this brochure

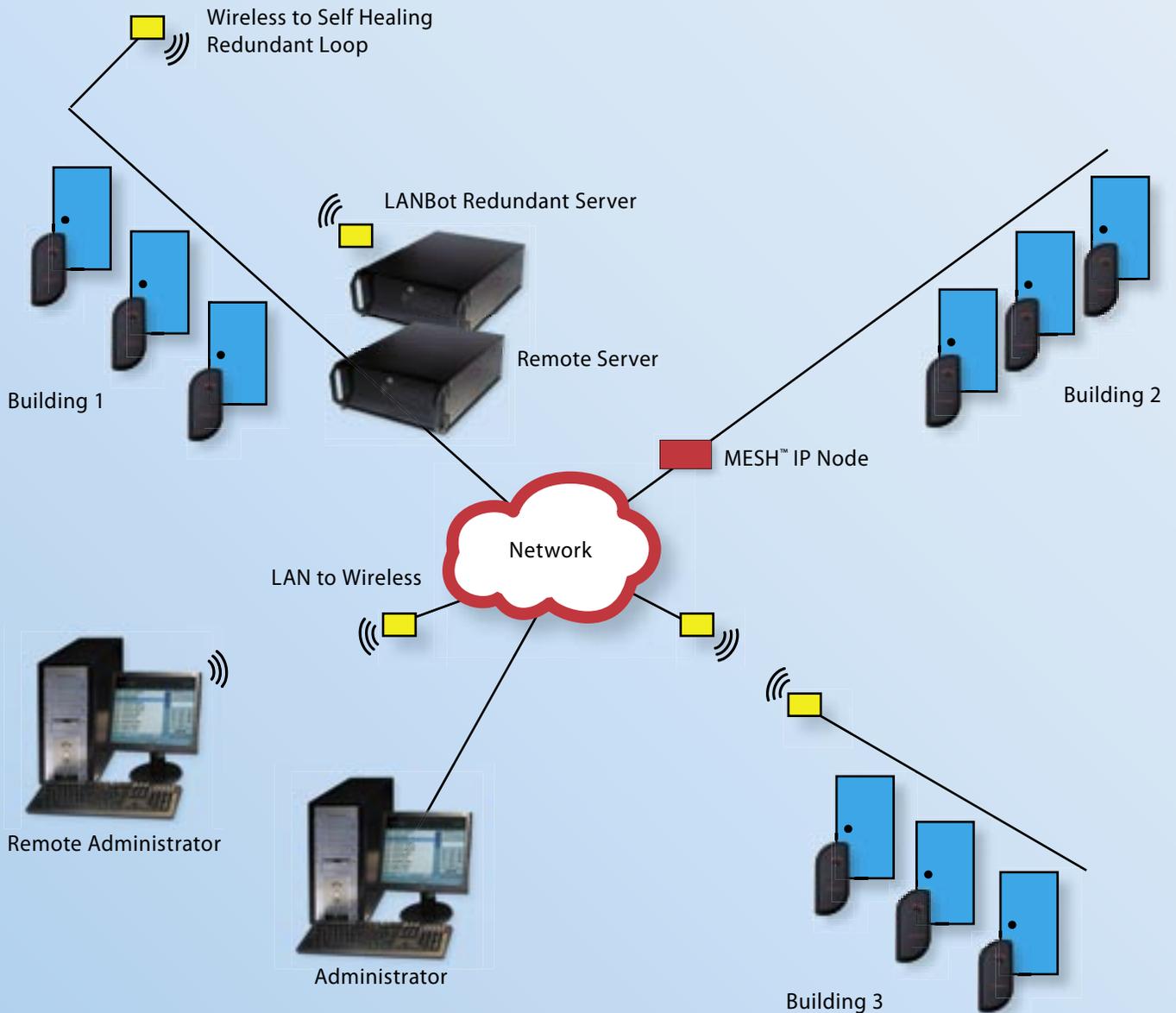
### Reader Specifications

-Operating Voltage	5-14 V DC
-Current Draw	120 ma
-Operating Temp.	-40-+70deg C
-Operating. Hum.	0-95% non-con
-Relay rating	1 amp, 60VAC or DC

# IP and Wireless | Extending the Reach

IP and wireless technologies can form a large part of any MESH™ installation, in most cases providing exceptional savings. MESH™ uses standard Information Technology (IT) and Internet Protocol (IP) principles which allows the use of a plethora of off-the-shelf IP converters and wireless devices to extend the reach to Card Readers. These devices can be placed in any building allowing card readers in a remote building to communicate with the master server. (Typical methods require a complex and expensive array of conversion hardware and controllers). When wireless is utilized readers can be connected up to 10 miles away without the need for expensive wiring or dependency on a corporate network.

## IP and Wireless Examples



The choice of a wireless device is dependant on many issues such as distance, material to be penetrated, and the data speed requirement, and is therefore site specific. When considering the implementation of wireless technology it is advisable to discuss the requirements with Viscount before proceeding. In many cases, Viscount can supply the required device.

# MESH™ Credentials | Conveniently Supporting all Security Applications

Viscount provides numerous credential types to suit a number of security applications.

## Credential Types

Standard Proximity Clam Shell Cards



Standard Proximity Key Fob



## Customized MESH™ RFID, PhotoID and Smart Card Options



### Graphic Options

- Customer information can be printed on one of many preset designs
- Customer supplied artwork and logo's can also be printed

### PhotoID Options

- ISO standard thin cards.
- Used with dye-sublimation printers.
- Adhesive Printable Labels for Existing Cards

Please call Viscount with your specific card and site requirements.

### Specialty and Custom Options

- MESH™ RFID c/w magstripe
- MESH™ RFID c/w barcode

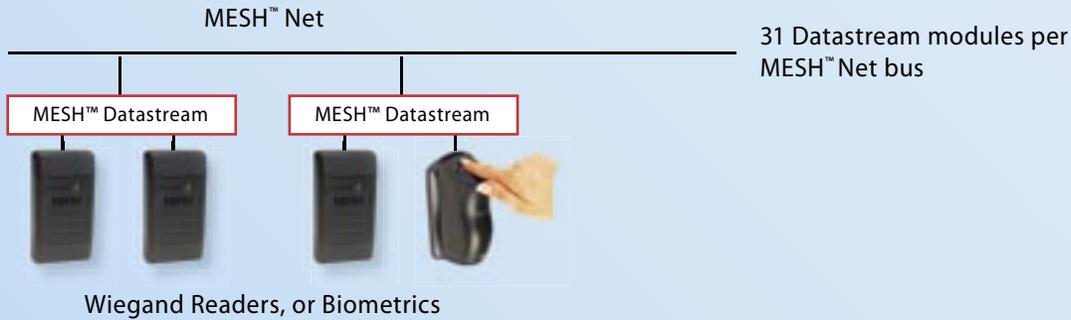
### Smart Card Options

- Clamshell, PhotoID, Keyfob
- Dual Punched Asset Tracking Tag
- Encryption

# MESH™ Supported Card Readers | Enhanced Compatibility

MESH™ Datastream modules are designed to support 3rd party Wiegand and Biometric compatible readers. Supported RFID manufacturers include HID, SecuraKey, Indala, AWID, AAID and more. This allows for retrofits, where retaining the initial investment in card readers is important. This is especially important when providing a MESH™ solution for an Enterprise that has legacy access control systems in some facilities. Typical applications that combine MESH™ Datastream supported readers with MESH™ Card Readers includes Biometrics at special doors, long range vehicle readers at gates and asset tracking devices.

Each Datastream module supports 2 readers and associated I/O. 62 readers can connect to a server. The associated MESH™ Server provides all reader processing, in essence making MESH™ the first server processed card access system.



- 26 bit Wiegand protocol is supported
- Numerous Wiegand formats can be supported. Call Viscount for compatibility issues.
- Biometric Fingerprint Readers are supported
- Smart Cards are supported
- Most manufacturers of card readers are supported, including HID, Indala, SecuraKey, AWID, AAID, etc.
- Viscount's Infrared Reader is supported
- Viscount's RadioClik Reader is Supported
- 4 inputs for door position switch and exit devices
- 4 outputs for electric lock control and auxiliary outputs
- 2 Readers per Datastream Module

*For further MESH™ Datastream applications refer to the MESH™ Datastream information page within this document*



Part # 46-23-03

## Specifications

### Datastream Module

Operating Voltage	9.5-15 Volts DC
Current Draw	130 ma
Dimensions	6.5"W x 4.375"H x 2" D
Relays Rating	Form C, 7 amp @ 28 VDC
Datastreams	31per MESH™ Net
Inputs	4
Outputs	4

### Wiegand Signal Converter

6ft data connect cable included  
Dimensions 4.5"W x 3"H x 1.2" D  
Power Supplied by Datastream module

# MESH™ Datastream Supported Card Readers | Enhanced Compatibility

MESH™ Datastream supports any device using standard 26 bit Wiegand protocol. Other Bit structures are available. Please contact your Viscount rep for availability, compatibility, and device specifications. Traditional device types (not all shown) that are compatible include:

**Biometrics - RFID - Magnetic Stripe - Insert - Barcode. Below are details on a selection of stock readers.**

### Viscount Infrared Transmitters



- Individually Coded for gates
- Up to 50 foot range
- Point and click

### RadioClik RF Transmitters



- Up to 100 foot range
- Multiple Button Option
- RFID combo option

### Viscount Vandal Proof Reader



- Rear Mount for High Security
- Cast Stainless Enclosure
- Ballistic rated cover

### Vehicle Transponder



- Automobile ID Tag and Reader
- Mounts on car chassis
- Up to 50' range

### iButton Keyfob and Reader



- In-door out-door
- Mullion mount
- Touch tags

### Biometric Options



- No cards required
- Typically for high security locations

### SecuraKey Long Range Reader



- Long Range Reader. Up to 36 inches
- Can read Viscount's MESH™ cards

### HID MaxiProx Reader



- Long Range Reader. Up to 8 feet.
- Dimensions, 12" x 12" x 1"

### HID ProxPoint Plus



- Mullion Mount.
- Dimensions, 3.135" x 1.7" x 0.66"
- Available in black, gray, white or beige

### HID iCLASS Smart Card Readers



RK40  
3.30" x 4.80" x 0.9"



R10  
1.90" x 4.04" x .80"



R30  
3.30" x 3.30" x .75"

- A multi-technology that meets ISO 14443A (MIFARE®), 14443B2, and 15693 standards.
- A Wiegand output that easily interfaces with Viscount's MESH™ ACCESS.
- A tamper magnet is provided in each housing except in the R10.

