

**TELEX**  
*Radio Dispatch*

**VOIProven** 



# IP-Based Dispatch



## *Why should I consider an IP-based radio dispatch system?*

- **IP-based dispatch enables effective communications interoperability.** Dispatchers can connect and control UHF, VHF, 800Mhz, conventional, trunked, P25, iDEN, satellite, and many other communications platforms.
- **IP-based dispatch can lower overall cost of ownership by simplifying installation, configuration, and maintenance.** Telex systems can also help you replace costly traditional infrastructure like leased lines and even your Central Electronics Bank.
- **IP-based dispatch makes for easy system growth and back-up.** Your communications system can evolve as your needs change or as applications demand.

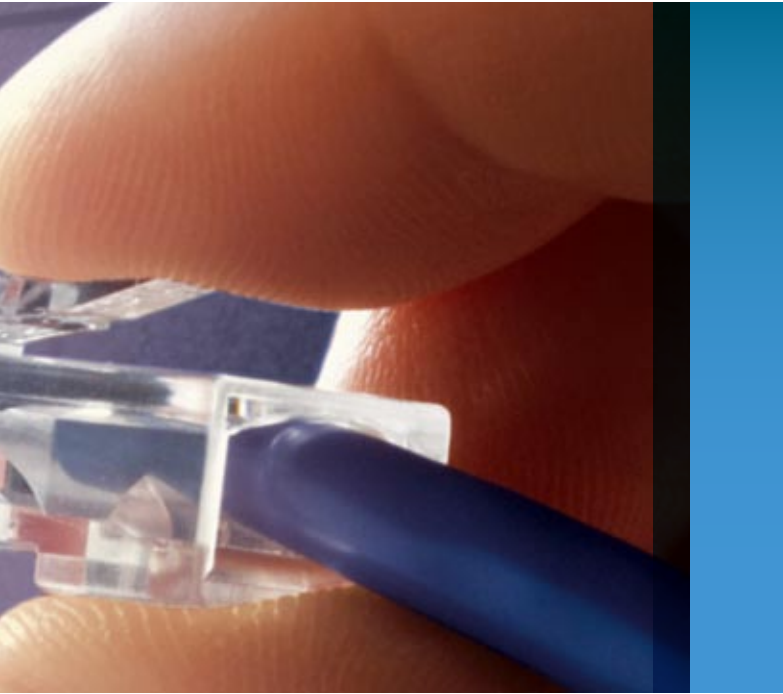
## *Why should I choose the Telex IP-based system?*

Telex invented IP-based dispatch technology, and was the first to offer IP-based solutions back in 2001. Telex has more experience and active installations than any other manufacturer—more than 3,000 Telex IP-based consoles are in use every day around the world.

## *Who should consider dispatch solutions from Telex?*

Telex has solutions available for installations of almost any size and application. We have had proven success in public safety, military, industrial, transportation, utility, and education applications. We also offer complementary solutions to enhance the capabilities of existing systems, including:

- **Portable dispatch and interoperability solutions for crisis communications**
- **Easy install mobile command center equipment**
- **Communications center back-up and redundancy solutions**
- **Technology migration solutions that allow agencies to move toward new standards while maximizing their investment in existing technology**



## More Installations Than Any Other IP-Based Dispatch System.

### *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

### *Mid Georgia Ambulance Service selects Telex’s revolutionary IP-based dispatch solution*

Mid Georgia Ambulance Service chose Telex’s revolutionary IP-based dispatching solutions, allowing them to replace their leased line with a low-cost DSL network connection, all at a significant monthly savings. The IP-based infrastructure also facilitates radio network expansion as their response area continues to grow. Connecting additional towers and adding dispatch positions or radios are simple IP connections. The system linked Mid Georgia’s VHF radios to the Southern LINC, iDEN radios by connecting both to a C-6200, 18-line dispatch console. The C-6200 bridged all of the disparate systems onto the IP network, and

they were then accessible from all five of the primary dispatch positions, each running C-Soft Dispatch Console Software. “This will be the way to communicate in the future,” states Joe Robinson, Chief Operating Officer. Expressing great pleasure in not only the system performance, but also the service by the Telex representatives who installed it, Mid Georgia now plans to expand it to all of their operating sites statewide. With future expansion to other remote sites on the horizon, Mid Georgia is excited about the ability to simply plug into their existing network.

