

INTRAPLEX®

Legendary Performance,
Next-Generation Innovation





Award Winning Service

In public safety, Intraplex IP and TDM solutions are among the most widely deployed worldwide for intelligible voice and data communications. Intraplex public safety solutions assure highly secure and available networks, with maximum redundancy to assure missioncritical information is delivered for emergency communication purposes. Simulcasting capability extends these communications to multiple receive stations, supporting single or multiple municipalities.

Global Service Locations



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For more information, please visit gatesair.com

GatesAir efficiently leverages broadcast spectrum and intelligent IP networks to maximize performance for mission-critical services, including multichannel TV and radio for broadcast; and public safety communications for municipalities and emergency response teams. All research, development and innovation is driven from the company's facilities in Mason, Ohio, and supported by the long-standing manufacturing center in Quincy, Illinois. Furthermore, GatesAir's global sales and support staff, and extensive channel partner network, establishes a worldwide presence unrivaled by competitive vendors.

In broadcast, GatesAir offers the industry's broadest portfolio to wirelessly deliver and monetize content. The company's exclusive focus on the over-the-air market helps broadcasters optimize services today, and prepare for future revenue-generating business opportunities. This includes the industry's most energy-efficient TV and radio transmitters, supporting all digital and analog standards with low total cost of ownership; and highly flexible radio consoles and studio networking solutions for on-air and production needs.

GatesAir's turnkey solutions are built on three pillars: Content Transport, TV Transmission, and Radio Transmission. GatesAir's globally renowned Intraplex range comprises the Transport pillar, enabling audio contribution and distribution (along with data) over IP and TDM networks. Intraplex solutions provide value for broadcasters for point-to-point (STL, remote broadcast) and multipoint (single-frequency networks, syndicated distribution) connectivity. Recent innovations give broadcasters rock-solid, bandwidth-rich solutions for moving content over IP networks, with visibility into stream and network performance. GatesAir continues to innovate robust and reliable solutions for traditional RF STL connections that can also accommodate IP traffic. In larger transmitter networks, Simulcasting technology ensures all GatesAir transmitters are time-locked for synchronous, over-the-air content delivery.

» INTRAPLEX® AUDIO CODECS FOR BROADCAST STL AND DISTRIBUTION



Performance

For more than 35 years, Intraplex® solutions have been broadcasters' top choice for linking studios and transmitters—from the simplest setup to the most complex network. Intraplex products are also widely used in public safety and other markets requiring highly reliable audio and data communications. It is clear: Intraplex products deliver solid reliability and long-term value, proven technology plus the latest innovations to help our customers outpace the competition.



Reliability

At GatesAir, we've built our business intelligently—by listening to customers. We've incorporated the best technologies into industry-first products that enable broadcasters to step into the future.

In 1922, GatesAir first started to serve the emerging radio industry. Today we offer a complete line of interoperable and integrated global broadcast solutions. GatesAir now has more installations around the globe—transmitters, audio consoles, networking systems, studio-to-transmitter links (STL) and data multiplexing solutions—than any other broadcast equipment provider. Our expertise is built into every product we bring to market, delivering quality and performance that endures.



Versatility

The Intraplex family of products includes a wide range of wired and wireless IP and audio networking solutions for IP networks, digital T1/E1 links or 950 MHz wireless. To minimize cost and ensure consistent performance, Intraplex solutions are interoperable, modular, compatible, and are easy to upgrade as business and technology needs change.

