

Wide-Area Rapid Response & Restoration Telecom Services

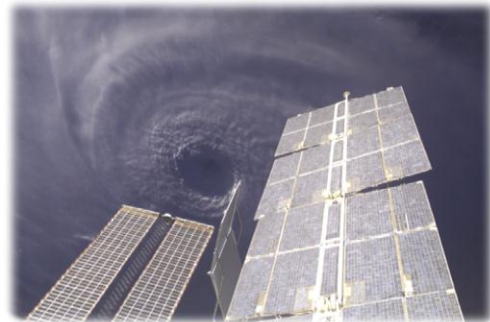


From tsunamis on remote islands, hurricanes in major cities and earthquakes in developing countries, to 9/11-style terrorism, communications reliability, survivability and security are critical factors in recovery. Commercial networks are fragile and restorative solutions limited. Recent events have provided ample evidence of a continuing and urgent need for enhanced 'reactive' disaster recovery capabilities, as well as providing 'proactive' solutions to mitigate the related risks.

In response to this requirement, **Raptor Global Services, Inc.** has developed '**QwikCom**', a rapidly deployed pre-packaged telecom solution intended to recover and sustain critical communications when disaster strikes. **QwikCom** rapid response and restoration systems are used to support first responders and follow-up agencies in mitigating the effects of natural or manmade disasters by providing wide-area wireless broadband voice, high-speed data and video services. **Raptor** has extensive 'hands-on' experience, both domestically and worldwide, in the deployment of wireless broadband and satellite services in crisis situations.

'QwikCom' Telecom Restoration Services are Unique

- ▶ **QwikCom** rapid response wide-area telecom systems are designed to bridge the gap between 'first response' tactical communications, and the resumption of normal telecom infrastructure, during times of natural or manmade disasters.
- ▶ **QwikCom** systems are designed to provide a high level of quality voice, video and data restoration and augmentation within a wide variety of hostile and devastated environments.
- ▶ **QwikCom's** on-board IP-based video system provides high-definition video from the scene of the disaster for remote situational and tactical analysis.
- ▶ **QwikCom** rapid response telecom systems are intended to quickly restore the communications infrastructure used, not only by those charged with rescue and civil order, but also those enterprises that are engaged in the reestablishment of commerce and daily living.
- ▶ Very often, first response communications is limited to two-way radio or satellite phone voice capability. The service area for a two-way radio-based system is usually small and interoperability between agencies is usually difficult if not non-existent. **Raptor QwikCom** rapid response telecom systems overcome these problems quickly and seamlessly using a variety of wireless and alternative power systems to blanket a wide area.





QwikCom Services, Supported Devices & Coverage

The rapid response telecom systems provided by **QwikCom** are much more encompassing than those normally available to first responders. These include:

- ▶ High-speed Internet access
- ▶ Voice-over-IP (VoIP) services
- ▶ Two-way video conferencing
- ▶ High quality video for surveillance and situation analysis purposes
- ▶ Secure access into VPNs and Intranets
- ▶ Telemedicine, including remote triage and medical evaluation services
- ▶ Data retrieval and storage

Devices supported by the **QwikCom** wide-area wireless broadband network include:

- ▶ Desktop Computers
- ▶ Laptop Computers (in fixed and pedestrian mobile mode)
- ▶ Smart Phones
- ▶ SIP enabled VoIP Phones
- ▶ Video Conferencing Systems (computer-based and stand-alone)
- ▶ Video CODECS
- ▶ Secure Routers/Servers

The wireless broadband 'footprint' extends to:

- ▶ Between and within buildings
- ▶ Throughout a campus or installation
- ▶ Within an affected geographical area regardless of the size¹
- ▶ From an affected area to remote locations worldwide
- ▶ From a central point to mobile locations within an affected area

Communications System

The **QwikCom** system supports high quality telecommunications and Internet coverage through the application of 'carrier grade' wide-area Wi-Fi, point-to-multipoint WiMAX and 'license-free point-to-point networks. The wireless feature allows on-site personnel to:

- ▶ Communicate real-time with on and off-site rescue, operations and support personnel using portable VoIP-SIP phones,
- ▶ Access regional or international telephony services (via VoIP),
- ▶ Send and receive changes, modifications and updates to large file-size documents, drawings and plans to and from the scene, via FTP, over the Internet,
- ▶ Access the Internet while roaming the area with laptops, 'Smart Phones' or any other Wi-Fi enabled device.

