



May 2020
Release 4.11.4

Avtec Scout Enterprise Consoles - MOTOTRBO™ *Capability Guide*

Introduction

Avtec's Scout™ dispatching system meets the needs of a wide range of mission-critical and business-critical environments. It maximizes efficiency, ensures safety, increases delivery reliability, and reduces costs, all of which are vital to the success of any organization.

Scout consoles handle all voice communication – both radio and telephony – and seamlessly integrate these technologies. Additionally, Scout's IT-friendly features provide unified views of system diagnostics, alarms, and reports.

Scout is a pure Internet Protocol (IP) communication tool based on open standards which prevents customers from being locked-in to a proprietary system. It can be integrated with third-party technologies and works with commercial off-the-shelf communications equipment, which simplifies upgrade and migration strategies and thus helps to future-proof dispatch centers.

As a system built on IP technology, Scout offers no single point of failure, is designed around an inherently scalable and redundant architecture, and has components that are easily distributed across an enterprise network, mitigating the risk of loss. Scout allows access to multiple communication channels and has an extremely customizable and easily maintained graphical user interface (GUI).

Characteristics

Consider these Scout characteristics that set it apart from other consoles.

The Scout User Interface: Scout is unparalleled in its configurability. Configure different window sizes, web browser objects, map backgrounds, custom buttons, colors, fonts, button icons, and more with one, simple-to-use application. The Scout System Administrator can develop unlimited screen configurations and assign them to any or all dispatch positions as required by business needs, and the administrator can develop a look that mirrors a legacy system to help reduce dispatcher training time.

Standard Components: Scout supports commercial-off-the-shelf (COTS) computers and networking equipment, while only requiring proprietary hardware for components unique to a console system. Customers can use standard computers, network switches, and routers, simplifying procurement and configuration, sparing maintenance, and reducing life-cycle costs.

Ease-of-Configuration: The Scout System Administrator uses a single, simple software system, Scout Manager, to maintain all system components remotely, via network access. An SQL database and standard XML files store the configuration data.

Dispatching Environment Options: Scout's suite of console options addresses the needs of 24x7 dispatch operations, whether the dispatchers require a fixed location, the flexibility of a system that operates on a laptop, or the portability of an accessory that runs on a tablet or laptop over Wi-Fi or LTE network. Mobile Scout™ is a field-tested mobile dispatch solution that runs on a Windows 10 tablet. As an alternative to legacy deskset devices, Mobile Scout is Bluetooth® compatible.

Scout Audio Options: Scout's fixed location dispatching environment offers two options for audio: the Hardware Audio Package and the Software Audio Package. The Scout Hardware Audio Package Plus provides dedicated hardware for audio processing to ensure the highest level of reliability. It includes dual network connections, is backward compatible with legacy Scout accessories, and meets global safety standards including RoHS (Restriction of Hazardous Substances). Scout's Software Audio Package offers the highest level of flexibility which allows organizations to break free of traditional limitations in dispatch technology. The Software Audio Package runs on a Windows desktop, or on a laptop computer for mobility, and provides dispatch centers the ability to relocate or expand quickly for disaster management or during special events. The system uses Avtec USB peripherals or standard USB peripherals.

Redundancy: VPGate™, Scout's voice gateway, uses redundancy as a basis of its design to prevent losing operations if a failure occurs. VPGate's failover capability provides a highly resilient system design that can continue to operate in a number of disaster scenarios, ensuring that the endpoints assigned to VPGate continue to be available for uninterrupted operation from all console positions. Scout also provides redundancy in other major system components.

Diagnostics: Every system element reports to the Scout Central Distributor (SCD), which permits the capability to observe detailed system behavior including audio diagnostics, console states, and component health. Log files created for each major subsystem allow deeper diagnostic analysis if necessary. Scout also sends SNMP messages for its alarms and events to as many as four SNMP managers to allow administrators the ability to view messages through an integrated management console.

IT Friendly: Scout is a pure VoIP solution because all of its components can be distributed over a LAN/WAN infrastructure using standard Ethernet technology, without the need for a centralized TDM (Time Division Multiplex) switch. If dispatch center size and locations change, then Scout easily adjusts to the required scaling needs. For companies with Scout systems in different geographical sites, Avtec offers Frontier™ which allows autonomous Scout IP systems to link with one another over a wide area network to form a very large-scale enterprise communication solution.

Scalability: A Scout system is capable of supporting hundreds of consoles and thousands of endpoints.

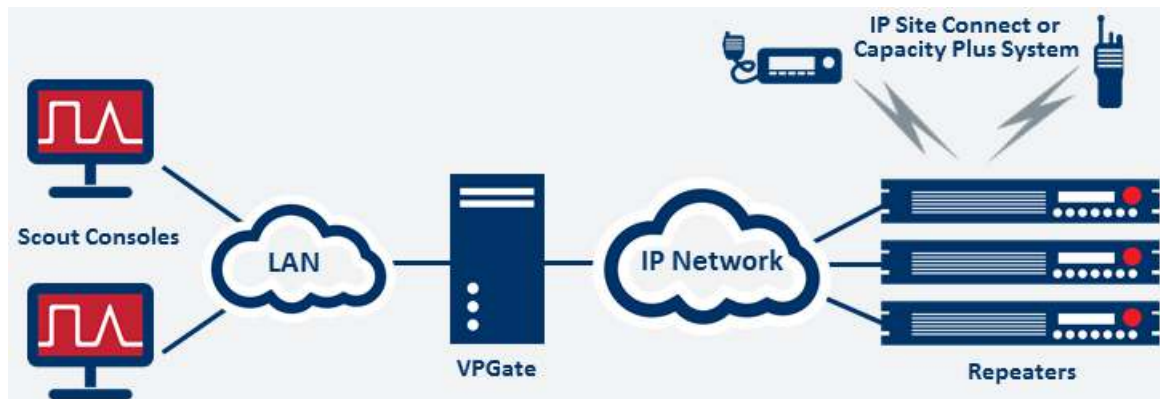
Enterprise-Wide Management: Scout offers a unique suite of enterprise management tools that allow for system visibility and management of voice communications over large distributed enterprises that are typical in airline, railroad, utility, and public safety installations. Key benefits include: reduced enterprise-wide LAN/WAN VoIP traffic bandwidth; centralized console configuration management; and unified views of system diagnostics, alarms, and reports.

Future-Proof Flexibility: Scout uses software interfaces to third-party endpoint devices to provide a dynamic, scalable, and extensible platform that easily accommodates new and legacy technologies. Concurrent support of open standard and proprietary radio and telephony protocols makes Scout the perfect solution for supporting communication technology migration plans.

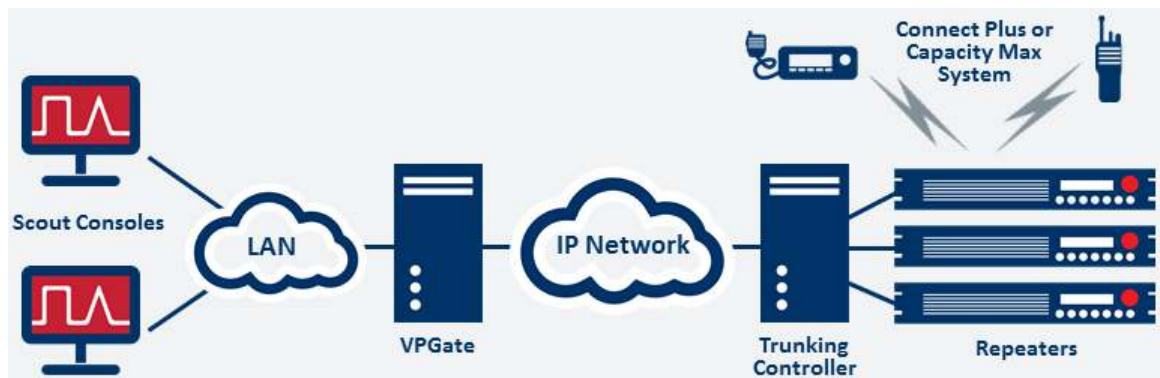
Configuration

Scout supports Motorola's MOTOTRBO™ systems: IP Site Connect, Capacity Plus, Multi-Site Capacity Plus, Connect Plus, and Capacity Max. For Connect Plus to Capacity Max migration, Scout supports use of the Capacity Max Bridge.