MESH™ BadgeMaker puts custom photographs, company identity, and additional text or graphics on a MESH™ Proximity Card or third party card. MESH™ BadgeMaker adds photographs to the user and visitor database, providing a one step system for authorizing users and providing them with identification credentials.

(Available Q3/4 2006)



Contact or Contactless Photo Badges for HSPD-12 and FIPS 201.



Print photos, signatures and /or bar code directly to the MESH™ photo ready card.

## FEATURES

- Supports all standard image formats
- One database for MESH™ BadgeMaker, MESH™ ACCESS, and MESH™ Voice Entry
- Encodes Bar Code and Magstripes
- Viscount will provide any badge design required
- Store multiple images and fingerprints per user record
- Transport card images for printing
- Supports Twain

## Associated BENEFITS

- Download any background image or photos for printing
- One step action to enroll an individual and provide an Identification BADGE
- Use the card for multiple purposes
- Never have to train staff on Card Design. Note: Customers can implement the card design module for in house design.
- Keep on record numerous photo images and fingerprints for future use
- For those that do not have an in house PVC printer, send the database to Viscount for processing
- Use an off-the-shelf Digital Camera for photo capture

# MESH™ Voice Visitor ENTRY (Intercom) | Quality as a First Impression

MESH™ Visitor Entry provides Entry to Visitors or Residents via Doors, Gates and Elevators.

The MESH™ Visitor Entry Panel has a virtual attendant feature providing verbal and visual feedback in multiple languages. Refer to MESH™ V-GIRL in this document.

The MESH™ Visitor Entry Panel is an advertising medium. When not active for entry purposes it can revert to a high resolution, customer configurable advertising screen, or a building information center.

Hot buttons can connect directly to special offices, such as sales or rental offices.

Installation does not require access to tenant or owner spaces.

## Hidden Pinhole Camera

- Video Camera takes recordable visitor images
- Images can be displayed on Cable TV

## Standby Screen

- Customizable Standby Screen for Advertising or Building Information
- Language can be Selected (English/Spanish/Chinese/French/Hindi...)



## Hot Buttons

- Dial directly to security or management

## Directory

- Unlimited Names
- Automatic call buttons
- Alphabetic "Quick Search"



## Touch Screen

- Full Color
- Viewable in direct sunlight
- Optional Vandal Resistant Tough-Touch

## Voice Prompts

- Multiple Languages
- Verbal Instructions
- Verbal Confirmations of Access granted or allowed



Visitors first view a MESH™ or custom building information screen saver. MESH™ panels come with color and mounting options to fit any building entrance including free-standing pedestals. Vandal resistant Tough-Touch screens, anti-glare screens and lighting enhanced screens are all available. And unlike older “LCD” panels, MESH™ is viewable day or night and in direct sunlight!

Multiple language MESH™ allows the user to select a desired language. Current languages supported include English, French, Spanish, Chinese and Hindi. MESH™ welcomes visitors and verbally assists the user in this language by providing system instructions. Screen text also appears in the chosen language. MESH™ can easily be switched back to English in the event of error.

Touching the desired language on the screen will display the building directory. All text is oversized to visually assist the user. The directory includes both tenant listings and additional important building information and “hot buttons”.

For commercial buildings a special layered directory is available. The main directory can show company lists and touching a company name can open a separate list of departments or employees. For gates serving multiple buildings this can be used to separate the directory by building address.

Visitors use their finger to find a name on the directory or use the “Search By Name” function. They dial a code or simply press the “call” button. The MESH™ keypad will verbally confirm each keypad number as it is pressed to avoid errors. If the number is busy or goes unanswered, a secondary number can be programmed for each listing. Verbal MESH™ prompts will tell the user if the system is dialing, busy, when the door is unlocked, if the wrong number was dialed or if they are denied entry.

## **Flexible codes protect privacy and increase security**

MESH™ panels provide a number of secure code alternatives. Individual names and suite numbers can be listed. Codes can also be randomized to increase privacy. Occupants can even request that they not appear in the directory at all. Visitors would then need to know the correct code before arriving. The actual occupant name can also be substituted with a proxy name to accommodate special needs such as home based businesses.

## **Restrict visitors to the floor they call**

MESH™ Panels have the ability to interface with elevators to limit building visitor access. Elevators can be restricted to allow visitors to only access the floor of the suite called to help secure parking and other sensitive areas. A MESH™ Card Reader in each elevator can also limit suite and floor access.

## **Guard Consoles control doors and track visitors**

MESH™ Guard Consoles are used where a receiving desk admits visitors. They can also be used in conjunction with MESH™ panels that turn off at certain times of day or panels at gates and alternate doors.

Guards can call suites and control doors and elevators manually from the console. They can view logs and change system settings using a password. Each visitor can have a digital jpeg image taken associated with the suite called and the time they entered. MESH™ Guard Consoles can also be used as a central programming station for card access, elevator control and alarm system functions.

## **Continued operation during programming**

While programming a MESH™ Panel, via the network or via a modem, the device will continue to operate providing full functionality. This is in contrast to many panels that cease operation while they are being updated.

MESH™ Panels and Displays come in a range of models to satisfy any site requirement. Enclosure options include type of metal, dialing functions, audio, and wall or pedestal mounting. Functions include telephone entry, building directories, guard stations, and custom information kiosks. A combination of MESH™ panel types may be deployed to provide the best solution for security, cost and architectural requirements. In addition to mechanical options there are many electronic security accessories available (refer to the accessory section of this guide). These include:

- Card Access
  - Elevator Control
  - Information Display
  - Multiple Languages
  - Cameras
  - Redundant Disk
  - Data Interface
  - Security Modules
- MESH™ panels can control up to 4 MESH™ or other readers (RFID, RF gate openers, Biometrics etc). Contact the factory for hardware requirements.
  - Restricts floors by tenants and visitors
  - Custom built static or active screen text along with graphics can be displayed
  - A touch of a button will change the displayed language
  - Visitor snapshot cameras are available in color or black/white
  - Data Interface
  - Mirrored disk drives that provide continued operation should a disk drive fail
  - Wiegand number output allowing interface with Access Systems
  - Input Modules to monitor doors and other alarms.
  - Output modules for auxiliary control.

## Building Entry Panels

Powder Coated Panel



Stock and custom color to match architectural styles

Stainless Steel Panel



Stock and custom coatings for an elegant high gloss look

Keypad Panel (Av Q3/4 2006)  
*(numeric and Braille options)*



Screen or combination units - single language supported - no alphabetic search  
-special version for MKIII upgrades

NTS Panel (Non-Touch)



Stainless or Painted  
*\*Separate Server Required*

NTS Panel



Stainless or Painted  
*\*Separate Server Required*  
*\*\* Paper Insert for information or typed directory*

Guard Station



Full MESH™ Panel Functions  
Built in program and administrative functions

## Building Directories—With Commercial Sub Directories

Kiosk



Stylish Slim Line  
Lobby Look

Stainless Steel  
Building Directory



Outdoor or Wall Mount

Guard Concierge  
Directory



Tenant Look-up Directory

## Pedestals and Kiosks

MESH™ pedestals and kiosks are designed for areas with no wall mounting surface, open areas, or to satisfy architectural preference. Please call your local dealer or the factory for custom software or requests for custom display.

Kiosk



Stylish Slim Line  
Lobby Look

Adjustable Post



Adjustable mount for vehicle or  
pedestrian applications

Tilt



Slim line look for lobbies  
-add any panel to standard footing

## Mounting Accessories

Weather Hood



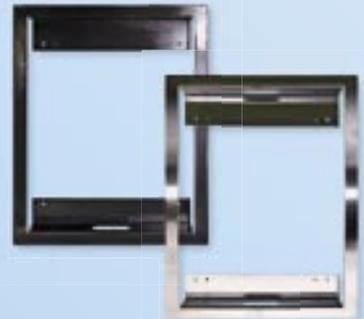
Additional Protection  
from the elements

Flush Frame



For flush mounting

Wall Sleeve



For site preparation  
or flush mounting

## ENTERPHONE SOLO™

- Residential/commercial telephone intercom
- No phone line required
- 2 wire installation
- Open doors/gates remotely
- 2 doors per controller
- Plastic or steel door stations



## EMERPHONE™ 303

- Vandal proof stainless enclosure and "Piezo" call button
- Plain, "Emergency" or "Assistance" engraving
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 305

- Vandal proof stainless enclosure and "Piezo" call button
- Plain, "Emergency" or "Assistance" engraving
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 203

- Vandal proof stainless enclosure and "Piezo" call button
- Plain, "Emergency" or "Assistance" engraving
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 204

- Vandal proof stainless enclosure and "Piezo" call button
- Plain, "Emergency" or "Assistance" engraving
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 402

- "Emergency" or "Assistance" wording
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 406

- "Emergency" or "Assistance" wording
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 304

- Vandal proof stainless enclosure and "Piezo" call button
- Plain, "Emergency" or "Assistance" engraving
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 416

- "Emergency" or "Assistance" wording
- Secondary number dialing
- Voice message chip
- I/O to open doors, activate strobes, sirens
- Green call placed, red call answered LED



## EMERPHONE™ 405

- Elevator phone/assistance phone
- Telephone line powered
- Second number dialing
- Remote programming
- Red "Emergency" lettering
- Surface/ double gang flush



## EMERPHONE™ 415

- Elevator phone/assistance phone
- Telephone line powered
- Second number dialing
- Remote programming
- Black "Assistance" lettering
- Surface/double gang flush