—Joe Robinson, Chief Operating Officer  
Mid Georgia Ambulance Service

### *Telex Radio Dispatch brings flexibility to University of Phoenix Stadium*

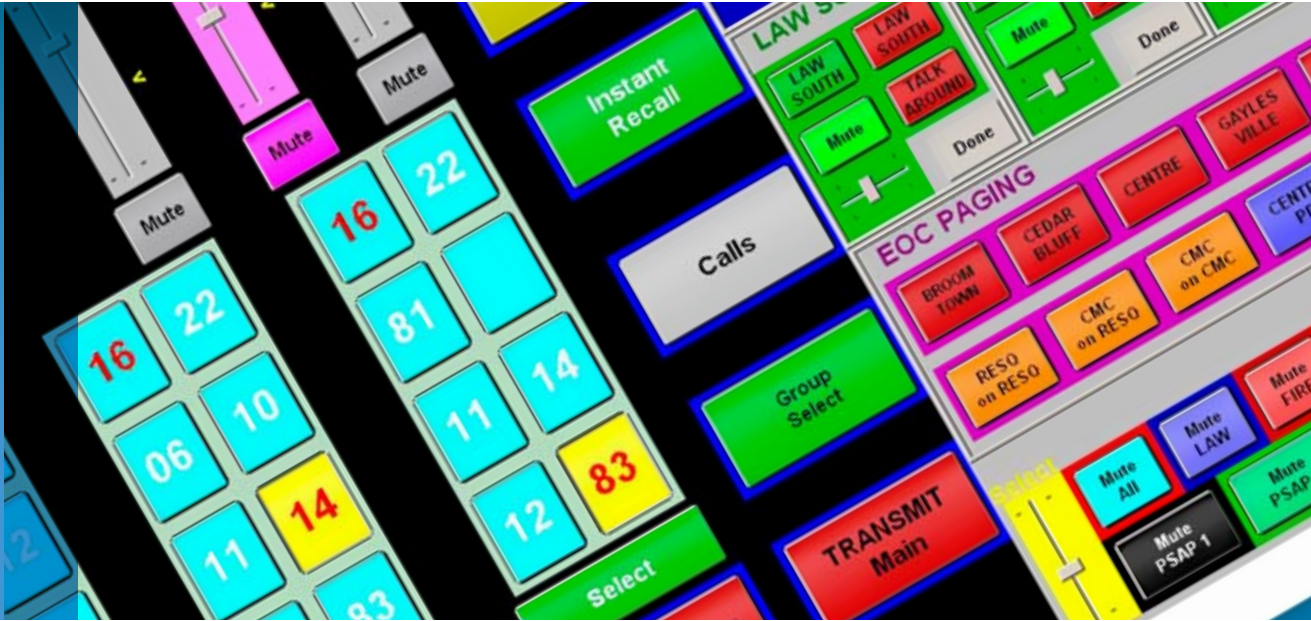
“The 24-hour stadium security team covers a multitude of responsibilities during its rotating shifts, including video surveillance, fire alarms, door/gate monitoring and answering after-hour incoming phone calls. An easy-to-use dispatch system was essential, especially