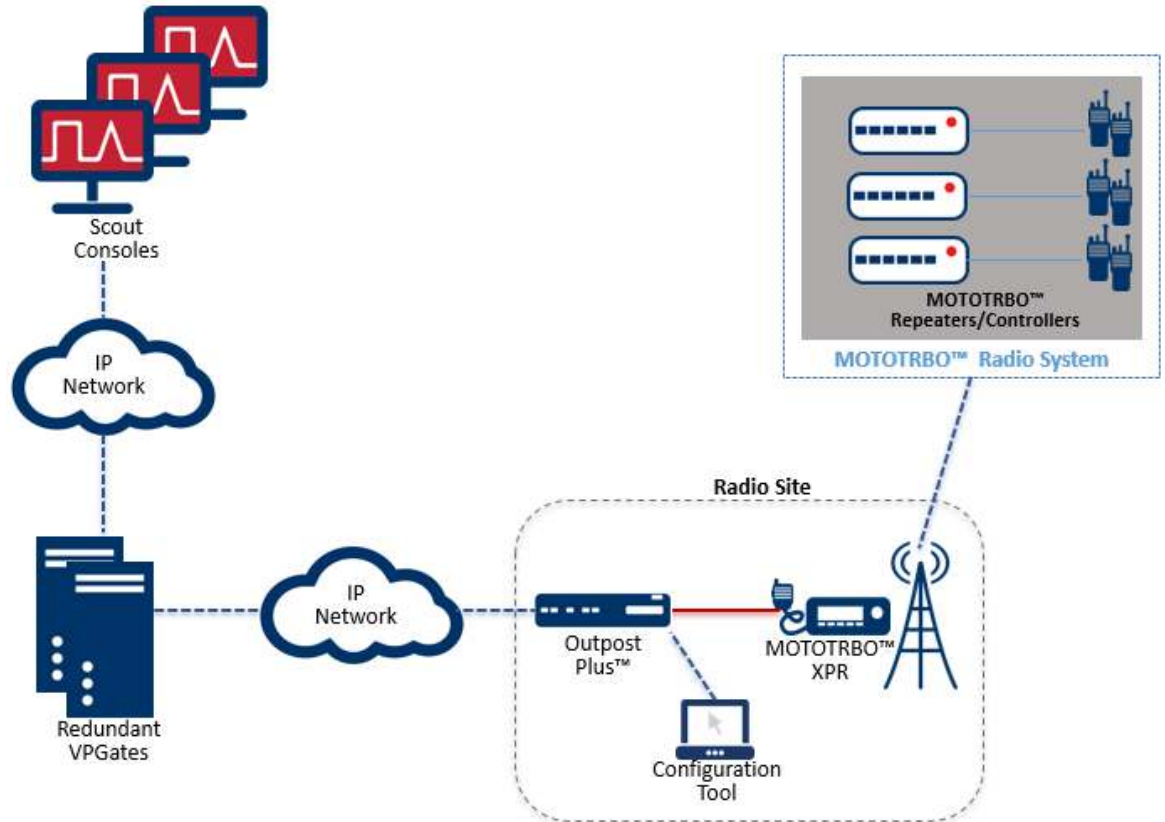
For IP Site Connect and Capacity Plus systems with wireline control, Scout connects directly to the repeaters via an IP network as shown in the following diagram.



For Connect Plus and Capacity Max systems with wireline control, Scout connects to a trunking controller via the IP network, and the trunking controller connects to the repeaters as shown in the following diagram.



Scout supports a wireless connection to IP Site Connect, Capacity Plus, Connect Plus, and Capacity Max systems via Avtec's Outpost Plus and Motorola's MOTOTRBO™ XPR 4000 and 5000 Series radios, as shown in the following diagram.



In the broadest view, four elements compose a Scout system:

- Management Structure
- Scout Dispatch Console Positions
- Scout System Gateways
- Endpoint Devices

Management Structure

Scout Manager is an Avtec software application that runs on Windows 10, Windows Server 2012 R2 Update 1, or Windows Server 2016. In Scout each collection of configuration settings for a particular Scout system, including settings for the consoles, screens, and endpoints is known as a project. Scout saves project configuration data in standard database and file formats.

One of the key functions of Scout Manager is allowing the Scout System Administrator to build and manage console screens. Scout Manager's user interface includes three configuration windows that facilitate

building screens, testing screens, and setting properties for various user interface tools. The administrator drags graphical components such as Endpoint Pads, Function Pads, Call Queues, Dialer interfaces, Web Browsers, and more onto the screen workspace from Scout Manager's Toolbox. The administrator then sets individual pad properties such as pad color, icon, or pad name using Scout Manager's Properties window.

The Toolbox function includes a section for customized user tools. The Scout System Administrator can configure a custom look for a tool, save it to Scout Manager's Toolbox and use it repeatedly when building additional screens.

For security purposes, Scout uses layers of password protection that apply to Scout Manager login, Scout user access, and Outpost™ webpage configuration. Scout offers two types of user name/password authentication for Scout Manager users and Scout Central Distributor users: Internal Security or Windows Active Directory (AD) Security.

- **Scout Manager Login** – To prevent Scout Manager from unauthorized updates, Scout Manager requires login with a user name and password when the software starts.
- **Scout User Access** – The Scout System Administrator can create users who have rights to access Scout Manager. Each user can have varying levels of access, as needed: No Access, Read-only Access, or Full Access, and each user's rights can be assigned differently for each portion of Scout Manager that can be modified. User rights enable administrators to deploy Scout Manager configuration changes to select locations without impacting other locations or administrators.
- **Scout Central Distributor (SCD)** – SCD users, created by an SCD user with User Administration rights, can have access rights in any or all of the web application's user categories: User Administration, Project Deployment, Alarm Acknowledgment, and System Administration.
- **Outpost™ Webpage Configuration** – The webpage password protection feature provides a method of ensuring that only authorized personnel access Outpost's internal webpages to make changes to the configuration. The usernames and passwords assigned apply only to the Outpost where the name and password is created.

Other components of Scout that support management operations include the following:

- **Avtec Audio Bridge** – Software component that enables administrators to create a permanent patch between two simplex endpoints
- **Avtec Routing Controller** – Software component used to enhance Scout's connection into the MOTOTRBO™ Multi-Site Capacity Plus and Capacity Max systems and the GenWatch 3 system to allow up to 100 endpoints to connect
- **Avtec Trunking Gateway System** – Software component used to maintain registration and routing information for group and unit-to-unit endpoints in a P25 Trunking system
- **Avtec Encryption Key Manager** – Software component used to create and store encryption keyset data for a Scout system that is communicating with radios that use encrypted communication
- **Avtec SIP Proxy** – Software component used to facilitate console-to-console communication for intercom functionality across multiple sites without regard to local networks used to support communication between external SIP devices and VPGate endpoints via ScoutLink, and used to support communication between SIP endpoints in Scout and SIP extensions hosted by external PBX systems
- **Call Voter** – Call arbitrating software used to determine which call goes to the console when multiple receivers get the call
- **ScoutLink** – Software component that provides a SIP gateway between licensed SIP devices that are external to the Scout system and endpoint devices that are configured in Scout's VPGate.

Scout Dispatch Console Positions

Each Scout position consists of Avtec software on a standard computer, a separate media workstation, and dispatching peripherals. Scout console software runs on a Windows 10 computer with any compatible pointing device or an LCD touchscreen. The computer and the media workstation connect to a local VPGate system via Ethernet to access endpoints.

The Scout User Interface software provides a user-friendly dispatching environment. The console screen displays virtual buttons called pads which the dispatcher operates via touch or by mouse click. The dispatcher touches the pads to answer calls, select functions, and move from screen to screen. And for dispatchers who work various territories according to need, Scout offers dispatching by Communication Landscapes called CommScapes. A dispatcher who is responsible for multiple CommScapes selects the appropriate one at login. The Scout System Administrator configures and maintains all console screens and all CommScapes from the Scout Manager software application.

Scout positions have the option of being configured for dispatcher login. Dispatcher login can either be configured for Project Authentication, which requires the entry of a username and password, or Windows Authentication, which enables authentication via the Windows OS platform. With dispatcher login, a dispatch center can use free seating with customized configuration. A dispatcher occupies any console position and logs in to a console that displays the dispatcher's unique screens. To support touchscreen console setups, the login dialog box accesses a software keyboard.

Scout also features Console Intercoms to provide dispatchers the ability to have two-way conversations with one another from the consoles. The dispatchers can place an intercom call as either a regular call or an emergency call, forward intercom calls, send one-way intercom group pages to multiple dispatchers, make All-Call announcements, and place a regular or emergency group ring call that converts to a one-to-one conversation when another dispatcher answers. The intercom endpoint pad can be configured with visual and audible signals that notify the dispatcher of a missed intercom call and a request to return the call. In addition, intercoms can be configured in PTT mode or in full duplex mode.

The Scout software provides the most feature-rich and configurable interface in the console industry. Every screen element, from graphical backgrounds to pad sizes, colors, and fonts, can be configured to meet a company's unique needs. Despite the wide array of features, the Scout Manager configuration application simplifies designing, maintaining, and deploying console screens.

Scout Position Hardware Components

The Scout dispatch console position includes the hardware components listed below.

Scout Media Workstation

Hardware Audio Package Option – The limitations of both computer audio processing and peripheral interfaces drive the need for the Scout Media Workstation Plus. Instead of a computer sound card, Avtec provides a robust embedded controller based upon a real-time operating system, with six dedicated DSPs to manage audio manipulation. It interfaces all of the dispatchers' peripherals such as speakers, headsets, handsets, and push-to-talk switches. The Media Workstation Plus converts the analog audio from these peripherals to VoIP audio for connection to the various IP endpoints (via VPGate). In addition, it provides transcoding between different audio codecs (G.711, G.729a, and G.726) and audio mixing for the console patch function. Up to five patches per Scout console can operate simultaneously.



Connectors located on the rear of the unit provide for headset jack boxes, footswitch, Select speakers, and Unselect speakers. The hardware media workstation supports a maximum of 11 audio peripherals at each console position. The unit features a front-panel reset switch and an LED to provide the power status indication. The Media Workstation Plus can be placed on the desktop or mounted out of the way to conserve valuable desktop space.

Software Audio Package Option – For customers who need a flexible, mobile software-based dispatching option, Avtec offers the Scout Software Audio Package. The Software Audio Package provides portability for a dispatch center or expands dispatch capability quickly for disaster management or during special events. To minimize dependencies on computer hardware and sound cards, the console software, when integrated with Scout's Software Audio Workstation, handles all of the audio processing, such as patching, transcoding, gain control, and mixing. The Software Audio Package uses Avtec USB peripherals, standard USB peripherals, or built-in audio devices.

