Starlink SL9003T1

T1/E1 Digital Transmission System

Moseley

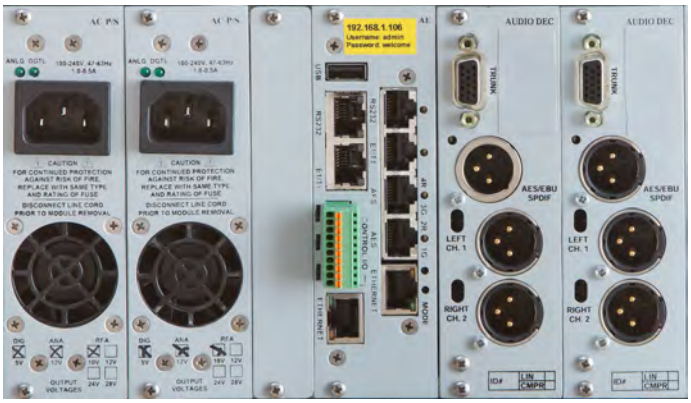
Maximize audio and data payload...

Starlink SL9003T1 T1/ E1 STL is a fully integrated program audio, voice, and data transport system that combines Moseley's reputation for high quality aural Studio Transmitter Links with digital T1/E1 technology.

STARLINK T1/E1 STL: THE RIGHT CHOICE FOR YOUR STATION

T1/E1 circuits are widely available at declining prices. They have no distance or line-of-sight terrain restrictions. This makes T1/E1 an ideal transport medium for STL/TSL and Intercity links.

The bidirectional high payload capacity of a T1/E1 circuit can significantly reduce a station's communications costs compared to using discreet audio, telephone, and data circuits.



*With **Starlink's** architecture, choosing the appropriate modules allows you to create a custom configuration to match your station's needs.*

STL
- Program Audio
- HD Radio™ Audio and Data Stream

TSL
- Remote Pickup (RPU)
- Satellite Downlink
- Off-Air Monitor

DATA
- Remote Mirrored Server
- IP-Based Equipment Control
- Surveillance and Security
- Internet and E-mail
- RDS / RBDS data
- Transmitter Remote Control

ADVANCED INTELLIGENT MULTIPLEXER : THE HEART OF THE STARLINK

The **Advanced** Intelligent Multiplexer is the host for the specialized plug-in daughter cards used to transport data streams and voice grade audio channels. This unique Starlink design provides a space and bandwidth efficient method of adding these services to the multiplex.

- 10/100Base-T Ethernet Bridge @ 9.6-2,048 kbps
- RS-232 asynchronous data @ 300 bps-38.4 kbps

The **Advanced** Intelligent Multiplexer also supports the built-in T1 CSU, or E1 network interface.

CD QUALITY DIGITAL AUDIO

Because it is digital, the Starlink SL9003T1 can deliver an exact copy of its input to the output with no distortion or noise buildup associated with analog STL systems. This results in CD-quality audio with crystal-clear highs and breathtaking lows that make a station stand out on the dial.

The Starlink's source encoder/decoder modules provide up to 22.5 kHz audio frequency response. Both digital and analog inputs and outputs are included for flexible connection to digital and analog studios and transmitters.

Advanced compression like MPEG 2/3, AAC can be enabled for any program change.

- *Linear uncompressed audio*
- *32, 44.1, or 48 KHz sample rates*
- *Input: AES/EBU Digital or Analog (L+R)*
- *Output: AES/EBU Digital and Analog (L+R)*
- *XLR connectors*
- *Built-in RS-232 data channel*
- *Choice of Compression*

CODEC Profiles

Profile Name	Algorithm	AAC/MPEG Modes	Sampling Rate	Bit Rate	Delete?
MP3	MP3	stereo	48	192000	Delete
MP12	MP12	stereo	48	256000	Delete
pcm16	PCM16	stereo	48	1536000	Delete
pcm16-32k	PCM16	stereo	32	1024000	Delete
AACLC.512	AACLC	stereo	48	512000	Delete
aac-lowrate	AACLC	stereo	48	64000	Delete

