

TELEX

Radio Dispatch

Innovating the Future of Mission Critical Communications



IP-Based Dispatch

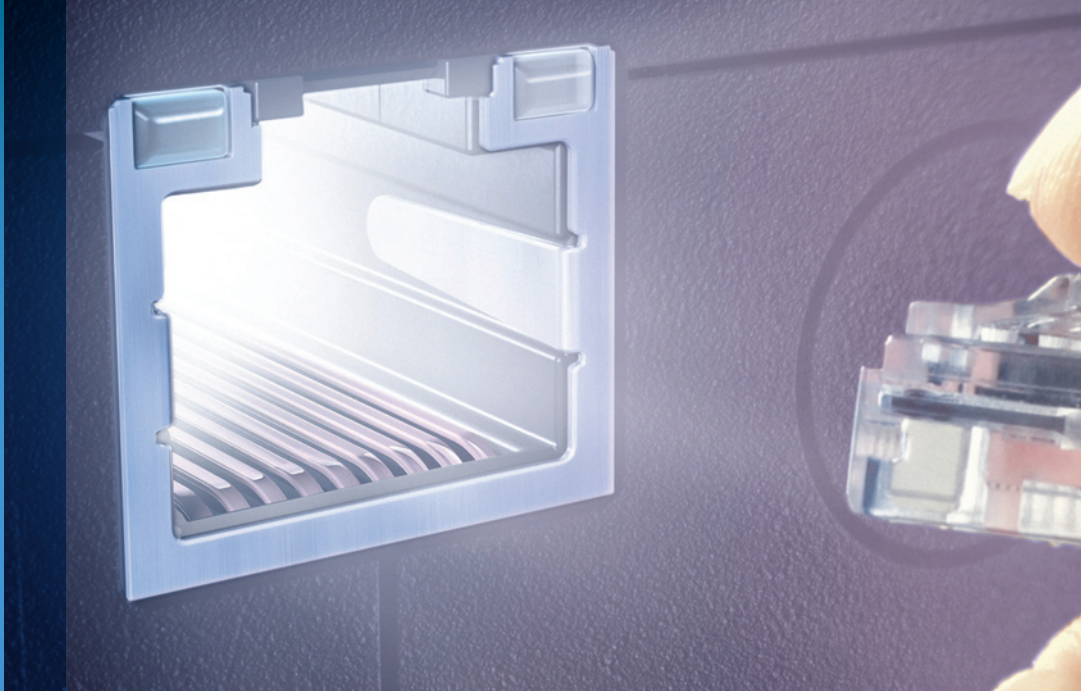


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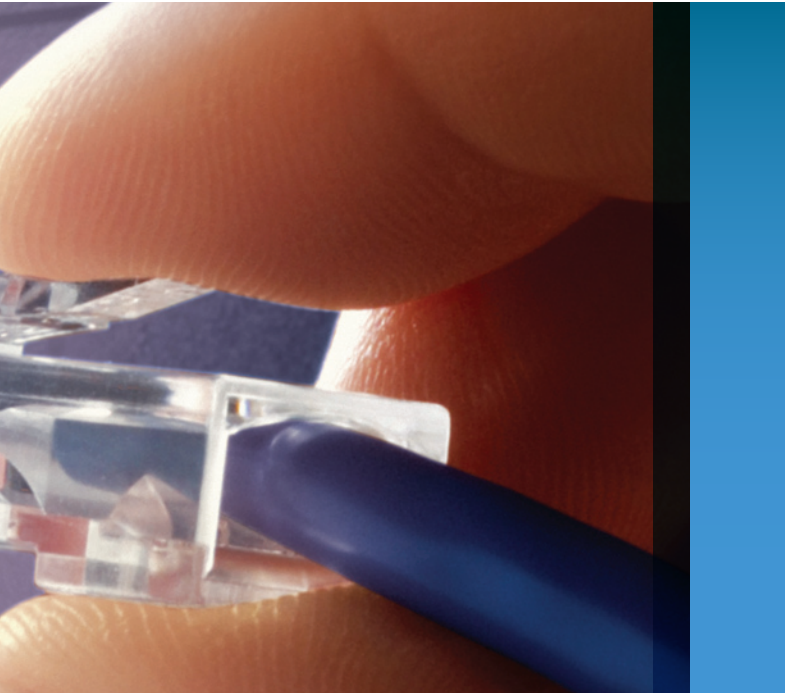
Telex ROIP for San Ramon Valley's mobile ECC

San Ramon Valley Fire District (San Ramon, CA) in the San Francisco bay area is one of many busy emergency service departments relying upon the solid performance of Telex IP-223 IP-based network remote adapters for their mobile command vehicles.

Suter states: "The system is easy to program and set up, we like how it provides channel-to-channel interoperability with each console."

"Because we're using mobile radios, we don't have the consoles set up to change channels—we're using all the capabilities of the radios. We can travel all over the bay area providing communications, and are not restricted to 2, 16, 24 channels—the radios select the channels. The IP-223 units are at the heart of an absolutely user-friendly dispatch system."

—Chris Suter
San Ramon Valley Fire District Communications Coordinator



More Installations Than Any Other IP-Based Dispatch System.

Telex ROIP for Cobalt Equipment's mobile ECC

Cobalt Equipment and TelePath chose the Telex IP-223 ROIP / C-Soft dispatch system because it was the best solution for a mobile response unit. "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

Telex ROIP heads for the Stratosphere Casino - Las Vegas

"Our PBX operators need to stay focused on the phones and providing guest service rather than navigating screens or using complicated technology," Lawney adds. "The interoperability between the phones, the GUI on the computer screen and the IP-223 systems behind the scenes is as user-friendly as it is technologically seamless. The operators have the usual buttons that you would see on a regular

radio-base station on their screens and the channels are arranged so that they can see them clearly without scrolling; they don't need to do anything beyond click on an on screen button to view, scan and send the call messages out.

"Working with McIntosh and Telex was a great experience. There were no issues, no down time and the system is a perfect fit for us."

