

Intraplex STL HD™

Digital T1 Studio Transmitter Link

The STL HD™ by Intraplex Products is an HD Radio-ready fully integrated digital STL designed to transport 20 kHz stereo linear uncompressed audio. STL HD provides a clear migration path to an all-digital air chain and is ideal for diverse broadcast audio applications ranging from a single studio-to-transmitter link to a multi-location wide area program audio distribution network.

Key Features

Take full advantage of HD Radio™

A digital 44.1 STL is recommended to take full advantage of HD Radio conversion. STL HD in digital mode delivers a bit-identical copy of the input to the output so frequency response, distortion and dynamic range of the source are unaltered by the system.

Digital 44.1 uncompressed audio performance

STL HD operates at 48, 44.1, or 32 kHz sample rates to support digital audio broadcasting and other high quality audio transport application. Uncompressed audio insures the best fidelity possible, free from the effects of encoding and decoding algorithms.

Unique features tailored to HD Radio™

A built-in data channel transports program associated data without the need to purchase additional channels or equipment. The digital audio output accepts external AES/EBU reference clock signal to synchronize the output stream to the exciter. Simultaneous digital and analog outputs feed both digital and analog systems and are handy for monitoring and testing.

No line-of-sight to the transmitter required

STL HD transports crystal clear digital audio over any distance or terrain. The digital signal is transported accurately regardless of distance and is unaffected by low levels of noise which build up in analog circuits. STL HD can be used on all types of T1 links including public leased telco T1 circuits, microwave, spread spectrum radio or fiber optic links.

Greater traffic capacity than conventional STL

STL HD is inherently bi-directional. Optionally it can carry simultaneous TSL backhaul from the transmitter for satellite downlink, RPU, and telemetry. Extra capacity can be used for remote control, OPX telephone extension, remote LAN connection or off-premises mirrored server. A single T1 line is more economical than leasing multiple analog lines and more convenient than licensing multiple TSL links.

STL HD serves multi-location groups

STL HD can be deployed in a wide area network program audio, telephone and LAN/WAN data transport system. These other applications "ride for free" with the program audio increasing communications efficiency. Point-to-point, point-to-multipoint, diverse routing and self-healing ring topologies are possible using combinations of STL HD and Intraplex CrossConnect systems.



Specifications

STL HD Systems

Includes two T1 multiplexers with one audio transmitter module and one receive module, and Universal AC power supplies.

Audio Section

PT-353 input module:
Digital / analog input, auto-detect
PR-353 output module:
Digital / analog output, simultaneous

Audio Channels

1 or 2 per module
Stereo, mono, or dual mono

Sample Rate and Audio Bandwidth

48 ksp/s for 22.5 kHz operation*
44.1 ksp/s for 20 kHz operation
32 ksp/s for 15 kHz operation

Coding

16-bit linear coding

Data Rate and Time Slot Usage (with FEC on)

2 ch. 22.5 kHz: 25 TS (1.600 Mbps)*
2 ch. 20 kHz: 23 TS (1.472 Mbps)
2 ch. 15 kHz: 17 TS (1.088 Mbps)
Processing Delay (digital audio through one pair of modules)
Less than 6.0 ms

Error Correction (FEC)

Reed Solomon

Data Channel

RS-232 up to 9.6 kbps, simplex

Input/Output Connectors

Audio Inputs: XLR female
Audio Outputs: XLR male
Ext. clock, Data/Alarm: RJ-11

Digital Audio Operation

Accepted Audio Sampling Rates
AES/EBU rate 32 to 48 ksp/s

Rate conversion (PT) (user selectable)

Converts any AES/EBU input rate to 48, 44.1, or 32 ksp/s

Rate Adaptation

PT locks to incoming AES/EBU clock rate, which is preserved to the output (PR)

*EI Operation Only!

External Sync (PR)

External AES/EBU reference signal or RS-422 clock to synchronize audio output to facility timing

Input/Output Impedance

Balanced, 110 Ohms \pm 20%

Analog Audio Operation

Frequency Response \pm 0.5 dB

48 ksp/s: 1 Hz - 22 kHz
44.1 ksp/s: 1 Hz - 20.5 kHz
32 ksp/s: 1 Hz - 15 kHz

Full Load Level +9 to +24 dBu

Crosstalk Greater than -80 dB

Total Distortion (THD+N)

Less than 0.003% at 1 kHz
-1 dBFS input

Dynamic Range

Greater than 91 dB

Input Impedance

Balanced, 600 Ohms nominal or greater than 10K Ohms

Output Impedance

Balanced, less than 52 Ohms

VU meter

Five-segment LED Audio Level with overload indication

Test Tone Generator

1004 Hz at -12 dBFS

Audio Module Alarm

Card level failure relay contacts

T1 Section

Connector

RJ-48C, 100 Ohms

Frame Formats

Extended Superframe (ESF)
D4 / Superframe (SF)

Line Codes

B8ZS
AMI

T1 Timing

Internal, External, Loop

Line Build Out (LBO)

Up to 655 feet
LBO 0, -7.5 or -15 dB

Integral CSU

No external CSU required

Status & Diagnostics

LED Indicators

Power, Normal, Alert, Alarm

Loopbacks

Line, Equipment, Payload

T1 Test Access

Bantam jacks

CSU Performance Monitoring

Compliant with ANSI T1.403-1995 and AT&T Pub 54016

Remote Access & Control

User Interface

IsiCL command-line interface
IntraGuide™ Configuration and Management Software
SNMP proxy agent

Control Interface

RS-232 and RS-485

Physical & Environmental

Power Requirements

Universal AC standard
Less than 25 watts, each shelf

Dimensions (rack-mount)

3 RU: 5.25" H x 14.75" D x 19" W
(13.4 cm H x 36.8 cm D x 48.3 cm)

Weight

12 lb. (5.4 kg)

Regulatory Compliance

CE Approved
FCC Part 15, FCC Part 68
UL 1950
Industry Canada CS-03

Specifications subject to change without notice