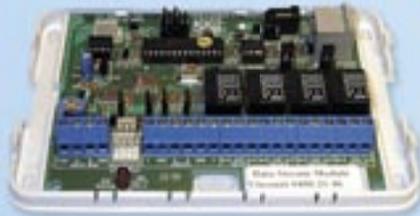
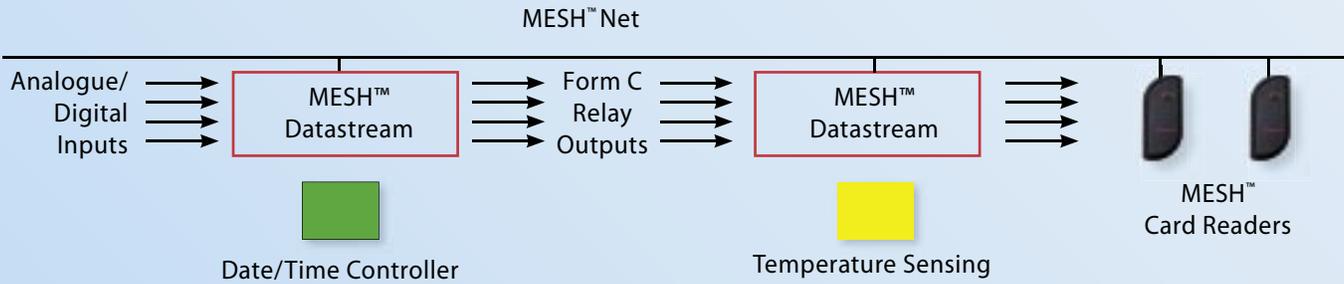
## EMERPHONE™ TOWER

- Standalone Emerphone
- c/w any Emerphone option



# MESH™ Datastream | Added Flexibility and Enhanced Protection

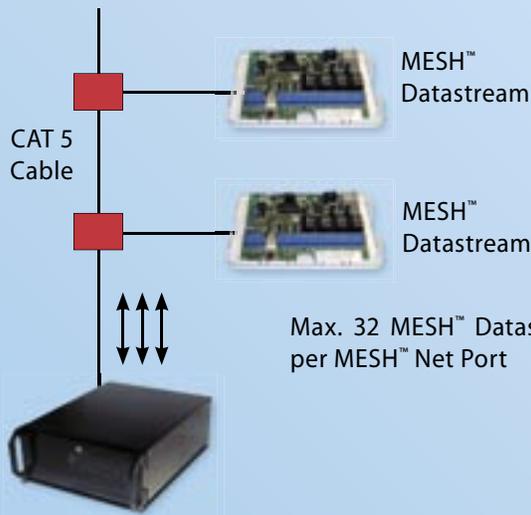
MESH™ Datastream is a programmable controller that provides complex input output logic. Viscount provides a fast turnaround programming service, allowing a customer to solve extremely customized solutions with ease. MESH™ Datastream also comes with some pre-programmed functions such as Temperature Sensing, Voice Command, and On/off control through the X10 (power line transceiver) family of devices. Conveniently MESH™ Datastream is deployed on the same MESH™ Net bus as MESH™ Access and MESH™ Alarm. MESH™ Datastream provides 4 analogue/ digital inputs and four digital (form C relay) outputs as well as specialized auxiliary modules such as temperature sensing and Date/Time timers. Please call Viscount for quotations on specific requirements.



Datastream

### Specifications

Operating Voltage	9.5-15 Volts DC
Current Draw	130 ma
Dimensions	6.5"W x 4.375"H x 2" D
Relay Rating	Form C, 7 amp @ 28 VDC
Memory	16K Non-volatile
Mounting	Wall, Electrical Box, Din Rail
<i>Powers auxiliary modules such as Timer and Temperature</i>	



Max. 4 MESH™ Net Ports

### Timer Controls



Used in a vast array of clock and calendar applications requiring minute, hour, day and monthly timing.

## MESH™ Quick Connect

Connects Reader to network  
Input/Output Isolation  
Reader Power Port



## MESH™ Video Splitter

For split JPEG and streaming video to DVR



## MESH™ Splitter 5

5 ports for star configuration  
within a MESH™ Net Bus.



## Enterphone Controller

No phone line intercom system  
Built-in call waiting  
Distinctive intercom ring  
MESH™ Interface



## MESH™ Splitter 3

3 ports for MESH™ Net daisychains



## Datastream Voice Annunciator

Add voice messages to readers, doors  
Up to 480 separate messages



## Datastream Temperature Module

Monitoring for IT or other  
temperature sensitive rooms



## MESH™ Patch Panel

16 Port MESH™ Reader server connectivity



## X-10 Datastream Module

Send or receive signals from X-10  
compliant devices



## MESH™ OPTO Splitter

For clean power for elevators  
Data enhancement for star  
or remote MESH™ devices.



## Hubs and Switches

Provides connection of servers and panels on IP network.  
Discuss with Viscount sales for the appropriate device.



## MESH™ IP Node

Convert up to 50 readers  
to single IP address  
Use for Fault Tolerant Data BUS



## Modem

For remote dial-up system management,  
monitoring and maintenance



## Intelligent Door Relay IDR

Added protection for high security doors



## UPS

Up to 3 hours power back-up  
for panels and servers



## MESH™ Digital Color Camera

Takes JPEG images of visitors  
For panels or Guard Stations



that other suppliers may not wish to answer

### Question 1

#### How do I add another reader/door to my system?

##### Answer:

MESH: Up to 170 MESH™ Readers can be processed on a MESH™ Server so extra hardware is rarely required. Readers can easily be added by tapping any reader cable in the area. MESH™ IP nodes can run remote or local readers from any data connection. Adding MESH™ Readers can also save incredibly on wire, conduit and labor, especially for highrise and large facility applications.

▲ CONVENTIONAL: Adding a reader can cost up to 80% more than MESH™ since another expensive controller may be required. Mount space for the controller can be a challenge and they are often located in assorted unsecured rooms adding to future service problems. Conduit and homerun cable is required. If the controller firmware has changed, expensive chip replacement or a complete system overhaul may turn a simple reader addition into an extremely expensive proposition.

### Question 2

#### How does physical access software affect IT departments?

##### Answer

MESH: MESH™ does not impact IT departments since programming and monitoring is done as a WEB application and multiple site software licenses are not required. MESH™ uses an open SQL database with Java code on a system independent Linux platform so third party software can be more seamlessly adapted.

▲ CONVENTIONAL: Controllers present ongoing problems for IT managers. They use specific WIN versions which often do not match the organization's IT (Unix, Linux, other WIN) network, so require separate "orphan PC's". Upgrading programming software can require replacing all controllers. Multiple site systems require Windows NT licences and additional orphan PC's. Upgrading to the new WIN 64 bit architecture may create major cost problems for organizations since existing controllers may have to be replaced to be compatible.

### Question 3

#### What happens if a reader fails?

##### Answer

MESH: MESH™ Card Readers are fault detecting and addressable so upon failure it immediately reports the condition as an alarm so that proactive action can be taken. MESH™ Readers have RJ45 plugs that can allow building personnel to "self-service" readers without even requiring the cost of a service call. For critical doors, the low cost per reader with MESH™ also makes it practical to run redundant readers.

▲ CONVENTIONAL: Conventional card reader failures must be personally reported when users cannot go through a door or gate; the problem has already escalated into an emergency. Unreported reader failures at doors used for hospital ER equipment, fire suppression equipment, university labs, or even primary security gates can create great inconvenience and even serious liability problems for facility management.

## Question 4

### What happens when a controller fails?

#### Answer

MESH: MESH™ does not have card reader controllers. With MESH™ card readers are supported directly from a MESH™ Server allowing the use of accepted redundancy techniques to virtually ensure no downtime. The IT concept of “high availability” with MESH™ applies to backup hardware, readers, and fault tolerant cabling, non of which is possible with a controller.

▲ CONVENTIONAL: Conventional controllers have no backup ability, creating similar liability issues as reader failures. A failure knocks out all readers connected to the controller. Electrical shocks and lightning have been known to damage controllers for dozens of doors and with warranty coverage voided, cost management tens of thousands of dollars for service. Controllers tend to be proprietary and not compliant with IT principles or redundancy options. These controllers have “no availability”.

## Question 5

### How do the IT concepts of High Availability and Redundancy Apply?

#### Answer

MESH: MESH™ is an IT system and any IT application can be enabled. MESH™’s core attribute is its high resistance to any failure. It is said to have “high availability”. MESH™ achieves this through numerous “state of the art” techniques. These include:

- Redundant Data Path - continued operation in event of data disruption to devices or between servers
- Addressable Card Readers - that report when they have trouble, allowing for proactive response
- Redundant Card Reader - continued operation should a reader fail
- Redundant LANBot Server– continued operation should a prime server fail
- Mirror and Reboot Drives – additional redundancy in each MESH™ Server
- Smart strikes – reports stuck or broken door strikes
- UPS and power isolation – prevents downtime in event of power disruptions

▲ CONVENTIONAL: Conventional controllers are generally not IT based. The only implementable high availability measures are for the programming computer and this does not improve system integrity. Reader wiring limits dictate controllers being located through a facility. No practical measures exist for reader or controller redundancy without doubling the cost of the system and even this creates major database conflicts. Simply put, any related hardware failure requires an affected user to report the problem. System downtime is dependent on the response of the service company and availability of spare parts at a supplier.

## Question 6

### How secure is physical security equipment?

#### Answer

MESH: With MESH™, readers are processed from on or off site servers. They can easily be installed in any IT or other room within the secured facility. Door lock tampering can be protected by MESH™ IDR devices.

▲ CONVENTIONAL: Reader distance limits require that controllers are “field located” and can end up in parkades, electrical rooms, janitorial closets or even in ceilings through out the facility. In addition to service difficulties (even locating faulty field equipment), controllers in unsecured rooms can be software hacked and wires can be manually shorted to unlock doors without being detected. If door lock and reader cables are run together, door security can be bypassed.

## Question 7

### How do you add/delete a card or make system changes ?

#### Answer

MESH: MESH™ uses a true “thin client” and works with a standard Web Browser. From any computer connected to the network (via the internet or a corporate WAN) you can access the secured card management screen in any language of your choice. There are no additional license fees for additional clients. For building managers, emergency changes can be done from home or on vacation.

▲ CONVENTIONAL: Conventional systems require software to be loaded on a PC. Remote programming is possible but often only from the host PC. There is a license fee for each location that can access the card management screens. Building managers often face issues of having to go to their office after hours to make a system change.

## Question 8

### What ability does the manufacturer have to support the system?

#### Answer

MESH: As an IT platform, Viscount support staff can assist in troubleshooting using any internet connection. Since there is no firmware, systems are considered “future proof” and software versions can be upgraded remotely. A redundant MESH™ system can operate in backup mode while waiting for spare parts or service. The cost of service can be greatly reduced since there are less parts to ship and service.