—Melissa E. Lawney, Telecomm Specialist for
American Casino & Entertainment Properties LLC

Telex Radio Dispatch brings flexibility to University of Phoenix Stadium

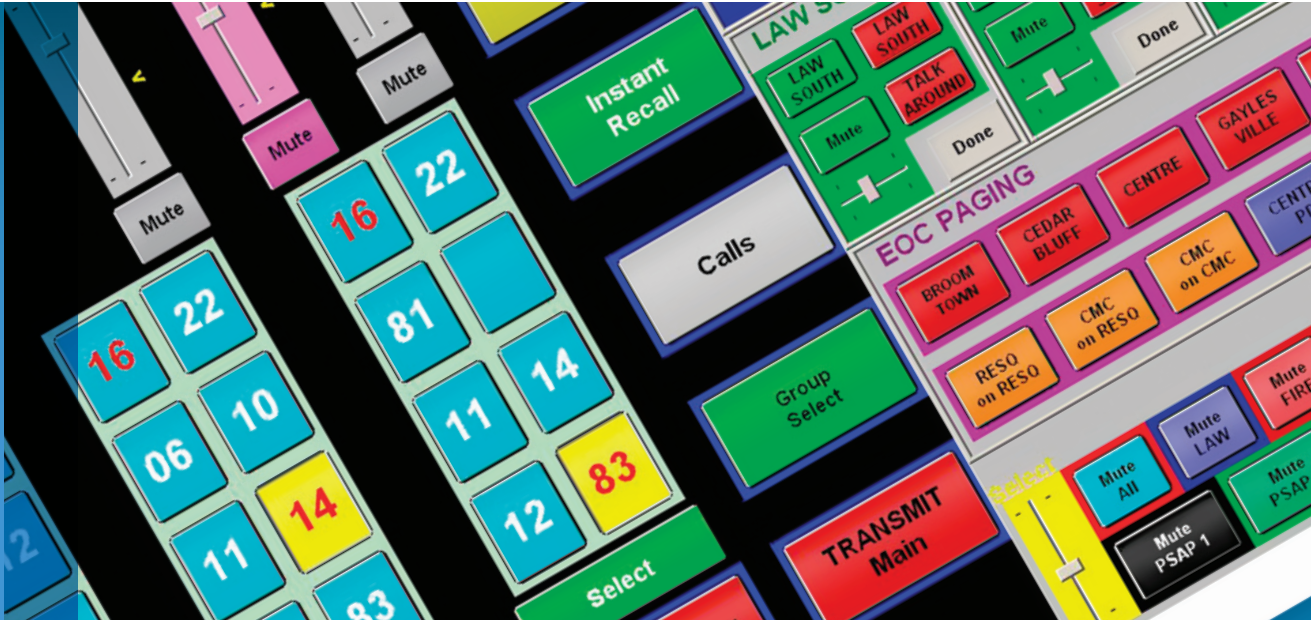
"The 24-hour stadium security team covers a multitude of responsibilities during its rotating shifts, including video surveillance, fire alarms, door/gate monitoring and answering after-hour incoming phone calls. An easy-to-use dispatch system was essential, especially in terms of training new staff and ensuring seamless operator turnover at the primary dispatch position."

Creative Communications recommended a Telex C-Soft 12-line basic dispatch console, using IP-223 to interface remotely with CDM base radios.

—Nick Spiro, Creative Communications

C-Soft

Software Based Radio Dispatch Console



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

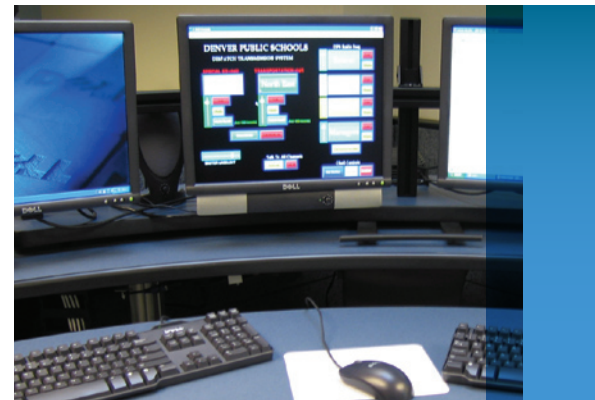
back-up of communications assets, and the ability to save multiple configurations on a single computer. This proven application has been deployed in communication centers around the world in applications from 911 dispatch to mobile command centers and transportation management.

Telex Radio Dispatch solution for New Hampshire Department of Safety

Six C-Soft workstations are currently in use at the Concord location, with 50 channel licenses. The C-Soft system's GUI can be easily modified to an operator's needs, making it very easy to interface with and control what the Telex systems can do. For example, because the IP-223 can be easily implemented on a phone line or on a radio, the team is able to shadow or tag any of the existing systems on their network and either roll them in to theirs or have them serve as a backup. Operators in Concord can now extend this kind of backup functionality to other districts by request, in addition to hardware backup.

PC Requirements:

- Operating System: Windows 7 or Windows XP
- Network Connection: 10Mbps or 100Mbps TCP/IP connection
- Processor Speed: Intel Pentium Dual CPU 1.8GHz
- Memory: Minimum of 2.00GB of RAM recommended.
- Parallel Applications: Telex recommends that mission critical dispatch settings do not run other applications on PCs running C-Soft, especially those applications that place high demands on processing power, sound system or network assets.



NOTE: These are minimum requirements and users should bear in mind that when handling a large number of lines - 50 or more per PC - it is strongly recommended that more powerful computers and more robust network resources be deployed. Please consult your integrator for specific system recommendations.



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, and Status Windows.

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.

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.

Crosspatch:

- Up to 30 simultaneous crosspatch groups are supported.

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 new ADHB-4 and the RHB, C-Soft can interface with all common dispatch communication audio sources, including headsets, desktop microphones, (up to 6) external speakers, and footswitches. The HB-3+ is also still available.

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.
- Per line configuration for each SIP account. SIP is only available with 24 lines of C-Soft dongle or above.

Multiple Vocoders:

- Per Line Vocoder Type ability to select lower bandwidth Vocoder.

Special Interfaces:

- iDEN, TETRA, P25, and Phone/PSTN

C-Soft now has...
Windows 7
Annunciation
WAV Files
UI Clock
NexEdge
ADHB4
RHB

IP-223

Dual IP Network Remote Adapter Panel



The Telex IP-223 IP Network Remote Adapter is the center of our IP solutions. The IP-223 bridges two-way radios and other communications devices onto the IP dispatch network. It also enables a number of other functions:

- Multiple types of communications interface: IP, 2-wire, 4-wire, iDEN, local control, and TDI with phone.
- Seven functional modes available in every device:
 - **Local** Direct connection to any radio, bridging it onto the IP network.
 - **Tone** Generate standard control tones via conventional connections to radio.
 - **Console** Bridge analog consoles into an IP dispatch network.
 - **Crosspatch/Repeater** Directly patch communications devices on the network without a console. It can also be used to extend coverage.
 - **Phone** Connects a standard POTS telephone line to the dispatch network via the TDI.
 - **iDEN** Puts iDEN phones onto the dispatch network and provides advanced access and control.
 - **TETRA** Provides access to advanced features of the TETRA system via an interface with Sepura radios.
- Telex System Manager: View, manipulate, and manage multiple Telex device parameters and settings. Easily detect all Telex devices on the network for easy configuration.

Each IP-223 allows you to connect and control up to two communications devices from any dispatch location on the network; that network can be within a single building, or can reach across the entire country—wired or wireless.

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 multicast 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-223/C-6200 system in many different ways. It’s a great platform to grow with.”