INTRAPLEX® BROADCAST SOLUTIONS

Product	Description	Applications	Key Selling Points
Ascent	Multichannel (up to 16 stereo), multistream IP encoder and decoder with integrated codecs for voice and broadband audio. Scalable, customizable, and reliable STL platform. Available as a 1RU hardware server or as a software-only solution.	Radio Broadcasting <ul style="list-style-type: none"> • STL • Audio contribution/distribution for AM/FM/HD Radio/DAB/DAB+/DRM/Internet streaming 	<ul style="list-style-type: none"> • Robust IP delivery • Robust failover mechanism • Hardware/software redundancy • Multicast, Unicast (Point-to-Point and Point-to-Multi-Point), and Multi-Unicast • Multi-coding • Multi-protocol, interoperability • Multiple streams per channel • Protocol Encapsulation: Real-time Transport Protocol (RTP), Secure Reliable Transport (SRT) • Audio aligned to metadata and GPIO • AES-128 stream encryption
Ascent Media Gateway	Multichannel, multistream IP encoder and decoder with integrated codecs for video and audio. Scalable, customizable, and reliable STL platform. Available as a 1RU hardware server or as a software-only solution.	TV and Radio Broadcasting <ul style="list-style-type: none"> • STL • Video contribution/distribution for UDP-based media over IP, including ATSC 1.0 and ATSC 3.0 • Audio contribution/distribution for AM/FM/HD Radio/DAB/DAB+/DRM/Internet streaming 	<ul style="list-style-type: none"> • Robust IP delivery • Robust failover mechanism • Hardware/software redundancy • Multicast, Unicast, and Multi-Unicast • Multi-coding • Multi-protocol, interoperability • Multiple streams per channel • Protocol Encapsulation: Real-time Transport Protocol (RTP), Secure Reliable Transport (SRT) • Supports up to 50 Mbps per stream • Total capacity of 250 Mbps per server • AES-128/256 stream encryption
IP Link 100c	Single stereo channel IP encoder and decoder with integrated codecs for voice and broadband audio, including AES 192. Portable, half-rack unit with smallest form factor. Lowest cost model of IP Link platform.	Radio Broadcasting <ul style="list-style-type: none"> • STL • Audio contribution/distribution for AM/FM/HD Radio/DAB/DAB+/DRM/Internet streaming 	<ul style="list-style-type: none"> • Robust IP delivery • Robust failover mechanism • Hardware redundancy • Multicast, Unicast • Multi-coding • Multi-protocol, interoperability • Audio aligned to metadata and GPIO
IP Link 100e	Single stereo channel IP encoder and decoder with integrated codecs for voice and broadband audio, including AES 192. Modular plug-in card for Flexiva transmitters/excitors, adding native AoIP STL functionality.	Radio Broadcasting <ul style="list-style-type: none"> • STL • Audio contribution/distribution for AM/FM/HD Radio/DAB/DAB+/DRM/Internet streaming 	<ul style="list-style-type: none"> • Robust IP delivery • Robust failover mechanism • Hardware redundancy • Multicast, Unicast • Multi-coding • Multi-protocol, interoperability • Audio aligned to metadata and GPIO
IP Link 200	Dual stereo channel IP encoder and decoder with integrated codecs for voice and broadband audio, including AES 192. Integrated front panel and GPS timing capability.	Radio Broadcasting <ul style="list-style-type: none"> • STL • Audio contribution/distribution for AM/FM/HD Radio/DAB/DAB+/DRM/Internet streaming • Precision playout delay for SFN FM 	<ul style="list-style-type: none"> • Robust IP delivery • Robust failover mechanism • Hardware redundancy • Multicast, Unicast • Multi-coding • Multi-protocol, interoperability • Audio aligned to metadata and GPIO • Independent SynchroCast® operation for each channel
IP Link MPXp	Single stereo channel, analog composite FM multiplex signal IP encoder and decoder with front panel display and GPS timing capability	Radio Broadcasting <ul style="list-style-type: none"> • STL FM • Precision playout delay for SFN FM 	<ul style="list-style-type: none"> • Multicast, Unicast • Robust IP delivery • Robust failover mechanism • Hardware redundancy • Excellent stereo separation (>56 dB) and THD • Futureproof: capability to transport the entire FM spectrum • Decodes Audio and RDS from MPX signal • Optional mixing of subcarriers signals • SynchroCast®

INTRAPLEX® BROADCAST SOLUTIONS

Product	Description	Applications	Key Selling Points
HD Link	950 MHz STL system to carry: 2 stereo, 2 mono channels and ethernet traffic	Radio Broadcasting <ul style="list-style-type: none"> STL FM/HD Radio 	<ul style="list-style-type: none"> Superior RF performance from integrated 5 Watts of RF power and LDPC channel coding Hardware redundancy Up to 256 QAM modulation – provides higher data rate per Hz Flexible partitioning of total data rate capacity – up to 100% can be allocated for Ethernet service Automatic failover to a backup IP path Automatic adaptation to degrading RF condition
NetXpress	Flexible, modular digital multiplexer for transport of audio, voice and data channels over T1/E1 and IP circuits	Radio Broadcasting <ul style="list-style-type: none"> STL Audio contribution/distribution for AM/FM/HD Radio/DAB/DAB+/DRM/Internet streaming Voice and data communications SFN for FM 	<ul style="list-style-type: none"> Single system to carry multiple channels of program audio, voice and data Wide variety of plug in channel modules for audio encoding/decoding, voice and various data interfaces, including Ethernet bridging. IP packet loss protection Hardware and site redundancy Multicast, Unicast (Point-to-Point and Point-to-Multi-Point) Up to 32 IP destination streams Simultaneous operation over E1/T1 and IP SynchroCast®
NetXpress LX	Flexible, modular digital multiplexer for transport of audio, voice and data channels over IP circuits	Public Safety <ul style="list-style-type: none"> Simulcast Mobile Radio Systems Mobile Radio Voted Audio Transport Simulcast mobile radio (precise timing control) Automatic backup site switching Site to site transport of audio, voice and data signals 	<ul style="list-style-type: none"> Includes tools required to make IP a reliable transport method for live traffic, Compatible with SynchroCast for simulcast mobile radio systems Connect to multiple sites (up to 32) from a single chassis Wide variety of plug in channel modules Easy upgrade to existing T1/E1 Intraplex users
LiveLook	Network Performance Monitoring and Analytics	Radio Broadcasting <ul style="list-style-type: none"> Network analytics for Voice and Data Over IP for IP Link Audio and MPX codecs. Provides recommendation to optimize the codec's network error protection schemes. 	<ul style="list-style-type: none"> Single platform to monitor, log and get email notification for media over IP (Audio, AES192, Analog MPX) streams Easy to follow graphical trends of network performance Logs and creates report of network performance to allow SLA monitoring Models packet losses to recommend most effective recovery

