TELEX

RADIO DISPATCH CATALOG
2020

TELEX
Radio Dispatch

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IP-based FAQ

Can we use our existing computer network to create an IP-based dispatch system, or do we need to build a new one?

The answer to this question depends on the IP dispatch system application. In many cases we can use existing IP networks, but in other cases, like public safety applications, you may want to think about creating a secure, standalone communications network. Here are a few things to consider with regard to IP dispatch solutions:

• How much traffic is on my existing network and how much bandwidth is available to dedicate to a communications solution?

• Does your network support multicasting? Multicasting is an important element in making our dispatch solutions as

effective as possible. We can work with non-multicasting networks, but there are some limitations.

• Do you want to connect and communicate between multiple locations or installations via an IP dispatch network? If so, that means you have to have a good network connection between them. Anywhere you have a network connection could be a potential location for communications equipment. If you have offices across the country that are all connected via a network, you could communicate between them using two-way radios because the network ties them together.

How much bandwidth will the dispatch system use on the network?

With a C-Soft low-bit vocoder, there can be a bandwidth savings of up to 30 percent. This depends on how many radios and dispatch positions you want on the system. The breakdown is simple: every device you connect to the system that operates in simplex mode requires 50 kBits of available bandwidth. Multiply that times the number of communication

lines you have on the system — 8 base stations means 8 x 50 kBit or 400 kBit for effective simultaneous communications. Always make sure the network has the capacity to account for the maximum possible number of simultaneous transmissions. Additional Vocoders/Bandwidths are supported.

What type of telephone integration does C-Soft support?

C-Soft implements phone integration via its Enhanced SIP interface. Two lines of Enhanced SIP are available in the latest version of C-Soft and that can be expanded to a total of six or twelve lines if needed through the purchase of optional software licenses. The proliferation of VoIP telephone systems over the last decade has overtaken a lot of the previous analog systems. Because of this we have made the technology decision to handle all calls using SIP (Session Initiation Protocol) because the trend over time will be more and more VoIP systems will be encountered and any analog systems can be interfaced by using a SIP server equipped with FXO ports. Through our solution everything from a

simple two-way call to a conference session can be handled. This allows dispatch to control incoming and outgoing phone calls and use features such as hold/unhold, call forwarding, conferencing, voice mail, and call transfer. One of the most important features is the crosspatch capability of radio and phone. Now a police officer on a radio channel can be connected to a phone call to coordinate activities or assist dispatch with a critical situation. SIP can be configured to use existing switches, so a large number of lines are available if required. Like the IP console, SIP is a powerful yet simple tool which is also very flexible and scalable.

I have two dispatch locations, but can only afford to update one console to IP. Will I be able to communicate with the old console?

In most cases, Telex will be able to interface an IP-224 or gateway to each channel at the location where the radios would be interfaced to the analog console, usually the Central Electronics Bank (CEB). The IP-224 is configured in console mode, and allows the channels configured this way to be put on the same IP network system as the new IP console. Through the network, the analog console can be monitored

and operated like it was another IP console. The flexibility of this design provides a way for an end user to start a migration path to a complete IP changeover when replacing the dispatch consoles in multiple locations. When required, this concept also provides a very cost-effective backup console to existing analog consoles.

TELEX

ENTERPRISE
INFRASTRUCTURE
PUBLIC SAFETY
TRANSPORTATION
SOLUTIONS

Telex Radio Dispatch equipment is trusted by professionals around the globe — nothing else is as reliable, scalable, or flexible.

Telex Radio Dispatch is the leading manufacturer of IP control for two-way radio communications. Capable of deployment in both distributed and server based architectures, Telex dispatch console systems have flexibility, scalability, and redundant capability based on the network.

Telex converts audio and control functions from analog or digital communication devices to Ethernet. Once converted to IP, the signal can be transported via LAN, WAN, 802.11 wireless, satellite, and the Internet. With this many mediums to work with, systems can be precisely scaled according to application, whether confined to a single building or campus, or covering an entire country or the world. You can control a Telex IP-based system in Texas from New York, and all with parallel control in London, England.

C-Soft is the industry's most flexible and capable dispatch software – the perfect application for any dispatch environment. This software installs on a Telex Nexus position, a Telex laptop, or on your own computer position (when used with the ADHB-4 audio adapter). With two to two hundred radio lines, C-Soft allows you to design your screen to your application. Standard features include an Instant Recall Recorder, paging, and intercom. Featuring a wide range of interface capabilities, the system can work with everything from simple PTT and tone controlled systems to advanced digital systems such as Kenwood NEXEDGE® IP based trunking systems. C-Soft dispatch software is compatible with Windows 7, 8.1 and 10 operating systems.

The last few years have seen a rapid shift in radio technologies. As a result Telex has brought to market a number of new interfaces such as NXDN™, TETRA™, and MOTOTRBO™ to name a few. Telex was right there working with manufacturers and technology groups to develop interfaces to these systems. When you choose a Telex solution you're choosing not just a product, but a company dedicated to the latest technologies.

Having great features and performance isn't enough if it's not backed by service and support. Telex Technical Support team members have the right combination of extensive training and years of experience to assist you with any technical issues, ensuring your Telex equipment provides the right solution for you.

Read on to learn more about how a Telex dispatch solution can be **right for you.**

TELEX
Radio Dispatch

Telex enables statewide radio dispatch system for Washington State Department of Fish & Wildlife

- Enforcement officers and scientists gain reliable radio communication, even in remote backcountry

- Integration plan by Phase 4 Design enables independent dispatch capability with scanning over existing wide area radio network

- Telex consoles and adapters leverage Internet links with existing infrastructure for full duplex RoIP connectivity statewide

The Washington State Department of Fish & Wildlife (WDFW) faces a monumental challenge: to provide smooth, reliable communications between its headquarters in Olympia, its statewide local and regional offices, and over 150 field officers patrolling some of the most rugged, isolated geography in the United States. With a modest budget to meet those enormous needs, the department turned to Dave Grant, founder and CEO of Kenmore, Washington-based Phase 4 Design, Inc. (Phase 4), specializing in advanced radio communications solutions.

"The Department had a dispatch system in place, but the consoles were not working well for their needs," says Grant. "They brought us in about three years ago to survey the system and see if it could be saved. We found that, with a few well-chosen pieces of software and hardware, notably the Telex C-Soft console, we could create a significant upgrade within a fairly modest budget."

"Our officers and staff all work in remote areas where radio coverage cannot be guaranteed," says Lieutenant Phil Johnson, who manages radio communications for the WDFW. "With danger from poachers, wildlife and the land itself, reliable communication is critical. In terms of both public safety and the welfare of the officers and scientists out in the field, the situation was unacceptable."

"After survey and site analysis, it was clear that the biggest problem with the Fish & Wildlife radio system was console software," says Grant. "Their core system of Telex radio controllers (Model IP-224) working with older legacy radios was fine, but their consoles were holding them back, especially with the inability to scan multiple frequencies. We did a pilot base station as a demo using Telex C-Soft, an IP-based dispatch console, and they were on board."

Lt. Johnson sees Phase 4 and Telex as key partners in maximizing the reach and efficiency of its dispatch system. "It's interesting. On one level, RoIP is not unlike my kids playing computer games online, talking on headsets," says Johnson. "But the stakes are a lot higher in public safety, where a system failure can literally cost lives. Phase 4's implementation of our Telex RoIP dispatch solution has given us reliable communications and great coverage, and we did it at a lower cost, with less frustration, than anything else we've tried. We couldn't ask for more."
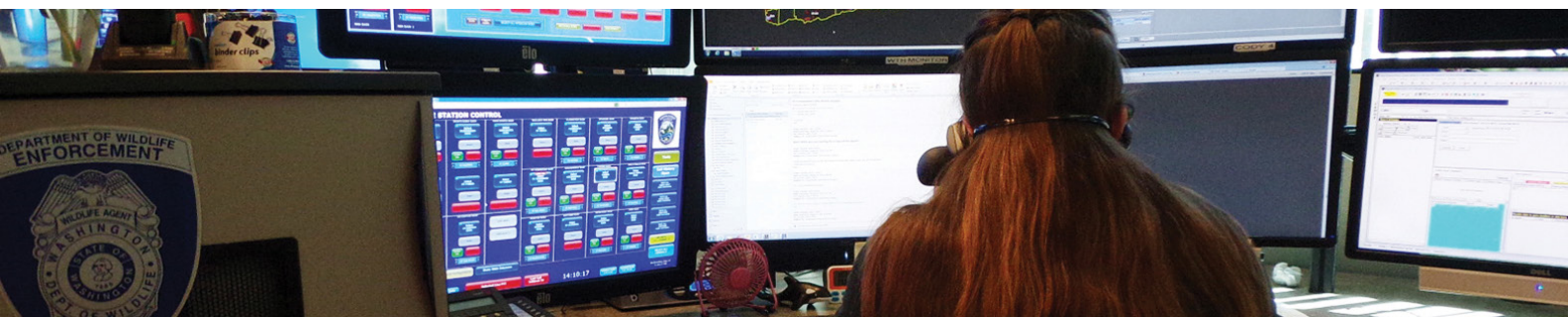
Enterprise Solutions

WHY CHOOSE TELEX?