—Jim Bailey,
Denver Public Schools Radio Room

IP-223 Features:

- Encode iDEN Emergency - Able to receive and decode ID and information related to incoming iDEN emergency signals.
- Sepura Status Messaging - Able to decode, and display status messages generated via TETRA (Sepura SRM200/3500) radios.
- Radio Telephony Operation - Allowing local console to change a remote radio channel via POTS line.
- Enhanced Crosspatch capabilities:
 - **Line-to-line crosspatch** - Enable and disable via DTMF strings.
 - **Start/Stop Function Tone Line-to-Line Crosspatch** - Designated function tones have the ability to automatically set up and knock down line-to-line crosspatches within the device.
 - **Dial** - Remote user with portable radio can key a DTMF string, causing IP-223 to take the TDI off-hook, dial a preprogrammed phone number, and establish a patch between the devices via DTMF strings.
 - **Dial VoIP** - Remote user with portable radio can key DTMF string, causing IP-223 to join different multicast group and port-mapping the IP to a different channel.
 - **Phone Patch** - Remote user with portable radio can key a DTMF string, causing IP-223 to take the TDI off-hook. The user can then manually dial a phone number.
 - **Multiple Vocoders** - Per Line Vocoder Type - ability to select lower bandwidth Vocoder.
- Kenwood P25 TK5710/5810 serial control - Supports encode and decode of FleetSync ID and P25 ID, channel change, scan ON/OFF, and monitor. Also capable of direct serial control of Kenwood 80, 90, and 150 Series radios.
- Generate FleetSync MSK signal at the IP-223 - DMR Radio: NexEdge Does not require specific Kenwood base station.
- Advanced compatibility with multiple radio manufacturers - Motorola, Kenwood, EF Johnson, iDEN, Sepura.
- 5-Tone Detection - Decodes 5-tone messages received from remote radios and sends console information to display.
- COR Click Dialing - While using COR, the remote user can key click a portable radio, causing the IP-223 to take a TDI off-hook, and dial a preprogrammed phone number to establish a telephone connection between remote user and a designated dispatch console.
- Improved Web-Based Programming Interface - Redesigned Web page displays important information on start screen and simplifies navigation to critical programming areas.

IP-223 Available Options:

- FleetSync Encode and Decode
- MDC1200 Encode and Decode
- iDEN Interface with NI-223
- TDI telephone interface required if using POTS
- Multiple Vocoders



Nexus IP Console Position

Complete Communications Solution



The Nexus 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.

Dependability and Performance

Telex has built the Nexus IP Console Position around a world-class desktop platform. This isn't just another PC. We've selected a custom CPU from Kolar Industrial Solutions Group. Kolar has been providing the highest quality industrial and specialty computer control devices to commercial, military, and industrial markets around the world for nearly 60 years. Kolar computers have been selected for use in defense operations, medical testing, and research applications and precision industrial processes.

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. And 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

The Nexus IP Console Position can be ordered in configurations from two 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 Console Position. You can even store multiple dispatch configurations on a single station for different applications or usage scenarios.

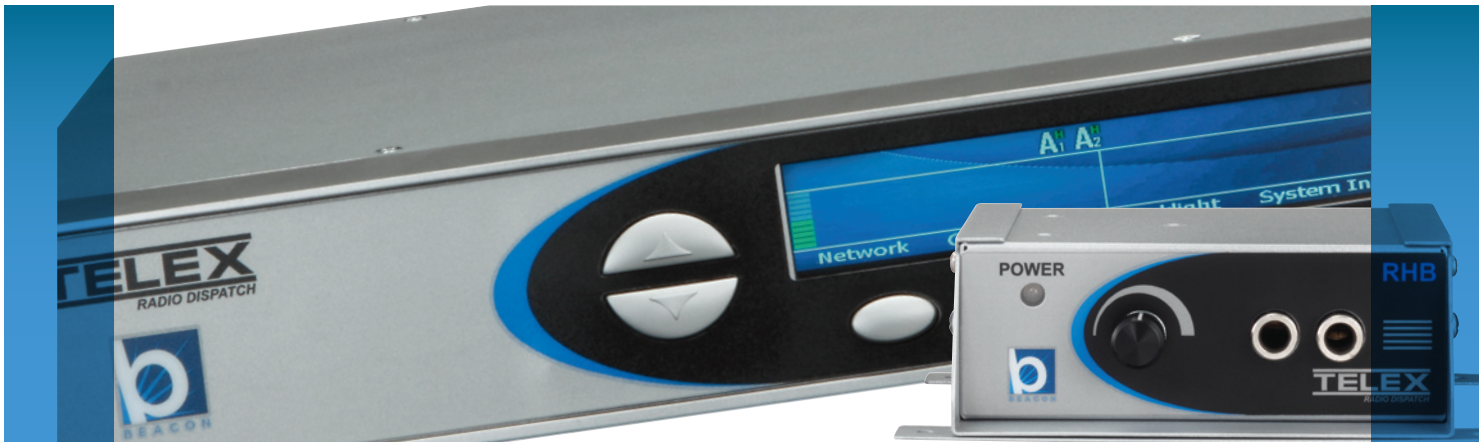
Nexus IP Dispatch Consoles: Build your Dispatch Position

Choose a PC Platform, Monitor, C-Soft, Headset Adapter & accessories needed. If the HB3+ Headset Adapter is selected, you MUST choose a Telex Dispatch Desktop or Laptop. If you select the ADHB-4 Headset Adapter, you can opt to purchase your own computer that meets Telex Radio Dispatch specs. To build your position:

1. Choose your computer
2. Choose C-Soft License size
3. Choose your monitor:
 - 19" LCD Monitor
 - 17" TS LCD Monitor
 - 19" TS LCD Monitor
4. Choose your headset adapter
 - BEACON ADHB-4
 - BEACON RHB-1
 - ADHB-4MTBRK
 - HB-3 Plus
5. Choose any of the applicable accessories
 - Microphone
 - Speaker
 - Headset
 - Footswitch

ADHB-4 & RHB

Advanced Digital Headset Box & Remote Headset Box



Use our all-new ADHB-4 Advanced Digital Headset Box, an enhancement to the current HB-3+, the ADHB-4 is the next generation radio dispatch headset adaptor. The ADHB-4 works exclusively with the Telex C-Soft console version 5.000 or later. It processes audio internally and communicates with C-Soft to transfer the signal via USB, which eliminates the dependence on the PC sound card. This allows users to purchase their own computer. While the current HB3+ works with two speakers, 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 the latest Microsoft Windows 7. It is also backwards-compatible with Windows XP. In addition, the ADHB-4 includes all connections necessary for full integration into the most common radio dispatch configurations, including Footswitch Input, Output relays, auxiliary inputs, RJ11 Mic, XLR Mic, 1/4" headset jack and more.

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. Direct from the position, the user can view speaker activity, PTT status, IP address and more. With its network 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 option RHB's to connect to the ADHB-4. This allows for other users to listen to the dispatch position (ie: supervisor, second dispatcher).

