TELEX
Radio Dispatch

WORKS FOR **YOU**

IP-224 is the next generation of IP radio gateway to form the heart of the Telex Radio Dispatch System.

Based upon the Linux operating system, the IP-224 provides an extremely reliable means of remote-controlling two audio devices. The IP-224 can be easily configured to work with both digital and analog consoles, and it performs a wide variety of other tasks related to using radios on a digital network, including state-of-the-art system diagnostics.

PRODUCT INFORMATION

Base Hardware

SAP #	Description
F.01U.306.547	IP-224 Radio Gateway (includes MDC and Fleetsync)
F.01U.347.907	IP-224 Radio Gateway Advanced Options NA
F.01U.347.906	IP-224 Radio Gateway Advanced Options Export

Software Options

SAP #	Description
F.01U.343.869	IP-224 Field Code Advanced Options NA
F.01U.343.868	IP-224 Field Code Advanced Options Export

Accessories

SAP #	Description
F.01U.319.163	IP-224 to Hytera DMR interface cable
F.01U.165.538	IP-224 mounting brackets (dual)
F.01U.165.539	IP-224 mounting brackets (single)
F.01U.165.540	IP-224 cable - Kenwood TK-X150/X180, 5X10 and NXDN radios
F.01U.165.541	IP-224 cable - Kenwood TK-X90 radio
F.01U.165.544	IP-224 DB-37 cable assembly to 4-Wire tone cable
F.01U.165.545	IP-224 Motorola CDM/PRO cable interface
F.01U.165.548	IP-224 EFJ 5300 radio interface (cable only)
F.01U.165.554	IP-224 MTRBI radio interface (includes cables)
F.01U.165.542	IP-224 to Sepura interface cable
F.01U.306.539	IP-224 to Hytera Tetra interface cable
F.01U.306.540	IP-224 to PowerTrunk TETRA interface cable
F.01U.306.543	IP-224 to Tait P25 and DMR interface cable
F.01U.306.546	IP-224 to ICOM IDAS interface cable
F.01U.306.549	IP-224 to MOTOTRBO interface cable
F.01U.117.426	Alignment handset

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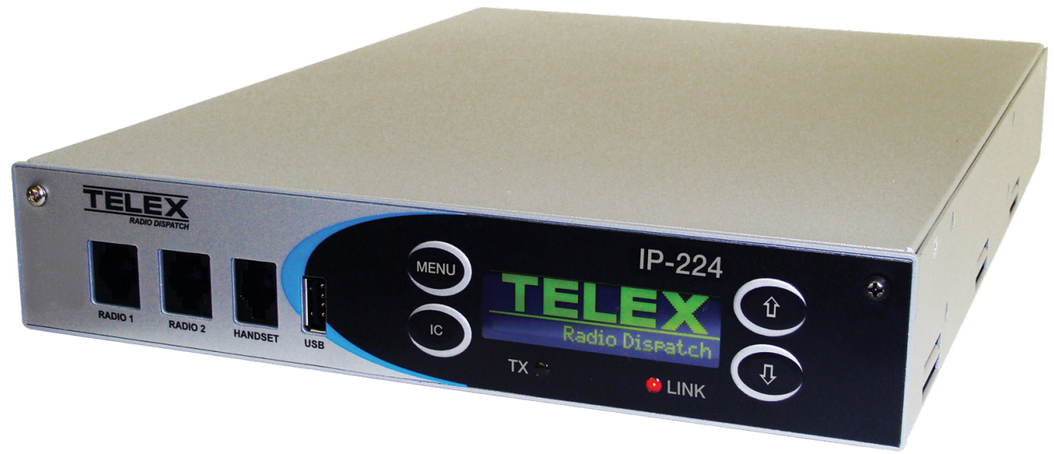
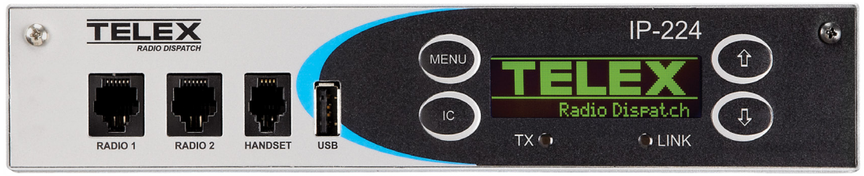
IP-224 IP RADIO GATEWAY



IP-224 IP Radio Gateway

The IP-224's sleek design combines form with function, allowing easy installation, operation, and servicing. The unit may be rack-mounted or placed directly on a desktop, and it is equipped with an LCD display to clearly provide user feedback when programming. VU meters are also provided via the display for alignment purposes. All other configurations are completed in the web browser configuration windows.