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

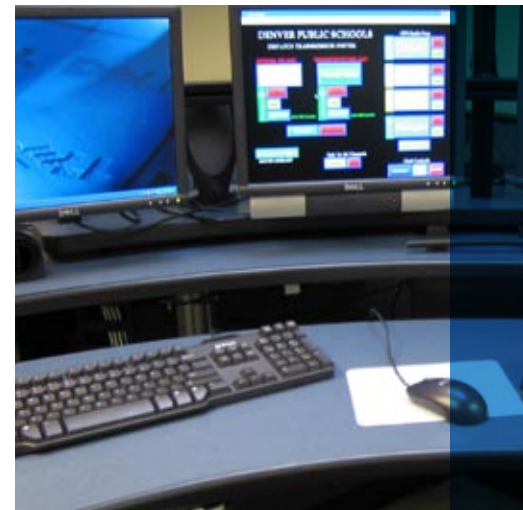


C-Soft is the industry's most flexible and capable software dispatch console, and is the perfect application for any dispatch environment. C-Soft delivers all of the dispatch capabilities you expect while also giving you the flexibility that only an IP-based software console can provide: simple and quick 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.

### PC Requirements:

- Operating System: Windows XP required
- Sound System: Full duplex Windows compatible sound system. Sound Blaster or HW compatible recommended.
- Network Connection: 10Mbps or 100Mbps TCP/IP connection
- Processor Speed: Celeron 500 or greater
- Memory: Minimum of 64Mbytes 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.



**MDC1200  
Encode  
coming soon!**

## Specifications:

### Available Configurations:

- C-Soft is available in configurations from two to 200 lines.

### User Interface:

- User-controlled configurations for any dispatch application.

### Signaling Capabilities:

- MDC1200 encode and decode, 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 three 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 the Telex HB-3 Plus, C-Soft can interface with all common dispatch communication audio sources, including headsets, desktop microphones, external speakers, 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.
- Per line configuration for each SIP account. SIP is only available with 24 lines of C-Soft dongle or above.

### Multiple Vcoders:

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

### Special Interfaces:

- iDEN, TETRA, P25, and Phone/PSTN

# IP-223

## Dual IP Network Remote Adapter Panel



The Telex IP-223 IP Network Remote Adapter is the heart and soul 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.

Coming Soon...  
MDC1200  
Encode and  
NexEdge

## IP-223 Functions and Capabilities:

- 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 - Does not require specific Kenwood base station.
- Advanced compatibility with multiple radio manufacturers - Motorola, Kenwood, EF Johnson, iDEN, Sepura, Elutions.
- 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 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 Console Position Standard Dispatch Position:

- 17" LCD monitor
- Keyboard and mouse
- HB-3 Plus headset adapter
- DH-2000 single-sided dispatch headset
- Desktop speakers

### Available Options:

- 19" LCD monitor
- 17" Touch screen monitor
- 19" Touch screen monitor
- Dual monitor configuration in both 17" or 19" and in LCD or touch screen
- Footswitch
- Laptop option available
- DM200 microphone





# 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.



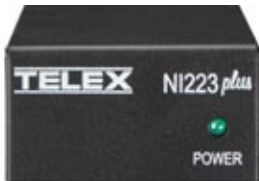
### TDI Benefits:

- 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.

## N1223 plus

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.



With New Enhanced Audio Quality!

### NI-223plus 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.
- Simple configuration and installation.
- Digital interface gives complete control, including channel change, ANI (P25 and others), emergency status, scan on/off and encryption on/off.

# V.I.P.E.R.

## IP-Based Radio Control System



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

- Completely self-contained mobile 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.

### 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

## HB-3 Plus: *Headset Adapter Panel*

This new model, an update from the popular HB-3 Headset Adapter Panel, features several significant performance enhancements. An updated mechanical design and durable steel construction improves the durability of the unit in heavy-use environments. New microphone and headset input circuits provide expanded compatibility, allowing 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. The PC mode is compatible with C-Soft and allows for the use of standard dispatcher quality 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 advanced features of the HB-3 Plus.