ADHB-4 Features

- Ethernet Communication
- Six (6) Audio Channels
- One (1) Dual Channel 1/4" Headset Jack
- One (1) XLR Connector to Low Impedance Microphone
- One (1) Desk Mic Jack
- One (1) Telephone handset Jack
- One (1) NENA I/O Jack with Offhook Detection
- Separate Headset Volume Control Knobs for Select
- Supports (3) pairs of speakers
- Any standard amplified speaker
- LED Power and PTT Indicator
- 12VDC Operation
- Two (2) Remote Headset Boxes
- Headset Boxes powered by ADHB-4
- Dual channel 1/4" headset jack
- Volume control knob
- LED for power/PTT indication
- Programmable Gain Control
- Footswitch Inputs for PTT and Monitor
- Two Relays with Form C contacts
- AUX Inputs are DC Isolated
- Color LCD Type Display
 - Network clock
 - Available speaker indication
 - PTT indicator
 - Active inputs indicator
 - IP Address
 - PTT Indicator for RHB 1 and RHB 2
 - Adjustable contrast for the backlight
 - Connectivity indicator for headset

HB-3 Plus

Headset Adapter Panel

This HB-3+ is our legacy Headset Adapter Panel. This unit has a durable steel construction. Allowing for durability of the unit in heavy-use environments. The microphone and headset input circuits, allows end users to choose between electret and dynamic element microphones.

The HB-3 Plus contains its own microprocessor and software, giving it the intelligence and ability to control multiple inputs and outputs. The adapter operates in two distinct modes. PC mode allows for the use of dispatcher quality standard accessories with the C-Soft application. Legacy Console Support mode allows the HB-3 Plus to connect to a Telex console through the headset jack and gives the dispatcher access to the HB-3 Plus advanced features.

HB-3 Plus Features:

- Desk mic input
- Footswitch inputs
- Relay outputs
- Recorder outputs
- Diode-blocked inputs
- NENA telephone interface
- Console connection
- Serial port

HB-3 Plus Controls:

- Volume control
- Headset on/off switch
- Level adjustments



NEO-10

Networked 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. For example: NEO-10 can be used as part of a dispatch position to control the opening and closing of doors, lights, gates, etc. Actual control of the NEO-10 is accomplished by a TCP/IP socket connection from the controlling console.

NEO-10 also enables the operation of other Telex IP-based dispatch equipment on a non-multicasting network by supporting 10 channels of echo packet functionality, which copies voice/data content on the network to and from multicast addresses. This feature allows the Telex multicast scheme to operate on a network without having multicast enabled.

Accessories

Telephone Dispatch Interface



Access phone lines directly from a Telex IP-based radio dispatch system.

This innovative technology lets dispatchers place and receive telephone calls from their console. A single analog phone line can now be a shared resource among several IP-based dispatch consoles in a facility.

TDI Benefits:

- Allows dispatchers to patch radio transmissions and telephone calls.
- Allows multiple dispatchers on IP network to share a single phone line.
- Passes caller ID information to dispatch console for on-screen display.

NI223+



Dispatchers can now control and interface directly with iDEN phones as a controllable asset on a Telex IP-based radio dispatch system.

Users will be able to change groups, initiate and terminate calls, crosspatch iDEN calls to other radio channels on the network, and communicate directly with the phone user. And, because this is an IP-based device, dispatchers on the network have access to all functions. The NI-223+ provides power to the iDEN phone and passes caller ID information back to the console, giving the dispatcher access to valuable tracking information.

NI-223+ Benefits:

- Decode incoming emergency calls.
- Passes caller ID information to dispatch console for display.

IP-25300



Access and control an EFJohnson 5300 radio directly from your console.

The EFJohnson 5300 mobile radio is available in bands from VHF to 700/800MHz and is used around the world. Users have the unique flexibility to crosspatch the 5300 mobile radio with any other communication platform, including iDEN and a range of other two-way radios.

IP-25300 Benefits:

- Provides the capability to crosspatch the EFJohnson 5300 mobile radio to any other communications asset on the dispatch network.
- Easy to configure and install.
- Digital interface gives complete control, including channel change, ANI (P25 and others), emergency status, scan on/off and encryption on/off.

Network Recorder



Network Recorder:

The Telex Network Recorder allows you to monitor and record audio for any channel in real time. It also stores detailed information for each call and event in an SQL database for quick and easy retrieval. This includes:

- Source IP addresses
- Channel changes
- Crosspatch creation and teardown
- Supervisor mode start and end
- ANI
- Date, time, and call duration
- Line number
- Scan status
- NEO-10 relay and input logging

Using the Telex Network Recorder, you can access extensive amounts of call information, sorting and refining your searches with a high level of detail. For example, you can search for all calls made by a particular user during a particular time period on a particular channel.

Network Recorder Monitors

The Network Recorder Monitor application monitors the status of the Network Recorder application and notifies users if an error has occurred in the system.

- Check for Heart Beat, Warning, and Errors
- Reporting Messages:
 - MP3 compression problems
 - Database connection/reconnect problems
 - Protect key (dongle) not found
 - Sound card problems
 - Hard drive full
 - Database rebuilding
 - A line has been recording over half an hour
 - Accumulation of error files
 - Less than 20GB left on hard drive recorder has closed

The recorder monitors your radio network for audio packets and records those that meet your criteria. These are stored as raw PCM audio and then compressed into MP3 files. A 32-bit digital signature is added to the file to guarantee its authenticity. Both RX and TX audio are stored and separated for search purposes.

The Network Recorder can record radio traffic from standard VoIP formatted lines, EFJohnson 2600 series

Network Recorder Software

The new network recorder is sold in combinations of 12, 24, 50, and 100 licenses.

Remote Database Reviewer

Recorder Search Engine:

The Network search engine can search the recorder computer using these parameters: ANI, line number, date, time, and call duration. Unrelated calls can be removed from the search screen, and calls of interest can be copied

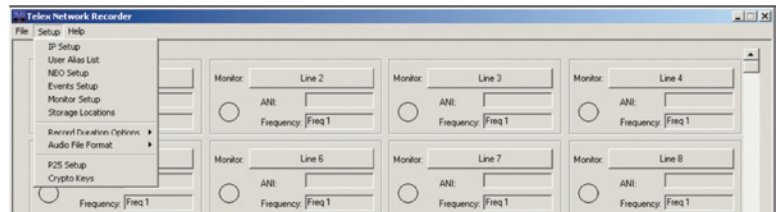
for playback on another computer or an MP3 player. Large groups of calls can be archived for permanent storage and to clear disk space. Archived calls can then be brought back into the database for later review.

The Remote Database Reviewer and Network Recorder's relationship is as client and server, respectively. The Remote Database Reviewer (client) connects to Network Recorder (server), and a session is created. While the session is active, Remote Database Reviewer is able to perform database queries and request audio from the Network Recorder server. As long as the session is active, the session's user account is also considered active. When Remote Database Reviewer is closed, the session ends, and the user becomes inactive. In order to ensure Network Recorder is able to perform its recording duties as well as hosting audio files for Remote Database Reviewer, Network Recorder allows for only six (6) sessions at a time.