» INTRAPLEX® SYSTEMS FOR PUBLIC SAFETY & GOVERNMENT COMMUNICATIONS

Flexible Communication Architectures

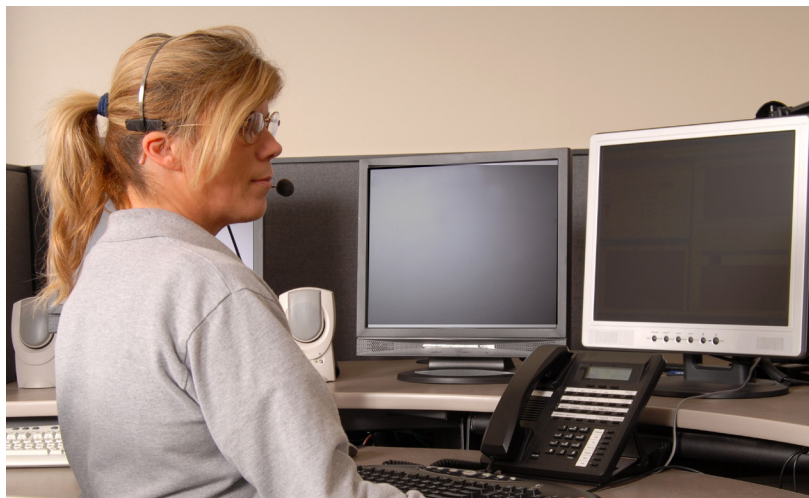
Robust, multipoint connections. Flexible communication architectures. Highly secure and available networks. These are the tenets of public safety communications systems today. And this is why emergency responder teams depend on GatesAir: Reliable, high-quality communication of mission-critical audio and data from one to many points, across many municipal organizations.

GatesAir Intraplex public safety solutions leverage the power of intelligent IP and TDM networks to transport voice and data with rock-solid reliability. The always-on nature of Intraplex solutions supports immediate and precision-timed delivery of emergency response communications over secure connections.

Flexible and scalable architectures eliminate the restrictions of point-to-point communications in favor of extensible networks that broaden reach. For multipoint networks, Intraplex simulcasting solutions allow the efficient use of the same set of frequencies at multiple sites for real time communication across multiple base stations and targets. Multiple dispatchers and emergency responders can clearly communicate information over the same network, with the exceptional quality and voice intelligibility that is a hallmark of Intraplex.

Performance

Intraplex solutions further enhance public safety networks with system-level redundancy to ensure constant availability, as well as outstanding bandwidth management to eliminate network congestion. Sophisticated network monitoring provides technical personnel with a comprehensive view of network performance. GatesAir's world-class service and support will ensure your networks are up and running quickly, with exceptional ongoing performance – ensuring the lowest possible total cost of ownership for your public safety networks.