We provide flexible solutions that scale to your operational needs. We have you covered – whether you're a small business, Fortune 500 company, retailer, or hotel.

When people think about radio dispatch systems the first thought that usually comes to mind is public safety, but dispatch systems are just as useful elsewhere. Our systems are flexible and scalable to meet the needs and budgets of enterprise customers of all sizes and verticals. Service industry users often need both communication and location information quickly. For example, a plumbing or delivery company might use a dispatch system to keep in touch with their crews or drivers in the field, utilizing GPS data provided by their radio to track their progress. This can result in better response times to meet their customer's needs.

Large companies with one or more campuses can also benefit from better communications. Our dispatch solution can help coordinate day-to-day operations staff along with maintenance and security for the entire facility or campus. In addition, because our products utilize IP connectivity, communications can be linked between geographically diverse areas. This makes it possible for a corporate radio communication system to reach beyond a single location or country.

Hospitality industry users are often concerned with making sure guests have the best experience possible. By utilizing dispatch software, those managing operations can effectively communicate with AV, catering, cleaning, maintenance, security, and other staff by individual or group. In addition, the crosspatching function makes it possible to link multiple groups together when needed, or keep them separate when not.

The retail industry can also reap the benefits of our dispatch technology. A large national or international retailer can link radio systems between corporate offices, data centers, warehouses, and retail operations. Further operational benefits can be realized when the dispatch system is interfaced to other systems such as public address, safety, and security. For example, a radio message can be automatically transmitted any time a dock door or any other door that is normally closed is left open. This can result in reduced heat and cooling costs, along with reduced potential for product shrinkage. This in turn results in better profitability.

St. Lawrence Seaway

Telex Dispatch equipment is ensuring seamless communications along the length of one of the world's busiest maritime thoroughfares: the St. Lawrence Seaway. Working with Denis Aubé from Cartel Communications Systems, the Seaway has been able to determine the best configuration possible for their needs. Eight Telex IP-1616 consoles are distributed at the seven locks along the Seaway, allowing the main St. Lambert center to communicate locally with other communications colleagues, maintenance staff, ships, etc. In addition, 12 IP 2002 consoles were specified for specific management locations to access different channels. All audio traffic is recorded on Telex Network recorders with RDR (Remote Data Reviewer) capability from remote locations. This recorder logs all audio traffic and events from each console and makes that information available to the various RDR locations for viewing.

Infrastructure Solutions

WHY CHOOSE TELEX?

**Critical environments require dependable solutions.
Our products can be relied upon to ensure seamless operations and worker safety.**

Telex has been delivering radio dispatch solutions in the infrastructure market for many years. Whether you are a large multi-state utility, an oil and gas operation, or a major waterway, our dispatch products can be tailored to meet your unique needs.

The Telex radio dispatch solution allow users to integrate multiple radio technologies, such as P25, DMR, TETRA, NXDN, and conventional in order to provide communications between groups responsible for making sure your operations run smoothly.

Utility companies often work across a wide geographic area, and often with multiple radio technologies. Worker safety is paramount not just for day-to-day operations, but even more so during a weather event when there are even more hazards. Through the use of GPS radio data, crews can be tracked by personnel in the operations center. If a worker encounters an emergency, such as being arc flashed, an emergency button on their radio can be pressed to alert the dispatcher to the worker's situation. They can then coordinate the response of other company personnel and emergency services to that worker's location. Because the whole system works over IP, the operations center can be in the same city or several states away.

The oil and gas industry has to coordinate a lot of moving pieces. From operations on drilling platforms to land based operations, to transportation of workers and material to and from sites, our solutions can be deployed to link all these vital elements together. Like the utility industry, the oil and gas industry is deeply concerned with both worker and environmental safety. Our dispatch systems can help coordinate rescue and cleanup efforts between multiple agencies using multiple radio technologies.

Traveling through large waterways such as the St. Lawrence Seaway and the Panama Canal is a complex business. Our dispatch solutions are counted on by both to coordinate operations and security in order to make sure things happen as smoothly and quickly as possible.

Tennessee County

"With the large number of agencies being dispatched at the SCECC, simplicity and ease of operation is necessary. The C-Soft Designer software makes such a design possible due to its scalable nature. It is easy to place buttons on the screen, size them, and program their function by way of an easy drag-and-drop interface that helps create a clean, clutter free design and allows the dispatcher to perform most operations in one mouse click. Efficiency is a number one priority for our E911 dispatchers."

Brad Adams,
CommTech Systems Engineer

Public Safety Solutions

WHY CHOOSE TELEX?

We are the #1 choice of emergency services because we offer flexible and user-friendly control software, future proof connectivity, and proven reliability in a constantly changing environment.

When someone calls 911, it's generally not because they are having a good day. Callers expect emergency services to be able to provide a coordinated response to deal with a situation that often seems out of the caller's ability to handle.

Our flexible and scalable solutions are found in countless public safety dispatch centers and mobile command vehicles around the world. This flexibility, coupled with our ability to utilize multiple radio technologies and the ability to link them together via IP, allows a coordinated response between police, fire, and EMS, along with other local, state, and even federal agencies in order to take care of the situation.

With the continued pressure on budgets and the desire to consolidate dispatch centers, having a solution that is both adaptable and cost effective is highly desirable. Dispatch solutions that only address one radio technology or one manufacturer of radios can only get you so far when you need to consolidate multiple dispatch operations. The reason being is that quite often the agencies being consolidated use different radio technologies. In order to gain the most from consolidation, you need dispatch systems that can handle it all from one position and that's where we come in. In addition, because our software GUI can be customized to better fit your unique dispatching operation, training time can often be reduced.

So whether it's someone experiencing chest pains, an active shooter, a routine traffic stop, a house fire, or even a forest fire, our dispatch solutions can help you handle the situation.

Classic Air Medical

"Our Telex system has been live 24/7 for nearly a year and has never gone down. The software is completely stable, and Peak Mobile gave us a great system design with full redundancy. We're in a business where fast, accurate communication is mission critical, so this was literally a life-saving change for us. I would absolutely recommend the Telex C-Soft solution."

Paul Matheson,
Flight Center Manager, Classic Air Medical

Transportation Solutions

WHY CHOOSE TELEX?

Sometimes there's a lot involved in getting from A to B. Our solutions help coordinate a smooth, safe journey and on-time arrival – whether it's for people or products.

Whether the task is offloading cargo in a port, coordinating airline ground operations, or getting students to school, it takes fast, efficient communications to make sure things happen as they should – all while maintaining safety and security.

Ports are busy places and it can be tough to have a complete picture of what is going on. Our radio dispatch system allows a variety of stakeholders, such as cargo handlers, tugs, and safety and security personnel to make sure everything works in sync.

When it comes to ground operations and maintenance, our system is the choice for multiple major airlines operating in the U.S. Since we can handle multiple radio technologies, ground operations radios can be linked when needed with those of other airport operations, including those of public safety. This allows an airline to make sure that passengers and cargo get to where they need to be while maintaining safety for everyone involved. Because the system uses IP as its backbone, operations at any given airport can be linked back to a central corporate command and control facility and/or linked to operations at another airport.

School bus operations might not sound glamorous or complicated, but there's a lot that goes on, especially those first few days of the new school year. That's why we are the choice of Denver and Minneapolis public schools. Calls into dispatch can range from safety and security issues for bus drivers to parents looking for a child, a missed stop, or a lost item. Our call queue feature makes sure that calls made into dispatch are handled with efficiency.

Houston Pilots

"At any given time, we've got two dispatchers and a supervisor managing the movements of 30 or 40 pilots, getting them on board the ships and then managing their movement into and out of the channel. The Telex equipment handles the land-based side of the communications circuit, enabling everyone to talk to each other seamlessly. That means the Houston Pilots can do their job and the freight keeps moving."

Garry Gaudin,
D&G Communications Owner and President

TELEX

HARDWARE
AND SOFTWARE
PRODUCTS

PC Based IP Console Position

Complete communications solution

Our PC based IP console position delivers everything for dispatch communications —stability, performance, and world-class dispatch capability. The IP platform makes it simple to install, easy to expand, and flexible enough to use in any dispatch setting.

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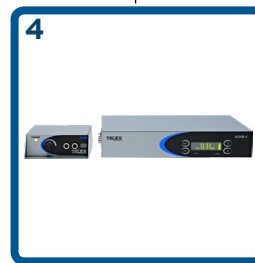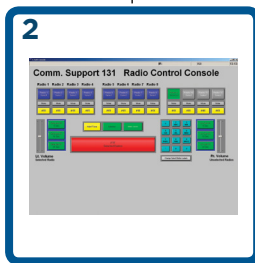
To build your dispatch position:

Choose a PC platform, monitor, C-Soft, headset adapter, and accessories.