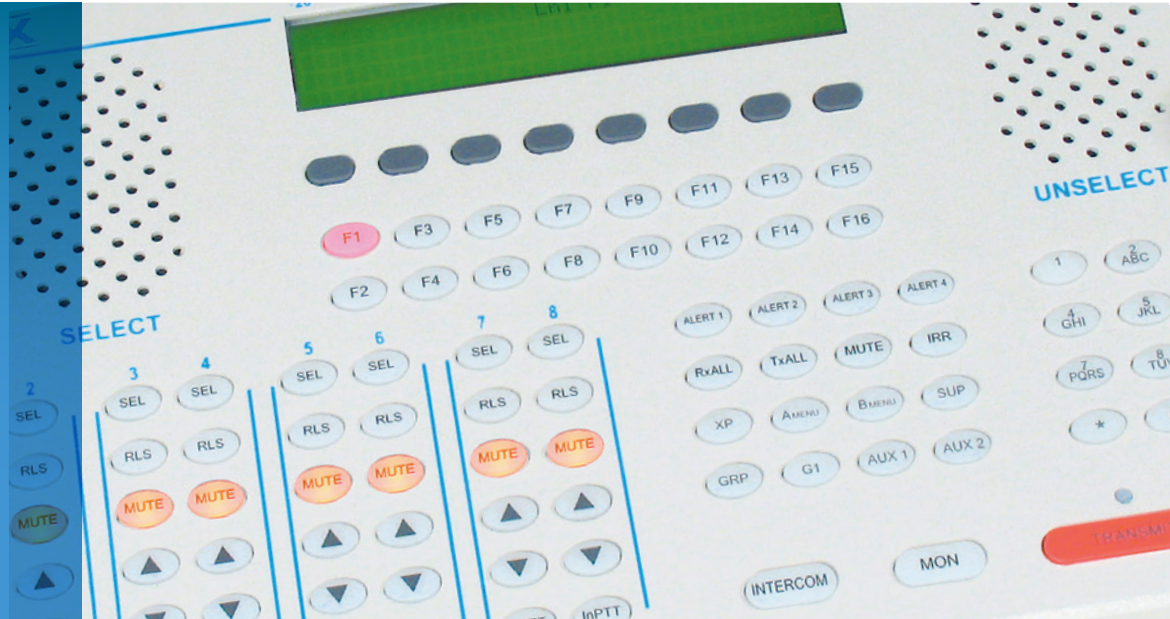
The Telex Remote Database Reviewer software is a powerful state-of-the-art tool that enables a user to remotely access the Telex Network Recorder database of audio files for playback, and data export to generate a report for portable viewing. The Remote Database Reviewer is able to stream and copy audio files and data from the Network Recorder's archive of recorded audio.

Features:

- Higher performance Rackmount PC
 - Faster CPU speed, more RAM
 - Dual 500GB hardware RAID control hard drives
 - Separate OS drive
 - 250GB SATA removable hard drive for archive
 - Easy to recover the system in case of failure
- Exportable
- Additional archive hard drive available



Hardware Consoles



IP-1616 *Eight-line IP-Based Radio Dispatch Console*

The IP-1616 is a workhorse console that offers all the dispatch features and control that you would expect from a larger, more expensive solution. Multiple IP-1616s can be used to control larger operations. Its smaller desktop footprint takes up less room at the workstation, but still offers all the dispatch capabilities and controls you need.

The IP-1616 requires no CEB or additional CPU equipment for operation. All processing and control capabilities are completely self-contained within the unit. Requires a gooseneck desktop microphone or dispatch headset for operation—all sold separately.

IP1616 Features:

- **Call history** Up to last 50 incoming calls displayed.
- **Autodial** Dials from history list and phone list.
- **Caller ID** Displays phone, iDEN, MDC, FleetSync, TETRA and 5-tone).
- **NEO-10 Support** Two NEO-10 relays from the console.
- **iDEN Support** Full support of NI-223 features, including ID, go-ahead beeps, busy signal, and manual dial.
- **Scan Feature** Scans for supported radios.
- **Emergency** Decodes incoming emergency signals from supported ANI formats.
- **Clear/Coded Transmit** Transmits to EFJ RS5300 mobile radio.
- **Radio Telephony Operation** Allows local console to change channel of the remote radio via POTS line. Also, gives operators the ability to designate certain lines to automatically failover to a standard POTS line if the IP connection fails.
- **Phone line interface** Allows interfacing to a phone line.
- **Telex System Manager (TSM)** View, manipulate, and manage multiple Telex device parameters and settings. Easily detect all Telex devices on the network for configuration.
- **Kenwood P25 TK5710/5810 serial control** Supports encode and decode of FleetSync ID and P25 ID, channel change, scan ON/OFF, and monitor. Also capable of direct serial control of Kenwood 80, 90, and 150 Series radios.
- **Generate FleetSync MSK signal at the IP223** Does not require specific Kenwood base station.

IP-1616 Features:

- Simplex/full-duplex operation (field programmable)
- Crossmute (Ethernet-based)
- Parallel console update
- Instant call Recorder (IRR)
- Telex System Manager (TSM)
easily detects C-6200 device on the network for easy firmware upgrade and configuration.
- 16-channel control
- Crosspatching of two to eight lines
- Communications with crosspatch groups while operating on unused channels
- Line select call with alarm

IP-1616 Controls:

- Monitor, intercom, and PTT button
- Up to four alert tones
- Crosspatch
- Group select, two pre-determined groups
- Supervisory control
- 16-digit DTMF keypad
- Volume controls
- Parallel TX LED detect
- Channel selection
- Instant PTT
- Four programmable buttons
- Paging (two-tone, DTMF, manual)
- A-menu and B-menu buttons



C-6200 18-Line IP/Analog Radio Dispatch Console

The C-6200 is a unique platform in the dispatch industry that can function as either an IP-based or an analog console, giving you the flexibility to deploy it in numerous settings. Perfect for any small to mid-sized operation, the C-6200 offers world-class dispatch capability and can even be configured to bridge analog and IP assets within a single unit. It's also the perfect

hardware console back-up to the Nexus IP Dispatch Position. The C-6200 requires no CEB or additional CPU equipment for operation. All the processing and control capabilities are completely self-contained within the unit. Requires a gooseneck microphone, desktop microphone, or dispatch headset for operation—all sold separately.

C-6200 Features:

- Simplex/full-duplex operation (field programmable)
- Crossmute (hardware)
- Parallel console update
- Instant Recall Recorder (IRR)
- Telex System Manager (TSM):
Easily detects C-6200 device on the network for easy firmware upgrade.
- Programmable single or dual function tones
- 16-frequency control
- Two-wire or four-wire (field programmable with optional line cards), local, and E&M
- Programmable squelch control
- Paging (multiple formats)
- Supports NEO-10 controls

C-6200 Controls:

- Monitor, intercom, and PTT button
- Up to four alert tones
- Crosspatch up to three groups
- Group select, three pre-determined groups
- Supervisory control
- 16-digit DTMF keypad
- Volume controls
- Parallel TX LED detect
- Channel selection
- Instant PTT
- Four programmable buttons
- Paging (two-tone, DTMF, manual)
- Auxiliary up to four buttons





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.