▲ CONVENTIONAL: With conventional systems a service call generally implies that security is out for 1 or more doors. They depend on site visits by service technicians and factory technical support. Many controller suppliers do not support older versions (sometimes only a few years old) so major service problems can turn into complete system overhaul. Regardless, system downtime depends on service response times, factory stock, shipping times and the expectation that the provided parts fix the problem. System downtime will always be an issue for the controller based model.

## VOICE ENTRY

## Question 9:

### How is the system programmed? How do you manage multiple sites?

#### Answer

MESH: MESH™ is a cost effective, easily managed single solution for one or multiple sites. The suite oriented database allows multiple panels, readers and sites to be programmed locally or remotely using the WEB based MESH™ “Graphical User Interface” (GUI). Multiple “Wide Area Network” (WAN) connected sites can be managed as a single database of users while individual building managers, through administrative permission restrictions, have limited views of event logs and user activation capabilities. Each client uses a standard WEB Browser that does not require licensing fees or special software. There are no software disks to lose!

▲ CONVENTIONAL: Panels are normally programmed with special client software or remotely via a modem. The on-site computer requires a specific operating system. Installing separate telephone entry and access control systems results in two databases to maintain and manage. Multiple panels often are programmed separately and each site requires a separate database.

### **Question 10: Can the screens be viewed in direct sunlight?**

#### **Answer**

MESH: The screens are of advanced design, providing full rich color and can virtually always be viewed in direct sunlight.

▲ CONVENTIONAL: The screens are normally monochrome and “bleed out” when hit by direct sunlight. Sun visors and weather hoods are often deployed with nominal improvement.

### **Question 11: What are the directory display options?**

#### **Answer**

MESH: Each MESH™ panel has unlimited capacity for names and users. Names can be listed alphabetically or with business subdirectories for commercial buildings. Multiple users can be listed per suite or business. Tenants can choose not to appear or to have “proxy names” for privacy. Touch Panels have extra options including alphabetic quick search, and call buttons. Additional display options include user selected language, “hot buttons” to call management and the ability to customize screens as a management advertising medium.

▲ CONVENTIONAL: Typical systems have limited memory ( 20, 50 100 .. names ) and list tenants alphabetically. The limited memory of older firmware chips greatly restricts the functionality and benefits of these systems.

### **Question 12: How can guests be admitted if a number is busy or unanswered?**

#### **Answer**

MESH: MESH™ has “backup number dialing” so if there is no answer, MESH™ can dial another number such as a cell phone. This is useful if a building manager is busy attending to duties but still wants to admit contractors and prospective renters. Also, tenants who are on the phone can answer the call from a cell phone and therefore not keep guests waiting.

▲ CONVENTIONAL: Conventional systems normally only dial once. Tenants must rely on the telephone companies billable options (such as call forwarding) in order to provide these features. In the case of Call Forwarding they must remember to turn the feature on/off.

### **Question 13: How can the Voice Entry System be used for value added marketing?**

#### **Answer**

MESH: MESH™ panels have full computer functionality to display custom advertising. They have direct dial buttons for dialing rental or sales offices. Networked sites allow cross promotion of other projects being managed or condominiums under construction. Regional preferences provide multi-language menus. Security features provide tenants access from anywhere in the world, allowing them to check when family members come home and see images of admitted visitors. Tenants can also receive email notification when specific people (such as their children) enter the facility.

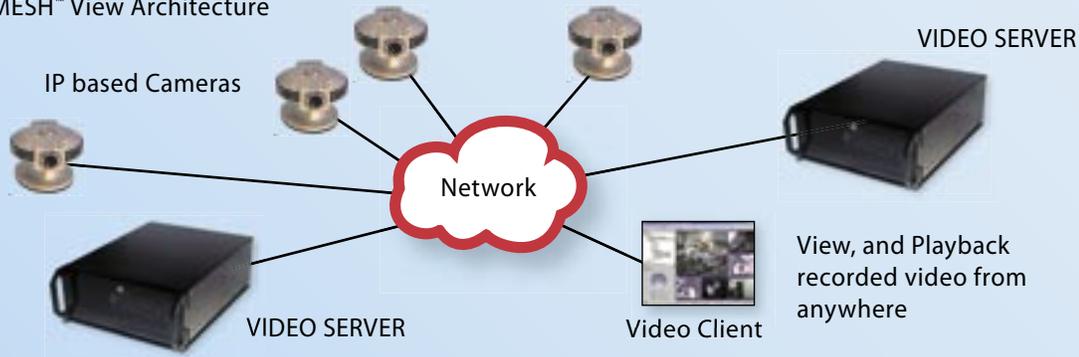
▲ CONVENTIONAL: Conventional systems provide security by dialing residents and opening doors.

# MESH™ View | Advanced Video Security for Peace of Mind

(Available Q3 2006)

MESH™ View is an advanced IP based Surveillance and Video Recorder for use with efficient IP based cameras. It supports virtually all IP based cameras and Web Cams. Unlike conventional Analogue Video (CCTV) systems it does not require a complex set of hardware; the server communicates directly with cameras and requires no interim multiplexers, converters, servers or monitors. The cameras can be located anywhere on a network or the internet. Instead of extremely high memory requirements at one location, the system is fully distributed providing video storage on multiple smaller Servers. Camera Views can be monitored from an unlimited number of Web based clients. This approach provides advanced features, reliability and significant cost savings.

## MESH™ View Architecture



Playback Recorded Video



Surveillance

## FEATURES

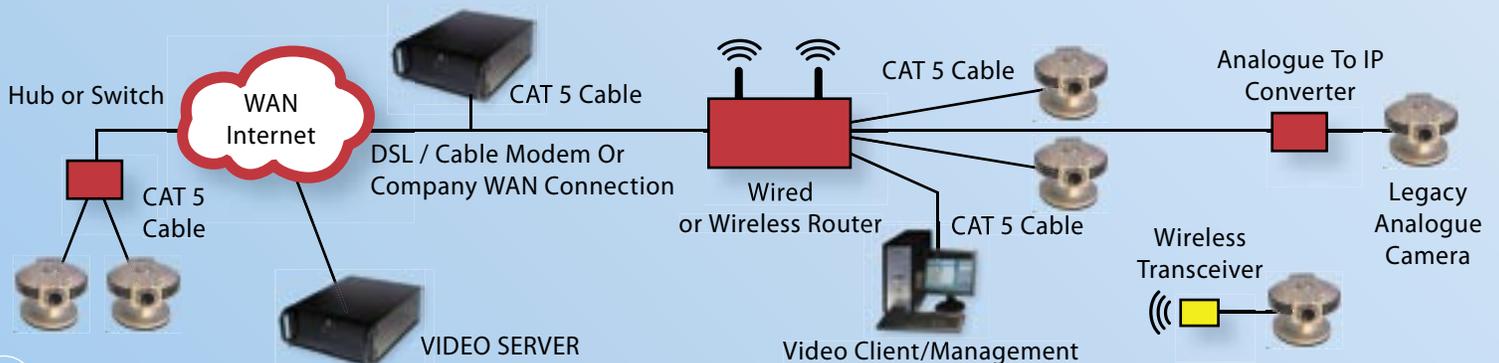
- IP based cameras communicate directly with MESH™ Server
- Continuous Recording
- Remote connection via Internet of LAN/WAN
- Real-time Playback
- Supports unlimited number of cameras
- Full Pan Tilt Zoom (PTZ) control
- Record and Search upon motion

## Associated BENEFITS

- No need for interim Switchers, Converters or Servers  
Attractive cost of ownership
  - No complex service requirements
  - No complex wiring
  - Use existing Network Infrastructure
- Provide effective security 24/7
- Video can be accessed from anywhere in the world for surveillance recording or playback
- Any camera can be in playback locally or remotely while not disturbing ongoing recording
- Expand the system when required
- Manipulate individual camera views from anywhere providing greater security
- Easy to search for important events
- No wasted disk space

## Supported IP Cameras:

- AreconVision
- Axis
- Canon
- D-Link
- FlexWATCH
- Intellinet
- IQinVSION
- I-YahornG
- JVC
- Linudix
- Lumenera
- Mobotix
- O'RITE
- Panasonic
- Pixord
- Sony
- Toshiba
- Veo
- Vivotek



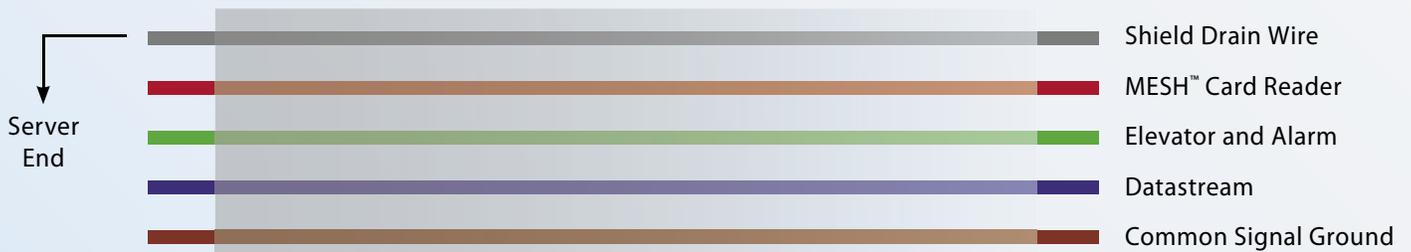
# MESH™ Net Basics | Power and Wire Requirements

When providing power to MESH™ modules or providing data cable, care must be taken to ensure proper wire gauge, grounding and shielding.

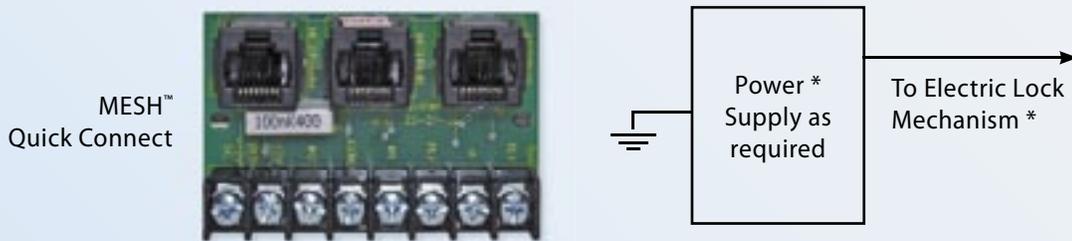
Viscount recommends using a separate power supply for Card or Biometric Readers, Elevator Modules, Alarm Modules, Datastream Modules and Electric Lock mechanisms. These power supplies should be backed up with Uninterruptible Power Supplies (UPS) that filter electrical noise and provide back-up power should AC power fail. The ratings on each UPS are dependent on the number of devices supported and are therefore site specific.