### HB-3 Plus Features:

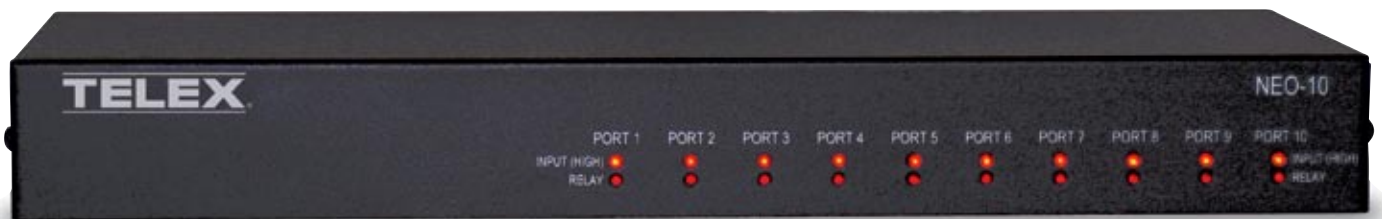
- Desk mic input
- Footswitch inputs
- Relay outputs
- Recorder outputs
- Diode-blocked inputs
- NENA telephone interface
- Console connection
- Serial port

### 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. 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.

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.

# Network Recorder



## 4.200: Network Recorder Software

The new NR-V2 is sold in combination with the Network Recorder 4.200.

### 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.

**Remote Monitor Capability** (NR Monitor Application) notifies users that an error in the system has occurred. Monitors the status of Network Recorder Remote

Application.

- 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 P25 digital repeaters, and also perform positional recording. The positional recorder lets you record the select, unselect, and mic audio of a specific console.

**Coming Soon... Remote Database Receiver will be a FREE upgrade**

## 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.

## NR-V2: Network Recorder

### NR-V2 Specifications:

- 4U Rackmount ATX chassis with front USB, 3x5.25"(ext.), 2x3.5"(ext.) and 1x3.5"(int.) drive bays. Color: Black Dimensions: 7"H x 19"W x 17.7"D (with rounded handles).
- Antec EarthWatts EA430 430W ATX 12V Power Supply with active PFC and auto-switching.
- Intel DQ35JO Core 2/Quad, Intel Q35 Chipset, FSB 1333/1066/800, Intel vPro Ready, Audio, Video, and Gigabit Ethernet Micro-ATX Motherboard.
- Intel Core 2 Duo Processor @ 2.2GHz, E4500 800MHz FSB, 2MB Cache LGA775 CPU with Intel RoHS Heatsink/Fan.
- 4GB 667MHZ DDR2 Memory.
- Adaptec 1220SA SATA2 RAID 2-Port 1x PCI-Express Controller for Data Drive Raid Array with two Seagate ST3500320AS 500GB SATA2 7200rpm Hard Drives Configured for Database in Raid 1 (Mirror) Configuration on Raid Controller Card.
- ICY Dock SATA hard disk drive Removable Drive Kit with keylock and fan including a Seagate ST3250410AS 250GB SATA2 7200rpm 16MB NCQ Hard Disk Drive installed into Icy Dock.
- One Seagate ST3250410AS 250GB SATA2 7200rpm 16MB NCQ Hard Disk Drive installed as OS Base.
- A Samsung DVDRW (Black) with CDBurnerXP and Nero OEM installed.
- Creative Labs SB Audigy 7.1 SBO610VP.
- US English Keytronics Lifetime Classic II Keyboard (BLACK) and Logitech LX3 Optical Mouse.
- Integrated Intel Graphics Media Accelerator X3100.
- Integrated Intel 82566DM Gigabit Ethernet Controller.
- Integrated 1x RS232, 1x IEEE1394a, 1x Parallel, 8x USB ports, 1x PCI.
- Express x16 slot, 1x PCI Express x1 slot, 2x PCI 2.2 slots.
- Acronis TrueImage OEM Recovery Software.
- Microsoft Windows XP Pro SP2 OEM.