INTRAPLEX® EMERGENCY SERVICES SOLUTIONS

Product	Description	Applications	Key Selling Points
IP Link 200	4 voice channels IP codec with integrated GPS option and 8 multi-function GPIOs.	Public Safety <ul style="list-style-type: none"> • Simulcast Mobile Radio Systems • Mobile Radio Voted Audio Transport • Simulcast mobile radio (precise timing control) • Automatic backup site switching • Site to site transport of audio, voice and data signals 	<ul style="list-style-type: none"> • Robust IP delivery • Robust failover mechanism • Hardware redundancy • Multicast, Unicast (Point-to-Point and Point-to-Multi-Point) • E&M Signaling
Access Server	Flexible, modular digital multiplexer for transport of audio, voice and data channels over T1/E1 networks	Public Safety <ul style="list-style-type: none"> • Simulcast Mobile Radio Backbone • Voted Audio Return Paths • Site-to-site transport of audio, voice and data signals. 	<ul style="list-style-type: none"> • Highly accurate timing for voting and simulcast applications • Modular design for flexible configuration • Robust transport reliability (multiple redundancy options, framing algorithm) • Wide variety of plug in channel modules
Digital Crossconnect Server/System	6 Port Digital Crossconnect system for grooming and/or protection of audio, voice and data channels on T1/E1 networks	Public Safety <ul style="list-style-type: none"> • T1/E1 ring protection • T1/E1 path protection • Circuit grooming 	<ul style="list-style-type: none"> • Flexible configurations for multiple system applications • Compatible with SynchroCast for simulcast mobile radio systems • Robust transport reliability (multiple redundancy options, framing algorithm) • Wide variety of plug in channel modules
NetXpress	Flexible, modular digital multiplexer for transport of audio, voice and data channels over T1/E1 and IP circuits	Public Safety <ul style="list-style-type: none"> • Mobile Radio Backbone Transport • Voted Audio Transport • Simulcast mobile radio (precise timing control) • Automatic backup site switching • Site to site transport of audio, voice and data signals 	<ul style="list-style-type: none"> • Allows connections over both TDM (T1/E1) and IP networks simultaneously • Includes capabilities required for robust IP transport • Compatible with SynchroCast for simulcast mobile radio systems • Connect to multiple sites (up to 32) from a single chassis • Wide variety of plug in channel modules
NetXpress LX	Flexible, modular digital multiplexer for transport of audio, voice and data channels over IP circuits	Public Safety <ul style="list-style-type: none"> • Simulcast Mobile Radio Systems • Mobile Radio Voted Audio Transport • Simulcast mobile radio (precise timing control) • Automatic backup site switching • Site to site transport of audio, voice and data signals 	<ul style="list-style-type: none"> • Includes tools required to make IP a reliable transport method for live traffic, • Compatible with SynchroCast for simulcast mobile radio systems • Connect to multiple sites (up to 32) from a single chassis • Wide variety of plug in channel modules
LiveLook	Software tool for monitoring and analysis of network conditions	Public Safety <ul style="list-style-type: none"> • Analysis of actual network conditions for aid in troubleshooting • Analysis of actual network conditions for aid in selection of NetXpress/ NetXpress LX configuration options to insure the most reliable transport possible 	<ul style="list-style-type: none"> • Clarifies the details of network conditions to aid in decision making about appropriate responses • Allows capture of network performance history



INTRAPLEX ASCENT

Multichannel audio over IP codec

Ascent is ideal for applications that require multiple channels of audio encoding and decoding at head-end sites. The high-density solution reduces cost and provides a path for convergence of IT and broadcast infrastructure. The interoperability between Ascent and IP Link codecs provides a complementary solution for remote contribution and distribution use cases.

Built with enhanced network reliability and security in mind, Ascent supports SRT (Secure Reliable Transport), an open-source protocol that provides low-latency, reliable and secure streaming of audio and video data via a built-in packet retransmission scheme; the security of streams is handled by the built-in AES-128/256 payload encryption. Ascent also uses Dynamic Stream Splicing technology, providing “hitless” protection for packet losses using the combination of time and network diversity for packet transmission, and FEC.

Built on Commercial-Off-The-Shelf (COTS) x86 architecture to leverage the scalability and cost of the technology, Ascent is available in a 1RU branded hardware server and as a software-only option.

GatesAir’s game-changing, award-winning STL system supports up to 32 audio channels with high-end features.



- 4, 8, 16 stereo channels. Each channel can be full-duplex, encode-only or decode-only
- Supports AES3, Analog and AES67 audio input and outputs
- Standard Coding: Linear, Opus
- Optional: AAC-HE, AAC-HEV2, AAC-ELD, AAC-xHE, MPEG 2 and MPEG 3 audio coding
- Protocol Encapsulation: Real-time Transport Protocol (RTP), Secure Reliable Transport (SRT)
- Streams: Multicast, unicast, and multi-unicast
- 10 streams per channel with up to 20 destinations per transmit stream; maximum of 100 streams per system
- Three independent IP interfaces for redundant network operation
- Built-in silence sensor with optional stream switchover
- Automatic backup to audio playout from USB drive or external audio source
- Multicoding: can encode the same audio source in multiple formats
- Prioritized stream sources at the output with automatic switch over and switch back between primary and secondary streams and backup sources (streams, USB, external audio source)
- Programmable RTP level Forward Error Correction (FEC) scheme
- Programmable time diversity and Interleaving of streams to combat burst packet losses
- Integrated scheduler for automated scheduled program switching
- Integrated with Intraplex LiveLook (network analytics and monitoring software)
- Web and SNMP for management
- Multiple web account types to restrict access
- GPIOs: up to 32 in, 8 out. Available for stream transport and alarm assignment
- Network reliability
 - Dynamic Stream Splicing with network and time diversity for “hitless” packet loss protection
 - Programmable RTP level Forward Error Correction (FEC)
 - Secure Reliable Transport (SRT): new protocol provides automatic packet retransmission method
- IP Security
 - Access control per interface
 - Encryption of streams with AES-128

