



Watchman Connect Communications

A WATCHMAN TECHNOLOGY WHITE PAPER | APRIL 2018

Watchman Systems delivers rapidly deployed, tactical covert video surveillance systems. All our products are designed to be deployed by a single, non-technical officer in a few minutes with no specialized equipment. Each surveillance system package includes one or more preconfigured cameras in a covert enclosure and a portable multi-camera viewer/recorder, or Personal Digital Video Recorder (PDVR). Most importantly the system also comes with wireless network connectivity preconfigured to make the whole system stream live video as soon as it is turned on.

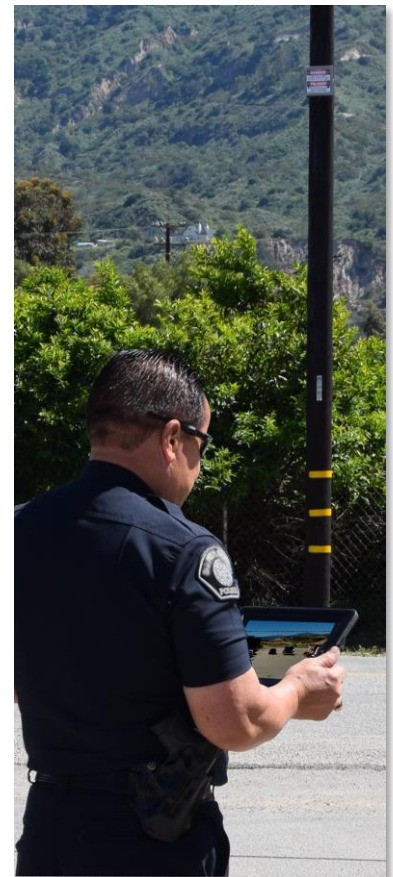
The purpose of this White Paper is to explain the unique technology that enables this automatic connectivity and how it can be used to create a customized surveillance Command and Control System.

Introduction

Watchman's Virtual Stakeout System is a complete video surveillance system designed by officers specifically for Covert Tactical Surveillance. It comprises equipment, options and features not found in traditional video surveillance solutions, with cameras that can be deployed in minutes by non-technical personnel operating alone.

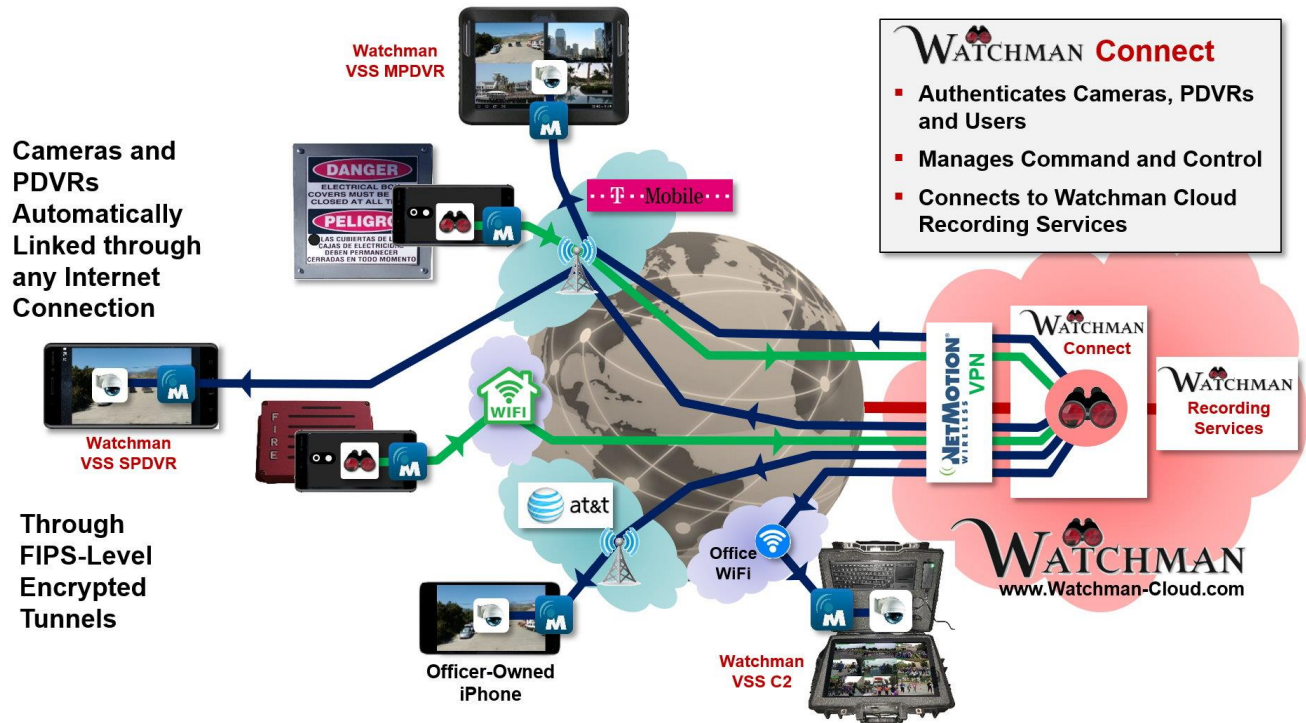
As an example, the Watchman Pole Mount Camera can be installed 20 feet off the ground in less than 5 minutes without using a ladder or bucket truck. This unobtrusive camera delivers high quality video streams for several days using its built-in battery power source.