Desktop Speakers



The desktop speakers provide Select and Unselect audio for the Scout console. The speakers are compact and easily stackable, ideal for confined spaces. Each has a volume control, a Power/Audio Activity LED indicator, and an adjustment that permits setting a minimum volume level. For the Media Workstation Plus, Scout supports up to 10 speakers per console position assuming the position uses a single Jack Box or desk microphone.

The Avtec USB Speakers provide similar functions for Scout's Software Audio Package.

Jack Box



Scout Jack Boxes provide a standard PJ327 jack for 4W/6W handsets and headsets. A minimum and maximum volume level is set under software control from the Media Workstation Plus. The units feature a manual volume control as well as a mute-indication LED. Avtec USB Jack Boxes provide similar functions for Scout's Software Audio Package.

Desk Microphone



The Desk Microphone features a sturdy weighted base, a flexible neck, and connects to the Media Workstation Plus. The microphone features a large button for Push-to-Talk (PTT) which is labeled TRANSMIT and a smaller button for Continuous Tone-Coded Sub-audible Squelch (CTCSS) which is labeled MONITOR. In addition, a top-surface Avtec logo illuminates when the microphone is active. The profile of the microphone prevents dispatchers from engaging PTT accidentally.

The Avtec USB Desktop Microphone provides similar functions for Scout's Software Audio Package.

Dispatcher Computer and Monitor



Each Scout console position requires a computer running the Windows operating system. Scout supports Windows 10 for its recent versions. Unlike competitors' systems, the computer is not proprietary and can be customer supplied. Each console also requires a display monitor that is compatible with the position's computer. Scout supports screen resolutions up to 2560 x 1600. For most users, Avtec recommends using 1280 x 1024 resolution and a 17" or 19" LCD touchscreen.

Scout System Gateways

Voice Over IP Protocol Gateway (VPGate)

VPGate software translates VoIP traffic as well as a variety of open and proprietary communication protocols to a common language used to communicate to Scout consoles and other VPGate systems over a LAN/WAN. VPGate interfaces to third-party protocols to connect Scout with the third-party endpoint devices.

VPGate separates the Scout console software from the software interfaces for third-party endpoint devices. Avtec creates the third-party interfaces as separate entities, which allows the interfaces to be added or removed from a Scout console system as business needs dictate without affecting the Scout console software. VPGate is unlimited in the variety of interfaces that it can support in a Scout system,

which allows VPGate to provide the utmost flexibility for connectivity to various communication technologies and protocols.

Endpoints in a Scout console system include radio, telephone circuits, and other devices. Every endpoint is assigned to an instance of VPGate, and one VPGate instance can license a maximum of 160 endpoints. To ensure reliability, VPGate is licensed in a redundant pair configuration; two copies of the system ensure that every endpoint is available at all times, even if one VPGate computer fails. Additional redundant pairs of VPGate can be added to a Scout system that needs to support more than 160 endpoints. Generally, VPGate systems reside within the same LAN with the Scout consoles and use multicast over the LAN to send audio to the consoles.

For smaller systems (up to 40 endpoints), VPGate can reside on the same computer as a Scout console. For larger installations with many endpoints, Avtec recommends a dedicated computer for each VPGate instance. VPGate communicates via Ethernet to VoIP endpoints using unicast transmissions; this simplifies its use in WAN environments. For non-IP devices such as control stations or Cimarron ANI decoders, VPGate uses a serial protocol. In these cases, two interfaces can be chained together for an endpoint. One converts the serial protocol to IP and another converts the proprietary protocol to the Avtec System Protocol.

VPGate is configured and managed through Scout Manager via a built-in web server. All updates take effect immediately after editing, eliminating a need to restart the gateway. Using an embedded server for configuration and status pages allows access to any VPGate system over the network from any installed Scout Manager location or from any standard web browser. For security purposes, users must have permissions established in DMS before updating the VPGate webpages.

In the event of a lost VPGate license key due to a computer failure, customers have the ability to activate a VPGate Emergency License. This license key allows the customer to continue using the VPGate service with a software key on a new server when recovering from a hardware failure. Upon installation, a 14-day emergency license key activates allowing dispatchers to continue dispatch operations while the administrator acquires proper Scout Suite Software licensing.

Although Avtec offers a robust VPGate computer, it can be customer supplied. VPGate operates on a Windows Server 2012 R2 Update 1, or Windows Server 2016 platform.

Frontier

Scout with Frontier makes efficient access to geographically diverse endpoints a reality. A Frontier-enabled Scout system reduces WAN use and provides seamless access to endpoints located anywhere Frontier software exists. At start up, Frontier-enabled Scout locations advertise their local endpoints to other Frontier peers as well as to the remote endpoints in which they have interest. This discovery process allows the Frontier peers to learn how to access shared endpoints. However, for network efficiency, Frontier peers do not pass audio or most status updates across the WAN until a console position wants to use a shared endpoint. Once a shared endpoint is in an active state on a console, it displays and reacts the same as local endpoints. To the dispatcher, the difference is unnoticeable.

A Frontier-enabled Scout location can be composed of a fully deployed Scout system or as little as a Frontier computer and one or more remote Scout consoles. In addition, Frontier can be installed to communicate with its local Scout console using either a multicast configuration or a direct, localhost

connection. In any configuration, a Scout system with Frontier provides seamless interaction with all endpoints, both those homed to a local instance of VPGate and those homed to an instance of VPGate located across the WAN.

Frontier software is licensed and controlled via a Frontier-enabled VPGate license. Licenses allow for redundant implementation to prevent a single point of failure. Frontier software operates on a Windows 10, Windows Server 2012 R2 Update 1, or Windows Server 2016, platform. It requires at least Scout Version 2.4 and Frontier-enabled VPGate Version 2.4.

Endpoint Devices

Outpost

The Avtec Outpost endpoint is a solid-state embedded IP controller that interfaces analog radio equipment to an IP network. It performs analog-to-digital conversion of the audio as well as remote monitoring and control. Outpost works in conjunction with VPGate to provide interoperability with endpoint devices from various manufacturers.

Outpost features two radio ports. Each port's interface can control a directly connected local radio or a tone remote controlled radio (locally or over a telephony circuit). In addition, each radio connection includes a serial data port which can tunnel serial protocols via IP to VPGate for translation. For security purposes, Outpost can be configured to require user ID and password before allowing verified users to view or modify its webpage configuration data.

Outpost supports a feature called In Cabinet Repeat. Also known as Console Repeat, Self Repeat, or Talk Through, this feature allows Outpost to create the appearance of a repeater from an ordinary base station. When enabled, any audio received on the 4-wire input side is retransmitted on the 4-wire output side. This feature can be configured to operate at all times, or it can be configured to operate when the dispatcher enables it.

Outposts can be rack mounted if necessary: four units in a 3U rack space.

When interfacing a radio, the multifunction ports perform the following functions under software control:

- Interface analog audio to and from the radio
- Decode DTMF digits for calls
- Generate tones for a radio to transmit, either as an answerback event or upon a command from the dispatcher
- Detect a carrier operated relay (COR) signal from the radio
- Detect a radio signal strength indicator (RSSI) from the radio for call voting
- Provide a push-to-talk (PTT) control to the transmitter
- Select a frequency of the transmitter, if the station supports this function
- Indicate connectivity and control status via LED

Outpost Plus

The Outpost Plus is Avtec's second generation Radio over IP gateway enabling radio connectivity via an IP network. It is designed to be highly reliable and is easy to install, use, and maintain. The Outpost Plus extends connectivity and communication for non-IP base station, fixed station, and control station radio technologies for both unbalanced and balanced audio.

The Outpost Plus features four radio ports easily connecting up to four analog or digital radios. When interfacing a radio, the multifunction ports perform the following functions under software control:

- Supports up to four radios
- Analog/digital radio gateway
- IP enables legacy radio systems
- Remote management
- Interconnects disparate radio networks and frequencies
- G.711 and G.729A audio compression
- Performs USB, serial, and relay control
- Connects to VPGate and consoles via Ethernet interface
- MOTOTRBO support
- VAD (Voice Activity Detection)
- Paging and knox tones
- DTMF encoding/decoding

Digital Radio

For digital radios that do not need the Outpost radio controller, Scout connects using interfaces designed specifically for the radio or the protocol.

Telephony with Session Initiation Protocol (SIP)

Scout and VPGate support Session Initiation Protocol (SIP) for connection to VoIP telephony devices. A Scout endpoint pad on the user interface can map to telephony circuits. These can be actual phone lines tied to a gateway or a VoIP extension off an IP PBX. Scout supports Cisco® Unified Communications Manager V6.1 and higher, Avaya IP Office™, generic SIP PBXs, and SIP gateways. Scout also provides its own SIP Trunking capability via the Avtec SIP Proxy.

Scout consoles treat telephone circuits similarly to radios. A console can have multiple telephone lines on its screen and allow multiple phone calls to be active simultaneously. Calls can be active, put on hold, and patched to other phone lines and radio endpoints. Avtec consoles are not restricted to one phone patch like traditional consoles from the public safety world. Scout also has a configuration option that can require PTT for full duplex endpoints and another configuration option to use */# keying to communicate with radios. In addition, Scout provides a High Availability configuration option for Scout's SIP endpoints to allow critical telephony conversations to continue without interruption.

VPGate contains the SIP stack and manages SIP connections. In simple applications, small 4- or 8-port SIP telephony gateways can be used to connect to POTS (Plain Old Telephone System) lines. In a VoIP PBX-

equipped installation, VPGate registers with the IP PBX and functions with the existing gateways and desk telephones.