New Features:

- Call history - Up to last 50 incoming calls displayed.
- Autodial from history list and phone list.
- Caller ID (Phone, iDEN, MDC, FleetSync, TETRA and 5-tone).
- iDEN Support - Full support of NI-223 features, including ID, go-ahead beeps, busy signal and manual dial.
- Scan feature for supported radios.
- Emergency - Decodes incoming emergency signals from supported ANI formats.
- Clear/Coded Transmit for EFJ RS5300 mobile radio.
- Radio Telephone Operation - Allows local console to change channel of the remote radio via POTS line. Also gives operators the ability to designate certain lines to

automatically failover to a standard POTS line if the IP connection fails.

- Telex System Manager (TSM): View, manipulate and manage multiple Telex device parameters and settings. Easily detect all Telex devices on the network for easy configuration.
- Kenwood P25 TK5710/5810 serial control - Supports encode and decode of FleetSync ID and P25 ID, channel change, scan ON/OFF, and monitor. Also capable of direct serial control of Kenwood 80, 90, and 150 series radios.
- Generate FleetSync MSK signal at the IP223 - Does not require specific Kenwood base station.

IP-2002 Features:

- 100 talkgroup/frequency control
- Simplex/full-duplex (field programmable)
- Crossmute (Ethernet based)
- Parallel console update
- Instant Recall Recorder (IRR)
- Line select call with alarm

IP-2002 Controls:

- Monitor, Intercom, PTT
- 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, and manual)



C-1616: Six-line Analog Tone Remote Control Console

The C-1616 is designed for easy field programmability. Its modular design offers selection and control of up to six base stations and 16 frequencies. The C-1616 comes standard with two channels. Additional channels may be added by installing another two-line module—sold separately.

Its unique vacuum florescent display provides channel alpha/numeric indication, and features clock and audio-level meter. Multiple consoles can be easily programmed by using the serial port located on the back of each console. Unlike other manufacturers' equipment, the C-1616 requires no additional programming. Optional: handset/headset, gooseneck mic, desk mic, and footswitch.

C-1616 Features:

- Two-wire or four-wire per line (field programmable)
- Simplex/full-duplex per line (field programmable)
- Programmable squelch control per line
- TX monitor
- Supervisory control
- Two alert tone cadencing (keypad programmable)
- Crossmute per line (hardwire)
- TX notch filter
- Wildcard groupings (function tones)

C-1616 Controls:

- Select/unselect status for each line
- Selective call indication
- 16-function tone button selection
- TX all button
- RX all button
- Mute button
- Alert button
- AUX relay button
- Intercom
- PTT button
- 16-digit DTMF keypad
- Supervisory button
- TX detect LED for selected audio
- Line activity monitor LED for each line



C-2002: Two-line Radio Control Console

Compact, but still loaded with features, the reliable C-2002 offers crossmute and supervisory capability and programmable squelch control, which eliminates the unwanted noise generally associated with line monitoring. The C-2002 can control two base stations and select up to 99 frequencies. This DSP-designed console can be

programmed by using the DTMF keypad on the front of the console. Used with our mating DSP-223 series adapter panels, the C-2002 meets all the needs and requirements for controlling remote base stations. The console comes with a handset and panel mic. Optional: headset, desk mic, footswitch, and wall-mount kit.



C-2002 Features:

- Selective call indication
- Parallel console update
- Alert tone
- Time duration of the PTT
- Audio delay
- Function tones (programmable)
- Two-wire or four-wire (field programmable), local, and E&M
- Simplex/full-duplex (field programmable)
- Programmable squelch control
- Crossmute (hardwire)
- TX monitor
- Supervisory control
- TX and RX notch filter
- Programmable TX delay

C-2002 Controls:

- Monitor, Intercom, PTT
- Alert tone
- ALT button
- Mute, release and select (per line)
- Supervisory control
- 16-digit DTMF keypad
- Volume control (select and unselect)
- Parallel TX LED detect
- Frequency selection
- Three simultaneous microphones

C-2000, C-2000HS: Single-line Radio Control Console

The C-2000 allows dispatchers to select and control a single base station and up to 100 frequencies. It's also designed for easy field programmability using the DTMF keypad. Used with Telex's DSP-223 series adapter panels, this console meets all dispatchers' needs and requirements for controlling remote base stations. Multiple consoles can be programmed

by using the serial port located on the back of each console. Unlike other manufacturers' equipment, the C-2000 requires no additional software. The C-2000 console comes with a built-in mic. Optional: handset/headset and desk mic. The C-2000HS includes handset. Optional: headset, desk mic, footswitch, and wall mount kit.



C-2000 Features:

- Programmable single or dual-function tones
- Two-wire or four-wire (field programmable)
- Simplex/full-duplex (field programmable)
- Programmable squelch control
- TX monitor
- Supervised control
- Crossmute (hardwire)
- TX notch filter
- Alert tone/warble
- 15 programmable DTMF addresses
- Parallel console update

C-2000 Controls:

- Monitor
- Intercom
- PTT button
- 16-digit DTMF keypad
- Volume control
- Parallel TX LED detect
- Frequency selection

Telex Band-Bridge: Frequency Re-Banding Solution



In this solution, Telex IP-223, Dual Network Adapter Panels provide the functionality required for the parallel operation of two base stations and the back-to-back repeater interface. Operation is such that tone remote control of a particular mutual aid channel by the dispatcher causes both old and new frequency assignments to key and transmit simultaneously.

In the reverse direction, subscribers working through either old or new channel assignments would be heard by all parties to a particular mutual aid event. Dispatcher control will be maintained at all times where the dispatcher will have priority over subscriber communications and the capability to enable and disable the repeat function of the various channels - all via standard tone control with no modification to operational procedures in place today.

The IP-223s are employed to provide parallel control of two base stations operating with old and new channel assignments and, additionally, will provide crosspatch communication between the two base stations. In this configuration, two IP-223 panels are required and are collocated with the remote base stations. One IP-223 operates in console mode and receives dispatcher audio and control tones from the mutual aid connectivity network. The second IP-223 is configured for tone mode and is interfaced with the two base stations. The two IP-223 panels are connected back-to-back using their Ethernet interfaces.

The IP-223's offers unique capabilities to the Telex Radio Dispatch solution including its ability to handle two lines per unit, and to operate in multiple different modes straight from the factory. No other network adapter panel offers as much flexibility and capability as the IP-223.

DSP-223: Tone Remote Adapter Panel

The Telex Radio Dispatch DSP-223 Tone-remote adapter 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.