¹ Multiple QwikCom trailers can be networked to provide ubiquitous coverage over a large geographic area.



Video System

QwikCom not only provides high quality communications, it also supports a wide variety of camera options for video surveillance, triage and video conferencing applications including:

- ▶ High-definition IP cameras with a variety of field-of-view and video resolution options,
- ▶ Remotely controlled (via Internet) IP cameras providing a full range of electronic or mechanical pan, tilt and zoom functions,
- ▶ Very low light and infrared (IR) cameras for extreme or poor lighting conditions
- ▶ Wireless portable high-definition cameras that can be used to monitor in fine detail the status of rescue activities, as well as specific elements of the recovery process.
- ▶ Advanced video analytics for facial and license plate recognition and geo-fence applications,

The video system can be complemented by a high quality audio system that can be extended through the use of additional wireless audio pickup devices.

Security & Safety Enhancements

Optional '**Trace-GEO**' enhancements are available in the **QwikCom** system to support a wide variety of security and safety applications such as:

- ▶ **Trace-GEO-MIDI** (Multimodal Intrusion Detection & Identification): an advanced perimeter protection and monitoring solution that incorporates a wide range of sensors (motion detection, passive IR, acoustic and seismic transducers), high-definition video surveillance, video analytics and an intelligent incident management system, to remotely detect and identify intrusions and recommend response actions in the harshest environments,
- ▶ **TraceGEO-PST**: wireless, satellite and GPS-based 'Lone Worker' and 'Man-Down' systems that support the monitoring and safety of personnel working in hazardous or potentially hostile environments,
- ▶ **TraceGEO-AST**: a complete line of asset, vehicle and equipment tracking, status monitoring and incident management and resolution solutions and services.

In addition, machine-to-machine control and status monitoring is available through the application of the latest wireless M-M technology. The M-M system can be used to:

- ▶ Remotely turn on and off pumps, generators and other site equipment,
- ▶ Monitor the status of electrical systems, engines and support systems,
- ▶ Poll performance and maintenance data from the J Bus of construction equipment.

System Range

Depending on topography, buildings and site clutter a single **QwikCom** system can effectively cover a perimeter with a radius of approximately two hundred to three hundred meters. The effective range of the system can be extended to up to five kilometers or more by adding additional **QwikCom** modules. Wi-Fi and 'mesh' technology is used to provide 'seamless' coverage for large areas, or along lengthy perimeters or travel corridors.

System Power

The standard **QwikCom** system is powered by a commercial 120-240 VAC (50-60 Hz) power source. However, due to the unreliable nature of power sources in many disaster situations the



QwikCom system is equipped with a generator and battery backup that provides for up to eight hours of self-contained power. Backup power can be extended for up to twenty-four hours through the application of additional battery modules. In addition, optional solar and wind power systems are available for deployment in areas where commercial power is unreliable or generator fuel is unavailable. These alternative power systems are backed up with a twenty-four to forty-eight hour battery reserve.

Backhaul

The **QwikCom** system accesses Internet and VoIP gateways using a variety of backhaul systems:

- ▶ Point-to-point high-capacity wireless connectivity to the nearest active access point,
- ▶ 4G WiMAX and LTE (if networks are active in the area),
- ▶ Very small aperture satellite (VSAT) uplinks (if no other backhaul medium is available).

The VSAT system is available in two configurations:

- ▶ Transmitting full-time on a dedicated single-channel-per-carrier (SCPC) basis,
- ▶ Transmitting on a 'band-width-on-demand' (shared hub) basis.

The amount of throughput for either configuration is application and client dependent.

System Configurations

The **QwikCom** system is available in three configurations:

- ▶ '**PortaQwik**': portable rapidly deployed system that is packaged in seven ATA cases that can be loaded on a commercial airliner or military helicopter.
- ▶ '**QwikCom**': a mobile trailer mounted system that is packaged for longer term deployments, supporting larger coverage areas, where access by road is possible.²
- ▶ '**SMART Pole**' a static system mounted on rigid monopoles designed for semi-permanent installations where a longer term solution is required.