Scout includes an extensive contact database organized into groups. Telephony functions include recall dial tone, call, display caller ID (name and number) in the Call Queue, transmit caller ID, patch, call transfer, automatic answer, call forwarding, voicemail, and more.

For a list of the SIP standards with which VPGate complies, see Avtec's *Session Initiation Protocol Capability Guide*.

Supported Technologies

Scout, via VPGate, integrates with the following technologies.

- Analog/IP Logging Recorders – Accurate Always, CVDS, Equature, Eventide, Exacom, HigherGround, Jotron, NICE, Synergon Vault, Uptivity, and Verint
- AT&T Enhanced Push-to-Talk
- Conventional Radio Interfaces – Avtec, LLC Outpost, Motorola MOTOTRBO™ IP Site Connect, MOTOTRBO™ XPR 4000 and 5000 Series
- ED-137 Systems
- EDACS Control Station
- GenSPOut – Genesis Specified Packet Output by Genesis
- iDEN/NEXTEL – SyTech
- IP Auxiliary Input and Output Panels – Avtec, LLC
- MDC1200 and FleetSync ANI Encoder/Decoders – Cimarron
- P25 Trunked Systems – Motorola Astro® 25 Radio Communications and Motorola APX™ P25
- P25 Conventional – Motorola APX™ P25
- Session Initiation Protocol (SIP) Telephony Systems – Avaya, Cisco, Quintum, others
- Time Synchronization – Spectracom NetClock
- Trunked Radio Interfaces – Motorola MOTOTRBO™ Connect Plus, Multi-Site Capacity Plus, and Capacity Max, including WAVE™ 5000 Broadband PTT functionality
- Valcom – IP Ceiling Speaker and SIP Doorphone
- Verizon Push-to-Talk Plus (PTT+)

Scout Console Features

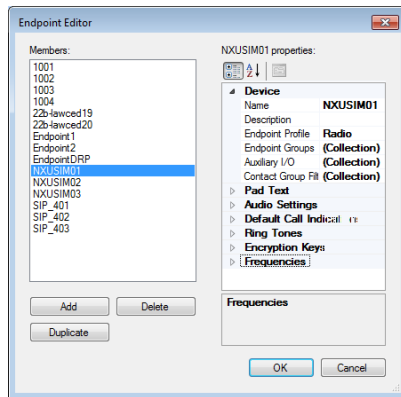
Transmitting and receiving audio is the crux of a Scout console system. The pages that follow provide insight into some of the system features that make Scout a frontrunner in the console industry. These descriptions provide information for features that support workforce integration, supervisory support, dispatcher screen design, system health checks, paging, and much more. For a quick list of Scout features, refer to the [Capabilities-at-a-Glance](#) chart that follows the feature descriptions.

Configurable Design



The Scout User Interface design focuses on custom configuration. Scout's options for colors, text, icons, windows, tabs, tools, and backgrounds allow a company to create a view that meets its exact needs. While Scout installs with design defaults set for user interface elements, those can be modified as needed. A screen can be designed to display multiple windows, accessed with tabs or pop-ups. Endpoint pads can be grouped in a panel with colors, borders, text descriptions, and backgrounds. The pads themselves can be configured with color, font, words, and icons unique to the environment. To ease the Scout System Administrator's design requirements, all configuration occurs within Scout Manager software.

Endpoint Spectrum



The pure IP Scout console connects with radio, telephony, intercom, and remote action endpoints such as auxiliary input/output endpoints.

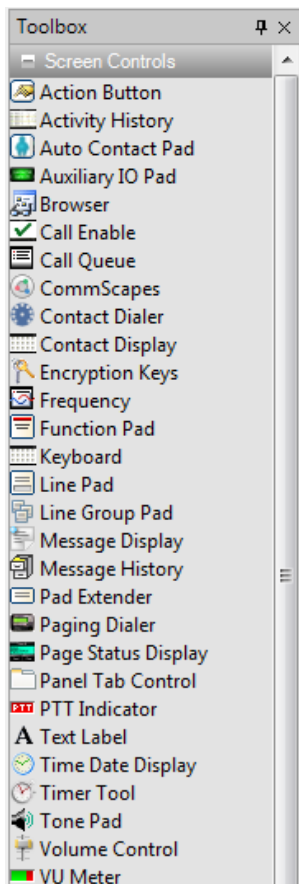
For radios, whether conventional or trunked, digital or analog, Scout provides the necessary options for communication. Scout also supports advanced radio features, frequency adjustments, repeater enabling or disabling, paging, and more.

Telephony endpoints, mapped from an endpoint pad on the Scout console to telephony circuits, can be actual phone lines tied to a gateway or VoIP extensions of an IP PBX. With Scout, multiple telephone lines can display on the Scout Console User Interface and be active at once. In addition, a telephone circuit can be active or on hold and it can be included in a patch with other lines, both radio and telephony.

Intercom endpoints connect dispatchers across a Scout system for regular or emergency console intercom calls. The intercoms also provide the dispatchers with tools for audible signaling and call back reminders.

Finally, dispatchers can control or observe remote actions using an auxiliary input/output endpoint. Designed to monitor or change the status of an outside entity, these endpoints allow the dispatcher to perform activities such as opening and closing doors, turning lights on and off, or simply displaying the status — opened/closed or on/off — of an outside entity.

On-Screen Controls



The Scout Console User Interface offers a variety of standard controls for the dispatcher's use. The Scout System Administrator can custom configure a control once, save it, then copy and reuse the control for any screen, for any dispatcher. Available controls include Volume, VU Meter, PTT Indicator, Dispatcher Messages, Frequency, Time/Date Display, and CTCSS Disable. Additional function pads, endpoint pads, endpoint pad extenders, and action buttons provide access to endpoints, information, and functions necessary for the dispatcher to communicate efficiently and effectively.

Call States and Types



Scout supports standard call states for telephones and radios. Endpoint pads display in a specific color for each state. While each state has a default color within Scout, the colors can be customized to meet a company's standard business practice.

Default call states include:

- Select – red
- Unselect – green
- Mute – brown
- Gone (error) – black
- All Mute – red
- Disconnect – white
- Inactive – gray
- Hold (telephony only) – yellow

Expanded Console Control



The ResourcePro screen control is a multi-function tool that provides unique configuration options for Scout screens and also provides dispatchers with operational flexibility, streamlined access to endpoints, and an activity center for controlling endpoints and intercoms on the Scout User Interface.

The ResourcePro screen control enables the administrator to design screens that bring the active endpoints and intercoms into view automatically or that provide a familiar place for the dispatcher to drop the pad onto the screen as needed.

Ultimately, the ResourcePro's configuration options and dispatcher activities save the dispatcher time in day-to-day operations.

The ResourcePro Screen Control requires an EMT license.

Touching to Talk



Scout provides easy options for sending radio and telephony audio through a variety of Scout User Interface options.

For radio, dispatchers use one-touch transmit via endpoint pads and Instant Transmit pads. For telephony, dispatchers touch with options such as the Call Queue, Auto Contact pads, the Contact Dialer, and the Contact Display. Scout provides its calling options — for radio and telephony — for local endpoints as well as for Frontier endpoints from across the WAN.

An endpoint pad appears to be a simple tool, yet it is one of the most powerful and configurable parts of Scout. Configuration includes properties at the project level, meaning the choices apply to all endpoint pads in the project, and properties at the control level, meaning that configuration is only for the currently selected pad.



An Instant Transmit pad allows the dispatcher to touch the pad and transmit immediately to a pre-configured endpoint. The dispatcher holds the pad while transmitting and releases the pad to stop.



The Call Queue provides the dispatcher a central place to reference all pending calls. Calls display by priority, emergency before regular, and then by arrival time, oldest calls first. Configuration options include an unanswered call timer, an icon to indicate emergency or regular calls, and the option to only display calls that have both an audible and visual indication. The dispatcher can touch a displayed call line and then touch an Answer Call button to connect to the call. Another answer option lets the dispatcher touch the Next Call button to answer the oldest waiting call.

The Call Queue can also be configured as a Missed Call Queue, displaying only calls that the dispatcher did not answer. In this configuration, the control works in the same manner as the original configuration, just displaying a different set of calls.



A dispatcher uses an Auto Contact pad to place a call to a radio or a telephone, to page a single contact or a group of contacts, or to forward SIP calls from a single line or group of lines. To initiate, the dispatcher can simply choose a single pad. The Auto Contact pads serve as shortcuts that help the dispatcher easily make outbound private calls and forward SIP calls.



Scout's Contact Dialer stores contact information and also serves as a tool for placing calls. The dial pad functions as a DTMF dialer and a Dial key allows the dispatcher to call a selected contact. In its Auto Contact view, the Contact Dialer presents Auto Contact pads to the dispatcher for easy, efficient calling.

Advanced Radio Features

Scout defines advanced radios as those with features beyond basic “push-to-talk, release-to-listen.” The advanced radio features can be found in some legacy technology in addition to cutting edge technology. The advanced radio set of unique functions that Scout supports includes the following:

- Group call
- Private call
- Call alert
- Emergency call display
- Emergency state clear
- Progress tones
- Clear call
- Unit check
- Unit monitor
- Unit stun
- Unit kill
- Unit revive

Total History Tracking

Scout endpoints, both local and over Frontier, can use Scout's call and activity tracking controls such as Activity History, Dispatcher Message history, and Scout Instant Recall Recorder (IRR). Scout has the capability to track history for calls, talkspurts, dispatcher messages, and for archival purposes, conversations.

