STUDIO TRANSMITTER LINK SOLUTION

Streamit's Studio Transmitter Link solution makes it a lot easier for radio stations to transmit their programs to FM transmitters and cable head-ends. By using standard internet technology, the setup and configuration of an STL connection is fast and easy. The Ogg Vorbis audio codec provides excellent audio quality.

Advantages:
1. High quality audio
2. Uses standard internet connections
3. Easy installation and configuration
4. Remote configuration and monitoring
5. Limited network knowledge required
6. 19" rack mountable

Easy to install
The STL solution consists of a transmitter and a receiver, which can also be used independently from each other. Using the optional rackmount kit, both devices can be mounted in a 19" rack. With standard CAT5 cables the devices are connected to the data network. Audio inputs and outputs are standard connectors.

Transmitter (SAS220)
The transmitter (SAS220) is installed in the studio and is equipped with XLR inputs and a headphone output. Analog audio is encoded in Ogg Vorbis format. This delivers excellent audio quality and requires little bandwidth. A standard ADSL connection normally provides sufficient bandwidth. Configuration of the transmitter (SAS220) is done with the Streamit Device portal.
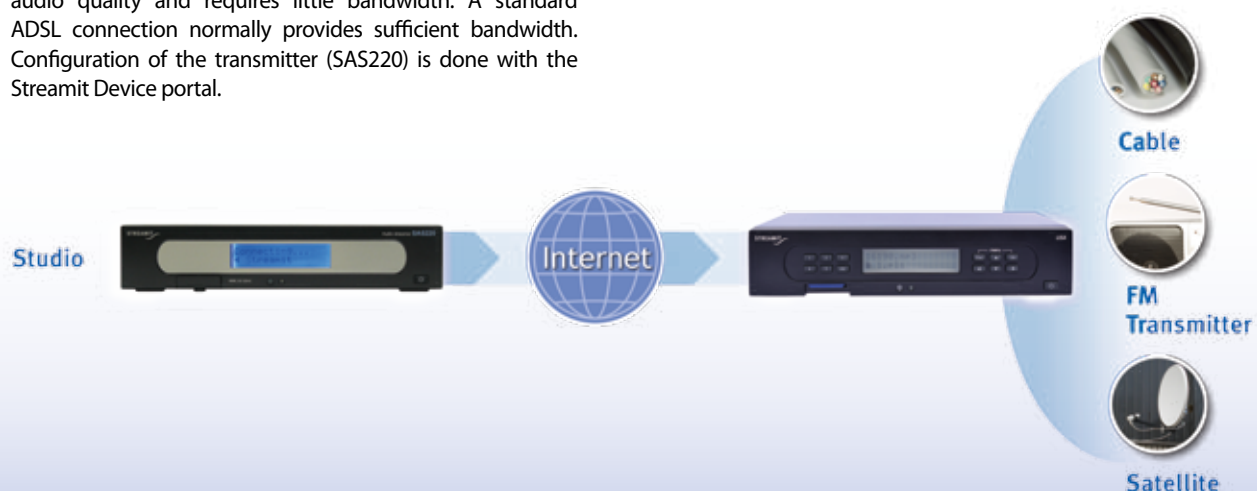
Receiver (Lisa LCD - Ultimate)
The receiver (Lisa LCD - Ultimate) is installed in the cable head-end, in the FM transmitter station or at the satellite uplink. The Lisa LCD - Ultimate has RCA outputs and supports not only Ogg Vorbis streams but also AAC+ and MP3. An SD(HC) memory card with a backup radio program deals with unexpected network issues. After a network or power failure the Lisa LCD - Ultimate automatically reconnects to the transmitter (SAS220). The configuration of the Lisa LCD - Ultimate is done with the Streamit Device portal. This portal also allows for remote monitoring and configuration. A long drive to the head-end or to the FM transmitter site will become a rare trip.

Low delay
The Streamit SAS220 and Lisa LCD - Ultimate support 'low delay' feature. Even over the public internet the delay for Streamit's STL is less than 1 second, depending on the bitrate being used.

Transmitter locations
Streamit's STL solution is being used around the globe by small and large radio stations and by cable and satellite network operators just as well. Network operators in particular are enthusiastic about the possibility to standardize and increase productivity because of the flexibility Streamit's STL solution offers.

