



**Networking Solutions**

***Intraplex***

**AudioLink PLUS**

**E1 System**

*Increase network efficiency and reliability*

*by integrating transport of contribution*

*and distribution program audio,*

*data, telephone, and other traffic*

*on digital E1 links.*

**assuredcommunications™**



**The Intraplex AudioLink PLUS digital E1 system combines digital program audio with telephone and data traffic for studio to transmitter and studio to studio links, while delivering the best quality on-air sound available today.**

**SOLVE TODAY'S CHALLENGING CONTENT TRANSPORT REQUIREMENTS**

Radio engineers face the challenges of managing their broadcast program contribution and distribution and migrating to a new digital age, while still controlling their costs.

The AudioLink PLUS STL/TSL/intercity link system combines bidirectional transport of program audio with a wide variety of other traffic, including LAN/WAN data, telephone, intercom, fax, DAB audio, remote control, and video all over the same link.

AudioLink PLUS can be deployed in a wide area network data and audio transport system allowing multiple locations to share talent and administrative resources, thereby reducing station operating costs. These other applications "ride for free" with the program audio, increasing communications link efficiency.

**AUDIOLINK PLUS DELIVERS CRYSTAL CLEAR DIGITAL AUDIO**

Because it's digital, the AudioLink PLUS delivers the same transparent, crystal clear on-air sound over any distance and terrain and is unaffected by low levels of noise that typically affect sound quality in analog transmission circuits. Intraplex' unique transmission robustness and error mitigation provides users with unmatched reliability.

**COMPLETE RANGE OF AUDIO OPTIONS**

The AudioLink PLUS offers the industry's widest range of plug-in modules for program audio, voice, and data to combine virtually any mix of payload traffic for transport over E1.

Program audio options include true uncompressed linear audio for the highest quality sound and the lowest processing delay. MPEG Layer II, Layer III, J.41, and apt-X100 are examples of audio options available to increase bandwidth efficiency for consolidation of multiple audio channels and other payloads on the same link.

Data modules provide one-way or full-duplex data circuits, with a variety of data rates and formats for LAN/WAN, control circuits, and program associated data. Voice modules transport voice-grade audio for telephone, intercom, and fax applications.

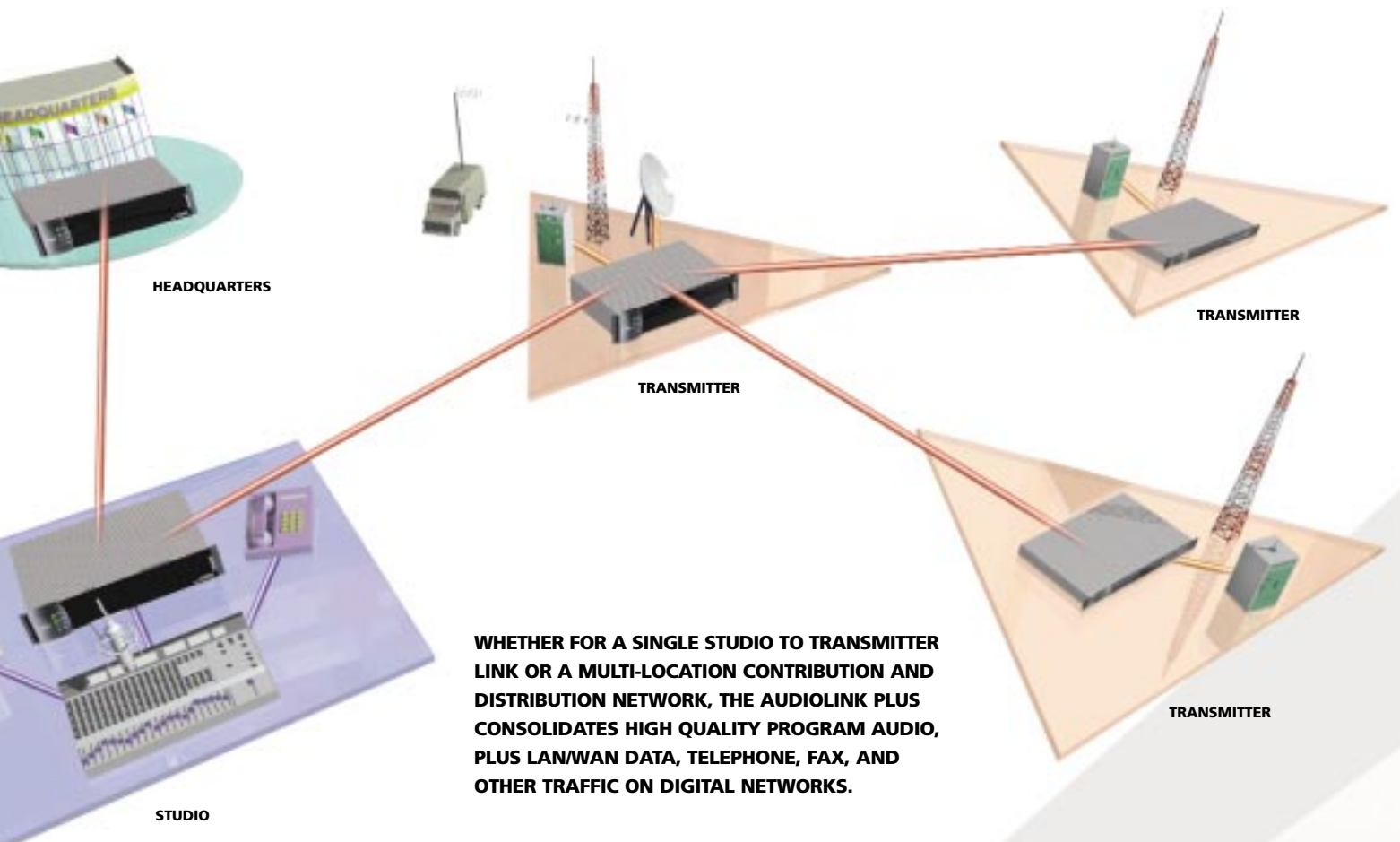
Whether over leased E1 lines, microwave radio, or fiber optic links, the AudioLink PLUS delivers superior audio quality and communication efficiency to broadcast stations and networks worldwide.