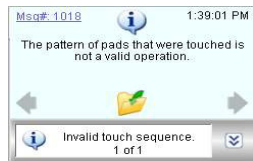


Scout tracks history for calls and talkspurts in the Activity History control. When the Scout IRR is installed with the Activity History control, the dispatcher can listen to a talkspurt by touching the line in the control. This control provides a configuration option that lets the dispatcher return telephone or radio calls with a simple touch on the call line. Scout IRR allows dispatchers to record inbound and outbound audio.

Scout also tracks dispatcher messages in the Message History control which is a companion to the Message Display control. Messages display throughout the dispatcher's day to indicate transmit errors and the reasons they occur. All messages remain in history with a timestamp and a message ID.



Introduced in Scout Version 4.9, the Activity History Pro control increases recording, search, filtering, and playback options. The 4.10 release added the ability to record and replay conversations in real time. Dispatchers can filter activity history by conversations, inbound or outbound talkspurts, or calls. The control also includes a search bar that lets dispatchers search for telephone or radio calls by entering a keyword or number. Dispatchers can also toggle the Scout IRR player on and off.



Scout supports analog and IP recording methods for logging recorders. The logging recorder information can include console and endpoint metadata for qualified recorders. The recorder capabilities determine if it can accept and display metadata. Avtec works with vendors to test the compatibility of their logging recorders with Scout. The current list of approved logging recorders for voice capture includes:

- Accurate Always
- Eventide, Inc.
- Jotron USA
- Uptivity
- CVDS, Inc.
- EXACOM, Inc.
- NICE
- Verint
- Equature
- HigherGround, Inc.
- Synergion Vault

Dialing Contacts



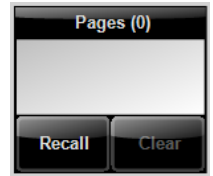
Contact compilation and control is an integral component of a Scout system. A single Scout system can catalog up to 1,000 contact groups and 10,000 contact devices such as radios, phones, or pagers. The Scout System Administrator can use Scout Manager's Contact Editor to create contacts with multiple radio, telephone, or pager numbers, available for access through auto contact pads or through controls such as the Contact Dialer, the Contact Display, or the Paging Dialer. The administrator can also use the Contact Editor to export and import contacts. The Contact Dialer control serves multiple purposes. Use the dialer for DTMF dialing from its dial pad for both primary and secondary dial strings. Next, use the dialer to place hexadecimal dial strings. Also use the dialer to place unit-to-unit calls. The new Forward key allows dispatchers to forward calls and cancel forwarded calls from one SIP line to another. Finally, use the dialer to place autodial calls. The dialer displays contact groups and individual contacts within the groups. When the dispatcher selects a contact from the group, the contact displays on the dial pad and the dispatcher simply presses the Dial key to dial the number. The Contact Dialer can be configured, on a per-console basis, to display the contact's name, the contact's number, the device type, or all three.

As an option, Scout supports the use of a programmable and a non-programmable commercial-off-the-shelf (COTS) external keypad to use in place of the Contact Dialer.

Paging Support



Scout paging supports stacking pages, steering pages, and sending autopages as well as a configuration choice of sequential or parallel paging. Paging tools include the Paging Dialer, Paging Status Display, and Instant Transmit pads. Scout maintains all paging contacts in the contact files that hold all information for radio, telephone, and paging contacts.



The Paging Dialer allows the dispatcher to send pages to pagers and to send unit alerts directly to radios in the field. The dispatcher can send a page or autopage to a single pager or send a group of pages to multiple pagers. The dispatcher can also send a unit alert to a radio as part of a paging stack. The Paging Dialer supports a variety of paging formats and it provides the capability to add custom formats.

Scout also supports SELCAL, a selective-calling radio system that alerts an aircraft's crew that a ground radio station needs to communicate with the aircraft.

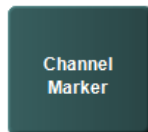
Handling Urgent Calls



All radio, telephone, and intercom endpoints within a Scout system can support emergency calls and many radio endpoints support emergency states. An emergency call is a call with a higher priority level than a regular call while an emergency state alerts the dispatcher of an emergency declaration from a subscriber unit on the associated talkgroup. The emergency state remains active on the Scout console even after the dispatcher answers the associated emergency call. Once the emergency is resolved, the dispatcher can use a separate control, Emergency Clear, to clear the emergency state indication on all the consoles and the radio system.



Other Scout features also support emergency calls. Scout controls such as the Call Queue and Workstation Relays offer special configuration options for emergency calls to ensure that the calls receive top priority in the dispatching center.



Scout can transmit a Channel Marker tone to alert users that the selected channel has priority status and routine transmissions should not be made on the channel.



Scout also supports the NENA E911 Radio/Telephone Headset Interface to provide additional emergency support functions. This interface provides connectivity and control signaling between the Scout console and a NENA-compliant external E911 telephone deskset.

Workforce Integration

Scout encourages dispatchers to work with one another by providing features that support an integrated workforce. These include:

- Call transfer
- Forward calls
- Free seating
- Intercoms
- Barge-in
- PTT Override



Scout provides several options for transferring calls. A dispatcher can transfer SIP telephone calls from one extension to another within a PBX system. These transfers can be configured as blind or attended transfers. In addition, Scout supports transferring telephone calls between dispatchers, when both have the endpoint configured.



Scout console intercoms provide dispatchers the option to have two-way conversations with one another, to make page announcements to groups of dispatchers, and to make All Call announcements. An intercom endpoint pad can be configured to ring, show call indications, or to voice announce an intercom call.



A Scout dispatcher can forward all regular and emergency calls to another dispatcher. The forwarded calls maintain the original audible and visual call indications that were set for the forwarding dispatcher's console. Multiple dispatchers can forward calls to a single dispatcher, who can forward the calls to yet another dispatcher, if the endpoints are already configured on the receiving dispatcher's console.

| VoIP Audio Settings | |
|---------------------------------------|-------------|
| Receive Audio Mode | FULL DUPLEX |
| Override Receive Audio IP Port | 0 |
| Override Transmit Audio IP Port | 0 |
| VoIP Audio Jitter Depth (ms) | 100 |
| Squelch Tail Time Out | 0 |
| Allow Barge-in/Monitor Outbound Audio | YES |

Barge-in allows a dispatcher to select an endpoint and join a telephone conversation that another dispatcher has in progress. The result: multiple dispatchers can select and talk to a telephone endpoint at the same time. This feature could allow a dispatcher to receive on-the-line support from a co-worker or supervisor. Each Barge-in conversation can support 11 simultaneous talkers: one field endpoint and 10 dispatchers.

The login screen features the AVTEC logo at the top. Below it are fields for Username (containing 'Dispatcher1'), Password, and Language (set to 'English (United States)'). A list of CommScapes includes 'CommScope1', 'CommScope2', and 'CommScope3'. At the bottom, there are 'OK' and 'Close' buttons.

Scout's Operator Login feature allows a dispatch center to use free seating with customized configuration. Consoles have the configuration option to require user names and passwords for login. When an operator logs in, the console displays the user-defined screens associated with the unique login.

If a dispatcher's responsibility covers various territories, the administrator can configure Communication Landscapes, or CommScapes, for the dispatcher. Each CommScope includes startup screens, call-in codes, hunt groups, and endpoints. The dispatcher's available CommScapes display on the login screen for selection.

Another feature that supports workforce integration, PTT Override, lets the Scout System Administrator configure VPGate to allow dispatchers to override each other's PTT. PTT Override benefits situations where multiple dispatchers have the same simplex endpoint on the Scout User Interface and the dispatchers use Monitor Outbound Audio to hear each other's outbound conversation to the field.

Multi-Endpoint Interaction The Scout console provides dispatchers with options for working with multiple endpoints at the same time.



Simul-select lets a dispatcher select more than one radio simultaneously. The dispatcher receives audio from all of the selected radios and can transmit to all selected radios at the same time. All field operators can hear the dispatcher, but not each other.

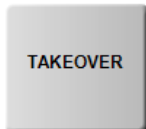


Patching, however, lets the dispatcher connect group or unit calls to one another. Patching, like many Scout features, includes many options for configuring behavior. Configuration options include:

- Automatically joining a patch
- Automatically placing a call into the patch without leaving the patch
- Removing a line from the patch without leaving the patch
- Using COR patch keying or VOX keying for certain endpoints
- Requiring PTT for full duplex
- Receiving a patch timeout notification
- Using */# keying for telephone endpoints

Supervisor Support

Scout offers several features to support supervisors in the dispatch center. These include Supervisor Takeover, Headset Monitor, Workstation Relays, Console Monitor, and SIP Monitor.



Typically used in a dispatch environment with a hierarchical management structure, the Supervisor Takeover feature allows a supervisor to take control of an endpoint, if necessary. The endpoint can be in any state, in simul-select, a member of a talkgroup, or even a member of a patch when the takeover occurs. The supervisor takes over the endpoint to gain exclusive use of the endpoint. While other consoles can keep the endpoint active, only the supervisor can transmit. This feature is not supported for endpoints shared over a WAN.



The Headset Monitor feature allows the dispatcher to share audio by activating the console's Select speaker. In this configuration, the dispatcher continues to hear audio in the headset while the audio is also replicated in the speaker.



A dispatching center's activity is often fast and furious. Easy-to-see notifications concerning a dispatcher's console state help the dispatcher, co-workers, and supervisors. Red and green lights connected to a pole above the dispatcher's console allow others in the dispatching center to see the dispatcher's current work status instantly. Called Workstation Relays because the lights are configured using the auxiliary relays in the media workstation, the lights indicate statuses that include: System Alarms, Call Forwarding, Emergency Call, Do Not Disturb, Channel Marker, Regular Call, Busy, PTT Event, and Transmitting.



