



Strata**CONNECT** **Wireless** (CommTrac)

WIRELESS COMMUNICATIONS AND TRACKING





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StrataConnect Wireless (CommTrac) is a truly wireless and battery-powered communication and tracking system that is designed for use in underground mining and tunneling. The system includes a network of fixed nodes underground, which communicate with mobile devices mounted on machines or worn by personnel. The fixed nodes are quickly and easily installed underground, with placement of each determined by the signal strength between the nodes. The network is self-forming and provides complete mesh coverage throughout the installed section. This wireless network enables two-way data transmission between the surface and underground operations.

COMPONENTS

FIXED COMMUNICATION NODES (COMMNODES)

Stand-alone, battery-operated devices deployed underground and create a mesh communication network. They are powered by four (4) D-cell alkaline batteries with a battery life of approximately 10 months. Device health, battery level and network statistics are reported back to the surface every five (5) minutes.



- Placed in reflective orange bags to protect and suspend from roof
- No external antenna
- MSHA approved with Energizer E95 and Energizer EN95 Industrial batteries

MINER COMMUNICATOR (MC2)

Small, compact units carried by personnel, the MC2 functions as a communication and tracking device. It provides two-way communication, personnel location tracking, and critical alert and response functions. The MC2 features a large screen and a full QWERTY keyboard for reading and composing messages. High-intensity LED lights indicate when a message or warning notification has been received.



TRACKING TAGS & ASSET TRACKERS

Tracking tags attached to worker hard hats or mounted onto equipment provide real-time location tracking. The current location and direction of travel history are visible on the user interface at the surface. Personnel tracking tags include a depressible button for emergency notifications.

SURFACE INTERFACE & GRAPHICAL USER INTERFACE (GUI)

Secure server with user interface facilitates communication between surface and underground operations and provides an interactive digital facility map, text messaging and system health data. The user-friendly GUI displays tracking location of personnel and assets and surface operators interact with underground personnel via the interface. Map layering enables operators to alternate between the underground map view and the surface road view. Maps are easily customized and updated.

SYSTEM FUNCTIONS

MESSAGING

Two way text message:

- Individual or Broadcast
- Underground to Surface
- Surface to Underground
- Underground to Underground
- Broadcast Alerts

TRACKING

- Periodic ID data transmission
- Actual location visible on surface interface.
- Location to within 200 feet
- Bread-crum tracking and direction of travel

SYSTEMS HIGHLIGHTS

FULLY WIRELESS

- Wireless mesh with no hard-wire backbone
- No requirement of existing communications infrastructure
- Every component underground is intrinsically safe
- Self-healing
- Redundant

BATTERY OPERATED

- No external power supply
- Always on and operating
- Continued operation after power loss

EASE OF INSTALL

- Simple “pick-n-place” installation of nodes
- No hard-wiring
- No antennas to set
- Self-forming routing scheme

SELF MONITORING

- Automatic system checks/network health
 - Battery Life
 - Node Failure
 - Quality of Service

BENEFITS

- No cables, wires, or fiber installations
- No cumbersome external antennas
- Rapid installation
- Easy advancement
- Easy expansion
- Self-forming, self-healing, self-monitoring
- No power connections or battery back-up
- No fuse replacement
- Resistant to voltage spikes (such as lightning)
- Minimal maintenance
- Proven functionality
- Intrinsically safe and MSHA approved

ASSET TRACKING

BENEFITS

- Track actual location and activities of equipment underground
- Calculate productivity metrics
- Increase efficiency
- Located equipment pre and post emergency
- MSHA approved

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