1. Choose your computer:

Either purchase our computer, or purchase a computer/laptop that meets the PC requirements listed on the next page under the C-Soft product.

2. Choose your C-Soft:
A. Select C-Soft size by adding total number of all line types
   • Standard lines (i.e. IP-224s) and optional
B. Select additional C-Soft options
   • Per Line Call Playback
   • P25 Encryption
   • API
   • P25 CSSI / DFSI
   • NEXEDGE®
   • Additional SIP Telephone Extensions
   • DMR-AIS

3. Choose your monitor:
   • 22" LED monitor
   • 19" touch screen LCD monitor

4. Choose your headset adapter:
   • ADHB-4 with PC position
   • RHB-1 for remote headset (optional)

5. Choose any of the applicable accessories:
   • Microphone
   • Speakers, up to 6 or 3 pairs
   • Headset
   • Foot switch

Service and support

By standardizing around a single dispatch position platform, we have been able to optimize both the operating system and dispatch software for maximum stability and performance. We are able to deliver a total solution that is significantly enhanced and much easier to support by removing the variables associated with software installation on an end-user provided PC.

Flexibility and scalability

Our PC based IP console position can be ordered in configurations from 2 to 200 lines. It is our most capable and highest-capacity dispatch solution. The user interface is completely customizable, meaning you can control the button layout — the size, shape, color, and even the labeling. Change the background color, create simple or advanced dispatch interfaces — the options are nearly limitless with the PC based IP console position. You can even store multiple dispatch configurations on a single station for different applications or usage scenarios.

C-Soft IP Dispatch Control

More installations than any other IP-based dispatch system.

Telex Radio Dispatch, part of the Bosch Group, manufactures and delivers thousands of mission-critical communication systems worldwide.

Telex Radio Dispatch is the leading manufacturer of IP control for two-way radio communications. Based on a distributive architecture, Telex dispatch console systems have flexibility, scalability, and redundant capability based on the network. Telex converts audio and control functions from analog or digital to Ethernet packets. Once converted to IP, the signal can be transported via LAN, WAN, 802.11 wireless, satellite, and the Internet. With this many mediums to work with, systems can be precisely scaled according to application—whether confined to a single building or campus, or covering an entire country or the world. You can control a Telex IP-based system in Texas from New York, and all with parallel control in London, England.

The graphical user interface of the C-Soft can be designed and arranged to best suit your organization's needs. Icons, text, buttons, borders, backgrounds, and images can all be programmed to meet your specific operational requirements. The screenshots above depict just a few of the design layouts that can be achieved using the C-Soft Designer application.
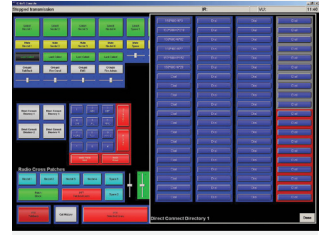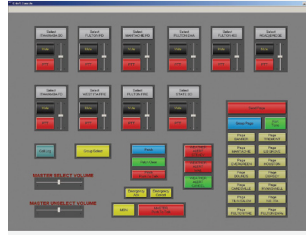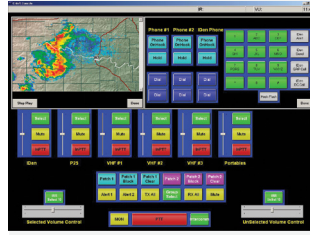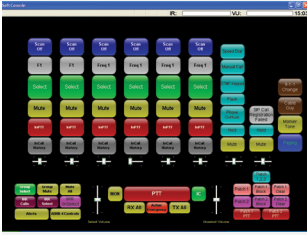
Telex PC specs:

- Core i5 7500T (Quad-Core 2.7 Ghz)
- 16GB (2x8GB) RAM DDR4 - 2133 MHz
- 250GB Samsung SSD OS drive
- 1TB Storage Drive
- External power supply 90 watts energy efficiency rating level VI
- Wireless Logitech keyboard and mouse combo MK330
- FCC's Declaration, RoHS, and CE Declaration of Conformance

OS and applications:

- Microsoft Windows 10 Enterprise LTSC
- Advanced Seneca Backup and Restore Software
- Telex Dispatch applications pre-installed and ready for activation to reduce installation time

Minimum PC requirements:

OS: Windows 7, 8.1 or 10 required.

Network connection: 10 Mbps or 100 Mbps TCP/IP connection. Static IP address preferred.

Processor speed: Intel Core i3 CPU 2.8 GHz or greater, especially if controlling P25 radios or large numbers of radios.

Memory: minimum of 8 GB recommended

HDD: minimum one HDD for OS and applications, an additional HDD suggested if using Per-Line Call Playback option. (SSD's are not recommended for this option)

Mechanical:

- Customized fan-less chassis version, mini form factor
- Housing 262.6 mm (W) x 215 mm (D) x 68.5 mm (H) plus stands
- VESA mount 100 x 100 mm.
- Wall mounting bracket (removable with bracket mounting instructions)

I/O connections:

- 1 HDMI
- 1 Display Port
- 4x USB 3.0 (back)
- 2x USB 2.0 (front)
- 2x Intel gigabit LAN ports
- 3.5 mm audio output
- Microphone input

SCALABLE SOLUTIONS

Telex C-Soft dispatch consoles are scalable to meet your current requirements, as well as grow to meet your future demands.

HIGHLY CONFIGURABLE

The C-Soft console is designed to meet your operational requirements. Operator screens can be designed and set up to accommodate and adapt to the way your organization communicates.

EASY TO OPERATE

C-Soft's intuitive design makes it extremely user friendly and easy to learn and operate.

C-Soft Features

AVAILABLE CONFIGURATIONS:
• C-Soft is available in configurations from 2 to 200 lines.

USER INTERFACE:
• User-controlled configurations for any dispatch application.

SIGNALING CAPABILITIES:
• MDC1200 encode and decode, NexEdge, FleetSync encode and decode, DTMF, serial and OTA FleetSync, 5/6 tone - supports emergency, group, individual, and status calls.

INSTANT RECALL RECORDER:
• Tracks the last ten minutes of both select and unselect speaker audio.
• Buttons can be set up to start playback at various points in the buffer or played call-by-call from the call buffer.

INFORMATION WINDOWS:
• Per-line call history, active emergency, emergency history, manual call list, status windows, and call queue.

PER LINE CALL PLAYBACK:
• The option expands capabilities to one hour to recording up to 100 lines. 1 line included with each C-Soft license.

INTERCOM CAPABILITIES:
• Intercom communications between dispatch positions can be set up on all consoles on the system.

DTMF KEYS:
• A full 16-key keyboard is supported.

PAGING:
• Multiple paging formats are built into the C-Soft console software.
• Quickcall II in both the 100 and 1000 group formats, as well as DTMF, Knox Paging tone, and 5/6 tone paging.
• Manual frequency entry mode is also supported.

ALERT TONES:
• Three alert-tone types are supported, including steady tone, pulsed tone, and high-low warble.
• All frequencies and durations are programmable.

PRE-RECORDED ANNOUNCEMENTS:
• Transmit pre-recorded .wav files to selected lines with a single button press.

PROGRAMMED GROUP & MUTE BUTTONS:
• For both group and mute functions, lines can be selectively included within these programmed buttons, allowing for instant access to particular lines of interest.

STATUS INDICATORS:
• 24-hour clock, VU meter, PTT indication, and instant recall recorder progress are displayed on the upper status bar.

FLEXIBLE AUDIO INTERFACE OPTIONS:
• Using Telex's ADHB-4 and the RHB, C-Soft can interface with all common dispatch communication audio sources, including headsets, desktop microphones, external speakers (up to six), and footswitches.

SIP TELEPHONY:
• Crosspatch, DTMF hold, call history, phone directory, stun, and proxy server.
• Provides audio adjustment with silence detection and jitter buffering.
• Able to specify IP interface for SIP connections.
• 2 lines included with each C-Soft license, expandable to 6 or 12 lines.

MULTIPLE VOCODERS:
• Per-line vocoder-type ability to select lower bandwidth vocoder.

SPECIAL INTERFACES:
• MOTOTRBO™ Systems with Mapping, Motorola Smartnet/Smartzone, Kenwood NEXEDGE, Icom IDAS, TETRA (Hytera/PowerTrunk/Sepura), iDEN, P25 DFSI, and DMR
• API option for 3rd party interface (CAD)

SPECIAL INTERFACE RADIO COMMANDS:
• Channel/TG change, group/private call, encryption, GPS, monitor, call alert, radio check/enable/disable, remote monitor, text messaging, status request, scan and talk-around
• Commands vary based on Interface type, please see manual for more details.
• P25 encryption option, supports DES and AES 256 bit standard. Using FIPS 140-2 compliant solution for DFSI and future CSSI systems.**

C-Soft is the industry's most flexible and capable software dispatch console and is the perfect application for any dispatch environment.