The Console Monitor feature allows a supervisor or dispatcher to monitor the same Select audio that is present on another dispatcher's console.

Another monitor feature, SIP Monitor which is for SIP endpoints, allows a dispatcher to place a telephone line in Unselect to monitor audio on the line. This enables the dispatcher to monitor one or more telephone lines continuously without being a part of the conversations. As an example, if the dispatcher is in a conversation with someone who must step away from the phone, the dispatcher can continue to monitor the call until the other person returns.

Call Indications



Endpoint pad colors, status bar colors, status bar text, and endpoint icons work together to provide the dispatcher an in-depth understanding of an endpoint's status. Endpoint pads and pad extenders can also display frequency in use, ANI information, encryption details, and unanswered call time.

Endpoint pad colors can be configured to meet a dispatching center's needs, with each color representing a different pad state.



The status bar section of an endpoint pad displays color and text combinations to provide additional detail. While the colors and text can be configured on a system-wide basis to meet individual company needs, the default colors include:

- Yellow – VOX is present
- Red – PTT in progress
- Green – CTCSS in use

Default text and meanings include:

- Call – An inbound call is pending on the endpoint
- Transmit – The endpoint is being keyed, but not by this console
- Cross Mute – Audio from the endpoint is currently cross muted at this console

Icons that display on an endpoint pad are also configurable. Scout includes icons for a variety of indications. Configuration options for icons include location on the endpoint pad, flashing the icon, and its rate of flash in addition to the icon itself.

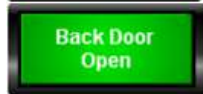
External Connections

Scout can connect to various external entities for dispatch center operations to extend the system's capabilities. The external entities include Computer Aided Dispatching (CAD) systems, Internet browser windows, SNMP manager applications, and remote devices for operation or observation.

Scout includes an API which can be used to connect it to an outside CAD system to perform a subset of the Scout console functions. The connection to a CAD could be used to change endpoint states, send pages, and issue unit-to-unit radio commands.



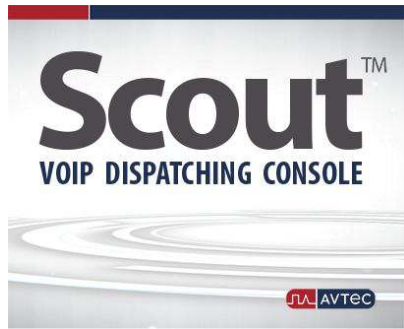
For Internet browser support, the Scout User Interface can be configured to include connections to specific, dedicated URL addresses. Each browser connection would be configured to connect to one Internet location that a dispatcher might need. Many customers use a browser window to connect to a weather site. The Scout System Administrator also uses a browser connection to link the Dispatcher Online Help to the Scout User Interface.



A special Scout endpoint type, the auxiliary input/output pad, can be used for two purposes: to display the state of an outside entity or to control an outside device. For example, the pad can display the state of a door, such as open or closed, or it can be used to control the door, to open or close it.

| SNMP Managers | | | |
|---|------|----------------|---|
| Add Manager SNMP Agent is currently enabled | | | |
| IP Address | Port | Description | |
| 172.16.5.18 | 165 | SNMP Manager 2 | ✘ |
| 133.40.30.1 | 165 | SNMP Manager 1 | ✘ |

Scout Central Distributor (SCD) can be configured to send its alarms and events to multiple SNMP manager applications. This aids network administrators who monitor network health with access to an SNMP manager application in addition to the SCD Alarms pages.

Enterprise Management

Scout's Enterprise Management Tools (EMT) include tools that support any Scout system; however, an EMT license expands the tools to address the particular needs of big companies that implement large scale or dispersed Scout systems. All systems, small or large, benefit from tools such as Scout Manager's Layout tab used for designing Scout system sites and SCD's in-depth reporting for alarms and statistical data for all components.

EMT also provides licensing tools for all systems. Scout Manager indicators track the number of sites and consoles both in use and allowed by licensing. An SCD webpage provides a quick snapshot of

Enterprise and console license statuses. The page displays standard and pool licensing information for consoles, specifically the number of standard hardware dongles and software key pool licenses that are in use and available. It also lists the number of consoles in a grace period and the total number of unlicensed or inactive consoles.

Enterprise customers with an EMT license receive additional benefits including the option to add sites and consoles above the standard limit, access to the Enterprise Endpoint Editor, and access to the ResourcePro screen control. When the customer has additional sites and consoles, alarm and statistical data reports include aggregate data for all components, across all sites. Access to the Enterprise Endpoint Editor helps simplify endpoint and driver configuration by centralizing configuration for multiple instances of VPGate. For example, instead of editing each VPGate instance individually, users can access the Enterprise Endpoint Editor from the Scout Manager menu to make changes to multiple endpoints at the same time. When dealing with large Scout systems, using the editor significantly reduces the time needed to implement changes and helps reduce errors. And, the ResourcePro screen control provides unique configuration options for Scout screens and also provides dispatchers with operational flexibility, streamlined access to endpoints, and an activity center for controlling endpoints and intercoms on the Scout User Interface.

Scout Security

For security purposes, Scout provides several layers of optional password protection. The protection levels occur in Scout Central Distributor (SCD), Scout Manager, and for dispatcher login.

SCD includes a central security infrastructure that lets administrators manage users via the SCD User Admin webpage. Use the page to create roles for users with identical authorization, authorize configuration activity, and manage passwords. This one user configuration page provides a location to manage privileges for SCD and for Scout Manager, using either Scout's Internal Security or Windows Active Directory (AD) Security. For SCD, authorization capabilities can include user administration or system administration rights, project deployment rights, rights to edit specific locations, and the right to acknowledge alarms.

 The image shows a login dialog box for Scout. At the top center is the AVTEC logo. Below it are two input fields: "Username:" and "Password:". At the bottom of the dialog box are two buttons: "OK" and "Close".

To prevent Scout Manager from unauthorized updates, the software requires login. After entering a user name and password, the user can lock the system and update the settings specified by the user's login role.

Each user can have one of three access levels: No Access, Read-only Access, or Full Access. Rights for Scout Manager users can be assigned differently for each modifiable portion of Scout Manager or an

administrator can create user roles and assign rights via roles. Verified against a master list at login, the user names and passwords allow access to Scout Manager on any computer where the project resides.



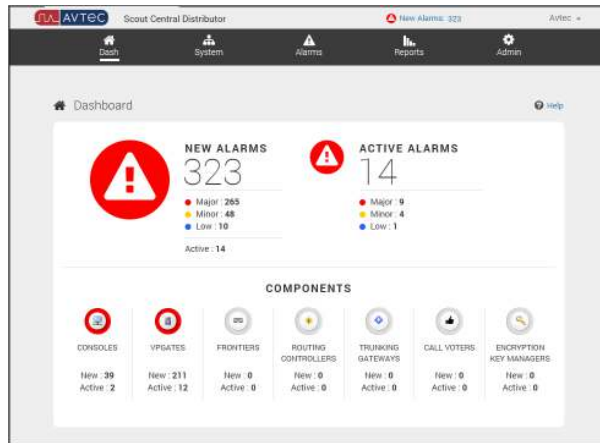
Another layer of security is available through the optional Console Login feature. This feature can either be configured for Project Authentication, which requires the entry of a username and password, or it can be configured for Windows Authentication, which enables authentication via the Windows OS platform. Once accessed, Scout consoles display user-defined screens associated with the unique login. The login dialog box includes a software keyboard to support consoles that do not include a

hardware keyboard. The Console Login feature can be configured for consoles that need it within the command center; other consoles can have assigned functionality without requiring dispatchers to log in.

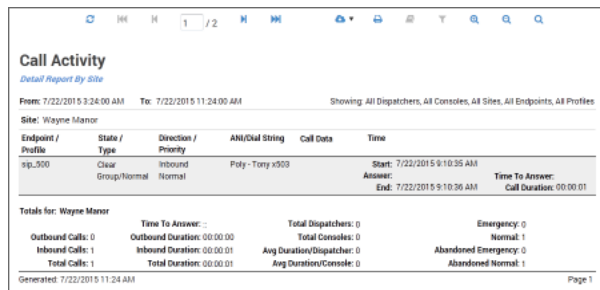
Scout also enables encryption as a security measure. Scout offers software-based encryption for Project 25 (P25) radios as well as for the following Motorola MOTOTRBO™ radio technologies: MOTOTRBO™ Connect Plus, MOTOTRBO™ Multi-Site Capacity Plus, MOTOTRBO™ Capacity Max, and MOTOTRBO™ IP Site Connect. Within Scout, VPGate is the component that stores all encryption keys; encrypts the audio before transmission; and, when the matching key is provided, decrypts incoming, encrypted audio.

As another security check at the operating system level, Avtec qualifies the latest critical and important Microsoft Security Patches during a release development cycle to ensure that the Scout release supports the Microsoft patches.

System Health Checks



The Scout Central Distributor (SCD) provides a central location to track system health and review the system's health status. SCD also triggers alarms and events regarding significant occurrences. The summary for the alarms and events displays on the SCD Dashboard, with links to access details and to acknowledge alarms. The alarms and events can also be configured as SNMP messages to be received by third-party SNMP managers. In addition, Scout enables administrators to customize alarm severity levels.