TRA-223: Tone Remote Adapter Panel

The TRA-223 tone-adapter is a simple way to remotely control radio base stations. The TRA-223 can be used in conjunction with all Telex analog consoles, or other manufacturers' consoles that use the industry-standard sequential tone keying format.

Base stations can be connected to the distant remote control console(s) by any voice-grade transmission medium-microwave link, a leased telephone line, or a twisted pair 600 ohm line, and are capable of Decoding the PTT and Monitor function tone sequence. The TRA-223 also features a front panel dip switch that allows you to select various options, such as two- or four-wire line operation along with full duplex.



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-223, IP-2002, and the IP-1616. In addition, TSM includes the ability to update firmware on the IP-223, IP-2002, IP-1616, C-6200, and the NEO-10. Telex System Manager

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

TSM Compatible With:

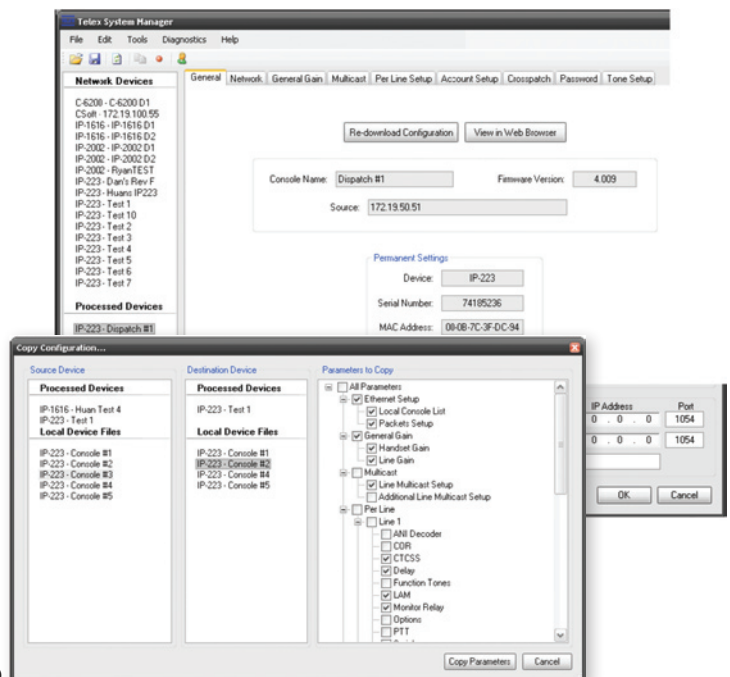
- IP-223 version 4.100 or higher
- IP-2002 version 4.100 or higher
- IP-1616 version 4.100 or higher
- C-6200 version 1.066 or higher (detected, firmware update only)
- NEO-10 version 4.001 or higher (detected, firmware update only)
- CSoft version 4.100 or higher (detected)
- Network Recorder version 4.200 or higher (detected)

FREE!
NO CHARGE
for this
application!

replaces and improves upon the existing FTP Telex and Configuration Saver programs.

Requirements:

- Windows XP SP2 or higher
- .NET Framework 2.0 or higher
- Windows Installer 3.1



V.I.P.E.R.

IP-Based Radio Control System



V.I.P.E.R. Benefits:

- Completely self-contained command center
- Easily transported and deployed
- Creates instant interoperability among disparate radio systems
- Establishes complete and robust dispatch capabilities
- Easily expands or integrates with other communications systems

Use the V.I.P.E.R. and our innovative IP dispatch technologies to create completely self-contained dispatch networks that are easy to deploy in emergency situations, providing effective communications interoperability solutions. Radio system interoperability is achieved instantly through simple crosspatches on the console. The IP-based system increases the reliability of the system and makes it easy to add additional radios or dispatch positions on scene. Because V.I.P.E.R. is based on a modular architecture, it provides the flexibility to create an exact solution for any application. Any authorized Telex Radio Dispatch dealer or integrator can help design a system that fits your needs. Our VIPER MCU and VIPER 8 can be connected together to achieve expanded capabilities.

Number of radios needed for control

Each installed Network Remote Adapter (IP-223) allows you to control and network up to two radios. The number of different radio systems you need to control will determine the number of IP-223s to include. Typically, two extra IP-223s are added to allow additional radios to be added to the system in the field.

Number of pre-configured radios for installation

When building a V.I.P.E.R., agencies and integrators often choose to have their most commonly used radios built right into the unit, which minimizes the amount of setup time in the field and provides complete interoperability and radio control in your most common deployments.

Other portable radios to add when necessary

By considering in advance which other types of radios might need to be added on the scene of an incident, you will be better prepared when the situation arises. Adding control cables is all that is necessary.

V.I.P.E.R. MCU Package includes:

- Nexus IP Laptop Computer
- 12-Line C-Soft Dispatch Console Software and Network Recorder Software included
- Four Telex IP-223 Radio Controllers
- Built-in storage drawers for laptop computer and accessories
- External speakers
- External connection for up to eight different portable radios
- External Cat-5 network connection
- Internal network switch
- 110V - 240V @ 320W max power supply
- Rugged weather resistant mil-spec case
- Overall closed dimensions 28" W x 29.5" D x 22.5" H

V.I.P.E.R. Eight Package includes:

- Four Telex IP-223 Radio Controllers
- External connection for up to eight different portable radios
- External Cat-5 network connection
- Internal network router
- 110V - 240V @ 100W max power supply
- Rugged weather resistant mil-spec case
- Overall closed dimensions 28" W x 27.25" D x 15.5" H

More Installations Than Any Other IP-Based Dispatch System.

Telex ensures seamless communications along 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. The Seaway's primary communications center is at St. Lambert, QC – one of the seven main locks that connect the Seaway's system of canals. The St. Lambert location is equipped with two primary Telex C-Soft positions

(interfaced with IP-223 ROIP adapters), one of which is a supervisory position for controlling communications over the length of the Seaway about 200 KM. Three more C-Soft positions are dedicated to controlling the locks. All of the above are backed up by two identical C-Soft positions at a smaller center at lock two in Sainte-Catherine, QC.

Telex Radio Dispatch Solution for Eastern Quebec Emergency Call Center

Remi Gignac with CAUREQ described their requirements for the new dispatch positions: "Currently we have twelve base stations, controlling both Kenwood and Motorola radios. These systems need to have Fleetsync encode and decode as well as MDC1200 encode and decode. Some of these stations also support paging as well as audio to the various Fire Departments and Ambulance Services in this remote area of Northern Quebec."

CAUREQ is now running four positions of Telex Radio Dispatch software and is interfaced to nine IP-223 interface gateways. The system gives CAUREQ the ability to respond quickly and easily to Fire and EMS requests in this very large and remote area.

IP-based Dispatch System 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?