C-Soft delivers all of the dispatch capabilities you expect while also giving you the flexibility that only an IP-based software console can provide: simple and quick deployment in the field, easy back-up of communications assets, and the ability to save multiple configurations on a single computer. This proven application has been deployed in communication centers around the world in applications from 911 dispatch to mobile command centers and transportation management.

PRODUCT INFORMATION

OPTIONAL FEATURES*

SAP #	Description
F.01U.307.047	SIP 6-line C-Soft v7
F.01U.307.048	SIP 12-line C-Soft v7
F.01U.307.042	P25 DFSI Direct IP 2-line
F.01U.307.043	P25 DFSI Direct IP 6-line
F.01U.307.044	P25 DFSI Direct IP 12-line
F.01U.307.045	P25 DFSI Direct IP 24-line
F.01U.307.038	Kenwood NEXEDGE Direct IP 2-line
F.01U.307.039	Kenwood NEXEDGE Direct IP 6-line
F.01U.307.040	Kenwood NEXEDGE Direct IP 12-line
F.01U.307.041	Kenwood NEXEDGE Direct IP 24-line
F.01U.307.032	Per-Line Call Playback 2-line
F.01U.307.033	Per-Line Call Playback 6-line
F.01U.307.034	Per-Line Call Playback 12-line
F.01U.307.035	Per-Line Call Playback 24-line
F.01U.307.036	Per-Line Call Playback 50-line
F.01U.307.037	Per-Line Call Playback 100-line
F.01U.343.856	P25 CSSI Direct IP, 2-line
F.01U.343.857	P25 CSSI Direct IP, 6-line
F.01U.343.858	P25 CSSI Direct IP, 12-line
F.01U.343.859	P25 CSSI Direct IP, 24-line
F.01U.343.860	DMR AIS Direct IP 2-line
F.01U 343.861	DMR AIS Direct IP 6-line
F.01U 343.862	DMR AIS Direct IP 12-line
F.01U 343.863	DMR AIS Direct IP 24-line
F.01U 343.865	API - Application Programming Interface, per seat
F.01U 343.866	AES Encryption Option, Per-Seat

BASE DISPATCH SOFTWARE

SAP #	Description
F.01U.307.023	C-Soft 2-line software v7
F.01U.307.024	C-Soft 6-line software v7
F.01U.307.025	C-Soft 12-line software v7
F.01U.307.026	C-Soft 24-line software v7
F.01U.307.027	C-Soft 50-line software v7
F.01U.307.028	C-Soft 100-line software v7
F.01U.307.029	C-Soft 150-line software v7
F.01U.307.030	C-Soft 200-line software v7
F.01U.307.031	Upgrade previous C-Soft to C-Soft v7

*These are enablement options, and do not add to total line count. Be sure to order the correct size of C-Soft to accommodate these options.

P25 DFSI

The Telex conventional P25 offering complies with Telecommunications Industry Association (TIA 102.BAHA) standards for the Fixed Station Interface (FSI).
This interface provides the connection between the C-Soft console and conventional P25 networks operating with the common air interface.

The Telex Digital Fixed Station Interface (DFSI) option allows C-Soft to connect directly to a P25 conventional repeater, thus eliminating the need for a radio gateway product such as the IP-224. Since this is a direct IP wireline connection, it can utilize the low distortion Enhanced IMBE (AMBE+2) vocoder. In addition, this design does not require dedicated servers in the system, so in a multi-position console system, one position takes the role of control server and another position backs-up the control in case of failure. Any of the positions can be configured to be the server and backup, thus maintaining scalability and flexibility in the console system design. All C-Soft features are still available with this design, including Crosspatch, which allows legacy analog systems and/or other digital radio systems to be connected to P25 systems. The following list outlines the companies and functions offered in this DFSI interface.

Supported DFSI repeaters:
- Tait
- Daniels/CODAN
- ICOM
- RIC-M

Supported DFSI repeater functions:
- Channel change
- Repeat mode
- Monitor
- Voting

Supported DFSI radio functions:
- Digital/analog/mixed mode
- Radio check
- Radio inhibit
- Radio un-inhibit
- Status request
- Call alert
- Radio monitor
- Private call
- Group call
- Pre-programmed text message
- Emergency acknowledgment

It is important to note that there is no special software build between consoles. Any C-Soft position can be configured as a server, backup server, or client console position by using C-Soft designer.
Up to 25 console positions can be connected to a single repeater.

Control and Voice Data between Server Console and Client Consoles

Voice and Control Data between Server and Fixed Station

Control and Voice Data between Server Backup Console and Client Consoles

Voice and Control Data between Backup Server and Fixed Station during primary failure

P25 CSSI Interface

Telex Radio Dispatch systems – including the easy-to-use C-Soft control software and IP-224 adapter panel for converting analog communications to IP – offer the ultimate in interoperability, reliability, and scalability for ROIP/VOIP communications

Our new TIA-102 compliant P25 CSSI interface allows C-Soft to talk to trunked P25 Phase I & II compliant systems, and supports optional FIPS 140-2 compliant AES-256 bit encryption. In addition, the interface also includes support for P25 DFSI systems.

Features include:

- Console registration
- Group call
- Private call
- Call alert
- Announcement call
- System call
- Short message
- Status query/update
- Support for up to 24 talk paths per position
- Crosspatch between radios/ talk groups
- Radio unit monitor
- Radio check
- Radio detach
- Radio inhibit
- Emergency alarm
- Emergency acknowledgment
- Audio encryption and key loading

Proven performance for public safety communications professionals

P25 CSSI / DFSI Encryption Option for C-Soft

Our encryption option supports both DES and AES 256-bit encryption using a FIPS 140-2 validated cryptographic module for P25 CSSI / DFSI wireline interfacing (direct IP) between C-Soft and P25 subscribers. It has been tested with both Motorola KVL 3000+/40000 and Tait Recon Key loaders.

- Value added option to each C-Soft seat.

- FIPS 140-2 compliant

- Supports 256 bit AES and DES encryption

- Supports 100 keys and 50 profiles

- Supports the following key loaders:
    - Tait Recon KVL
    - Motorola KVL-3000 or 4000

Tennessee county uses Telex C-Soft console to consolidate six 911 centers under one roof

The Sumner County Emergency Communications Center (SCECC), was built in order to consolidate all of the public safety dispatch centers located in Sumner County, TN into a single facility in Gallatin, TN. Communications Group Inc., better known as CommTech, was engaged to handle the design and integration of the radio hardware and software.

CommTech selected the Telex C-Soft console as the backbone of the system. The Telex C-Soft console is a networked-based console that connects the facility's twenty-nine radios to thirteen dispatch positions via Telex IP-224 RoIP (Radio over Internet Protocol) interface gateways. The Telex IP-224 gateways have the capability of interfacing with a wide variety of radios across multiple platforms, making them the perfect choice for the Sumner County project. The facility utilizes radios on analog, DMR and P25 radio systems to meet the communications needs for all of the agencies dispatched by the SCECC.

CommTech systems engineer Brad Adams explains why Telex was selected for three primary reasons. "The main

reason being its wide range of capabilities and high level of reliability, especially its ability to interface with multiple radio vendors and protocols" he said. "The second was cost, which was very important to Sumner County and Telex provides a great product at a reasonable cost. Thirdly, was our experience with Telex. Having installed several Telex C-Soft consoles previously, we have found that Telex provides a solid product along with great technical support and the people in all departments are great to work with."

The Telex C-Soft installation succeeded in smoothly combining all of the independent Sumner County dispatch centers into a single Emergency Communications Center. The SCECC serves all of Sumner County's public safety services, including all law enforcement, fire, and emergency medical services. The county has, at this date worked with CommTech to add two additional radio dispatch positions, increasing the total to fifteen. The SCECC administration is planning for expansion to eighteen total dispatch positions, along with a proposed backup site in the future.

API SDK / API Seat

With the API SDK / API Seat option customers are able to develop and implement 3rd party interfaces into C-Soft for applications such as CAD, AVL and other systems. It utilizes an encrypted connection and user authentication to ensure data reliability. The API SDK requires a Non-Disclosure Agreement (NDA) with the third party developer. It comes with documentation and a simulator to help in interface development. Telex Radio Dispatch engineering recommends that anyone purchasing the SDK also purchase a 2-line version of C-Soft and the corresponding API Seat in order to facilitate total testing of any solution developed. The API is required in order for C-Soft to talk to a 3rd party product where the SDK has been used to develop an interface and is sold on a per seat basis.