### NR-V2 Features:

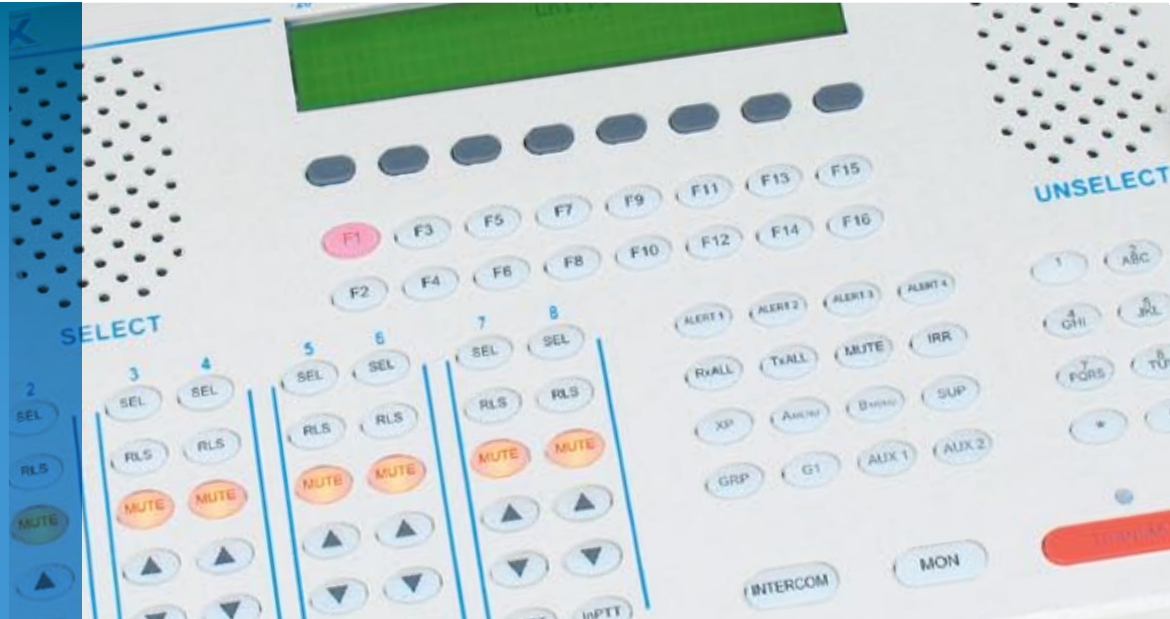
- Higher performance Rackmount PC
  - Faster CPU speed, more RAM
  - 250GB hardware RAID control hard drive
  - Separate OS drive
  - 250GB SATA removable hard drive for archive
  - Easy to recover the system in case of failure
- Exportable
- Additional archive hard drive available



Removable  
archive  
hard drive



# 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.

### New Features:

**TSM and FleetSync Encode Available on new release 4.100 software**

- 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).
- NEO-10 Support - Able to control 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 for supported radios.
- Emergency - Decodes incoming emergency signals from supported ANI formats.
- Clear/Coded Transmit for 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.
- 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:

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

### IP-1616 Controls:

- Monitor, intercom, 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
- A-menu and B-menu buttons
- Four programmable buttons
- Paging (two-tone, DTMF, manual)



## 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:

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

### C-6200 Controls:

- Monitor, intercom, 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
- Auxiliary up to four buttons
- Four programmable buttons
- Paging (two-tone, DTMF, manual)

**C06200  
Now  
Available  
in version  
4.100  
Software**



# 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).
- NEO-10 Support - Able to control 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 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
- NEO-10 relay control
- 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 cadence (keypad programmable)
- Crossmute per line (hardwire)
- TX notch filter
- Wildcard group 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

## 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, a 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

TSM (Telex System Manager) 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 include:

- 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:

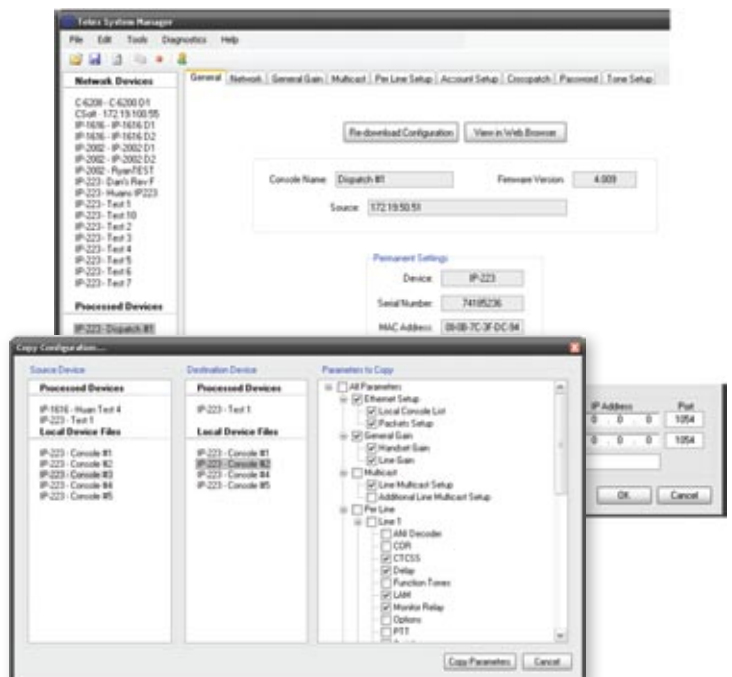
- IP-223 version 4.100 or higher
- IP-2002 version 4.100 or higher
- IP-1616 version 4.100 or higher
- C-6200 version 1.066 or higher (detected, firmware update only)
- NEO-10 version 4.001 or higher (detected, firmware update only)
- CSOFT version 4.100 or higher (detected)
- Network Recorder version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



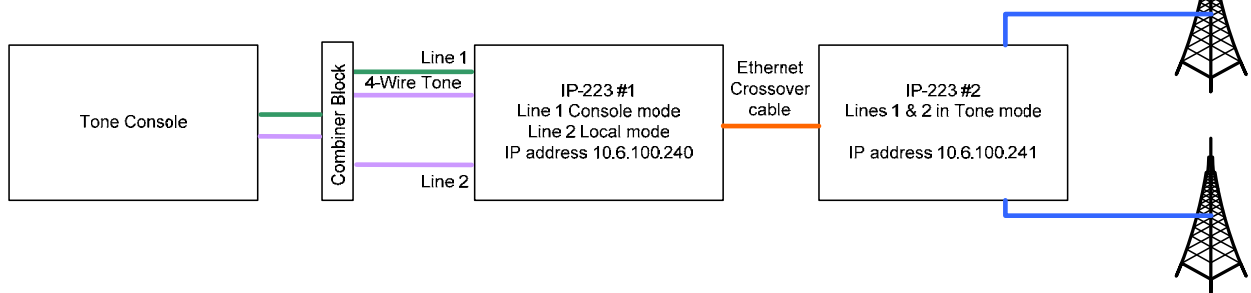
# Telex Band-Bridge

## Frequency Re-Banding Solution



As agencies across the country prepare for band reconfigurations, one universal constant will be encountered wherever the process is undertaken, not all agencies will be able to re-band at the same time, or together. Therefore, it is necessary to provide for simultaneous operation on both old and new channel

assignments during band reconfiguration to avoid stranding any user that may be party to a response. That's why Telex has developed the Band-Bridge frequency re-banding solution, an off-the shelf solution designed to accomplish exactly this task.



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 this 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.

# More Installations Than Any Other IP-Based Dispatch System.

## *Morgan County, GA 9-1-1 Dispatch Center Update*

The Morgan County, GA 911 dispatch center's radio consoles were all but obsolete, sending county officials in search of a new solution. As more and more public safety agencies in the region were turning to iDEN systems to supplement their two-way communications, the 911 center realized it needed a communications platform that would enable interoperability between

disparate phone and radio networks. Morgan County chose Telex's IP-based dispatch solution with the NI223 iDEN Phone Interface. Operating on the county's IP network, the 911 center was able to implement a full-featured dispatch system at a fraction of the cost of traditional radio consoles.