Power to critical devices should be supplied by the building's AC power circuits that utilizes an isolated ground.

In all cases, cabling must adhere to local regulations.



MESH™ Net cable, CAT 5, 4 twisted pair, 24 AWG, Shielded, Belden # 1624 or equivalent



\* Electric Lock requirements vary between AC or DC and range from 12 to 24 volts. Some locks can draw up to 1 amp.

For those wishing to supply a centralized power source the following table is provided as an aid.

MESH™ Device	Voltage Range	Current Draw
Card Reader	9-14 Volts	120 ma
Elevator Module	12 Volts	64 ma (636ma surge)
Alarm Input Module	12 Volts	53 ma
Datastream Module	9-14 Volts	130 ma
MESH™ Server	110 volts	136 ma

MESH™ Net	MESH™ Net Cable	Category 5 Shielded, Belden # 1624 or equivalent
Wire Consideration	Power Feed Cable	Per specific application (must conform to local regulations)

# MESH™ Net Basics | Cost Effective Wiring

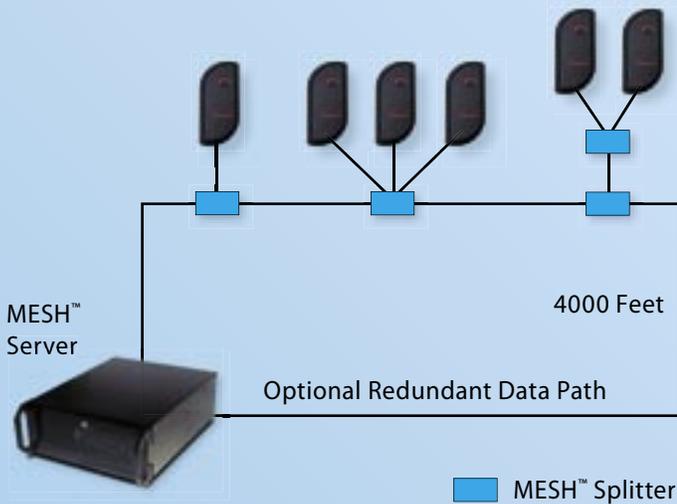
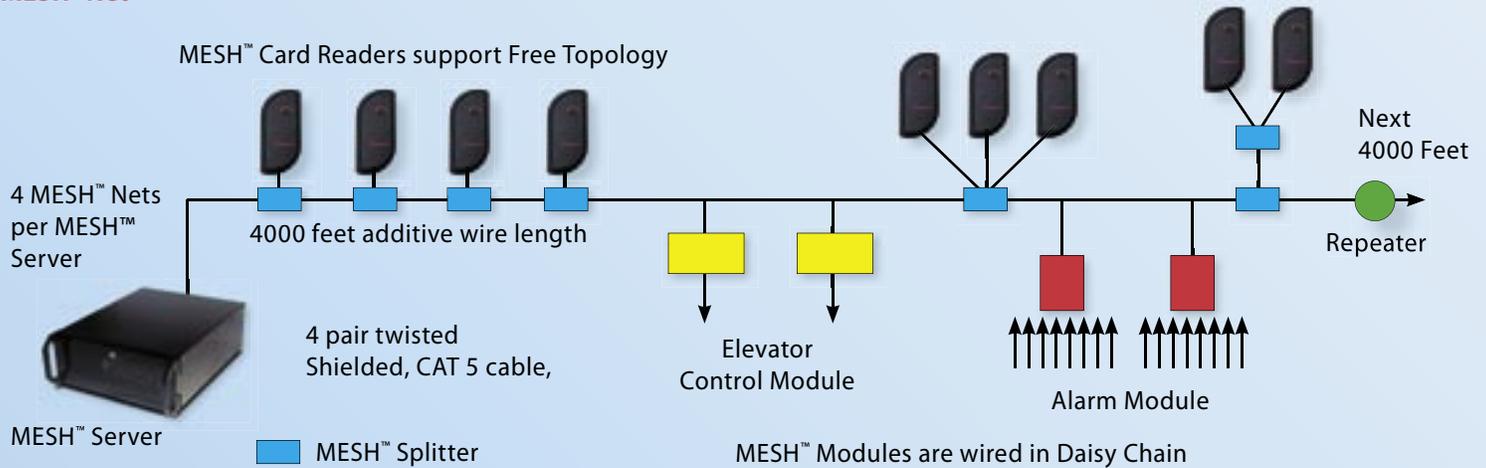
## MESH™ Net Wiring

MESH™ Net supports MESH™ Card Readers, MESH™ Elevator Modules, MESH™ Alarm Modules, MESH™ Converters, and MESH™ Environmental Modules to a wire length of 4000 feet. The length can be extended an additional 4000 feet by use of a MESH™ Net Repeater.

The MESH™ Net communication bus can (optionally) run in a loop to provide fault tolerance. Should a line be cut, communications will continue through the loop back to the server. The maximum total wire length is 4000 feet.

MESH™ Card Readers can be split off of the main bus in a star configuration, often called Free Topology. The MESH™ Splitters come in different configurations; 2, 4 or 16 port to accommodate different wiring requirements. In this configuration the maximum additive wire length is 4000 feet.

## MESH™ Net



MESH™ Net Free Topology with Optional Redundant Data Path

### MESH™ Net Specifications

• Maximum Cable Length (Additive for Free Topology Reader Wiring)	4000 feet
• Devices per MESH™ Net	
MESH™ Card Readers	50
Datastream Modules	31
Elevator and/or Alarm Modules	31
• Devices per Server (Max) (Incl. Readers)	200
• Max number of Card Readers Per Server	170
• MESH™ Nets per Server	4

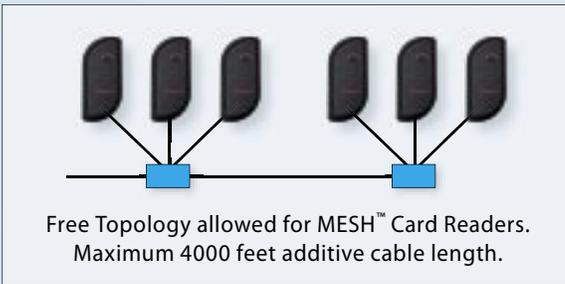
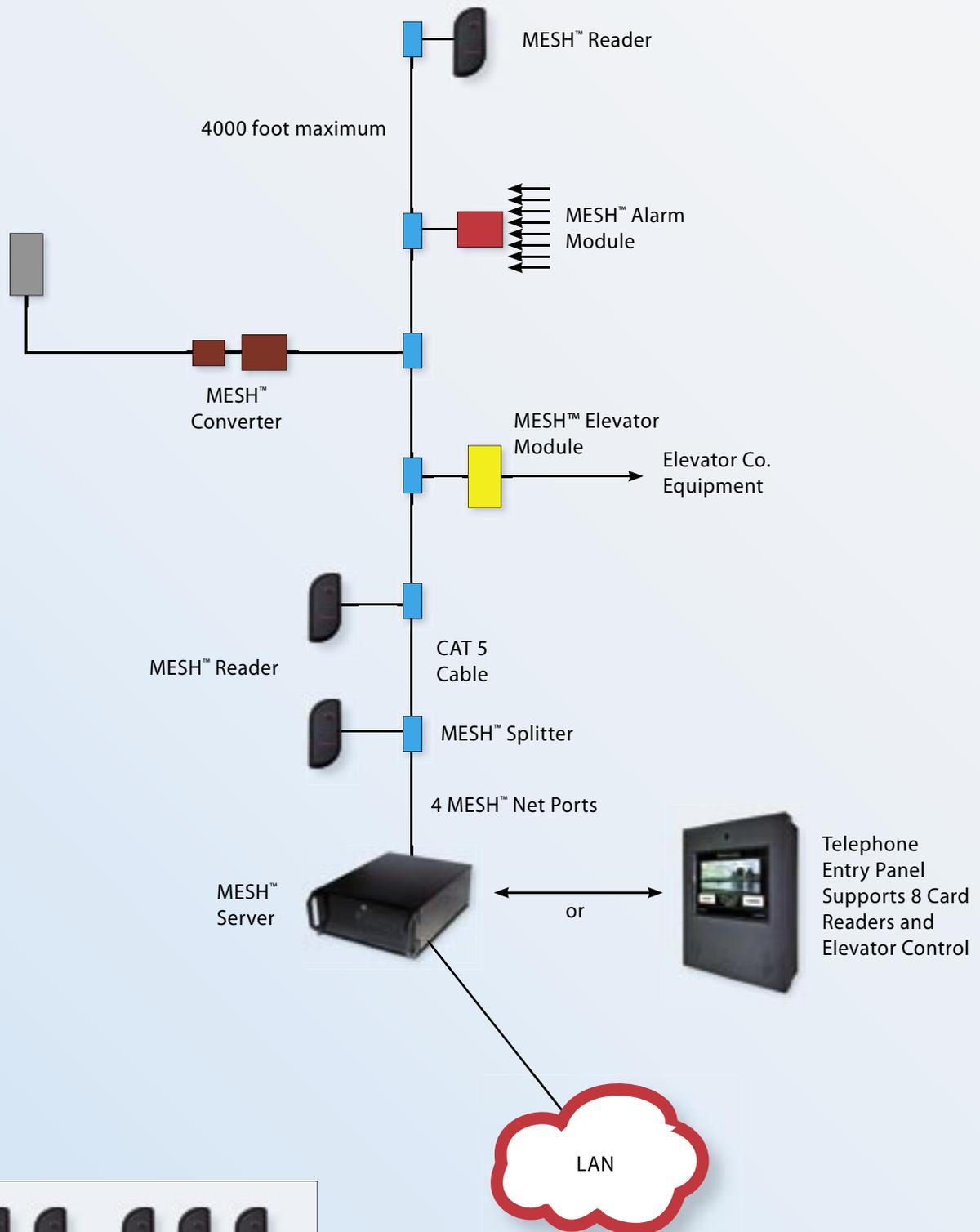
Note: Each MESH™ Net includes 4 twisted pair

For detailed wiring please refer to the MESH™ Installation Manual

MESH™ Net Wire Consideration	MESH™ Net Cable	Category 5 Shielded, Belden # 1624 or equivalent
	Power Feed Cable	Per specific application (must conform to local regulations)