CAD

Security Management

C-Soft API

Emergency Alerts

Enterprise Applications

Mapping Applications
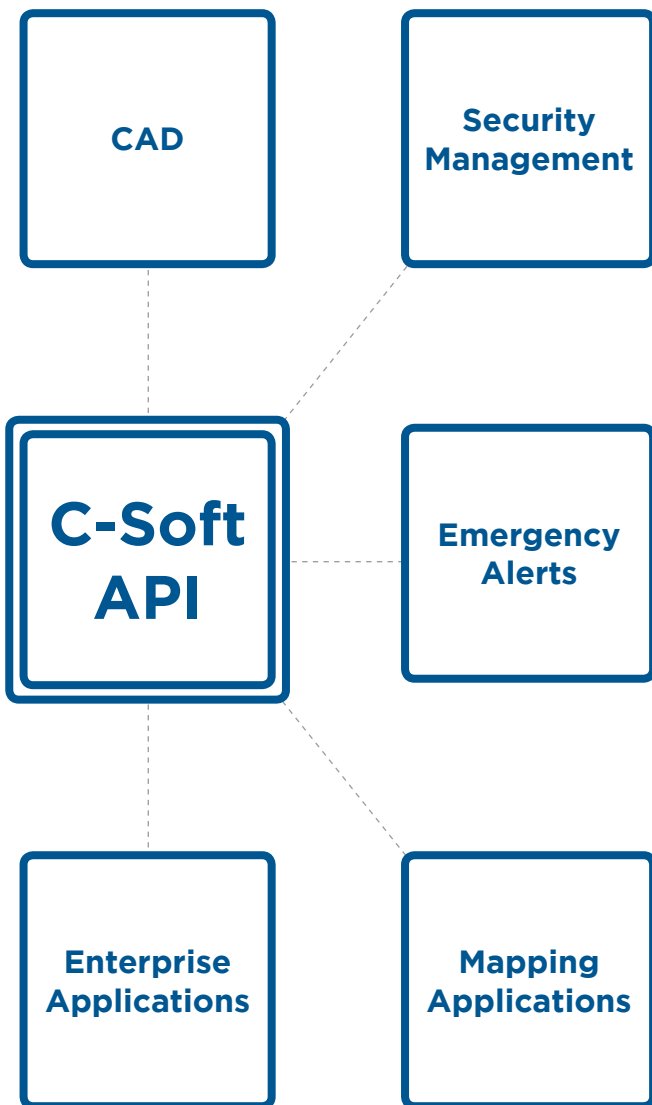
Secured connection to a 3rd party application

• User authentication
• 256-bit AES data encryption
• Guarantee data delivery using TCP connection
• Value added option to C-Soft

Capabilities:

• Main PTT
• Line PTT
• Private call
• Group call
• Line selection
• Multiple line selection
• Channel/talkgroup selection
• Paging functions (single, stack pages)
• Remote monitor (covert call)
• Crosspatch
• GPS integration
• Event notifications
    - Private call acknowledgment
    - Incoming private call
• Emergency
• Connection monitor (heartbeat)

DMR - AIS Direct IP Interface Option

The Telex direct IP interface to DMR-AIS systems.
This interface provides the ability to have a direct IP connection between the C-Soft console and DMR-AIS systems without the need for a hardware gateway. All C-Soft features are still available with this design, including Crosspatch, which allows analog and other digital radio systems to be connected resulting in enhanced interoperable communications. The option is available in 2, 6, 12, and 24 line configurations. This product has been tested and approved through Tait radio's partner program.

Supported functions:
(system dependent)
- Selectable 2, 6, 12 or up to 24 talk paths per console
- Group, broadcast and unit calls with selectable talk group
- Emergency call decode with acknowledgment capabilities
- Radio remote monitor with supervisor password
- Radio status decode and encode
- Radio stun and revive
- Radio check
- GPS decode with IP interface
- Text messaging
- Call alert

Telex C-Soft Consoles
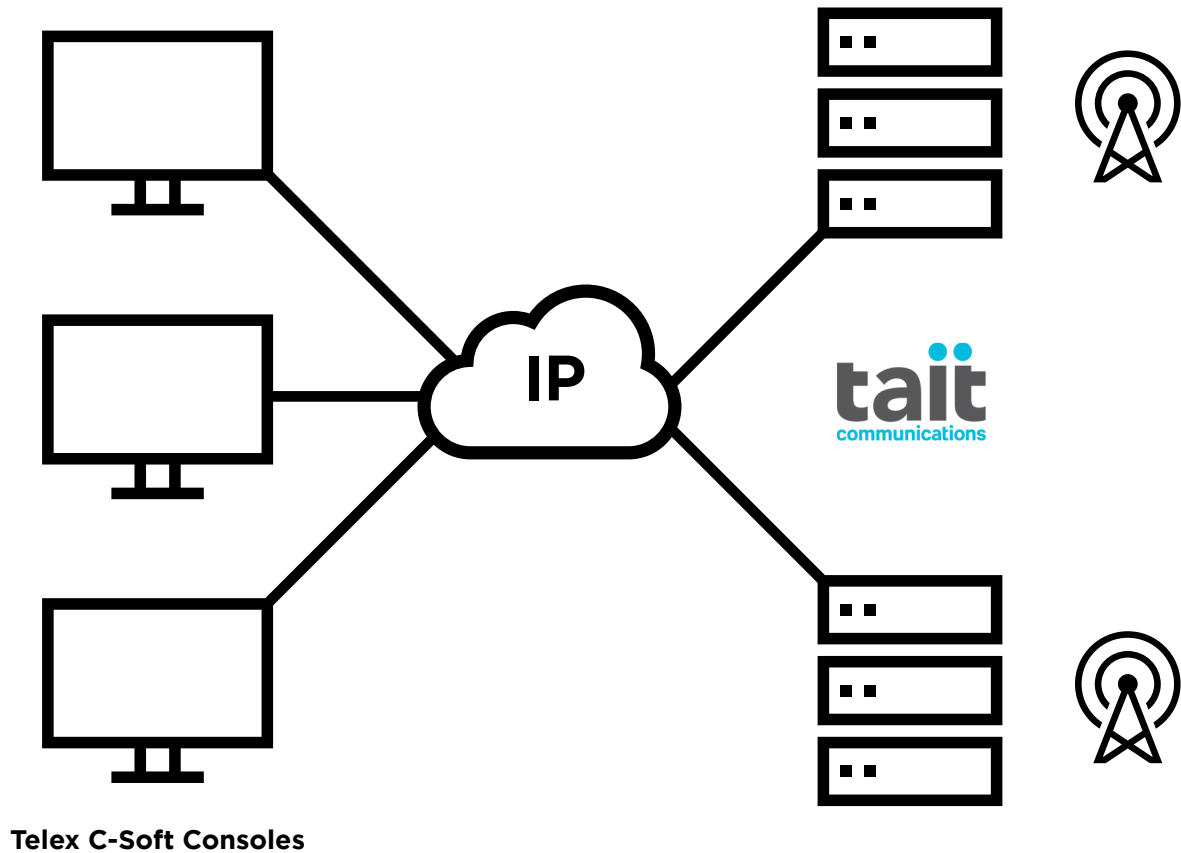
Minneapolis Public Schools select Telex Radio Dispatch software

The Minneapolis Public Schools Transportation Department is responsible for 500 buses on the road each school day. When developing its latest dispatch software, C-Soft V7, Telex Radio Dispatch worked closely with the department's management and dispatchers to develop the next generation of the industry's most flexible and scalable software-based dispatch platform. User-friendly operation—as well as server and distributed configurations—make the C-Soft V7 ideal for a wide range of customers and vertical markets. The effectiveness of the new platform has led to it being adopted by facilities in the nearby suburbs of Bloomington and Rosemount.

Kenwood NEXEDGE®
Trunking and Conventional

The Telex direct IP interface to Kenwood NEXEDGE® Trunked systems eliminates the need for a dedicated radio gateway. This interface provides the ability to have a direct IP connection between the C-Soft console and Kenwood NEXEDGE® Trunking system without the need for a hardware gateway. All C-Soft features are still available with this design, including Crosspatch, which allows the analog systems to be connected to the NEXEDGE® systems. The option is available in 2, 6, 12, and 24 line configurations.

The following list outlines the functions offered in this NEXEDGE® interface.