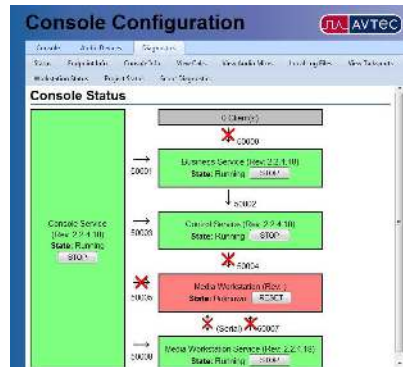


SCD also provides detailed statistical reports regarding dispatcher activity as well as an executive summary report. Designed to provide a Scout System Administrator the capability to manage the center and its employees based on call activity, the statistical reports include the following: Dispatcher Activity, Call Activity, Endpoint Activity, and Maintainer Activity. Users can generate the reports using pertinent variables and can view the reports in a web browser with the option to export them to an

external file.

SCD's System View summarizes deployment details, general information, and message queue status for each major component of the Scout system including Scout consoles, VPGate/Frontier systems, and endpoints. The System View provides a quick method for administrators to check network health to help troubleshoot issues that could occur.

For systems and consoles, the type of information reported includes version, uptime, and IP address/system name. For endpoints, the information includes the endpoint name and associated active VPGate system (active local Frontier system for remote endpoints) plus the audio configuration and the features supported.



Every Scout configuration webpage displays diagnostic information for the primary software and hardware elements in a console position. Color-coded status indicators provide a quick view of the elements that need attention. The Scout System Administrator can access the diagnostic page for each console remotely using a web browser.

Localization



Scout addresses the needs of dispatchers in non-English speaking settings by providing user interface elements and Dispatcher Online Help in languages other than English. When configuring Scout positions for dispatchers, the Scout System Administrator can choose from French, Spanish, Portuguese, or English as the dispatcher's language. English remains the default language for Scout, but if a position is configured for a different language, the dispatcher who accesses the system sees the Scout User Interface tools, the dispatcher messages, and other text in the configured language. The Scout System Administrator can associate a startup language with a specific dispatcher for dispatching centers that use Scout's Dispatcher Login feature to support a free-seating dispatch center.

Usability



Scout is easy for a dispatcher to use. Whether the dispatcher needs to change a channel's frequency, enable or disable a repeater, change encryption keys, or return an endpoint to Unselect after every use, the Scout User Interface accepts the change with minimal touches. And that's just the beginning of the dispatcher's experience.

Throughout the dispatcher's day, a Message Display control presents console messages to the dispatcher. The control features pop-up messages that occur at the time of an event and a history of all of the day's messages including the timestamp, the message ID, and the

message itself.

In addition, the Scout proprietary hardware components in a dispatcher's position provide dedicated audio mixing and high quality sound while supporting a clean, safe, quiet environment with sleek RoHS-compliant designs, understandable and easy-to-use controls, and state-of-the-art operating features. The Scout System Administrator can configure additional usability for the dispatcher by configuring the local mute feature to remove background sound.

*Capabilities-at-a-Glance***Action Buttons**

- Close a Pop-up Screen
- Close the Scout User Interface
- Navigate to a Specific URL to Open in a Browser Control
- Navigate to Another Screen
- Open a Pop-up Screen
- Open the Previously Viewed Screen
- Open the Scout Console's Start Screen
- Toggle the Scout User Interface between Windowed and Full Screen Mode

Additional Configuration Options

- All Mute Timeout
- Audio Priority
- Audio Routing
- Console Override
- Custom Size Function Pads
- Frequency Synchronization Configuration
- Pop-up Screens
- Quality of Service (QoS) Support
- Silent Installation Support
- Speakers, multiple
- Text Label Control
- VAGC (Voice Automatic Gain Control) Per Endpoint
- WAV File Repeat Delay
- VOX Display Release Time Configuration

Authentication

- Internal Security
- Windows Active Directory

Call Features

- Activity History Call Back
- Activity History Pro Call Back
- Answer on Ring with Audio Recording, for SIP calls
- Auto Contacts
- Automatic Numerical Identification (ANI)
- Call History

- Call Indications
- Call Monitor
- Call Queue: Answer Call/Next Call Button
- Custom Message During Hold
- Default Transmit Groups
- Dispatcher-defined Radio Groups
- DTMF Call-in Codes
- Endpoint Groups
- Forward Calls to Another Dispatcher
- Hunt Groups
- Line Groups
- Simul-Select
- Simultaneous Phone and Radio
- SIP Monitor
- Volume Control per Endpoint
- Volume Reset to Default Level

Codec Support

- G.711
- G.726
- G.729

Console Intercoms

- Call Forwarding
- Callback Notifications
- Console Monitor
- Console-to-Console Emergency Calls
- Console-to-Console Regular Calls
- Console Transfer
- Intercom Group Page
- Intercom Group Ring Emergency Calls
- Intercom Group Ring Regular Calls
- Ring Announce Intercom Calls
- System-wide Intercoms
- Voice Announce Intercom Calls

Contact Dialer

- Dial Tone
- Display Contact's Name, Contact's Number, or both
- Dual Tone Multiple Frequency (DTMF)

- External COTS Keypad Support
- Hookflash (Flash)
- Recall Last Number
- Secondary Dialing
- Unit-to-Unit
- Hexadecimal Dialing Support

Contact Display

- Radios as auto dial pads
- Telephone numbers as auto dial pads

Contacts

- 1,000 Contact Groups
- 10,000 Contact Devices
- Active Directory Support
- DTMF Dial Strings with Pauses
- Multiple Pages per Contact
- Multiple Telephone Numbers per Contact

Developer Support

- API Software Development Kit (SDK)
- Computer Aided Dispatch (CAD) Interface

Diagnostics Features

- Alarms
- Events
- Log Gathering Tool
- SNMP Manager Support
- Statistical Reports
- System View

Dispatcher Support

- All Mute
- Analog/Digital Endpoint Pad Toggle
- Breakback
- Change Frequency Control
- Channel Release for MAP27
- Console Local Mute
- Console Timer Tool
- Continuous Tone Coded Squelch System (CTCSS) Disable
- Cross Mute

- Do Not Disturb Mode
- Echo Cancel
- Free Seating
- Instant Transmit
- Localization Support
- Mic Mute
- Next Call Button
- Patch Release
- Privacy Mode
- Repeater Enable/Disable
- Return Call from Activity History
- Return Call from Activity History Pro
- Ring Back Tones
- Ringer Disable
- Ringtone Location
- Show Call Indications
- SIP Monitor
- Transmit Interrupt
- Volume Unit Meter (VU Meter)

Emergency Support

- Channel Marker
- Dispatcher Intercept for Emergency Calls
- E911 NENA Interface
- Emergency State/Emergency Clear

Encryption Support

- Advanced Encryption Standard (AES)
- Automatically Transmit with Receive Key
- Clear/Encrypt Endpoint Toggle
- Configure Permanent Encryption Mode
- Data Encryption Standard (DES)
- Encryption Key Selection Tool
- Key Fill Devices
- Key Management Facility Support

Endpoint States

- Default Unselect
- Deselect
- Disconnect
- Gone
- Hold

- Mute
- Select
- Sticky State
- Unselect

Function Pad Behaviors

- All Mute
- Analog Digital Mode
- Callback
- Cancel
- Channel Marker
- Channel Release
- Clear Encrypt Mode
- Console Monitor
- CTCSS Disable
- Do Not Disturb
- Emergency Call
- Emergency Clear
- Flash
- Forward Calls
- Headset Monitor
- Hold
- Instant Transmit
- Mic Mute
- Mute
- Next Call
- Patch 1 through 5
- Private
- Push-to-Talk
- Release
- Repeater Enable/Disable
- Ringer Disable
- Ringtone to Secondary
- Set Frequency
- Show Ring
- Simul-Select
- Takeover
- Transfer
- Unselect 1 through 10
- Volume Reset

Indications

- Audible Indication for Trunked Radio Queue Request
- Endpoint Status Indications
- Function Pad Indication Bars
- Pending Call Flashing Indications
- Voice Activity Indicator (VOX)

Mobile Dispatching

- Mobile Scout

Notifications

- Audible and Visual Intercom Callback Notification
- Input Alerts for Auxiliary Input Endpoints
- Patch Timeout Notification
- System Alarms

Pad Extenders

- ANI Information
- Encryption Key Receive
- Encryption Key Transmit
- Frequency Alias
- Receive Indicators
- Redundant Controller
- Remaining Trunked Call Time Indication
- Timer
- Transmit Indicators
- Unanswered Call Timer
- Unit ID
- Username
- Voicemail

Pages

- Alert Tones within a Paging Stack
- Custom Paging Format
- Paging Dialer
- Paging Side Tones
- Paging Status Display
- Parallel Paging
- Pre-defined Paging Stacks
- Sequential Paging

- Stacked Unit Alerts
- Unit Alerts

Patches

- */# Patch Keying
- 5 per workstation at one time
- 8 members per patch
- 10 endpoints per console at one time
- Carrier Operated Relay (COR) Patch Keying
- Dispatcher Automatically Join
- Patch Timeout Notification

Push-to-Talk (PTT)

- */# Keying
- Footswitch PTT
- Handset PTT
- Intercom PTT
- Microphone PTT
- On-Screen PTT
- Push to Speak for SIP Endpoints
- Right Mouse Button PTT

Recording Support

- Certified Logging Recorder Vendors List
- Logging Recorder Interface
- Logging Recorder Metadata
- Record Outpost-Generated Tones on Third-party Recording Device
- Record Signal Tones on Third-party Recording Device
- Scout Instant Recall Recorder (IRR)
- Talkspurt Detection Level Configuration for Scout IRR