Profile Name	Algorithm	AAC/MPEG Modes	Sampling Rate	Bit Rate	Save?
	AACLC	stereo	48 kHz		save

E1T1 Configuration

Trunk	Mode	Clock	Haul Mode	Encoding	Audio Transmit	Audio Receive	Ethernet	Framing	Lock status
E1T1_A	E1	Internal	Short	HDB3	1920	1920	Enable	CRC-MFM	Locked
E1T1_B	T1	Internal	Long	B8ZS	1408	1536	Disable	ESF-B8ZS	Locked

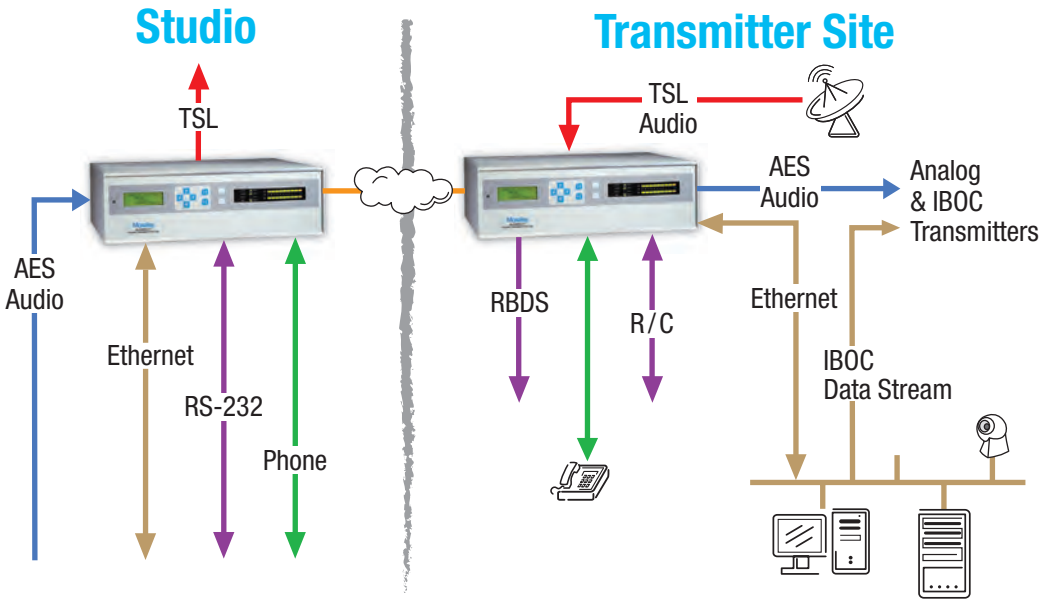
Trunk	Mode	Clock	Haul Mode	Encoding	Audio Transmit	Audio Receive	Ethernet	-
E1T1_A	E1	Internal	Long	AMI	1920	1920	Enable	save

HDRADIO™ READY TODAY

The Starlink SL9003T1 meets all the requirements for IBOC digital radio. The Starlink transports AES/EBU digital audio at all the approved sample rates along with Ethernet data to provide all the signals necessary for the audio, multicasting, and datacasting services. With Starlink, stations can get the most out of HD Radio™ conversion now and in the future.

STARLINK SYSTEM MANAGEMENT

The Starlink SL9003T1 features easy to read front panel VU meters, indicators, and soft-touch controls. The Windows®-based graphic interface software provides convenient configuration of the **Advanced** Intelligent Multiplexer. A built-in remote management channel allows monitoring and control of the remote Starlink chassis over the T1/E1 link. **SNMP Management is available.**



Starlink SL9003T1 *creates your station's custom bidirectional local area / wide area program audio, voice, and data network.*

...over any distance or terrain.