Supported functions:
- Broadcast, group, and unit calls
- Emergency call decode with acknowledgment capabilities
- Radio status decode and encode
- Radio remote monitor with supervisor password
- Selectable talk group
- Radio status request
- Radio stun and revive
- Radio remote grouping
- Over-the-air-aliasing
- Text messaging
- GPS decode with IP interface
- Alert call
- Kenwood 15-bit encryption

System limits:
- Up to 24 talk paths per console
- Up to 10 consoles per site and 100 per system (NEXEDGE® System Limit)
- Supports both narrowband (12.5 kHz) and very narrowband (6.25 kHz) channel spacing.
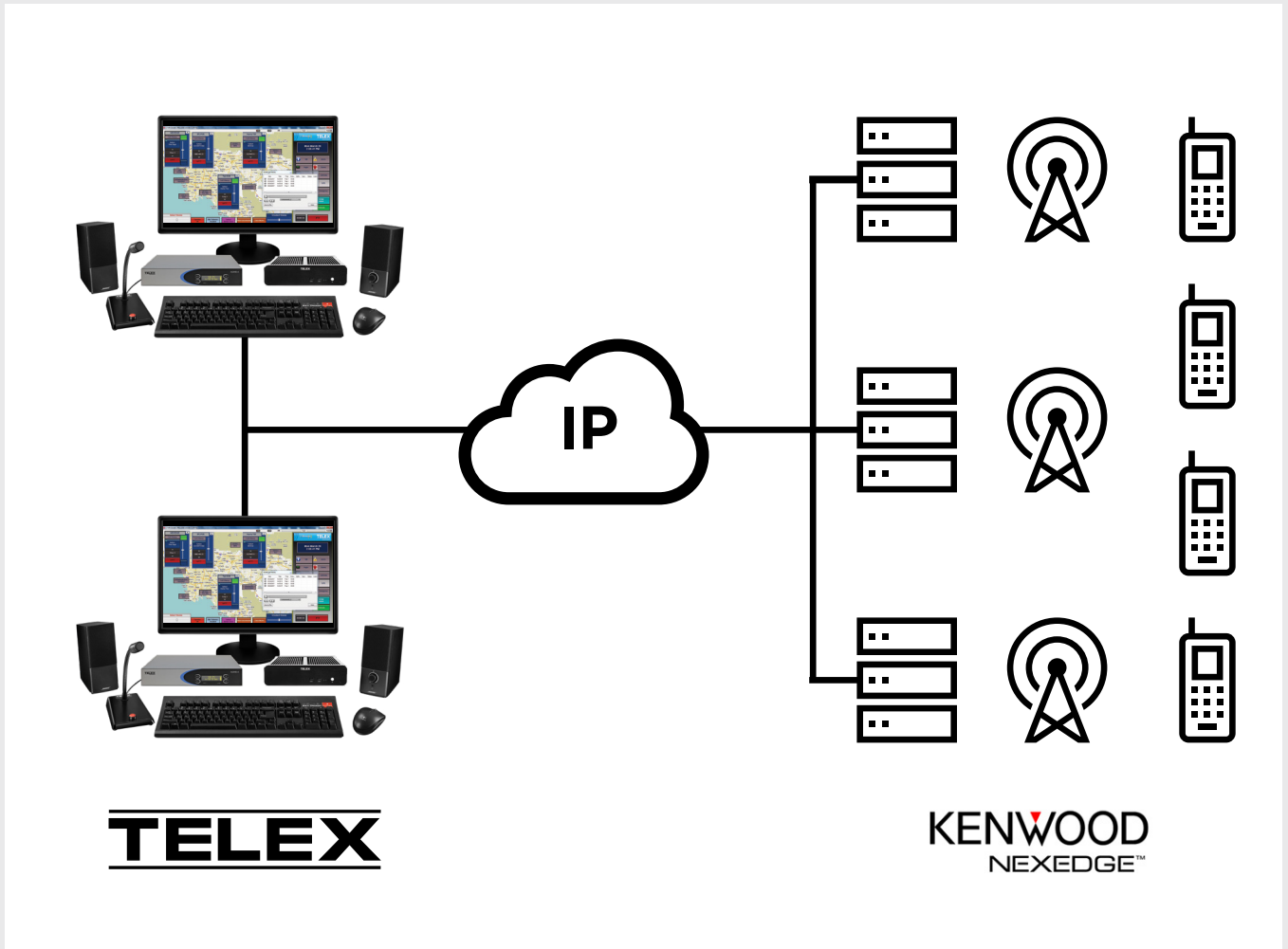
Denver Public Schools use Telex for stability and effectiveness

"I have been working with two-way radios for DPS going on 25 years now, and RoIP is the neatest technology I have seen in communications yet. The ability to multi-cast over Ethernet is a powerful tool. RoIP has created endless possibilities for our two-way applications. We can design and add on to the Telex IP-224/C-6200 system in many different ways. It's a great platform to grow with."

Jim Bailey,
Denver Public Schools Radio Room

Enhanced SIP VoIP Telephony
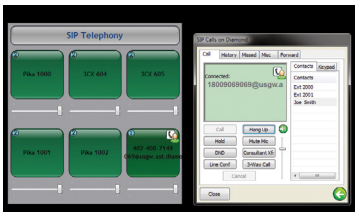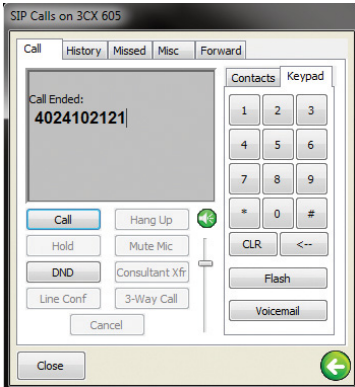
Features:

Call hold – places the current call on hold and returns to the previous call.

Call waiting – sends an audible indicator when a third party calls in.

Blind call transfer – two parties are in a call and one transfers the call to a third party without first contacting the third party.

Call transfer with consultation – two parties are in a call, then the third party is contacted to announce the transfer before it happens.

Call-forwarding feature:
- Unconditional – routes all incoming calls to voice-mail or another number for any reason.
- Busy – sends a call to another phone number or voice-mail in the event the line is busy.
- No answer – sends the call to another phone number or voice-mail in the event that there is no answer (after a pre-defined time).

Three-way call conferencing – allows up to three calls via conference bridge.

Crosspatching radio PTT users with SIP calls – allows dispatchers to interface radios via SIP, to be included in the inter-operable conferences.

Call conference up to five users – allows for multiple calls out to others, putting all calls on hold then bridging the conference call.

Do not disturb – allows all calls to be routed to voice-mail.

All SIP call sessions are recorded on the Network Recorder – C-Soft records via echo packets, so the user will have to configure packets in C-Soft Designer.

We offer a full industry-standard SIP (Session Initiation Protocol) two line solution as a part of the C-Soft software-based console. Users can expand to six-line or twelve-line via an add-on license key. Adding our new Enhanced SIP solution to the Telex IP dispatch consoles integrates VoIP telephony, allowing for a complete console solution.

Our new application provides a great method of telephone line installation into a dispatch console solution. If you don't have a VoIP phone system, a simple SIP server with FXO ports can be used to convert analog lines to SIP.

With the Enhanced SIP features, users can implement and configure many telephone lines into a C-Soft console position without having to connect external hardware.

Our application is easy to install and easy to use! The icons are intuitive and they indicate various calling features (i.e. call is on hold, etc).

Per Line Call Playback
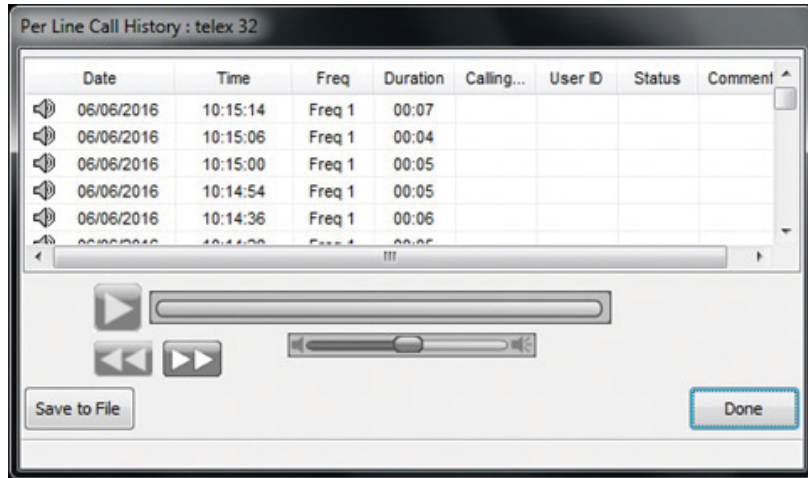
The **Per Line Call Playback option allows up to 60 minutes of recording and playback, supporting both transmit* and receive audio for each defined line.** Supporting up to 100 lines per dispatch position, this feature gives dispatchers the ability to review not only what has been said by responders, but their own responses as well. By eliminating the need to access the dedicated recording system, dispatchers can enjoy increased accuracy and efficiency which may make the difference to events unfolding in the field.

A single line of Per Line Call Playback is included with the base C-Soft package with additional lines available as options.

*C-Soft version 7.2 and higher

Features:

Playback of both TX* and RX audio streams on a per line basis

Stop / pause playback

Seek / search playback

Display elapsed and total time

Ability to adjust playback volume

Ability to pin audio so it is not recorded over

Ability to make text comments to individually logged call

Display selectable data fields for date, time, line, frequency, status, caller ID, user ID, duration, comments

Logs ACKs and clears of emergency events

"Telex is very user-friendly, it can be changed quickly, and it's very flexible. We looked at several other systems, but we kept on coming back to Telex. A lot of states and state fire agencies also use Telex, so we figured that it would be a good fit with anyone with whom we would ever work."