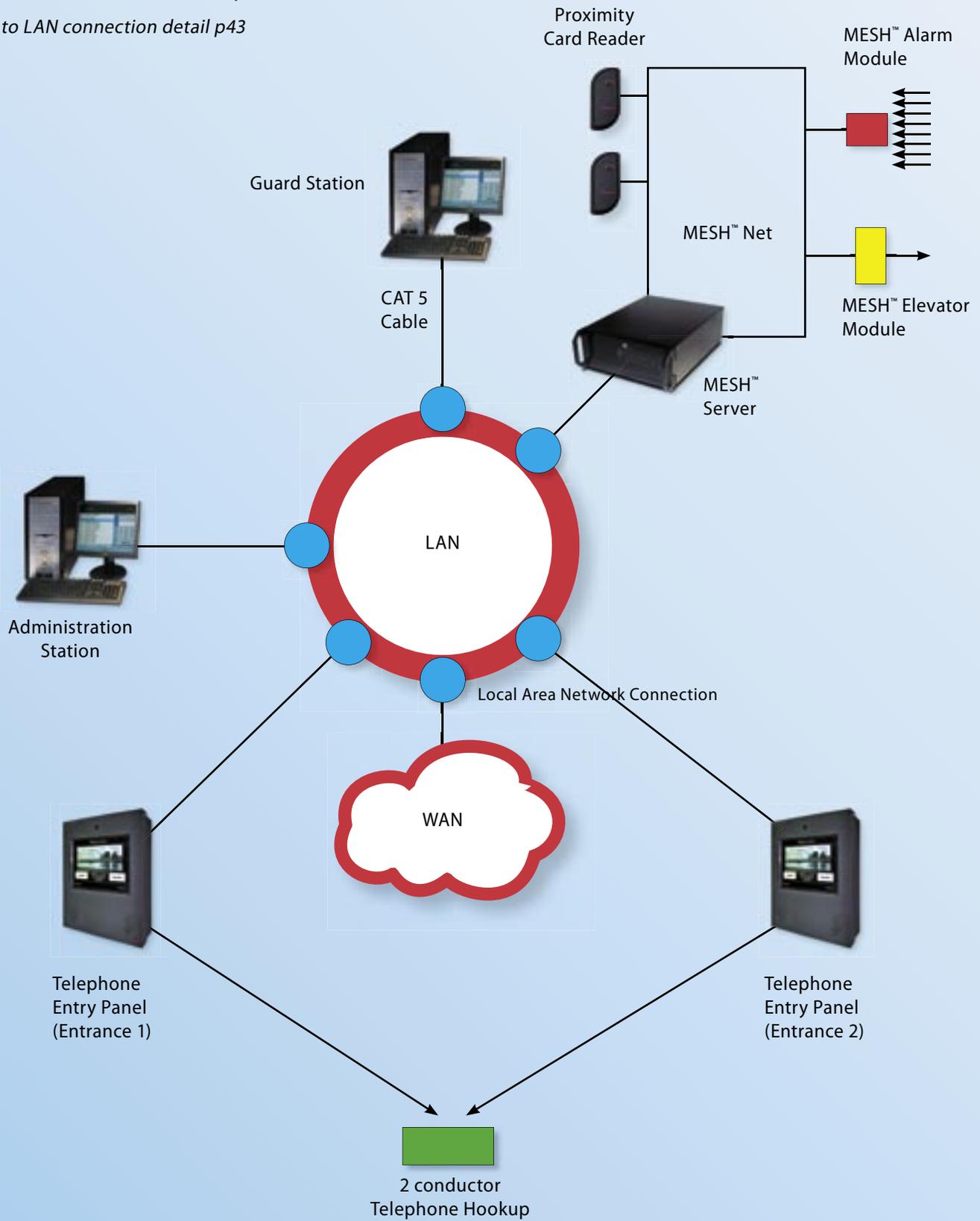
# Understanding MESH™ Networking | MESH™ Net, LAN, and WAN

