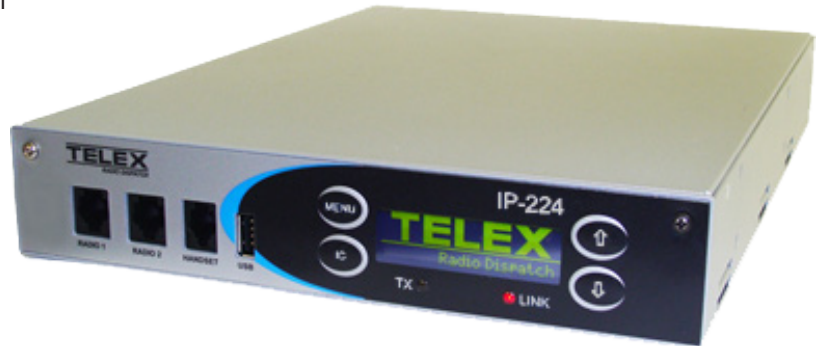


IP-224

Ethernet Adapter Panel

The IP-224 Ethernet Adapter Panel provides a means of controlling two (2) radio devices remotely. The IP-224 can be configured to operate in modes that allow it to connect to both digital and analog radios, and perform a variety of other tasks related to using radios on a digital network.

The IP-224 can be rack mounted providing easy installation and service. A sleek LCD display provides user feedback when programming. VU meters are provided on the front of the display for alignment purposes. All other configurations are completed in the web browser configuration windows.



Features

IP addressable network device with SNMPv3 capability	Provide basic parameter setup directly from the front of the unit including gains and network setup	Direct Radio Control
IPv6 compliant for product addressing and configuration.	Support multiple serial protocols	EF Johnson
Simultaneously interface to two (2) audio devices (radio, repeater, etc.)	including RS-485, RS-232, TTL, CAN, USB 2.0	5300 ES Series 53SL ES Series Viking VMx00 Series VM-x000 Series P25
Up to 1000 function tones supported when operated with C-Soft	PTT (Push To Talk), Monitor, F1 and F2 relays	Hytera
Ethernet TX and LINK LEDs	Four (4) PTT Modes and Three (3) Monitor Modes	Hytera MD782 Hytera MT680
Software Gain Control	Support Console Mode	ICOM NXDN Radios
Software based hardware setup	Provides the capability to interface to analog consoles	IC-Fx061 Series IC-Fx400D Series IC-F7540
Handset Port for Monitoring Activity and Transmission	Support Tone Mode	Kenwood ¹ Radios:
AGC (Automatic Gain Control)	1000 programmable function tone frequencies	x80 Series x90 Series x150 Series x180 Series 5x10 Series
RX (Receive) Audio Squelch	Single or Dual Function Tone Generation	NX-700/800 Series NX-5000 Series VM5x30
ANI (Automatic Number Identification) Over the Air Protocol	Adjustable Guard, Function, and Hold Tone duration and magnitude	Motorola MOTOTRBO ²
SOIP (Serial Over Internet Protocol)	PTT Guard Tone User Selectable for 2100Hz, 2175Hz, 2300Hz, 2325Hz, 2400Hz, 2600Hz, 2800Hz, 2850Hz, 2970Hz, or 3200Hz	XPR4550 XPR5350 XPR5550
Support serial over IP for data exchange	Local radio control	PowerTrunk
3rd Party Radio API Available	Programmable per function tone (up to 1000)	MDT-400
MDC ¹ and Fleetsync ¹ Encode/Decode	Hardware PTT relay	Sepura TETRA Radios
Redundant Ethernet Interface	CTCSS (Continuous Tone Coded Squelch System) generation (up to 64 frequencies)	SRM2000 SRG3500
Analog tape output	Eight (8) Digital Outputs for Channel Selection	Tait Mobile Radio
IP Positional Recorder Output with Auto Switching capability	Backwards Compatible with Telex Radio Dispatch Products	TM9100 TM9300 TM9400
Configure the device easily using web page interface or Telex System Manager tool		
Monitor audio levels via status web page interface		

¹ See copyright notice * on back.

² See copyright notice ** on back.