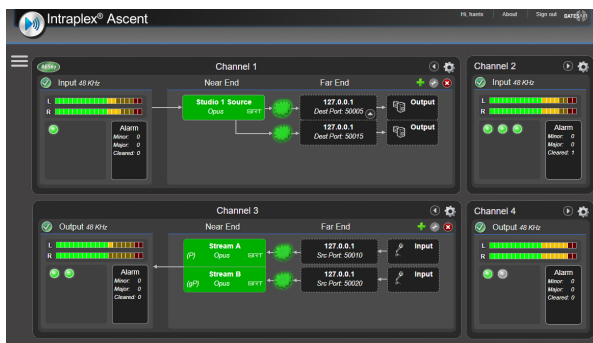


INTRAPLEX ASCENT MEDIA GATEWAY

HIGH-PERFORMANCE IP STL SYSTEM FOR VIDEO AND AUDIO DISTRIBUTION

The Ascent Media Gateway is ideal for applications that require real-time distribution of UDP-based media over IP-based WANs or Microwave. This includes video programs for TV broadcast, and distribution of audio or FM/MPX signals to a large number of radio transmitter sites. This high-density solution reduces cost and provides a path for convergence of IT and broadcast infrastructure.

The platform provides a scalable, cloud-enabled solution for the distribution of video and audio signals with enhanced reliability and security with SRT (Secure Reliable Transport) protocol and Intraplex StreamSplicing®. Like Ascent, Ascent Media Gateway is available as either a 1RU branded hardware server or as a software-only option.



GatesAir's Intraplex Ascent Media Gateway platform supports reliable and secure Cloud-enabled distribution of TV and radio programming with high-end features.

- Supports any constant rate UDP over IP media. Tested with ATSC1 and ATSC3 for video, and AES3 and FM/MPX signals for audio.
- Supports point-to-point and point-to-multipoint with content replication at the receiver to feed up to 3 local destinations
- Protocol Encapsulation: Real-time Transport Protocol (RTP); Secure Reliable Transport (SRT)
- Streams: Multicast, unicast, and multi-unicast
- Capacity
 - Supports up to 50 Mbps of source rate per stream
 - Total capacity of 250 Mbps per server
 - Number of streams per server: scalable up to 100 with the limitation of maximum capacity
- Server Specification
 - Intel i7, 4-core, 8 GB memory, 32 GB SSD
 - 3 Network Ports
 - OS: Ubuntu version 16.04
 - Available with single or dual power supplies
- Management
 - HTTP and HTTPs
 - Built-in access control (Firewalling) on each network port for security
- Web and SNMP for management
- Multiple web account types to restrict access
- Network reliability
 - Dynamic Stream Splicing with network and time diversity for “hitless” packet loss protection
 - Programmable RTP-level Forward Error Correction (FEC)
 - Secure Reliable Transport (SRT): new protocol provides automatic packet retransmission method
- IP Security
 - Access control per interface
 - Encryption of streams with AES 128/256



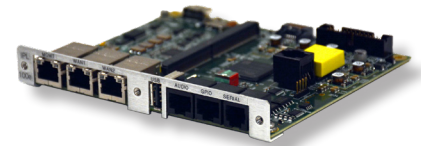
INTRAPLEX IP LINK FAMILY

Audio Coders for IP-based STL/TSL

Offering an array of audio coding options, the IP Link codecs are suitable for use in Studio to Transmitter Links (STLs) as well as audio contribution/distribution networks. Support for IP multicast and multiple unicast streams enables one encoder to feed multiple decoders.

By incorporating three IP interfaces that can be used for streaming and management, the IP Link systems can provide a level of reliability not seen in comparably-priced codecs.

As the latest addition to the Intraplex family of audio transport products, the IP Link audio codecs bring legendary Intraplex reliability to the IP codec market.