## MESH™ Net Capability

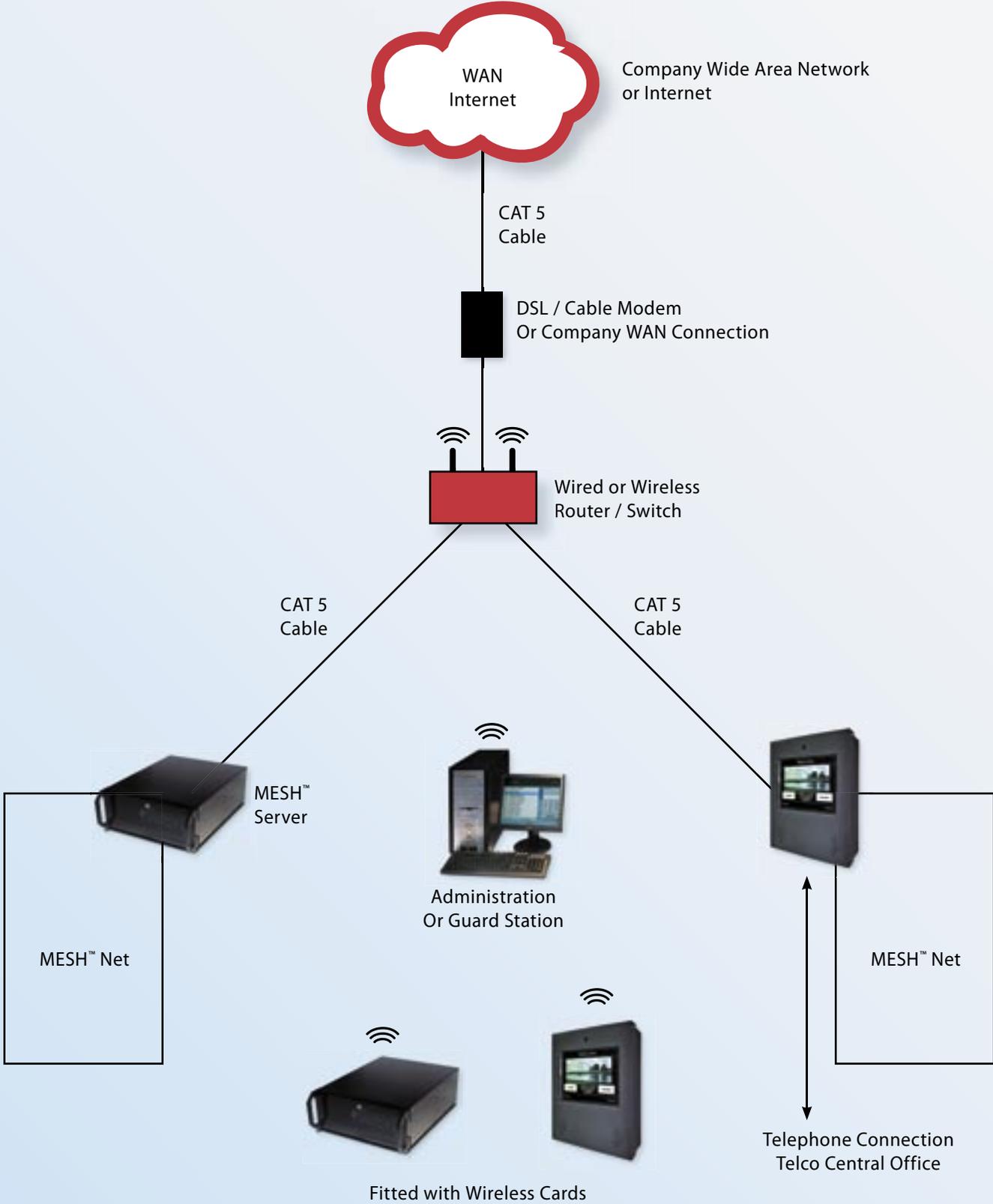


### LAN / MESH™ Net Basic Example

Refer to LAN connection detail p43

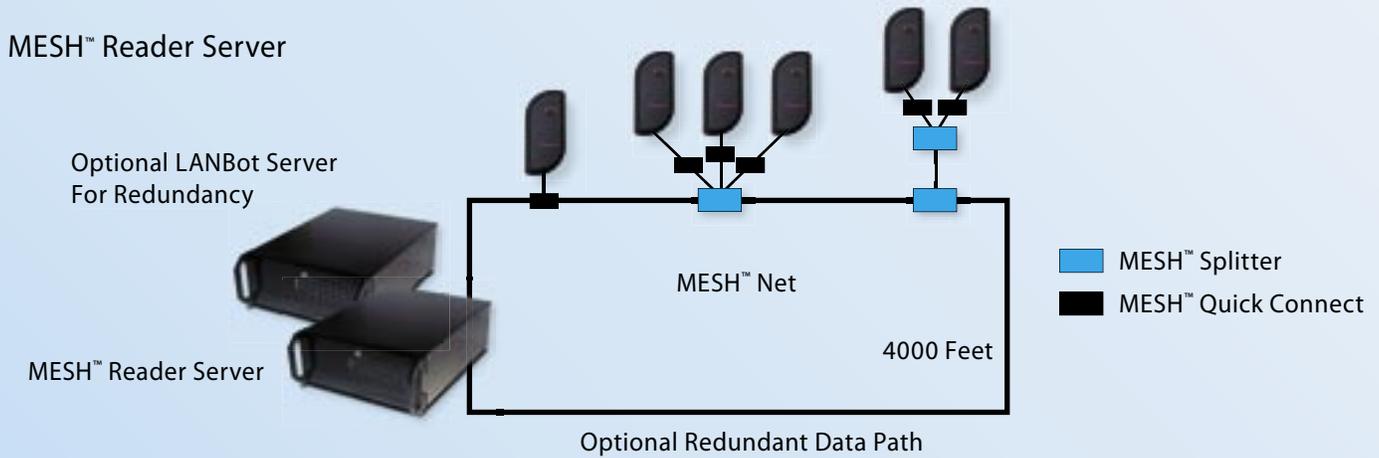


LAN Connection Detail



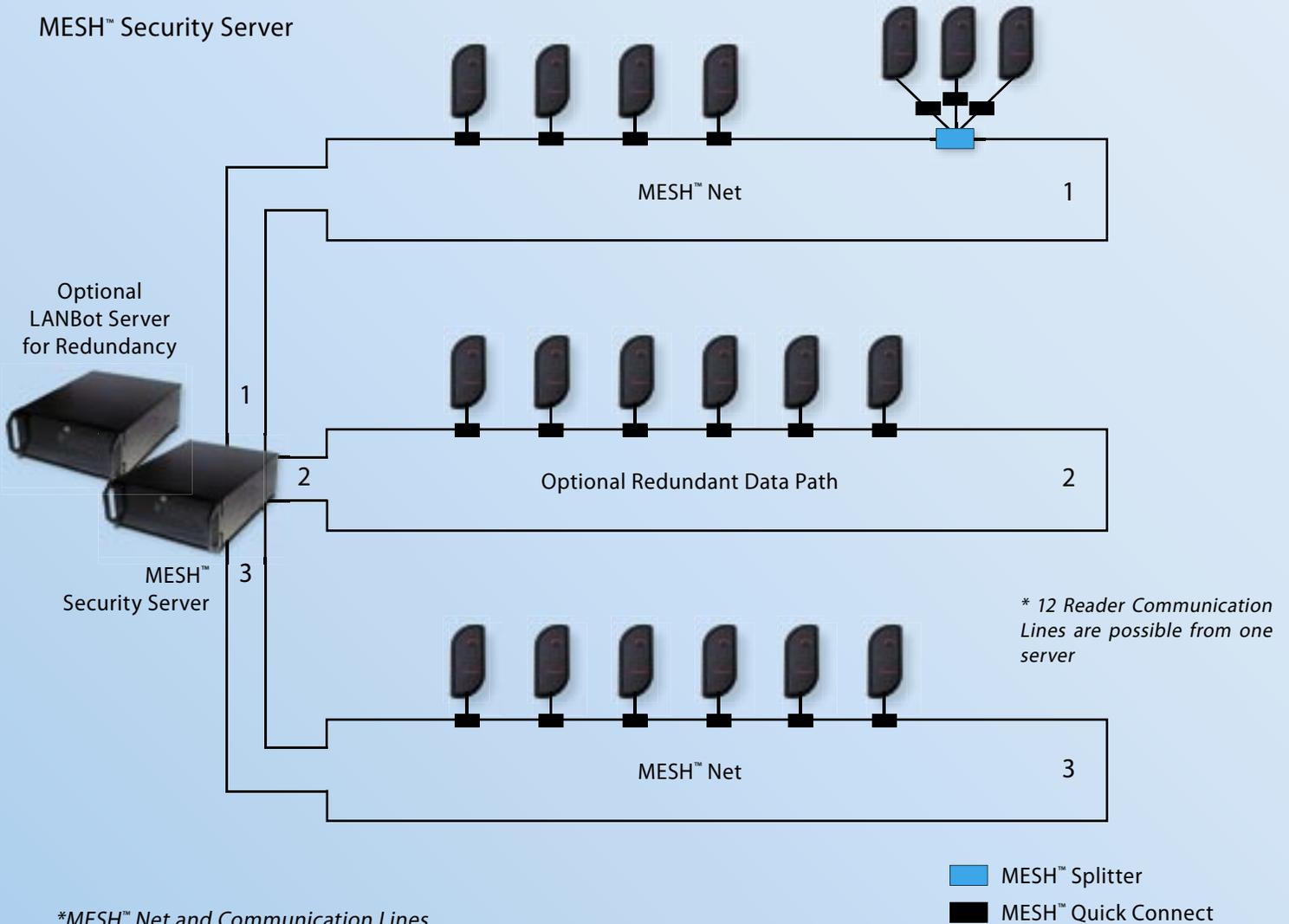
# MESH™ System Design | Wiring Examples

## MESH™ Reader Server



Maximum 50 Readers per System  
Upgradeable to Security Server

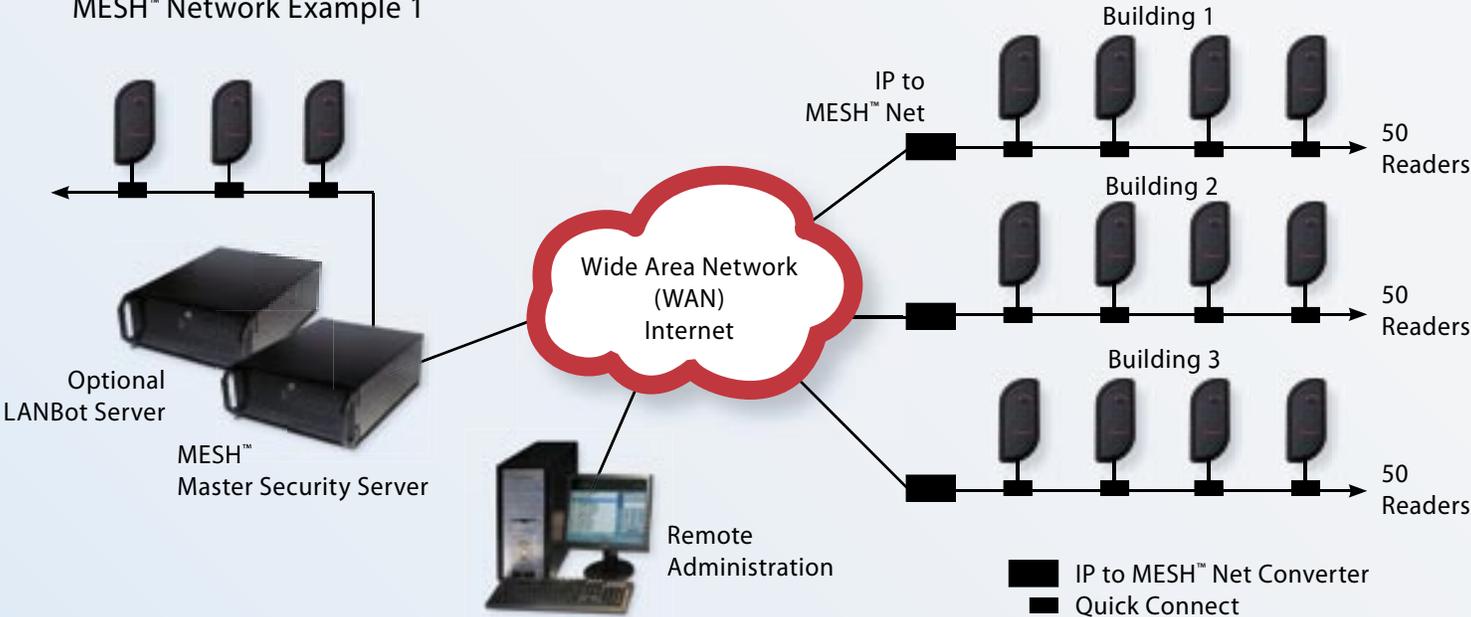
## MESH™ Security Server



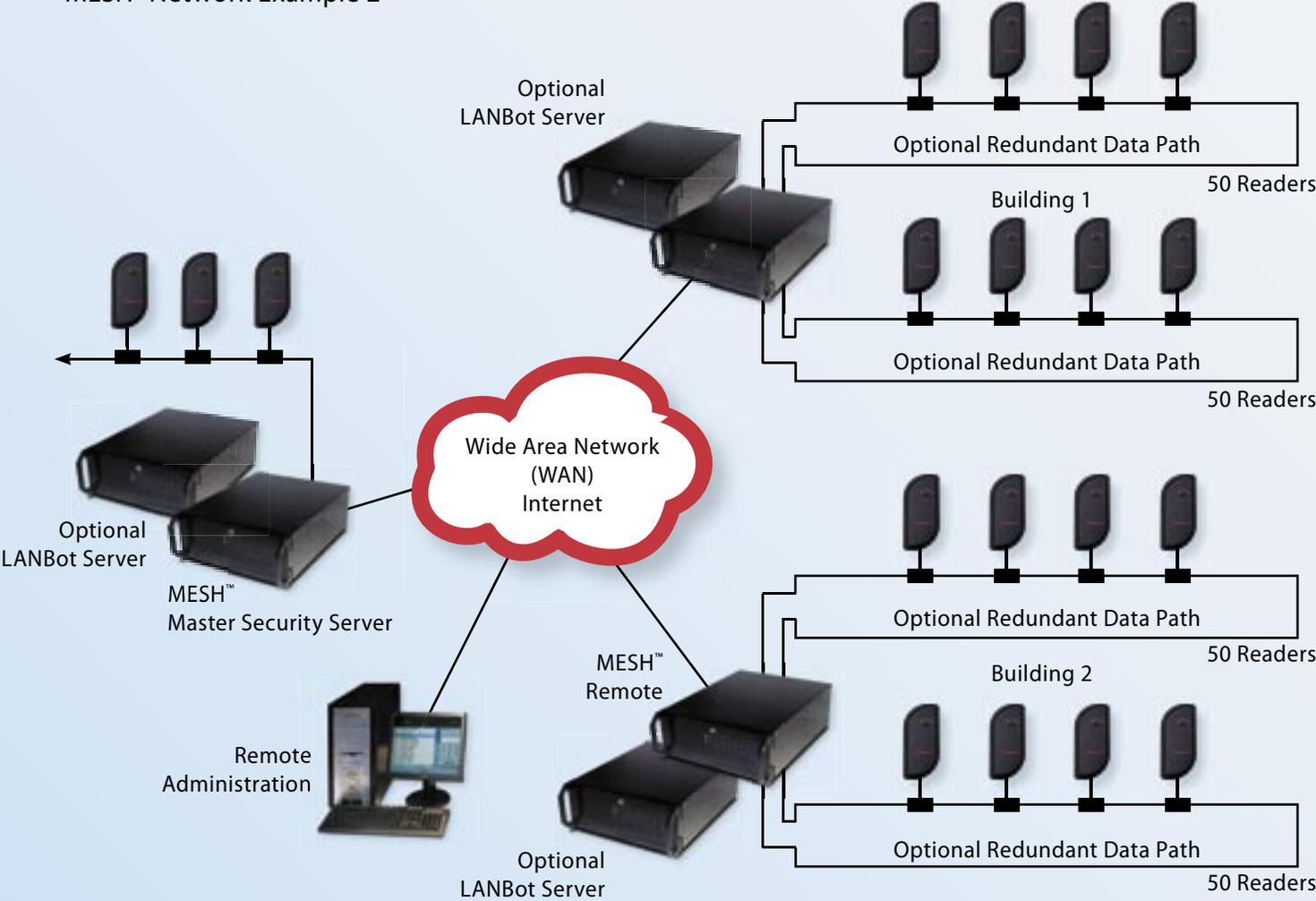
\*MESH™ Net and Communication Lines

Each MESH™ Net bus consists of 3 communication pairs. The first pair is traditionally utilized by card readers while the others are used by Input/Output Modules, Elevator Control Modules or Datastream Modules (Refer to MESH™ Net Basics in this document). However, due to the flexibility of MESH™ it is possible to use all the communication pairs for card reader communications. Since each server can support 4 MESH™ Nets, it is possible to have up to 16 communication ports for card reader support.