PRODUCT FEATURES

MP3 is the most commonly used format for storing digital audio as well as for audio streaming.
Applies to devices: *SAS220, Lisa LCD - Ultimate*

Ogg Vorbis is a free and open source audio format intended to serve as a replacement for MP3. For many applications, Ogg Vorbis has clear advantages over other audio formats in that it produces smaller files at equivalent or higher quality when using bitrates of 64 kbps or higher.
Applies to: *SAS220, Lisa LCD - Ultimate*

AAC+ is a standardized audio format and designed for 16-48 kbps streaming audio applications. CD quality is achieved at 48 kbps.
Applies to: *Lisa LCD - Ultimate*

SAF (Store And Forward) enables the device to update the audio content of the memory card from a remote server.
Applies to: *Lisa LCD - Ultimate*

Remote monitoring and control. The device sends status messages at user-defined intervals to a remote monitoring server; from the remote server also commands can be send to the device.
Applies to devices: *Lisa LCD - Ultimate*

Encryption. The device supports both playback of encrypted files and encrypted streams.
Applies to: *Lisa LCD - Ultimate*

Task scheduler. Task schedules can be sent to the device from a remote server, consisting of all kind of tasks to be executed at desired moments in time and daily intervals.
Applies to: *Lisa LCD - Ultimate*

Remote Software Update (RSU)) enables the device to update its internal software from a remote server.
Applies to: *SAS220, Lisa LCD - Ultimate*

Low Delay (LD) enables reduction of the delay between source and receiver to less than 1 second, depending on the bitrate being used.
Applies to: *SAS220, Lisa LCD - Ultimate*

ABOUT STREAMIT

Streamit is a Dutch company specialized in the development and marketing of transmitter and receiver equipment for audio and video streaming over the internet. We develop our products for niche markets where quality and specific requirements can not be met by standard consumer solutions. Our products and solutions are being used worldwide.

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Technical information

ORDER INFORMATION	SAS220	Lisa LCD
SIZE AND WEIGHTS		
Sizes (b x d x h mm)	220 x 125 x 45	220 x 125 x 45
Size of packaging (b x d x h mm)	310 x 220 x 100	240 x 165 x 73
Weight (g)	800	750
Total weight in packaging (g)	1300	1200
SPECIFICATIONS	SAS220	Lisa LCD
Stereo decoder		MP3, AAC+ and Ogg Vorbis
Stereo encoder	Ogg Vorbis	-
Samplefrequency (max. kHz)	48	48
Bitrate (stereo, max. kbps)	256	576 (AAC)
Ethernet controller	10 Mbps	10/100 Mbps
Audio input impedance	> 20 kOhms (balanced)	-
Common mode rejection ratio	> 50 dB	-
Inputlevel (nominal, clipping)	6 / 15 dBu	-
Outputlevel (nominal, clipping)		
LCD-display	62 x 15 mm, 2 x 16 characters, 5 x 8 dots	
LCD-display with backlight / color	yes/blue	yes/white
Languages	English	English / NL, DE, FR, ES
Real-time clock	yes	yes
Firmware upgrade on-line	yes	yes
Compatible with Icecast	yes	yes
Compatible with Shoutcast	yes	yes
SD memory card / back-up	no	yes
Poweradapter	100 - 240 VAC / 12 Vdc - 500mA	100 - 240 VAC / 5 Vdc - 400 mA
Power consumption		
- standby (typical W)	2	2
- operation (typical W)	3	3
Streaming clients	2 (max)	
INPUTS		
Ethernet 10 Base-T	RJ45	RJ45
Power in 12 Vdc	Screw-jack	-
Power in 5 Vdc	-	adapter + adapter plugs
Service-connector in/out	USB-B	USB-B
MMC/SD/SDHC-card	no	SDHC
Remote control		Optional
Infrared control	yes	-
RS232	yes	-
Balanced inputs	2x XLR female	-
OUTPUTS		
Stereo headphone / line output	6,3 mm	2 x RCA
TEMPERATURE RANGE		
Operation (°C)	+10 to +35	+10 to +35
Storage packed (°C)	-25 to +50	-25 to +50
Storage unpacked (°C)	0 to +45	0 to +45
ACCESSORIES		
19"-rack mounting kit	MK (optional)	MK (optional)

SIGNAL SPECIFICATION OF COMPLETE SOLUTION	
Amplitude response	< +/- 1 dB, from 20 Hz - 20 kHz
Total harmonic distortion	< 0,15%
Total intermodulation distortion	< 0,15%
Signal to noise ratio	> 75 dB relative to 0 dBFS (Unweighted)
Left/right channel level difference	< 1 dB, from 20 Hz - 20 kHz
Left/right channel phase difference	< 5 °, from 20 Hz - 20 kHz
Left/right channel separation stereo mode	> 70 dB, from 20 Hz - 20 kHz
Audio level non-linearity	< 0.4dB, from 20 Hz - 20 kHz @ -40dB0s
Signal to hum ratio	> 80 dB, RMS from 20 Hz - 1 kHz @ 0 dBFS
Minimum delay @ 128 / 64 / 16 kbps	0,7 / 1,5 / 3,2 s

SAS220

Lisa LCD