The IP-224 is backward compatible, allowing the use of IP-224 and IP-223 adapters in the same system. This will allow a migration to the new products when desired.



FEATURES:

PTT (Push-To-Talk), monitor, and F1 and F2 relays (programmable to any function tone or revert to F1)	Secure remote web-browser-based programming and configuration
Eight digital outputs for channel selection, completely programmable per function tone	Nine selectable PTT frequencies
CTCSS (Continuous Tone Coded Squelch System) generation (64 frequencies)	Software gain control
Local handset port for monitoring activity and transmission back to base or to radio, uses optional AHS-1 alignment handset.	Menu-driven front panel controls for TX, RX, spare audio, IP addressing, and CTCSS
ANI (Automatic Number Identification) over-the-air-protocol decode and display	Supports USB, RS485, CAN-bus, RS232, and TTL
RX AGC (Automatic Gain Control)	Single- or dual-function tone generation
RX (Receive) audio squelch	Backwards compatible with Telex Radio Dispatch equipment
SoIP (Serial-over-Internet Protocol)	Number of channels or talk groups up to 1000
Crosspatch mode, console mode, redundant ethernet	Four PTT modes and three monitor modes
Guard tone user-selectable for 2100 Hz, 2175 Hz, 2300 Hz, 2325 Hz, 2400 Hz, 2600 Hz, 2800 Hz, 2850 Hz, or 2900 Hz	SNMP
MDC-1200 and Fleetsync encode and decode	Generic API Available

Advanced interface Option:

- P25 (Kenwood/Tait)
- Kenwood NEXEDGE®
- Icom IDAS™
- TETRA (Hytera/PowerTrunk/Sepura)
- Sprint Direct Connect
- MOTOTRBO™
  (This feature is only available for North America)
- E.F. Johnson RS5300 P25 radio Interface
- DMR (Tait/Hytera)
- iDEN Interface

Available Accessories:

- Single or dual rack mounts
- AHS-1 handset
- Radio Interface cables, please see backside for list

This specification information is subject to change without notification.
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IP-224 Specifications

Power Requirements	+11 VDC to +16 VDC, 600 mA maximum
Ethernet Speed	10 BaseT or 100 BaseTX
Flash Memory	128 MB
SDRAM Memory	128 MB
Lease Line	2-Wire and 4-Wire supported
Radio Interface	345 VDC withstand rating
Hum and Noise	60 dB below rated output for each line
Non-Relay Outputs	Open collector, active low, 200 mA maximum, 40 V collector to emitter voltage
Radio Input Level	10 mVp-p to 10 Vp-p, adjustable
Line Output Level	10 mVp-p to 10Vp-p, adjustable (Single-Ended)/20 mVp-p to 40 Vp-p, adjustable (Balanced)
Tone Frequencies	Single or dual function tone generation
Function Tone Range	0—3200 Hz, adjustable in 1 Hz increments
Total Tone Duration	0—999 ms
Tone Magnitude	-60 dB to +12 dB
Vocoder	ADPCM 32/16 Kbits, 50 Kbits simplex (active channel) or 34 Kbits respectively, G.711 64Kbit at 82Kbit
Relay Contact Ratings	1A at 63V AC/DC
Digital I/O Ratings	Pull up/pull down/float 3.3 VDC/5 VDC/12 V 10K Ohm Pull up
Transmit Output Impedance	600 Ohms for balanced mode, 200 Ohms for single-ended mode
Receive Input Impedance	10/600/10 K Ohms (User-selectable)
Audio Distortion	2% THD maximum
Audio Frequency Response	300 Hz to 3000 Hz + 1, -3 dB less than 3% distortion
LAM Sensitivity	-50 dB to +10 dB
COR Sensitivity	User selectable rising or falling edge from radio
DTMF Detection Bandwidth	325 Hz around center of frequency
Monitor Timer	10 ms to 9999 ms, adjustable
Control Type	32-bit Digital Media Processor
Electro Static Discharge Immunity	8 kV on all exposed operator control areas. At 8 kV no operation is disturbed. At 8 kV no permanent damage.
Line Protection	Fast-acting solid state surge protection
Memory Protection	Settings preserved in non-volatile memory
Level Controls	Menu driven front panel controls for TX, RX, spare audio and CTCSS
Operating Temperature Range	0° to 50° C (32° to 122° F) for full specifications
Storage Temperature Range	-30° to 65° C (-22° to 149° F) for full specifications
Dimensions (H x D x W)	1.625" x 11.5" x 8.5" (41.3 x 292.1 x 215.9 mm)
Actual Weight	4.125 lb (1.9 kg)
Shipping Weight and Dimensions (H x D x W)	7 lb (3.18 kg), 5" x 15" x 16" (127 x 381 x 406.4 mm)