MESH™ Network Example 1



MESH™ Network Example 2



Note: The Maximum number of card readers per remote server is 170

In recent years, computers, and end-devices such as card readers, have become increasingly more powerful and reliable. Viscount has capitalized on this new era of reliable processing power by introducing MESH™ which differs from traditional Facility Protection System architectures, providing greater functionality, reliability and less cost of ownership. The key advantages of MESH™ technology are:

- 1- It is a platform for rapid development of integrated facility protection applications
- 2- It does away with many costly hardware components, lowering the cost of ownership
- 3- It is extremely reliable due to superior redundancy techniques and the removal of superfluous hardware

## **MESH™ -Rapid Development and Deployment Platform**

Applications such as Access Control, Telephone/Voice Entry, Alarming, Visitor Control, Environmental Protection, and Video Recording typically operate on individual platforms. MESH™ is a software core, or Security Software Platform, which provides the common routines found in these applications. This allows these applications to work in unison, sharing data and acting upon conditions presented by each other. It also allows for rapid development of new or custom applications because many of the key routines are already contained in the Core. In today's market, where obsolescence of technology is the norm, MESH™ provides a means of "Future Proofing" an investment in facility protection systems. As new technologies and associated software are introduced, Viscount can easily adapt the MESH™ Interface layer to accommodate the newer technologies, allowing interoperability with the legacy components. Because MESH™ is resident on Servers, enhancement to a customer's software is a simple one time one location event.

## **MESH™ - Reduced Costly Hardware Dependency**

MESH™ is designed so that a Server and end devices communicate directly with each other without the use of interim processing components (controllers). Because of the processing power found in end devices, such as Card Readers and the extreme reliability of Servers, Viscount's customers believe that there is no need for expensive interim controllers which are presently the norm in Facility Protection Systems. In a large Access Control system, for example, there may be as many as 200 Card Reader Controllers at a cost of approximately \$300,000. With MESH™, these components, the most expensive in a conventional system, are eliminated.

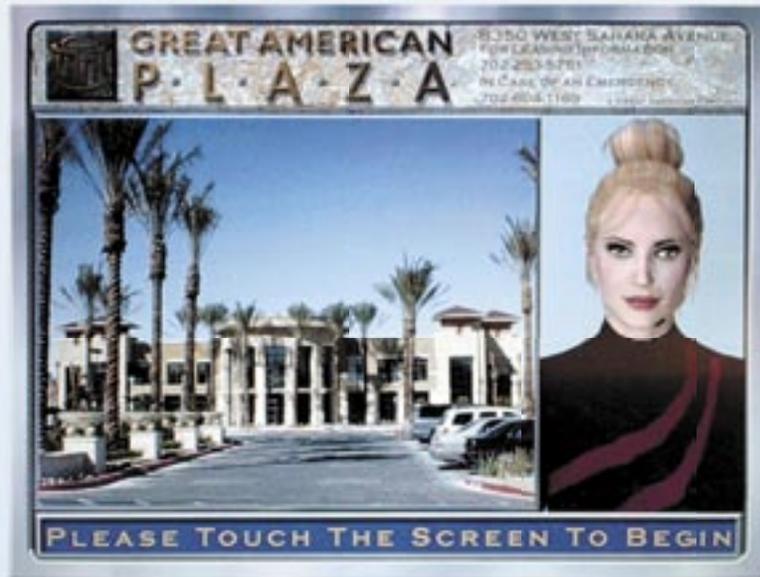
## **MESH™ - Reliability**

MESH™ is built upon central Servers which provides a simple path for adding enhanced functionality, and allows for superior redundancy techniques such as RAID and mirrored drives. The removal of interim controllers (found in conventional systems) removes the concern of system or localized failure and the complexity of keeping firmware updated.

## **The Legacy of Card Reader Controllers**

Card Reader Controllers were originally introduced to provide stability in Card Access Systems at a time when computers, servers, and networks were not dependable. Should a computer stop communicating with a controller, the controller would then, in stand-alone mode, support a secured door or elevator. The intention was to eliminate a single point of failure; the computer, server, or communication network. Due to lack of processing power, most of these controllers could only support limited functionality. Even today, with more powerful processors, cost inhibits these units from achieving total functionality. In addition, these controllers have software that needs to be fully synchronized with the Server Software, therefore, the revision levels need to match. The upgrading of Server software often requires the upgrading and sometimes total replacement of all the controllers. Even with these shortcomings access control manufacturers have stayed the course, and race to build more powerful controllers that give greater stand-alone functionality. The key reason for this is that 80% of sales revenue comes from the controllers. They defend their practice based upon the "single point of failure" premise, which, due to the introduction of MESH™, Viscount and Viscount's customers believe is unfounded.

The MESH™ family of products includes V-Girl, astonishing technology that allows for unattended yet engaging upscale lobbies and waiting rooms. V-Girl, affectionately called Victoria, and her associated Touch Screen welcomes visitors in a number of languages, helps them make choices either with contacting tenants or finding visitor information. Victoria makes guests feel welcome 24 hours a day, 7 days a week. MESH™ V-Girl includes all of the extensive features found in MESH™ Visitor Entry, such as support for a number of facilities managed from one central location, with the added human touch of a virtual attendant.



MESH™ V-Girl Virtual Attendant

- Victoria will enter into small talk about the company or interesting tourist information while a visitor waits
- Victoria will provide a list of tenants and guide the visitor on how to contact them. If the tenant is not there Victoria can arrange to call the tenant's cell phone
- Once a guest is permitted, Victoria will provide directions on how to find a tenant
- The V-Girl application can be utilized as a powerful advertising tool

**V-Girl software is a site custom application. Please call for applicability.**

# MESH™ Physical Access Savings \$\$\$ - A Quick Guide

The savings of MESH™ compared to Control Panels begins with less conduit, grows with system installation and continues for many years. The multiplier effect of **Reduced Cost of Ownership** in itself improves facility security by reducing ongoing costs and making **operational budgets available for security improvements rather than maintenance.**

When selecting a physical access system the following cost benefits and long term issues should be considered. Many MESH™ benefits such as conduit and liability costs are "hidden" if only comparing installation quotes.

## Installation Savings \$\$

<b>Panels</b>	<ul style="list-style-type: none"><li>- MESH™ Server replaces up to 170 panels and accessory boards</li><li>- Network readers in remote sites eliminate field panels</li></ul>
<b>PC's</b>	<ul style="list-style-type: none"><li>- WEBGUI eliminates dedicated PC for remote programming</li><li>- MESH™ Kit replaces dedicated PC for onsite programming</li><li>- Eliminates ALL local PC's for Enterprise applications</li></ul>
<b>Conduit</b>	<ul style="list-style-type: none"><li>- Reader "daisy chains" eliminate dedicated door conduit</li></ul>
<b>Wiring</b>	<ul style="list-style-type: none"><li>- 50 readers per CAT5 "daisychain" eliminates homerun wiring</li><li>- Reader I/O eliminates door strike, exit device and alarm wiring</li><li>- Eliminate core drilling by using existing riser for retrofit high-rises</li><li>- IP and wireless reader applications if necessary</li></ul>
<b>Software</b>	<ul style="list-style-type: none"><li>- No PC software required, No NT License fees</li><li>- Eliminates multiple software (intercom/access)</li></ul>
<b>Labor</b>	<ul style="list-style-type: none"><li>- Reduced cost for pulling wire, mounting equipment, programming</li></ul>
<b>Applications</b>	<ul style="list-style-type: none"><li>- Centralized database allows more affordable HR/IT integration</li></ul>

## Long Term Savings \$\$

<b>Future Proof</b>	<ul style="list-style-type: none"><li>- MESH™ Servers eliminate firmware version issues/costs</li><li>- Protection against new WIN 64 versions</li><li>- Eliminates Enterprise site firmware conflicts</li><li>- Open architecture as devices migrate to new formats</li></ul>
<b>Service</b>	<ul style="list-style-type: none"><li>- Self-serve readers reduce service calls and downtime</li><li>- Less hardware to service, no firmware issues</li><li>- MESHGUI replaces lost/stolen software problems</li></ul>
<b>Real Estate</b>	<ul style="list-style-type: none"><li>- Eliminates equipment rooms in high rises (dead sq. footage)</li></ul>
<b>Management</b>	<ul style="list-style-type: none"><li>- Addressable devices allow proactive response</li><li>- Redundancy options reduce management service overhead</li><li>- WEBGUI uses "any PC" for remote emergency programming</li><li>- Global database management reduces programming costs</li></ul>
<b>Liability</b>	<ul style="list-style-type: none"><li>- Reliability and service improvements reduce organization liability</li></ul>
<b>Expansion</b>	<ul style="list-style-type: none"><li>- Greatly reduced cost to add readers or sites</li></ul>

**Every end user has a limited budget. Here are ways others are Saving with MESH™.**

### Savings of \$75,000+ in hardware, wiring and conduit

A long term care facility required readers at all occupant doors and eliminated **\$50K+** in conduit costs by using existing CAT5 and **\$25K+** by eliminating panels.

### Savings of \$150,000/year in guards

A dealer is replacing onsite guards by using MESH™ Panels, Access and Video to process visitors remotely at a central station. Building management is saving up to **\$150K/year** per site.

### Savings of \$30,000 + \$50,000 in amortized costs

A high rise modernization faced the issue that adding readers to upper floors requiring core drilling and sacrificing 120 sq. ft. of prime \$35 space for a dedicated equipment room. The dealer used existing CAT5 to bypass both problems and saved **\$30K** on the install.

**MESH™ will protect your facility, your budget and your bottom line. Call us to see how.**



**Call 1-800-476-3774**

**E-mail us at [sales@viscount.com](mailto:sales@viscount.com) or visit us at [www.viscount.com](http://www.viscount.com)**