- IP Link 100c: Portable, half-rack unit; single bidirectional stereo audio channel
- IP Link 100e: Modular plug-in card for Flexiva transmitters/exciters; single bidirectional stereo audio channel
- IP Link 200: Two bidirectional stereo audio channels
- Standard audio coding: Linear and Opus (IP Link 200 also includes AAC-LC and G.722)
- Optional audio coding: AAC-LC; AAC-HE; AAC-HEv2; AAC-ELD; AES192; MPEG2; MPEG3; Icecast; Shoutcast; Enhanced aptX
- Other transport modes: Transparent AES up to 192 kS/s to support composite FM multiplex signal over AES
- Protocol Encapsulation: RTP; Shoutcast/Icecast (requires optional audio coding pack); SRT; MPEG-TS (for IP Link 200)
- 3 independent IP interfaces for redundant network operation
- Built-in silence sensor with optional stream switch-over
- Automatic backup to audio playout from USB drive or external audio source
- Multicoding: the same audio source can be encoded in multiple formats for STL, backup, and Web streaming
- Prioritized stream sources at the output with automatic switch-over and switch back between primary and secondary streams and backup sources (Streams, USB, external audio source)
- Programmable RTP level Forward Error Correction (FEC) scheme
- Programmable Time Diversity and Interleaving of streams to combat burst packet losses
- Integrated with Intraplex IP Link Scheduler for automated scheduled program switching
- Integrated with Intraplex LiveLook (Network Analytics and Monitoring software)
- N+1 redundancy with integrated control of external switching equipment
- Support for IP multicast and multi-unicast
- Web browser user interface and SNMP network management
- Multiple, multi-purpose contact closure inputs/outputs provide:
 - Transport of logic signals with time-alignment to audio
 - Stream control
 - Alarm notification
- Additional options:
 - Dynamic Stream Splicing provides "hitless" operation over diverse network paths
 - SynchroCast™ provides dynamically managed precision delay for Single Frequency Network (SFN) broadcasting and simulcasting
 - μMPX transport a full FM composite MPX signal, including pilot and RDS, with perfect peak control with bitrate of 320 kbit/s. Compatible with SynchroCast. (for IPL100c & 100e)
 - 10-band high-precision audio processing (for IPL100c & 100e)
 - Digital FM-MPX format support with compatibility with IP Link MPXp (for IPL100c & 100e)
 - Secure Reliable Transport (SRT) with 128/256-bit encryption and automatic packet re-transmission (for IPL100c & 100e)
 - Internal plug-in module supports two microphone level inputs (for IPL100e only)
 - Redundant power supply: +12V, -48V DC (for IPL200 only)
 - Automatic audio loudness leveling and metering compliant with EBU R-128 and ITU-R (for IPL200 only)



INTRAPLEX IP LINK MPXp

The Intraplex® IP Link MPXp provides robust transport of your FM MPX composite signal over IP networks.

Now offering both digital and analog MPX FM composite signal support as well as flexible sampling rates and sample sizes options. The IP Link MPXp codec optimizes IP network bandwidth utilization based on the FM services being transported. IP Link MPXp codecs are suitable for use in IP based Studio to Transmitter Links (STLs) as well as distribution networks. Support for IP multicast and multiple unicast streams enables one encoder to feed multiple decoders.

By incorporating three IP interfaces that can be used for streaming and management, the IP Link MPXp system can provide a level of reliability not seen in comparably-priced codecs.

As the latest addition to the Intraplex family of audio and data transport products, the IP Link MPXp codec bring legendary Intraplex reliability to the IP codec market.



- Single bidirectional FM MPX composite signal
- Support for both analog FM MPX composite and digital MPX over AES with bridging between digital and analog domains
- Redundant input MPX signal ports with automatic failover based on signal activity
- Redundant output MPX signal ports
- Independent signal level setting for each input and output MPX signal port
- Flexible sampling rates and sample size options to tailor IP WAN bandwidth
- Two channels of SCA mixing
- Three independent IP interfaces for redundant network operation
- IPConnect option provides reliable time aligned transport of external data streams such as HD Radio E2X with the MPX data stream
- Optional redundant power supply: 12VDC or 48VDC
- VU meters to indicate input and output MPX signal levels
- GPS support for precision digital timing reference
- Decoding audio and RDS data from input or output MPX signal. Audio is output on headphone jack
- Built-in silence sensor with optional stream switch over
- Optional Dynamic Stream Splicing with time and network diversity provides “hitless” packet loss and network loss protection
- Prioritized stream sources at the output with automatic switch over and switch back between primary and secondary
- Programmable RTP level Forward Error Correction (FEC) scheme
- Programmable time diversity and interleaving of streams to combat burst packet losses
- Integrated with Intraplex IP Link Scheduler for automated scheduled program switching
- Integrated with Intraplex LiveLook (network analytics and monitoring software)
- N+1 redundancy with integrated control of external switching equipment
- SynchroCast™ option provides dynamically managed precision delay for Single Frequency Network (SFN) broadcasting and simulcasting
- Support for IP multicast and multi- unicast
- Web browser user interface and SNMP network management
- Eight multipurpose contact closure inputs and outputs provide:
 - Transport of logic signals with time- alignment to MPX signal
 - Stream control
 - Alarm notification



INTRAPLEX HD LINK™

Digital 950 MHz STL and IP Data Gateway

The Intraplex HD Link™ STL transport solution delivers reliable and robust audio links for 950 MHz applications, and includes an integrated IP gateway—the first in a radio STL. The easy-to-configure HD Link employs the latest RF, audio and digital networking technologies for dependable, quality audio links for both UDP/IP and the higher-performance TCP/IP protocols. Options are available for nearly any combination of audio, data, control and status in radio broadcasting, as well as future media applications.

With HD Link, you can count on the same dependable performance, superior support and long-term value for your microwave links that you receive on your T1 and IP audio links. HD Link offers RF power to spare, sophisticated data handling capabilities and multiple channels of great audio. The intuitive front panel and remote interfaces put the most complete feature set of any microwave STL at your fingertips.