Starlink SL9003T1

SPECIFICATIONS

SYSTEM

FREQUENCY RESPONSE	< 5 Hz to 22.5 KHz (48 kHz), < 5 Hz to 15 kHz (32 kHz), ± 0.2 dB
DISTORTION	< 0.01% at 1 kHz at maximum output level
SAMPLE RATE	Selectable 32, 44.1, 48 kHz, built-in rate converter
DYNAMIC (SNR) RANGE	92 dB Digital (AES/EBU) IN/OUT, > 85 dB Analog IN/OUT, 90 dB static encoder/decoder
LATENCY	Linear 0 ms, ISO/MPEG 160-200 ms
CROSS TALK	> 80 dB
BIT ERROR IMMUNITY	> 10-4 with no subjective loss in audio quality (ISO/MPEG)
LEVEL STABILITY	< 0.2 dB

SOURCE ENCODER & DECODER

AUDIO CONNECTORS	Input - XLR Male, Output - XLR Female
AUDIO SAMPLE RATES	32/44.1/48 kHz selectable, built-in rate converter
ANALOG AUDIO INPUT	Electronically balanced, 600/10kΩ selectable, CMRR>60 dB
ANALOG AUDIO OUTPUT	Electronically balanced, low-Z/600Ω selectable
ANALOG AUDIO LEVELS	-10 dBu to +18 dBu
DIGITAL AUDIO	AES/EBU or SPDIF selectable
AES/EBU INPUTS/OUTPUTS	Transformer balanced, 110Ω
SPDIF INPUTS/OUTPUTS	Unbalanced, 75Ω
DATA INPUT/ OUTPUT CONNECTORS	9-pin D male, RS-232
DATA INPUT RATES	Async, 300-9600 bps selectable
ISO/MPEG MODES	Mono, Dual Mono, Joint Stereo, Stereo (ISO/IEC 111172-3 Layer II)
ISO/MPEG SAMPLE RATES	48 kHz selectable
DATA RATES	64/80/96/112/128/160 /192/224/256/320/384 kbps selectable

ADVANCED INTELLIGENT MULTIPLEXER

PORTS	0 to 6 (Internal), 0 to 24 (Expansion)
AGGREGATE RATES	Up to 16 Mbps
CLOCKS	Internal, Derived, External
TRUNK	IP, T1/E1, Radio

LAN OPTIONS

TYPE	10/100Base-T
STANDARD	Ethernet IEEE 802.3 bridge
CONNECTOR	RJ-45 (2 ports)
SPEEDS	8 – 8192 kbps

T1 INTERFACE

CSU	Built-in
CONNECTOR	RJ-45
IMPEDANCE	100Ω balanced
LINE CODES	B8ZS, AMI
FRAMING	ESF, D4
LINE LENGTH EQ.	0 – 655 Ft.
REDUNDANCY	Optional Redundant T1 Interface

E1 INTERFACE

CONNECTOR	RJ-45, BNC adaptor
IMPEDANCE	100Ω balanced, 75Ω unbalanced
LINE CODES	HDB3
FRAMING	256N, 256S, with/without CRC-4
COMPLIANCE	CCITT Rec. G.703, G.704, G.732
REDUNDANCY	Optional E1 Interface

SYSTEM MANAGEMENT

DISPLAY	Front panel LCD - menu driven
VU METER	Front panel Stereo 10-segment bargraph with Clip Indicator
LOOPBACK	Local and Remote
USER INTERFACES	Command line for terminal program Windows®-based user interface software
NETWORK MANAGEMENT	Built-in communications channel for control of remote Starlink across the link
CONNECTOR	9-pin D female RS-232, SNMP and Graphical User Interface

PHYSICAL

POWER	Universal AC 90-260V, 47-63 Hz Optional Redundant Power Supply Optional 24Vdc, 48Vdc supply
DIMENSIONS	17"w x 14"d x 5.2"h (43.2cm x 35.6cm x 13.2cm)
MOUNT	19" Rack Mount – 3 Rack Units
TEMPERATURE	-30°C to 60°C Operational
HUMIDITY	95% Noncondensing
REGULATORY	FCC Part 68, FCC Part 15

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Web http://www.moseleysb.com • These specifications are subject to change without notice. Rev.03DAD1E