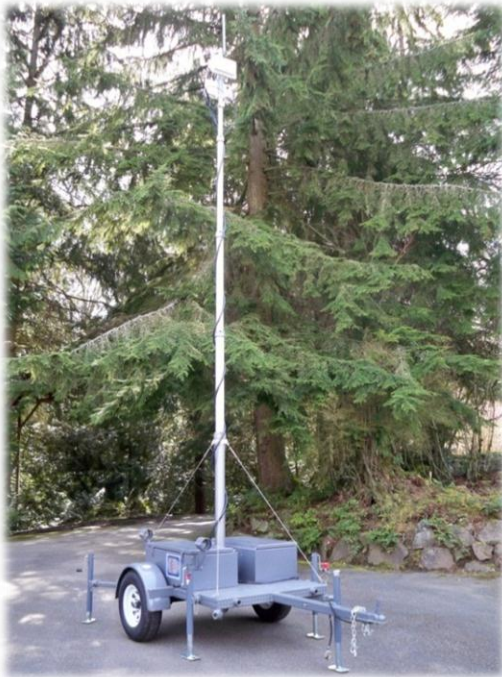
Summary of Features

- ▶ An extended-area Wi-Fi system designed to support high-quality voice, data and video,
- ▶ Point-to-point and mesh interconnectivity for networking and backhaul capability
- ▶ Site-wide wireless pedestrian mobile Internet access for laptops, 'smart phones', and other Wi-Fi enabled devices
- ▶ High-resolution low-to-high light level digital video cameras equipped for Internet-controlled remote pan, tilt and zoom,
- ▶ Portable wireless high-resolution camera with macro-zoom lens for close examination of details during rescue, recovery and medical triage events,
- ▶ Alternative powering options including solar, wind and bio-fuel.
- ▶ Rapidly deployable to any location domestically and internationally.

² The mobile trailer design allows it to be broken down in a 'palletized' configuration for transport by military or commercial aircraft.