## *Telex IP-223 Provides Solution for Galveston County Office of Emergency Management*

"We selected a Telex RoIP as a solution for our emergency management and interoperability radio communications needs. Through the combined efforts of the Galveston County Office of Emergency Management and the Galveston County Emergency Communication

District, we are not only implementing an in-house dispatch console system but also a countywide link to the VHF/UHF interoperability frequencies for all PSAP's."

Lee Lockwood, Operations Coordinator  
Galveston County Office of Emergency Management

## *IP-based Dispatch System Question*

### **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 the release of C-Soft 4.100 and the enhanced 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 / Mics



## *DH-2000 Single Side & DH-2200 Dual Side Dispatch Headset*

Telex is the world's largest manufacturer of commercial aviation headsets. We've taken our most popular headset, the Airman 750, and applied it to another mission critical

application—dispatch. You'll enjoy noticeably superior comfort and audio quality.

### **DH-2000, DH-2200 Features:**

- Lightweight and comfortable—just 3.2 oz.
- Amplified, noise-canceling electret microphone for amazingly clear transmit audio
- High/Low volume switch
- User-replaceable ear cushions
- Your choice of 10- or 25-foot lower cord, with pistol grip PTT and featherlite, quick disconnect connections for comfort and safety

## *DH-3000 Single Side Noise Canceling Dispatch Headset*

## *DH-3200 Dual Side Noise Canceling Dispatch Headset*

Dispatch centers can be noisy. That's why we're introducing the world's first active, noise-canceling dispatch headsets, based on our best selling Airman 850.

Both reduce background noise by a full 12dB, improving clarity and reducing fatigue.

### **DH-3000, DH-3200 Features:**

- Lightweight and comfortable—just 3.4 oz. and 4 oz.
- Amplified, noise-canceling electret microphone for amazingly clear transmit audio
- High/Low volume switch
- User replaceable ear cushions
- Your choice of 10- or 25-foot lower cord, with pistol grip PTT and featherlite, quick disconnect connections for comfort and safety

### **Audio Interface Options:**

Choose the audio interface to your console that works best for you and your environment. We offer a variety of

microphones and headsets to deliver high performance, convenience, and comfort.

## Desktop Microphones for Dispatch Consoles

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 (0db=1Vmicrobar)
- **Frequency Response:**  
200 Hz-5 KHz
- **Cable:** 4 Conductor, 2 Shield, 1.5m  $\pm$  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-cancelling
- **Impedance:** 150 Ohms
- **Output Level:**  $-57\text{ dB}$  (0 dB = 1 mW/10 dynes/cm<sup>2</sup>)
- **Case Material:** Pressure-cast zinc and Cyclocac
- **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

### GNM Specifications:

- **Generation Element:** Condenser, back-electret
- **Frequency response:** 100 Hz to 15,000 Hz
- **Polar Pattern:** Cardioid
- **Sensitivity, Open Circuit Voltage:** 8.0mV ( $-42\text{ dB}$ )/pascal @1kHz
- **Power Level, 1kHz (0 dB = 1 mW/pascal):**  $-44\text{ dB}$
- **Dynamic Range:** 102 dB
- **Output Impedance:** Compatible with RTS keypanels
- **Power Requirements:** 1.5 VDC to 9 VDC phantom supply
- **Current Consumption:**  $<500\ \mu\text{A}$
- **Color:** Non-reflecting black
- **Environmental Conditions, Relative Humidity 0-95%:**  $-29^\circ$  to  $74^\circ\text{C}$  ( $-20^\circ$  to  $165^\circ\text{F}$ ) Storage
- **Relative Humidity 0-50%:**  $-29^\circ$  to  $57^\circ\text{C}$  ( $-20^\circ$  to  $135^\circ\text{F}$ )
- **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.



MD-MS  
0118022  
Omni-Directional  
Electret Microphone



6513C-  
30190500  
Noise-Cancelling  
Dynamic Microphone



GNM-18  
Desktop Gooseneck  
Microphone

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

[www.telex.com/radiodispatch](http://www.telex.com/radiodispatch)