**AUDIOLINK PLUS ALLOWS UNLIMITED COMBINATIONS OF CHANNEL MODULES FOR AUDIO, VOICE, AND DATA TRANSPORT.**

- ETHERNET LAN BRIDGE MODULE**
- DATA MODULES**
- FOREIGN EXCHANGE AND OFF-PREMISE TELEPHONE MODULE**
- ANALOG PROGRAM AUDIO MODULES**
- DIGITAL PROGRAM AUDIO MODULES**
- E1 NETWORK INTERFACE**
- POWER SUPPLY AND ALARM CONTACTS**





## AUDIOLINK PLUS HIGHLIGHTS

- **Savings:** By consolidating traffic, the AudioLink PLUS cuts costs when compared to multiple discrete transport lines and often eliminates the need to add transmission circuits as applications grow. Because it is inherently bidirectional, contribution, distribution, and backhaul traffic are handled over the same E1.
- **Flexibility:** The AudioLink PLUS allows unlimited combinations of channel options, up to the available bandwidth of the E1 using 17 physical slots, with the industry's widest range of plug-in modules for audio, voice, and data. In an audio only configuration, the AudioLink PLUS can transport up to 15 stereo audio channels in a single E1.
- **Reliability:** The AudioLink PLUS can accommodate an optional hot stand-by power supply and redundant network interface for maximum protection from costly downtime.
- **Ease of Use:** IntraGuide™, the Intraplex Windows-based user interface simplifies configuration, monitoring, and control. The enhanced front panel display makes the AudioLink PLUS quick and easy to install and operate, even for first-time users.
- **Network Capability:** Combinations of terminal, drop and insert, and digital crossconnect units can be combined into network configurations for point-to-point, point-to-multipoint, drop and insert, star, and loop topologies.
- **Network Management Communications:** Network management information can be sent across the network from a single AudioLink PLUS, to remotely configure, perform diagnostics, and monitor performance and alarm conditions on any other AudioLink PLUS on the network.

## AUDIOLINK PLUS SYSTEMS

Each AudioLink PLUS system includes two Intraplex E1 multiplexers with one audio transmitter module and one receive module with XLR module adapters, and a Universal AC power supply.

AudioLink PLUS 5200: Linear/uncompressed system

AudioLink PLUS 5230: ITU-T J.41 system

AudioLink PLUS 5220: MPEG Layer II system

AudioLink PLUS 5210: apt-X system

ADL-263: AudioLink single multiplexer

ADL-265: AudioLink drop and insert multiplexer

ADL-266: AudioLink dual multiplexer

AudioLink PLUS Audio Add-on Packages:

5101: TSL Linear/uncompressed

5131: TSL ITU-T J.41

5121: TSL MPEG Layer II

5111: TSL apt-X

5125: MPEG Layer II program audio channel

5115: apt-X program audio channel

OPX and ARD telephone, asynchronous and synchronous data packages are also available.