Specifications

Power Requirements	 +11Vdc to +16Vdc, 600mA nominal at 12Vdc
Ethernet Speed	 10BaseT or 100BaseTX
Flash Memory	 128MB
SDRAM Memory	 256MB
Lease Line	 2-Wire and 4-Wire supported
Radio Interface	 ±45Vdc withstand rating
Hum and Noise	 60dB below rated output for each line
Non-Relay Outputs	 Open collector, active low, 200mA max., 40V collector to emitter voltage
Radio Input Level	 10mVp-p to 10Vp-p, adjustable
Line Output Level	 10mVp-p to 10Vp-p, adjustable (Single Ended), 20mVp-p to 40Vp-p, adjustable (Balanced)
Tone Frequencies	 Single or dual function tone generation Function tone range 0 Hz–3200Hz adjustable in 1Hz increments, Total tone duration 0 ms–999ms, Tone magnitude -60dB to +12dB
Vocoders	 Telex 32K (50 kbits/sec simplex), G.726 16K (34 kbits/sec simplex) G.726 32K (50 kbits/sec simplex), G.711 (82 kbits/sec simplex)
Relay Contact Ratings	 1A at 63V AC/DC
Digital I/O Ratings	 Pull up/pull down/float 3.3VDC/5VDC/12V 10K Ohm pull up/pull down
Transmit Output Impedance	 600 Ohms for balanced mode, 200 Ohms for single-ended mode
Receive Input Impedance	 10/600/10K Ohms (user-selectable)
Audio Distortion	 2% THD max.
Audio Frequency Response	 300Hz to 3000Hz + 1, -3dB less than 3% distortion
LAM Sensitivity	 -50dB to +10dB
COR Sensitivity	 User-selectable rising or falling edge from radio
DTMF Detection Bandwidth	 ±25Hz around center of frequency
Monitor Timer	 10ms to 9999ms, adjustable
Control Type	 32-bit Digital Media Processor
Electro Static Discharge Immunity	 8kV on all exposed operator control areas At 8kV no operation is disturbed At 8kV no permanent damage
Line Protection	 Fast-action 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°C to 50°C (32°F to 122°F) for full specifications
Storage Temperature Range	 -30°C to 65°C (-22°F to 149°F) for full specifications
Dimensions	 1.625" H x 11.5" D x 8.5" W (41.3mm H x 292.1mm D x 215.9mm W)
Actual Weight	 4.125lbs (1.9kg)
Shipping Weight and Dimensions	 7lbs (3.18kg), 5" H x 16" W x 15" D (127mm H x 406.4mm W x 381mm D)

Order Information

IP-224 V2	IP-224 Adaptor (includes MDC and FLEETSYNC)	DB37 HYTERA DMR	IP-224 to Hytera DMR Interface Cable
IP-224 V2 WOPS NA	IP-224 Advanced Interface Option (North American) for enabling all Serial Types, factory installed	DB37 HYTERA TETRA	IP-224 to Hytera Tetra Interface Cable
		DB37 ICOM IDAS	IP-224 to ICOM IDAS Interface Cable
IP-224 V2 WOPS EXPORT	IP-224 Advanced Interface Option (Export) for enabling all Serial Types except MOTOTRBO Interface, factory installed	DB37 Kenwood TK-X150	IP-224 Cable - Kenwood TK-X150/X180, 5X10, NX-x00, NX-5x00, and TK or VM-5x30 series radio
		DB37 Kenwood TK-X90	IP-224 Cable - Kenwood TK-X90 radio
OPTION CODE NA	IP-224 Advanced Interface Option (North American) for enabling all Serial Types, field installed	DB37 MOTOTRBO	IP-224 to MOTOTRBO Interface Cable
OPTION CODE EXPORT	IP-224 Advanced Interface Option (Export) for enabling all Serial Types except MOTOTRBO Interface, field installed	DB37 PWRTRNK TETRA	IP-224 to PowerTrunk TETRA Interface Cable
		DB37 TAIT P25 DMR	IP-224 to Tait P25 and DMR Interface Cable
IP224 MB DUAL	IP-224 Mounting Brackets (Dual)	DB37 EFJ VM-x00	IP-224 Cable to EFJ VM-x00
IP224 MB SINGLE	IP-224 Mounting Brackets (Single)	DB37 Single E&M	IP-224 Cable with single E&M wiring, 8 wires, 25'
AHS-1	Alignment Handset	DB37 Kenwood NX3x20	IP-224 Cable to Kenwood NX-3x20 radios (HDDB-15)
DB37 CABTONE	IP-224 DB-37 Cable Assembly to 4-Wire Tone Cable (2 lines, 4-Wire 24' length)	EFJ5300-Cable	IP-224 EFJ 5300 ES, 53SL, Radio Interface Cable
DB37 CDM1250	IP-224 Motorola CDM/PRO Cable Interface		

The specification information is subject to change without notification.

*Brand names mentioned are the property of their respective companies.

**MOTOROLA, MOTOTRBO, and the Stylized M logo are registered in the U. S. Patent and trademark Office.

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). This product includes cryptographic software written by Eric Young (ey@cryptsoft.com). This product includes cryptographic software written by Tim Hudson (tjh@cryptsoft.com).

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