Straight out of the box, HD Link manages all HD Radio™ transport scenarios, no matter where the importer and exporter are placed. With two prioritized Ethernet paths, the HD Link gives preference to HD Radio™ data over control and other LAN/WAN data, and supports UDP and TCP. The HD Link can even handle the switching of TCP return packets over asymmetric IP paths available) with plug-and-play simplicity.



- One or two stereo audio programs, linear or compressed (Note: With the selection of one or two stereo programs, linear or compressed, all other list items are standard)
- 5 W output power (can be dialed down to 1 W or 2 W, if desired)
- Two 7 kHz auxiliary audio channels that can be used for AM, reading for the blind, SCA and EAS
- Built-in circulator for protection
- Up to 1.5 Mb/s IP data handling capacity, user-configurable
- Two prioritized IP data ports: high priority for HD Radio™ streams, low priority for control and LAN data
- One RS-232 auxiliary data port for each main program audio channel
- Front-panel headphone jack on the receiver to monitor any of the audio programs
- Ability to operate on both 950 MHz and IP paths simultaneously and automatically back up any service from either path to the other in case of path failure
- Automatic adaptation to impairment of the RF path by shifting to a lower QAM rate and adjusting the audio and data services to a minimum (requires a small amount of IP connectivity to operate)
- Advanced LDPC error correction
- Bright, full-color, easy-to-use front-panel display
- Control and monitor via web browser
- Easy-to-load firmware upgrades via USB key or FTP



Intraplex NetXpress LX™

Digital Audio Transport System for IP Networks

The Intraplex NetXpress™ IP audio multiplexer provides audio transport over packet-switched networks for a wide range of real-time audio, voice and data applications. NetXpress delivers quality and economy of IP in one solution, including distribution circuits, studio-to-studio, STL/TSL links, remote pickup, and program and spot delivery.

- Support of up to 32 simultaneous streams
- Simultaneous IP and T1/E1 operation, including the ability to bridge programs between two types of networks
- Network monitoring and bandwidth management
- Professional audio transport over 10/100Base-T networks
- Multiple services transported in one or more streams
- Smooth migration to packet-switched networks
- Integrates with SynchroCast3™ for simulcast systems
- Built-in error correction
- Easy management of multiple distribution networks



› Intraplex NetXpress LX™ Program Audio Transport

The Intraplex NetXpress LX™ multiplexer delivers the same quality performance of the Intraplex NetXpress IP audio multiplexer, but in a scaled down, cost-efficient platform. NetXpress LX supports unicast and multicast, and can carry multiple stereo audio programs and accommodate up to 32 streams. It is fully interoperable with NetXpress systems for flexibility and easy expansion.

› Intraplex CM-30 — IP Network Conversion Card

The Intraplex CM-30 network card converts your T1/E1 systems to IP. Plug in a card and perform user configurations, and in most cases, within minutes the CM-30 upgrades Intraplex T1/E1 systems to lower-cost, high-performing IP networks that maintain signal quality and existing feature sets. It virtually pays for itself. The CM-30 is compatible with all Intraplex audio, voice and data interface cards, and works with SynchroCast3 simulcast systems for FM transmission. Intraplex frames equipped with the CM-30 are fully interoperable with NetXpress and NetXpress LX IP multiplexers.

› Intraplex SynchroCast3™ — Multiple-Transmitter Simulcast System

The Intraplex SynchroCast3 simulcasting system delivers industry-leading performance for multiple-transmitter simulcasts. SynchroCast3 enables single-frequency analog FM coverage by synchronizing two or more adjacent FM transmitters to increase coverage area and reduce interference. The third-generation SynchroCast3 makes new GPS-based timing technology available to older transmitter networks, and automatically—and hitlessly—adjusts for changes in link delays occurring with STL path rerouting or data buffering. The SynchroCast3 system is scalable and works with Intraplex T1/E1/IP multiplexers to allow broadcasters to benefit from SynchroCast® technology without installing a new transmission system.

› Intraplex STL HD — T1 STL System

The Intraplex STL HD solution lets you customize your T1 STL with the features and circuits you require. The modular system transports crystal-clear digital audio on all types of T1 links, across any terrain. The STL HD system can be set up to carry one-way or full-duplex stereo audio, with or without compression. STL HD provides a range of data-interface options and supports a variety of telephone, intercom and other voice-grade applications.

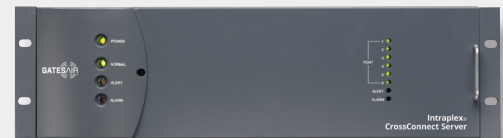


STL HD: Next-Generation Intraplex Technology

- Unsurpassed reliability and audio transport
- Two-wire and four-wire available
- Industry-leading data circuits and interface options
- Fully software configurable

› Intraplex CrossConnect System and Server (DCS-9500) T1/E1 CrossConnect Routing/Switching System

Intraplex CrossConnect systems and servers provide the flexibility to combine, interconnect and multicast traffic on up to six T1 or E1 circuits, as well as automatic backup switching for STL links. Broadcasters can mix and match program audio, voice and data feeds among multiple studio and transmitter locations, and save on programming, talent and administrative costs by sharing transmission resources among stations. Using the same plug-in modules as the Intraplex T1/E1 multiplexers, the CrossConnect server accepts a variety of sources for integrated voice, data and program audio.