## AUDIO PERFORMANCE (LINEAR)

### Operating Modes

Monaural, dual monaural, or stereo

### Dynamic Range

Greater than 90 dB

### Processing Delay

Total coding/decoding delay:

3.0 ms at 15 kHz operation

### Line Error Tolerance/Error Mitigation

No audible degradation at  $10^{-4}$  random bit error rate. CRC error detection of audio sample and DSP-based error mitigation provide effective interpolation over errant samples.

### VU Meter Indicators

5 level VU meters with overload indication

### Test Tone

Switch selectable 1 kHz at -12 dBFS

## ANALOG INPUT/OUTPUT (LINEAR)

### Sample Rate

32 kHz, 16 kHz

### Coding

16-bit linear delta sigma coding with 64x oversampling

### Frequency Response

0.2 Hz to 15.6 kHz, +0.5/-3.0 dB

20 Hz to 15 kHz,  $\pm 0.5$  dB

### Maximum Full Load Level @ 1 kHz

(Input/output level corresponding to digital full scale, 0 dBFS)

Adjustable: +9 to +24 dBu (0 dBu = 0.775 V rms)

### Crosstalk

Less than -80 dB @ 1 kHz

### Total Distortion

Including harmonic and noise, less than 0.03%

(1000 Hz at -12 dBFS)

### Input Impedance

Balanced, 600 Ohms or greater than 10K Ohms

### Output Impedance

Balanced, less than 30 Ohms

### Connectors

XLR female input and XLR male output

## DIGITAL INPUT/OUTPUT (LINEAR)

### Accepted Audio Sampling Rates

32, 44.1, or 48 kHz

Rate conversion to 32 or 16 kHz for network transmission

### Coding

16-bit linear, uncompressed

### Crosstalk

Less than -80 dB @ 1 kHz

### Total Distortion

Including harmonic and noise, less than 0.01%

(1000 Hz at -12 dBFS)

### Input and Output Impedance

110 Ohms  $\pm 20\%$

### Connector

XLR female input and XLR male output

## E1 INPUTS/OUTPUTS

### Connector

BNC, 75 Ohms, RJ-48C, or

DB-15, 120 Ohms

### Frame Formats

Channel Associated Signaling (CAS)

Common Channel Signaling (CCS)

Per ITU G.703, G.704 and G.706

### Line Codes

High Density Bipolar Order 3 (HDB3)

Alternate Mark Inversion (AMI)

### Timing

Internal, 2,048 Mbs  $\pm 30$  ppm output

External, RS-422 clock input

Loop

### Redundancy

Optional redundant common module

## STATUS & DIAGNOSTICS

### LED Indicators

Power, Normal, Alert, Alarm

### Loopbacks

Line loopback, Equipment loopback,

Payload loopback

### Test Access

Bantam jacks for E1 input/output signal and E1

input/output monitoring

## REMOTE ACCESS & CONTROL

### User Interface

Remote programming and monitoring using ISiCL

command-line interface or IntraGuide™

Configuration and Management Software

### Control Interface

RS-232C and RS-485 asynchronous for user interface

### Network Management Communications

Remote access of AudioLink PLUS(s) over the

network using fractional DS0 timeslot

## PHYSICAL & ENVIRONMENTAL

### Power Requirements

Universal AC standard

Optional -48 VDC, +24 VDC, -24 VDC

Optional hot-standby redundant supply

### Nominal Power Consumption

Less than 25 Watts, each shelf

### Temperature

0°-50° C Operating

### Humidity

10%-90% noncondensing

### Dimensions

3 RU: 5.25" (13.4 cm) H x 14.75" (37.5 cm) D x

19" (48.3 cm) W rack-mount

1 RU: 1.75" (4.5 cm) H x 14.75" (37.5 cm) D x

19" (48.3 cm) W rack-mount

### Regulatory Compliance

CE Approved

CTR - 12 and 13

FCC Part 15

UL 1950

Specifications subject to change without notice.



Specifications are subject to change. For a complete listing of the most current specifications, please visit our Website at [www.broadcast.harris.com](http://www.broadcast.harris.com).



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