The camera automatically connects to the hand-held Portable Digital Video Recorder (PDVR) and starts transmitting as soon as it is turned on. This connection is achieved through *Watchman Connect* Cloud Services which also allow live video to be monitored on other officers' smart phones, tablets and laptops.



Watchman Connect

Watchman Connect comprises several components that work together to deliver high-speed, reliable and secure wireless connectivity between Watchman Cameras and PDVRs:



- Each Watchman Camera device is based on an Android Smart Phone platform running *Watchman Custom Camera Software*. This software utilizes the Smart Phone’s digital, High Definition Camera technology along with its processing power and built-in LTE data communications. The software allows in-camera recording as well as real time video streaming, and each Watchman device is augmented with 128GB of additional storage.
- A wireless broadband connectivity is provided through *Watchman’s Nationwide LTE Data Service with unlimited data* included with each Camera and PDVR device. Watchman devices are not locked to a specific carrier, however, and the SIM Card and Data Service can be replaced with those from a preferred carrier if required.
- *Watchman Connect Cloud Services* manage the authentication of the devices and the connection between groups of cameras and groups of users. Watchman Connect Cloud Services are available for a small monthly fee per device and is maintained by Watchman at its secure, remote data center. Watchman Connect services can also be set up on agency premises, if required, and Watchman is very happy to quote for a complete hardware, software and services solution for agencies wanting to operate on a “private cloud” basis.

- Watchman Connect is a *“many-to-many” service* that can be configured to connect a single camera to a single viewer, multiple cameras to a single viewer, or single or multiple cameras camera to a group of viewers. Examples of using this many-to-many mode includes enhancing group situational awareness by providing views from multiple cameras to the smart phones of an entire response team, and delivering a command and control overwatch for a Commander of multiple teams.
- Watchman Connect maintains a *secure VPN connection* for both the cameras and PDVRs. Watchman uses *NetMotion* for its VPN service, and NetMotion charges are included with each Watchman Connect device subscription. NetMotion is the leading VPN service in the public safety arena and is trusted by hundreds of agencies around the world. It is FIPS-certified and uses high-level encryption to maintain total confidentiality of Watchman video transmissions. NetMotion also continuously optimizes its Internet connection, automatically switching between services such as cellular or WiFi depending on connection quality – preserving its VPN security as it does so.
- The combination of NetMotion and Watchman Cloud Services enables secure, *device-to-device connection independently of how those devices are connected to the Internet* and is independent of local IP address assignment. This means that Watchman Connect initializes and maintains connectivity from devices on different carriers (a Watchman camera on Watchman LTE to an AT&T iPhone, for example), or if either device is taking advantage of a local WiFi connection.
- Watchman Connect also delivers access to other Watchman Cloud Services such as the *Watchman Recording Service*, offering a choice of ONSSI and Milestone-based systems. Watchman is also pleased to quote for integrating Watchman cameras into your NVR systems, if required.

All Watchman Cameras and PDVRs are preconfigured with a NetMotion ID and Virtual IP Address so that when they are switched on, they connect automatically through the VPN and run either the camera or viewer software. As mentioned above, the Watchman Camera Software is unique. But the viewing/recording software is readily available for all IOS and Android devices – you can download it from the Apple App Store or Google Play Store for a nominal fee. The basic version of IP Cam Viewer is free, and the Pro version (without ads, and with a few extra features) costs less than \$5.

This means that *any Android or IOS device* registered with Watchman Connect can be used as a Watchman Viewer/Recorder, allowing officers’ personal or agency-issued smart phones and tablets to be used to monitor the Watchman cameras without the officer having to carry multiple devices.

The process of setting up a user-supplied device as a Watchman PDVR is not complicated and usually only takes a few minutes, but detailed instructions can be downloaded from the Watchman web site as Watchman Technical Notes available for both IOS and Android devices.

Process is summarized, as follows:

- The Agency Systems Administrator requests Watchman Connect device authentication by submitting a form on the www.Watchman-Systems.com web site
- Once approved, authentication to view specific cameras is supplied through the NetMotion credentials that are emailed back to the Administrator
- For each smart phone/tablet viewer, the NetMotion Mobility App is downloaded from the App Store or Play Store and configured with these new credentials
- The IP Camera Viewer App is similarly downloaded and configured with the IP Addresses of the cameras to be viewed
- This latter process can be sped up emailing the camera configuration(s) to the individual viewing devices. IP Cam Viewer will install the camera or groups of cameras just by clicking on the email attachment.

Conclusions

Up to now, configuring wireless cameras and viewing devices has been a complex process, normally requiring a skilled technician. Watchman Connect makes the connection process *automatic and effortless*, with preconfigured cameras and viewers/recorders that work straight out of the box.

Each Watchman surveillance system comes complete with an unlimited LTE data service, but Watchman Connect provides secure, authenticated connections *independently of how each device is connected to the Internet*. This enables you to take advantage of WiFi, if available, for either the cameras or the PDVRs, or use personal or agency-supplied smart phones or tablets as viewer/recorders even if they are connected through a different carrier.

Watchman Connect “many-to-many” connectivity allows you to *mirror your Command and Control* infrastructure. You can have multiple cameras being accessed by multiple users (each team member accessing multiple cameras on their personal smart phones). With multiple deployments you can also set up command and control supervision with access to multiple groups of cameras (or all cameras).

Watchman offers *multiple recording options*. Video data streams can be recorded in-camera, on any of the PDVRs, in the cloud using the Watchman Recording Service, or on your own compatible NVRs, if required.