Rob Knabe
President, Cobalt Equipment

Advanced Audio Interface (ADHB-4 Gen 2) & Remote Headset Box (RHB)

Advanced Audio Interface Gen 2

Remote Headset Box

Features:

Ethernet communication	LED power and PTT indicator
Six audio channels	12 VDC operation
One dual-channel 1/4" headset jack	Two remote headset box connections
One XLR connector to low-impedance microphone	AUX audio input
One desk mic jack	LED for power/PTT indication
One telephone handset jack	Programmable gain control
One NENA I/O jack with offhook detection	Foot-switch inputs for PTT and monitor
Separate headset volume knobs	Two relays with form-C contacts
Supports three pairs of speakers	AUX inputs are DC isolated
Use with any standard amplified speaker	Color LCD-type display

The **Advanced Audio Interface (ADHB-4)** works exclusively with the Telex C-Soft console. It processes audio internally and communicates with C-Soft to transfer the signal via USB, which eliminates dependence on the PC sound card. This allows users to purchase their own computer. The ADHB-4 supports up to six speakers per position.

The ADHB-4 is the heart of the C-Soft console dispatch position. It removes the barrier between users of different PC audio platforms and enables them to relay vital, life-saving information. To further enhance the flexibility of the system, the ADHB-4 works with most desktop systems running Microsoft Windows 7, 8.1 or 10.

In addition, the ADHB-4 includes all connections necessary for full integration into the most common radio dispatch configurations.

One of the most striking features of the ADHB-4 is its full-color LCD screen. This display hosts a rich interface which provides the user with at-a-glance system status updates. With its web capability, the ADHB-4 can also be managed via web interface. These advanced configuration options will bring peace of mind to dispatch operators, enabling them to focus on the critical task at hand. Our new **Remote Headset Box (RHB)** allows up to two optional RHBs to connect to the ADHB-4. This allows other users to listen to the dispatch position (ie: supervisor, second dispatcher).

NEO-10

Network input/output control device

The NEO-10 is a network-based input/output device that has 10 DPDT relays and 10 inputs for monitoring external events. Anytime a relay or input changes, the NEO-10 sends a message across the network, allowing all console users on the system to see status updates in real time. Actual control of the NEO-10 is accomplished by a TCP/IP socket connection from the controlling console.

Telex System Manager
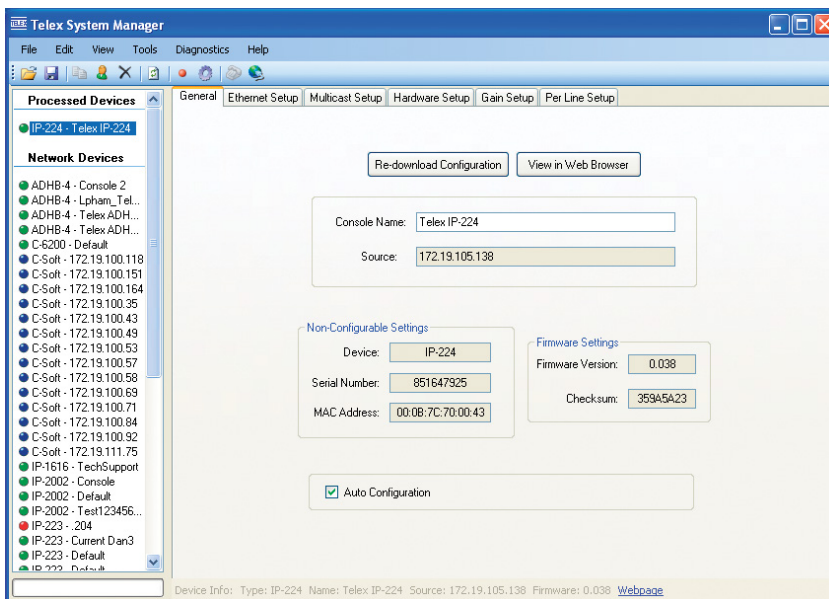
Telex System Manager (TSM) software allows users to easily configure Telex devices. TSM allows a user to view and manipulate configuration parameters for the IP-224, IP-2002, and the IP-1616. In addition, TSM includes the ability to update firmware on the IP-224, IP-2002, IP-1616, C-6200, and the NEO-10. Telex System Manager replaces and improves upon the existing FTP Telex and Configuration Saver programs.

Features:

Option to save the configuration to a file

Selectively copy device parameters from one configuration to another

Import or export to XML or CSV file, ID directory, crosspatch table

Save device configuration files to local disk for backup, archiving, or duplication

Record configuration files back to a Telex device

Selectable Ethernet port

Requirements:

• Windows 7, 8.1 or 10

IP-224 IP Radio Gateway

Available options:

- iDEN Interface
- Kenwood conventional
- Kenwood NEXEDGE®
- Icom IDAS™
- TETRA (Hytera/PowerTrunk/Sepura)
- Sprint Direct Connect
- MOTOTRBO™
- E.F. Johnson P25 radio Interface (5300/ES/VM)
- DMR (Hytera/Tait)
- P25 (Kenwood/Tait)

Available accessories:

- Single or dual rack mounts
- AHS-1 handset

Features:

Local/Tone/Console Modes, Line-Line Crosspatch

PTT (Push-to Talk), monitor, and F1 and F2 relays (programmable to any function tone or revert to F1)

Four PTT modes and three monitor modes

Nine selectable PTT frequencies in Tone Mode

Eight digital outputs for channel selection, completely programmable per function tone

CTCSS (Continuous Tone Coded Squelch System) generation (64 frequencies)

Software gain control

Local handset port for monitoring activity and transmission back to base or to radio, uses optional AHS-1 alignment handset

RX AGC (Automatic Gain Control), RX (Receive) audio squelch

Dual Ethernet ports and support for SNMP

ANI (Automatic Number Identification) over-the-air-protocol decode and display

SoIP (Serial-over-Internet-Protocol)

Supports USB, RS485, CAN-bus, RS232, and TTL

Backwards compatible with Telex Radio Dispatch equipment

Secure remote web-browser-based programming and configuration

Single- or dual-function tone generation

Guard tone user-selectable for 2100 Hz, 2175 Hz, 2300 Hz, 2325 Hz, 2400 Hz, 2600 Hz, 2800 Hz, 2850 Hz, or 2900 Hz

Menu-driven front panel controls for TX, RX, spare audio, IP addressing, and CTCSS

Number of channels or talk groups up to 1000

Backward compatible with IP-224 — both can exist in the same system

MDC-1200 and Fleetsync encode and decode

The IP-224 is the next generation of IP radio gateway to form the heart of the Telex Radio Dispatch System. This redesigned radio gateway does not require any jumper settings or setting of internal pots. Configuration is made simple by the use of a computer for IP settings and communication device settings. Below are more details about the features and options of Telex's newest offering.

Based upon the Linux operating system, the IP-224 provides an extremely reliable means of remote-controlling two audio devices. The IP-224 can be easily configured to work with both digital and analog consoles, and it performs a wide variety of other tasks related to using radios on a digital network, including state-of-the-art system diagnostics. The IP-224's sleek design combines form with function, allowing easy installation, operation, and servicing. The unit may be rack-mounted or placed directly on a desktop, and it is equipped with an LCD display to clearly provide user feedback when programming. VU meters are also provided via the display for alignment purposes. All other configurations are completed in the web browser configuration windows.

The IP-224 is designed to handle the latest radio interface technologies such as NEXEDGE®, IDAS™, MOTOTRBO™, TETRA™, P25, DMR and whatever comes next.

IP-224 Control Station Interface Options

The IP-224 radio gateway interfaces to a variety of radio products. Some interfaces are included with the standard unit and many others are available as an advanced interface add-on product. In some cases, additional hardware may be required.

Below is a summary of interfaces and radios supported. Due to changing radio models, please consult with your Telex sales representative for the latest information.

Manufacture	Radio model	IP-224 option code required
EF Johnson	RS, ES 5300, VM-X00 and VM-0000	Yes
Hytera	MT-680 (TETRA), MD-782 (DMR)	Yes
ICOM	IC-F505x/606x (IDAS™)	Yes
Kenwood	TK-x80, -x90, -x150, and -x180	
Kenwood	TK-5x10/5x30 and NX-700/800/5000 (NEXEDGE®)	Yes
Motorola	XPR Series (MOTOTRBO™)	Yes*
Motorola	Falcon (iDEN)	Yes
PowerTrunk	DT-410 (TETRA™)	Yes
Sepura	SRG3500 (TETRA™)	Yes
Sprint DC	AdvancedBridge by AdvancedTec	Yes
Tait	TM-91xx/93xx/94xx	Yes

* Requires external device or optional code is required

Below is a summary of common features supported by each interface. Variations and additional features may exist, please consult with your Telex sales representative for the latest information.