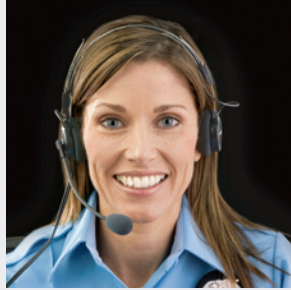
C-Soft low-bit Vocoder, there can be a bandwidth savings of up to 30 percent. This depends on how many radios and dispatch positions you want on the system. The breakdown is simple: every device you connect to the system that operates in simplex mode requires 50kBits of available bandwidth. Multiply that times the number of radios you have on the system—eight radios means 8 x 50kBit or 400kBit for effective simultaneous communications. Always make sure the network has the capacity to account for the maximum possible number of simultaneous transmissions.

Dispatch Headsets

DH2000 Single Side Dispatch Headset



DH2200 Dual Side Dispatch Headset



Weight 3.2 Ounces
Stereo No
Mic Noise Canceling Electret Microphone
Made in USA
Ear Seals Foam
Warranty 3-Years

The DH2000 Single Side Dispatch Headset & DH2200 Dual Side Dispatch Headset leverages the Telex Airman 750 headset which is a best in class lightweight headset. This headset weighs in at only 3.2 ounces and features an

amplified noise canceling electret mic for crystal clear voice transmission. A flexible boom allows microphone adjustment to preferred side, and the adjustable stainless steel headband makes it comfortable even on the longest of shifts.

DH3000 Single Side Noise Canceling Dispatch Headset



DH3200 Dual Side Noise Canceling Dispatch Headset



Weight 4 Ounces
Total Noise Reduction 12dBs
Volume Control Yes
Stereo No
Mic Noise Canceling Electret Microphone
Microphone Boom Flexible Boom
Made in USA
Ear Seals Plush Foam
Warranty 3-Years
Power Source Microphone Bias (requires boom microphone to be powered continuously.)

DH-3000 Single Side and DH3200 Dual Side is our noise canceling headset option. At just four ounces, these headsets are very light and the ear cups and cushions have been enlarged from previous models to enhance comfort. Additional features include a set-and-

forget volume control feature, noise-canceling electret microphone 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.

Dispatch Desktop Microphone

Telex offers three different types of desktop microphones for use with all of our console products. Microphones are sold separately from consoles.

MD-MS Specifications

Type: Dynamic Microphone
Directivity: Omni-directional
Sensitivity: $-14 \pm 4\text{ dB}$ at 1KHz
($\text{Odb}=1\text{V/microbar}$)
Frequency Response: 200 Hz-5 KHz
Cable: 4 Conductor, 2 Shield, 1.5m 3 5cm
Dimensions:
— Height: 1.43 mm
— Width: 67.5 mm
— Length: 12.9 mm

6513C Dynamic Specifications

Frequency Response: 125 Hz-5,000 Hz
Polar Pattern: Cardioid, noise-canceling
Impedance: 150 Ohms
Output Level: -57 dB
($0\text{ dB} = 1\text{ mW}/10\text{ dynes}/\text{cm}^2$)
Case Material: Pressure-cast zinc and Cylolac
Finish: Black
Dimensions:
— Height: 246.1 mm (9.69 in.)
— Width: 114.3 mm (4.5 in.)
— Depth: 122.2 mm (4.81 in.)

Net Weight: 822 g (1 lb., 13 oz.)

Switch: Leaf, DPDT, switches external circuit and shorts or opens mike in OFF position

Cable: 2.13 m (7 ft.) long, 5-conductor, 2-shielded, vinyl jacket, black

DT-GN Specifications

Generation Element:
Condenser, back-electret
Frequency response: 100 Hz to 15,000Hz
Polar Pattern: Cardioid
Sensitivity, Open Circuit Voltage: 8.0mV
(-42 dB)/pascal @1kHz
Power Level, 1kHz (0 dB = 1 mW/pascal):
-44 dB
Dynamic Range: 102 dB
Output Impedance:
Compatible with RTS keypanels
Power Requirements:
1.5 VDC to 9 VDC phantom supply
Current Consumption: <500 μA
Color: Non-reflecting black
Environmental Conditions, Relative Humidity 0-95%: -29° to 74°C
(-20° to 165°F) Storage
Relative Humidity 0-50%: -29° to 57°C
(-20° to 135°F)
Mounting: Male threaded TRS
Dimensions - Knurled Stem to Head Length:
Maximum Head Diameter: 14 mm (0.55 in.)
Gooseneck Diameter: 6.4 mm (0.25 in.)
Electronics Module Diameter: 20 mm (0.79 in.)
Accessories Furnished:
Specially designed windscreen to prevent overloading and distortion in normal operation.

PC Desktop 18RD Specifications

Generation Element:
Dual condenser, back electret
Frequency Response: 50 Hz - 20,000 Hz
Polar Patterns:
Omnidirectional
Cardioid
Supercardioid
Hypercardioid
Switches and Controls:
Top mounted momentary push-button
Configuration switches
Sensitivity, Open Circuit Voltage, 1 kHz:
5.6mV/Pascal
Clipping Level (1% THD): >135 dB SPL
Equivalent Noise:
<26 dB SPL "A" weighted
($0\text{ dB} = 20\text{ micropascals}$)
Dynamic Range: >109 dB
Output Impedance, 1 kHz: 200 ohms
Power Requirements: 12-52 VDC
Current Consumption:
<8 mA with P12 supply
Polarity:
Pin 2 positive, referenced to pin 3, with positive pressure on the diaphragm
Cable:
10-foot, 5-conductor (2-conductor shielded) black cable, terminated with a professional 3-pin male XLR style connector with gold plated pins
Logic Levels:
Standard TTL levels for switch out and LED control
5 Volts = Logic High
0 Volts = Logic Low
Dimensions:
Base Length = 175 mm (6.9 in.)
Base Width = 117 mm (4.6 in.)
Base Height = 56 mm (2.2 in.)
Gooseneck Length= 470mm (18.5 in.)
Max Head Diameter= 14.6 mm (0.58 in.)
Gooseneck Diameter, Upper= 6.4 mm (0.25 in.)
Gooseneck Diameter, Lower = 7.9 mm (0.31 in.)
Accessories Furnished: Windscreen
Optional Accessories:
WS-PC1 Large Windscreen
Color: Nonreflecting Black
Environmental Conditions:
Relative Humidity, 0-50%:
 -29° to 74°C (-20° to 165°F)
Relative Humidity, 0-95%:
 -29° to 57°C (-20° to 135°F)
Net Weight: 730 grams (25.8 oz)
Shipping Weight: 1111 grams (39.2 oz)

MD-MS
0118022
Omni-
Directional
Electret
Microphone



6513C-
30190500
Noise-
Cancelling
Dynamic
Microphone



DT-GN-18
Desktop
Gooseneck
Microphone



PC DESKTOP-18RD
Polar Choice
18" Microphone



Bosch Security Systems, Inc.
Telex Dispatch Products
8601 East Cornhusker Highway
Lincoln, NE 68507
(800) 752-7560

www.telex.com/radiodispatch