Redundancy

- Avtec SIP Proxy Redundancy
- Call Voter Redundancy
- Frontier Redundancy, supporting multiple subnets
- Network Redundancy
- Trunking Gateway Redundancy
- VPGate Redundancy, unicast or multicast

Scout Components

- Avtec Audio Bridge
- Avtec Encryption Key Manager
- Avtec Routing Controller
- Avtec SIP Proxy
- Call Voter
- Frontier
- Mobile Scout
- Outpost
- Outpost Plus
- Scout Central Distributor (SCD)
- Scout Data Store (SDS)
- Scout Manager
- Scout Console User Interface
- Scout Instant Recall Recorder (IRR)
- Scout Trunking Gateway System
- ScoutLink
- VPGate

Screen Controls

- Action Button
- Activity History
- Activity History Pro
- Auto Contact Pad
- Auxiliary I/O Pad
- Browser Control
- Call Enable Tool
- Call Queue
- CommScape Selector Tool
- Contact Dialer
- Encryption Keys
- Frequency Selection Tool
- Function Pad
- Line (Endpoint) Pad
- Line Group Pad
- Message Display
- Message History
- Notification Pad
- Pad Extender
- Paging Dialer
- Page Status Display

- Panel Tab Control
- PTT Indicator
- ResourcePro
- Text Label
- Time Date Display
- Timer Tool
- Tone Pad
- Volume Control
- VU Meter

Security

- Encryption
- MD5 Checksum Verification
- Microsoft Security Patch Verification
- Scout Manager User Login
- Scout Manager Password Security
- Scout Console Dispatcher Login/Logout

Supervisor Support

- Barge-in
- Console Monitor
- Headset Monitor
- Supervisor Takeover

Supported Call Types

- All Call
- Emergency
- Emergency Intercom
- Group
- Intercom
- Regular
- Site All Call
- System All Call
- Talkgroups
- Unit-to-Unit

Supported Endpoint Types

- Automatic Ring Down
- Auxiliary Input and Output Endpoints
- Console Intercom
- Dispatcher Lines
- Duplex Endpoints

- Full Duplex
- Mutli-Frequency Radios
- Session Initiation Protocol (SIP)
- Simplex Endpoints
- Telephony

Supported Technologies

- AT&T Enhanced Push-to-Talk (EPTT)
- Avaya Telephony
- Cimarron Encoder/Decoder
- Cisco Instant Connect
- Cisco Unified Communications Manager
- ED-137 Protocol Support
- GenSPOut
- iDEN
- JPS NXU2
- MDC1200 Protocol Support
- Motorola APX™ P25
- Motorola KVL 3000
- Motorola Astro® 25
- Motorola WAVE™ 5000 Broadband PTT in Multi-Site Capacity Plus, Connect Plus, and Capacity Max systems
- MOTOTRBO™ Capacity Max Radios
- MOTOTRBO™ Capacity Plus Radios
- MOTOTRBO™ Connect Plus Radios
- MOTOTRBO™ IP Site Connect Radios
- MOTOTRBO™ Multi-Site Capacity Plus Radios
- MOTOTRBO™ XPR 4000 and 5000 Series Radios
- Session Initiation Protocol (SIP)
- Valcom
- VEGA Radios
- Verizon Push-to-Talk Plus (PTT+)

Tone Features

- 200 Hz Tone Support
- Alert Tones
- All-Call Announcement Tone
- Answer Back Tone
- Beep Tones
- DTMF and Knox Tone Support
- Emergency Ring Tones

- Radio Progress Tones
- Ring Tones
- Test Tones
- Tone Pad

Transfer Calls

- Attended Transfer to Another PBX Extension
- Blind Transfer to Another PBX Extension
- Transfers between Dispatchers within Scout

Web Browser Protocols

- Hyper Text transfer Protocol (HTTP)
- Hyper Text transfer Protocol Secure (HTTPS)

Workstation Relay Indications

- Busy
- Call Forwarding
- Channel Marker
- Do Not Disturb
- Emergency Call
- PTT
- Regular Call
- System Alarm
- Transmitting

For More Information

Refer to the following additional cut sheets and capability guides for further information regarding the Scout console system. To contact an Avtec sales representative, email sales@avtecinc.com.

Cut Sheets

- [10-Port USB Hub](#)
 - [19-Inch Monitor](#)
 - [20-Inch Monitor](#)
 - [24-Port Managed Ethernet Switch](#)
 - [Avtec Audio Bridge](#)
 - [Avtec RIC-M](#)
 - [Avtec USB Desktop Microphone](#)
 - [Avtec USB Jack Box](#)
 - [Avtec USB Speaker](#)
 - [Basic Display](#)
 - [Bluetooth Headset](#)
 - [Cisco® Analog 8E/M SIP 2901 Gateway](#)
 - [Cisco® Analog 8FXO SIP Gateway](#)
 - [Cisco® Analog 8FXS SIP 2901 Gateway](#)
 - [Cisco® E1 SIP 2901 Gateway](#)
 - [Cisco® T1 PRI SIP 2901 Gateway](#)
 - [Cisco® T1 SIP Gateway](#)
 - [Desktop Handset Cradle](#)
 - [Enterprise Endpoint Editor](#)
 - [Enterprise Management Tools](#)
 - [Footswitch](#)
 - [Frontier](#)
 - [Handset](#)
 - [IP Talkback Door Intercom](#)
 - [KVM Switch](#)
 - [KVM Switch in 1U Rack](#)
 - [Media Workstation Plus](#)
 - [Memory Module Upgrade](#)
 - [Outpost Power Supplies](#)
 - [Outpost Radio Controller](#)
 - [Outpost Plus Radio Gateway](#)
 - [Relay Rack Mount Kit](#)
 - [ResourcePro Screen Control](#)
 - [Ring/In-Use Indicator Lights](#)
 - [Ruggedized Tablet](#)
 - [Scout 100](#)
 - [Scout 1U Rackmount Computer](#)
 - [Scout 1U Rackmount Enterprise Computer](#)
 - [Scout 400 and Scout 800](#)
 - [Scout Audio Adapter RJ45 to DB25 Connector for Outpost](#)
 - [Scout Console API SDK](#)
 - [Scout Console Computer](#)
 - [Scout Console Jack Box](#)
 - [Scout Console Laptop](#)
 - [Scout Console VPGate Software](#)
 - [Scout Desk Microphone](#)
 - [Scout Desktop Speaker](#)
 - [Scout E1 Console](#)
 - [Scout EX, Scout E8, and Scout E4](#)
 - [Scout Input/Output Package](#)
 - [ScoutLink](#)
 - [Touchscreen Monitors](#)
 - [USB Desktop Microphone](#)
 - [USB Dual Speaker Kit](#)
 - [USB Keypad](#)
 - [USB Monaural Headset](#)
 - [USB PTT Quick-Disconnect Adapter](#)
 - [USB Relay Module](#)
 - [Wide Treadle Footswitch](#)
 - [VPGate Mini Cut Sheet](#)
-

Capability Guides

- [Avtec RIC-M Capability Guide](#)
- [DMR-AIS Capability Guide](#)
- [ED-137 Capability Guide](#)
- [Kodiak Broadband PTT Capability Guide](#)
- [Logging Recorder Interface Capability Guide](#)
- [MOTOTRBO™ Capacity Max Capability Guide](#)
- [MOTOTRBO™ Connect Plus Capability Guide](#)
- [MOTOTRBO™ Control Station Capability Guide](#)
- [MOTOTRBO™ IP Site Connect Capability Guide](#)
- [MOTOTRBO™ Multi-Site Capacity Plus Capability Guide](#)
- [Motorola APX™ P25 Control Station Capability Guide](#)
- [P25 Digital Fixed Station Interface \(DFSI\) Capability Guide](#)
- [P25 CSSI Capability Guide](#)
- [P25 Privileged Capability Guide](#)
- [Scout Audio Package Options Capability Guide](#)
- [Scout Encryption Capability Guide](#)
- [Scout Localization Capability Guide](#)
- [Scout Select Capability Guide](#)
- [Scout with Frontier Capability Guide](#)
- [ScoutLink Capability Guide](#)
- [Session Initiation Protocol \(SIP\) Capability Guide](#)
- [SmartNet/SmartZone Capability Guide](#)

Avtec maintains a library of resources on its website to provide further details on Scout solutions. Resources include brochures, case studies, white papers, videos, capability guides, cut sheets, and more. Access the library at avtecinc.com/site-library.

About Avtec

Avtec, LLC provides pure Internet Protocol (IP) dispatch console solutions for the transportation, public safety, utility, business and industry, and government markets. For more than 40 years, customers have chosen Avtec's award-winning technology for their mission-critical dispatch centers. There are thousands of Scout Voice over Internet Protocol (VoIP) consoles installed worldwide. Visit avtecinc.com to learn more.



MOTOROLA and the Stylized M Logo are registered in the U.S. Patent and Trademark Office. All other product and service names are the property of their registered owners. © Motorola, Inc. 2019.

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, Avtec, LLC assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein. Avtec, LLC reserves the right to make changes in the product design without reservation and without notification to its users. Avtec updates capability guides as changes occur. A capability guide could be the most current yet reflect a prior Scout release number if changes were not necessary at each release.

Scout™, VPGate™, Frontier™, Audio Bridge™, Avtec SIP Proxy™, ScoutLink™, CommScape™, and Outpost™ are trademarks of Avtec, LLC.

© Avtec, LLC 2020.