Common features	Kenwood Serial	P25	NEXEDGE®	IDAS™	MOTOTRBO™	TETRA™	DMR	SDC
Channel and zone change	✓	✓	✓	✓	✓	✓	✓	
ANI decoding	✓	✓	✓	✓	✓	✓	✓	✓
Emergency decode	✓	✓	✓	✓	✓	✓*	✓*	✓
Emergency Acknowledgment	✓	✓	✓		✓			
Status message decoding	✓*	✓	✓	✓	✓	✓	✓*	✓
Status request	✓	✓*	✓		✓	✓		
Monitor ON/OFF	✓	✓	✓	✓	✓			
Scan ON/OFF	✓	✓	✓	✓			✓*	
Individual call	✓*	✓*	✓		✓	✓	✓	✓
Group call	✓*	✓*	✓		✓	✓	✓	✓
Radio enable/disable	✓*	✓*	✓		✓		✓	

* Not available for some radios

Hardware Consoles

IP-2002 Two-line IP-based radio dispatch console

The perfect footprint for smaller operations or supervisory monitoring situations, the IP-2002 is an IP-based dispatch console in a familiar desktop telephone form factor. Dispatchers using the IP-2002 can initiate a crosspatch between the two lines, as well as inject audio into the crosspatch. A simple Ethernet connection places the IP-2002 on the network. The IP-2002 requires no CEB or additional CPU equipment for operation — all the processing and control capabilities are completely self-contained within the unit. The console comes with a handset and panel mic. Other microphone options are sold separately.

Controls:
- Monitor, intercom, and PTT button
- Up to two alert tones
- Crosspatch
- Supervisory control
- 16-digit DTMF keypad
- Volume controls
- Parallel TX LED detect
- Frequency selection
- Menu button for direct menu access
- Paging (two-tone, DTMF, manual)

Features:

Simplex/full-duplex operation (field programmable)	100 talkgroup/frequency control
Crossmute (hardwire)	Call history with autodial
Parallel console update	Caller ID (phone, iDEN, MDC, FleetSync, TETRA™, and 5-tone)
Instant Recall Recorder (IRR)	Scan feature for supported radios
Telex System Manager (TSM) easily detects Telex device on the network for easy firmware upgrade and configuration	Emergency – decodes incoming emergency signals from supported ANI formats

DSP-223 Tone remote adapter panel

The Telex DSP-223 provides a reliable means of remotely controlling two-way radio base stations. The adapter can be used in conjunction with all radio dispatch consoles, or other manufacturers' (such as Motorola and GE) remote consoles that use the industry-standard sequential tone-keying format. The DSP-223 is interconnected to the distant remote control console(s) by any voice-grade transmission medium, such as a microwave link, leased telephone line, or a twisted-pair 600-ohm line. All DSP-223s are capable of decoding the PTT (push-to-talk/transmitter-on) tone sequence and the voice-plus-tone signals during transmission. All models are prepared for jumper plug conversion from two-wire line operation to four-wire line operation. In the four-wire mode, the panels are full-duplex capable.

DH3000 Single-side noise-canceling headset
DH3200 Dual-side noise-canceling headset
DH3300 Single-side noise-canceling headset

DH3000, DH3200 and DH3300 are our noise-canceling headset options, which are very light, with ear cups and cushions enlarged from previous models to enhance comfort. Other features include a set-and-forget volume control and fully flexible boom. This headset dramatically improves the clarity of communication and does not require batteries or panel be power-active noise reduction powered by microphone bias. All DH Headsets require a LC1500 lower cord unit when ordering.

Features:

Weighs 4 ounces	Total noise reduction 12 dB
Mic-noise-canceling electret mic	Volume control
Plush foam ear seals	Three-year warranty

DH2000 Single-side headset
DH2200 Dual-side headset
DH2300 Single-side headset

The DH2000, DH2200 and DH2300 headsets leverage technology from the Telex Airman 750 and Airman 7 headsets, which are best-in-class lightweight headsets. A flexible boom allows microphone adjustment to preferred side, and the adjustable stainless steel headband makes it comfortable—even on the longest of shifts. All DH headsets require a LC1500 lower cord unit when ordering.

Features:

Weighs 3.2 ounces	Foam ear seals
Mic-noise-canceling electret microphone	Three-year warranty

PREMDESKMIC Premium desktop microphone

Specifications:

Type: dynamic	Directivity: unidirectional
Sensitivity: 1mV/Pa (-60dBV/Pa 33dB)	Frequency response: 150Hz to 12kHz @ -10dB
Cable: RJ Type, 6 conductor	Dimensions: 4.1 in. W x 6.3 in. L x 5.9 in. H (105mm W x 160mm L x 317mm H)

MD-MS Omnidirectional electret microphone

Specifications:

Type: dynamic	Directivity: omnidirectional
Sensitivity: -14 3 4 dB at 1 kHz (0 dB=1 Vmicrobar)	Frequency response: 200 Hz – 5 kHz
Cable: 4 conductor, 2 shield, 1.5 m 3.5 cm	Dimensions: H 1.43 mm, W 67.5 mm, L 12.9 mm

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DT-GN-18 Desktop gooseneck microphone

Specifications:

	**windscreen furnished
Frequency response: 100 Hz - 15000 Hz	Color: non-reflecting black
Generation element: condenser, back-electret	Power requirements: 1.5 to 9 VDC phantom supply
Sensitivity, open circuit voltage: 8.0 mV (-42 dB)/ pascal @ 1 kHz	Output impedance: compatible with RTS keypanels
Power level, 1 kHz (0 dB = 1 mW/pascal): -44 dB	Current consumption: <500 QA
Polar pattern: cardioid	Maximum head diameter: 14 mm
Dynamic range: 102 dB	Gooseneck diameter: 6.4 mm
Mounting: male threaded TRS	Electronics module diameter: 20 mm

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PC Desktop-18RD Polar Choice 18" microphone

Specifications:

	**windscreen furnished
Frequency response: 50 Hz - 25000 Hz	Output impedance, 1 kHz: 200 ohms
Generation element: dual condenser, back-electret	Equivalent noise: <26 dB SPL "A" weighted (0 dB=20 micropascals)
Polar patterns: omni-directional, cardioid, super-cardioid and hyper-cardioid	Polarity: pin 2 positive, referenced to pin 3, with positive pressure on the diaphragm
Switches & controls: top mounted push-button configuration switches	Current consumption: <8 mA with P12 supply
Sensitivity, open circuit voltage, 1 kHz: 5.6 mv/ pascal	Cable: 10 ft, 5-conductor cable, terminated with 3-pin male XLR
Clipping level (1% THD): >135 dB SPL	Power requirements: 12-52 VDC
Dynamic range: >109 dB	Base dimensions: H 56 mm, W 117 mm, L 175 mm

System Diagram

Other systems: public address, recording, security & fire, computer aided dispatch, etc.

IP-2002

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010000110100111101001110010001110101001001000001
010011110100111001010011001011000010000001011001
010001010010000001001010010101010101001101010100
010101100100010101010010010010000
001000010001010010000001010011
101010101000010000001001101010
101000111010001010010111000100000010100000100110
010001010100111001000100001000000101100101001111
0101011101000101010100100010000001010100010011111
```

NETW

Since Telex IP dispatch utilizes an Ethernet data network as its backbone for all the components, communications are possible to and from anywhere a user has access to an IP network. VoIP networks are easily expanded to grow with users' needs, and the number of end-users that can be added to the network is virtually unlimited. Get in touch with Telex and let us help you control your dispatch: communications with IP.

P25 DFSI system

NEO-10
Door control, monitor power, temperatures, and other console functions

PC based IP console position
with ADHB-4

...WORK

0101010001010101010011000100000101010100010010010
0100111101010101001000000100100001000001010110
0010000001000100010010010101001101000011010011111
101010001000010000001010001
0100010101000011010100100100
0001010101001101010011010000
001000101010000101010011010001010010000001010011
0101010101010010001000000100000101001110010100110
0010000001000101010100100100100101001011001011110

IP-224/control radio

Kenwood NEXEDGE trunking

Radio base station

TELEX

Telex radio dispatch systems can be scaled to enhance day-to-day communications and operations at any facility. We provide application-specific solutions for a wide range of verticals, including commercial business, education, federal and state government, infrastructure, public safety, and transportation.

- We offer the most radio interfaces and direct IP interfaces: DMR, NEXEDGE, P25

- We cover the most RF technologies: conventional, DMR, NXDN, P25, SDC, TETRA

- The industry's best ROI – lowest cost of investment with the highest performance

- The #1 choice of dispatch services – flexible and user-friendly control software, future proof connectivity, and proven reliability for a constantly-changing RF environment

- Fully customizable and scalable solutions to fit the unique requirements of any critical communications application

- Seamlessly integrates into existing operations, making communications between internal and or external personnel more efficient and effective

Bosch Security Systems, Inc.
Telex Dispatch Products
12000 Portland Avenue South
Burnsville, MN 55337
1-800-898-6723
dispatch@us.bosch.com