› Intraplex Modules



GatesAir Intraplex program audio, data, voice and telephone modules are available to meet even the most specific need.

Program audio modules are available with analog and/or AES inputs and outputs, and function with T1, E1 or IP networks enable broadcasters to transport linear and compressed audio to transmitters or share programming with other studios.

Voice and telephone modules digitally transport voice-grade audio for telephone, intercom, fax and modem circuits, which can be combined with other data, voice and program audio for transmission. Two-wire, four-wire and wideband voice modules, with a variety of coding and signaling options, are available.

Data application modules for synchronous and asynchronous protocols, including RS-232, RS-449, X.21 and V.35 and LAN interfaces, are available.



The Intraplex® Legacy

First in Proven Performance & Next-Generation Innovation

For over 35 years, Intraplex products have delivered proven performance for audio, voice and data transport worldwide. The Intraplex line has been the broadcast transport leader in customer satisfaction, innovation and industry firsts. At GatesAir, we know our reputation is because of our reliable, intelligent products that help our customers enhance their competitive position and business results. In an ever-changing industry, we keep our eye on the horizon. We listen to our customers, so we can continue to engineer innovative, high-value products with the versatility to perform today and into the next generation.

1984-1989

- Named first Bell system-approved audio multiplexer (then built by TauTron)
- Deployed for the world's first digital audio broadcast over long-distance fiber optic networks; first remote broadcast by satellite using T1 digital transmission (used to broadcast the Reykjavík, Iceland Summit between U.S. President Ronald Reagan and Soviet Union Secretary-General Mikhail Gorbachev)
- First variable rate audio multiplexer

1990-1999

- First T1 audio multiplexer to incorporate proprietary frame synchronization to ensure transmission robustness
- First digital audio multiplexer to support both EBU standard J.41 audio coding and non-standard apt-X100 coding on the same platform
- First transport of plesiochronous data signals over T1, in support of NASA launch tracking
- First T1/E1 multiplexer capable of synchronizing single-frequency analog FM networks (SynchroCast)
- First multichannel T1/E1 digital cross-connect switch for use in digital broadcast audio networks
- GatesAir acquires Intraplex

2000-2004

- First modular ISDN audio codec (IntraLink)
- First modular IP audio codec (IntraLink-IP)
- First T1 system to transport FM and HD Radio signals together (STL HD)

2005-2010

- First digital audio multiplexer to work on T1/E1 and IP networks simultaneously (NetXpress)
- NetXpress deployed globally to support BBC World Service program distribution and monitoring
- First combined T1/E1/IP system for synchronizing single-frequency analog FM networks (SynchroCast3)
- First 950 MHz STL system to intelligently handle both FM and HD Radio (HD Link) to seamlessly operate on both RF and IP paths with automatic fail over.
- CM-30 launched; provides existing Intraplex users flexibility to convert their T1 systems for use on IP networks

2011-2013

- IP Link Audio Codec Platform launched with IP Link 100 model. IP Link 100 won "Best of Show" NAB 2012
- IP Link 200 launched. Won "Best of Show" NAB 2013. IP Link 200 selected for FM SFN by Geo Broadcast Solution

2014-2016

- Intraplex LiveLook- network analytics and optimizing software for IP Link codec platform launched. First for Audio Over IP Codec Industry
- IP Link codecs selected for SynchroCast® application by Arqiva for BBC project
- IP Link codecs selected by NPR for nationwide audio contribution/distribution project
- HD Link capabilities expanded to transport up to 3.1 Mbps of IP data for STL application
- IP Link MPX product launched. Won "Best of Show" at NAB 2016

2017-2021

- IP Link MPXp product launched. Won "Best of Show" at NAB 2017
- IPConnect product launched, our reliable transport network gateway. Won "Best of Show" at IBC 2017 & NAB 2018
- Ascent platform launched, our cloud-based AVoIP multichannel STL codec, the first in the industry to use Secure Reliable Transport (SRT). Won "Best of Show" and "Product of the Year" at NAB 2019 and "Best of Show" at IBC 2019



Award Winning Service -- Global Locations

From experienced installation and field service engineers to responsive factory experts, GatesAir provides the strongest service team in the broadcast transmission industry. Couple that team with reliable products, responsible service parts inventories and a demonstrated commitment to the industry, and you have a service offering that's perfectly matched to your equipment and your operations.

Ordering Information

Our GatesAir experts will help you determine the most efficient solution to meet your requirements. Visit www.gatesair.com/contact to find your representative.



Connecting What's Next

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