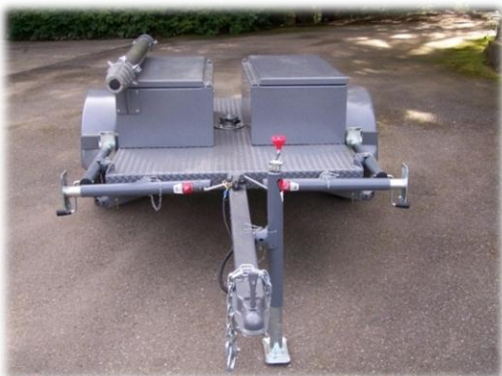
QwikCom Configuration



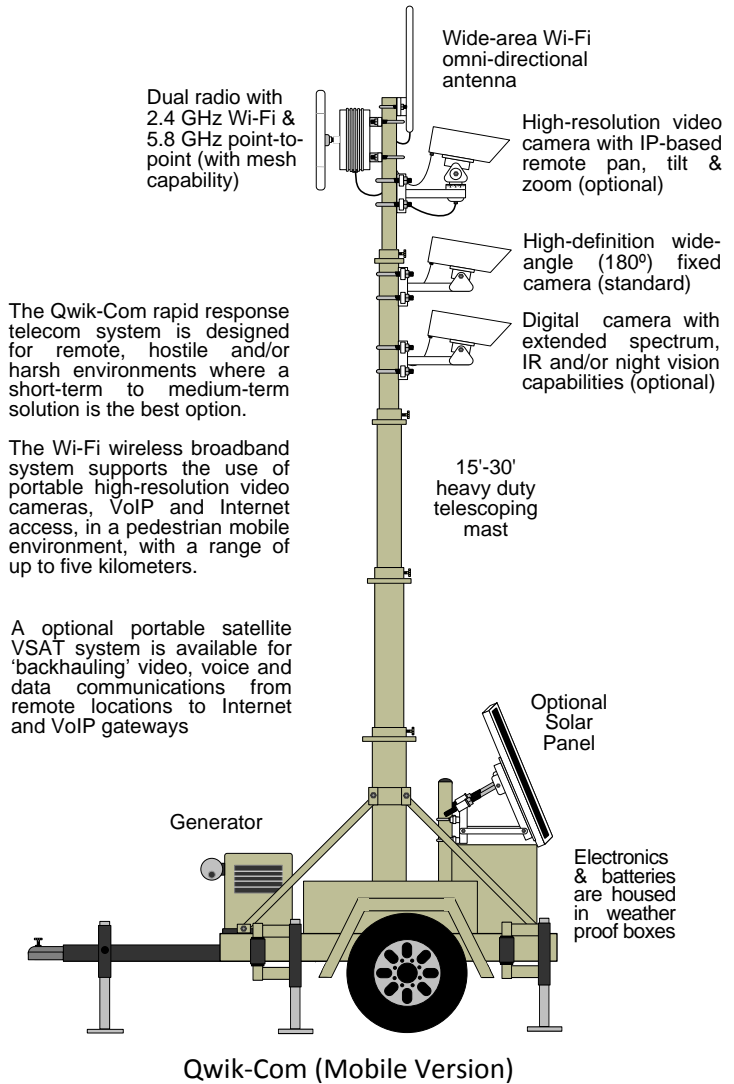
Fully Deployed



Mast Retracted



Front View



Electronics Payload



QwikCom Rapid Response Service Rates

"Porta-Qwik"-Portable Systems	Daily	Daily	Weekly	Weekly	Monthly	Monthly
1. Portable Restoration Service	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate
7X24 Portable Restoration Service (Includes):	2,200	2,800	10,700	16,200	39,100	57,000
1 Flyaway Satellite Terminal						
1 WiFi Multipoint Hub (Serving up to 25 users)						
1 Technician						
System is configured to provide:						
High-speed Internet Access						
International VoIP						
All expenses except travel and transport of cargo						

2. Satellite Bandwidth Charges	Daily	Daily	Weekly	Weekly	Monthly	Monthly
	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate
a) 1 Mbps of sustained throughput:	3,500	3,900	18,400	23,000	42,000	57,800
b) Additional bandwidth per Mbps (max 3 Mbps):	3,000	3,300	15,800	19,700	36,000	49,500

3. Options	Daily	Daily	Weekly	Weekly	Monthly	Monthly
	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate
a) Additional WiFi Hubs per unit (max 4):	1,500	1,900	9,000	11,200	31,500	39,400
b) Additional Technician:	1,500	1,900	8,700	11,200	34,800	45,200

"Qwik-Com"- Mobile Systems	Daily	Daily	Weekly	Weekly	Monthly	Monthly
1. Mobile Restoration Service	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate
7X24 Mobile Restoration Service (Includes):	2,300	2,900	11,000	16,700	40,400	59,000
1 Mobile Data Center with Sat Terminal						
2 WiFi Mobile Hubs (Serving up to 100 per hub)						
2 Technicians						
System is configured to provide:						
High-speed Internet Access						
VoIP						
Video Conferencing						
Video Streaming						
All expenses except travel and transport of cargo						

2. Satellite Bandwidth Charges	Daily	Daily	Weekly	Weekly	Monthly	Monthly
	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate
a) 1 Mbps of sustained throughput:	3,000	3,300	15,800	19,700	36,000	49,500
b) Additional bandwidth per Mbps (max 10 Mbps):	2,500	2,800	13,200	16,400	30,000	41,300

3. Options:	Daily	Daily	Weekly	Weekly	Monthly	Monthly
	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate	Retained Rate	Ad Hoc Rate
a) Additional Mobile WiFi Hubs per unit (max 4):	1,200	1,500	7,200	9,000	25,200	31,500
b) Additional Technician:	1,500	1,900	8,700	10,800	34,800	43,500

Please Note: 'SMART Pole' networks are deployed as part of a semi-permanent or permanent telecom response and are designed specifically for a particular application. As such, pricing is on a case-by-case basis.

- ▶ Retained customers receive a credit of up to 50% of the annual retainer during a deployment occurring in the same calendar year.
- ▶ If customer provides satellite bandwidth no additional bandwidth charges apply other than Internet and VoIP connection fees.
- ▶ Charges begin at the time of deployment.
- ▶ Fees are in US Dollars (USD).



Contact

Raptor provides end-to-end security technology solutions for homeland security, military, energy, maritime, transportation and enterprise applications. For more information about **Raptor Global Services, Inc.**, please visit our website at www.raptorglobalinc.com or contact:

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