iLux | Broadcast

Advanced ATSC 1.0 Encoding Platform

Powerful Broadcast Encoders

XScale Encoder

XScale uses H.264 compression but can also be configured as a mixture of MPEG2 and H.264 channels into a single ATSC 1 compliant multiplex.

Based on igolgi's new dual technology encoding platform, XScale uses H.264 compression but can also be configured as a combination MPEG2/MPEG4 encoder for any necessary resolution or program requirement.

Broadcasters who adopt XScale can more than double their existing channel count compared to older ATSC1 encoders. With the wide adoption of/H.264 capable TVs for the past decade, consumers can immediately receive many more channels on a single ATSC1 broadcast.

For broadcasters wishing to continue certain channels in MPEG2, the XScale can support that also. Each channel can be individually configured to be MPEG2 or H.264.

igolgi's iLux ATSC 1.0 XScale is a versatile, compact, high quality and reliable ATSC 1.0 encoding platform. This new offering includes H.264 encoding technology compliant with the ATSC A/72 specification for superb video quality with expanded channel support. Using H.264 encoding and the latest CPU technology the igolgi XScale platform supports up to 24-output programs and can support any combination of SD/HD-SDI, baseband, ASI, or IP inputs. Additionally, XScale model can be configured as a combination MPEG-2/MPEG-4 system for maximum flexibility.

As with all iLux ATSC encoders, the XScale model offers the industry's most flexible interface support and easiest configurability.

The XScale provides a complete ATSC 1.0 Broadcast Station Solution for encoding, Electronic Program Guide (EPG), analog or IP-based Emergency Alert System (EAS), CALM Audio loudness control, Hourly Station Callout, and many more.

Included with the basic package is integrated Statistical Multiplexing which optimizes video quality across all the channels being encoded. In addition, Static or Dynamic PSIP is also supported. For Dynamic PSIP, XScale can integrate with third party PSIP generators, or can create the dynamic PSIP information directly. Simultaneous outputs over ASI and IP are available and enhance the operational value of the XScale platform, which also supports 1+1 redundancy if a hot spare is required with instant failover switching.

The XScale advanced ATSC 1.0 platform is a complete system offering exceptional video processing and field-proven software algorithms for the highest quality and fastest throughput. XScale is simple to set up, monitor, and use, and offers a variety of hardware and software configurations appropriate for any broadcast application.

Our value proposition is simple: the highest quality, most flexible product at the best price point.

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Each channel in the multiplex can be configured as MPEG2 or H.264 for maximum flexibility for broadcasting.

Flexible inputs
iLux XScale encoders offer any mixture of SD/HD-SDI, IP, ASI, or analog inputs up to 24 channels

Flexible outputs
Dual redundant ASI and IP outputs.

High quality STATMUX
True multi-pass with no compromise in quality.

Encoding
iLux XScale offers numerous types of selectable video encoding combinations and bit rates. Configurations are user definable and simple to change.

PSIP
iLux has built in static PSIP and seamlessly integrated dynamic PSIP with no external server required.

Upgrade to ATSC 3.0
Always an upgrade path, update software and hardware (if required) and you have ATSC 3.0. iLux protects your investment!

Key Features

- **24-program, H.264 Flexible multi-channel encoder to fit any requirement**
- **MPEG2/MPEG4 combination configuration available**
- **Statistical multiplexing with 3 pass MPEG for superior video quality**
- **Dynamic CALM Act loudness control**
- **EAS support through analog or IP interface**
- **Logo insertion**
- **Text scrolling feature with full week schedule**
- **Hourly station callout**
- **Static or dynamic PSIP modes**
- **Video scaling and frame rate conversion**
- **Multiple audio programs per channel**
- **Full closed captioning compliance**
- **Fully configurable and flexible web-based management and control**
- **Customizable software platform ensures easy integration of many optional functions**
- **SDI, ASI, analog, and IP inputs in any combination**
- **Simultaneous and redundant IP or ASI outputs**
- **1 + 1 redundancy available with instant failover switch • SNMP for monitoring**

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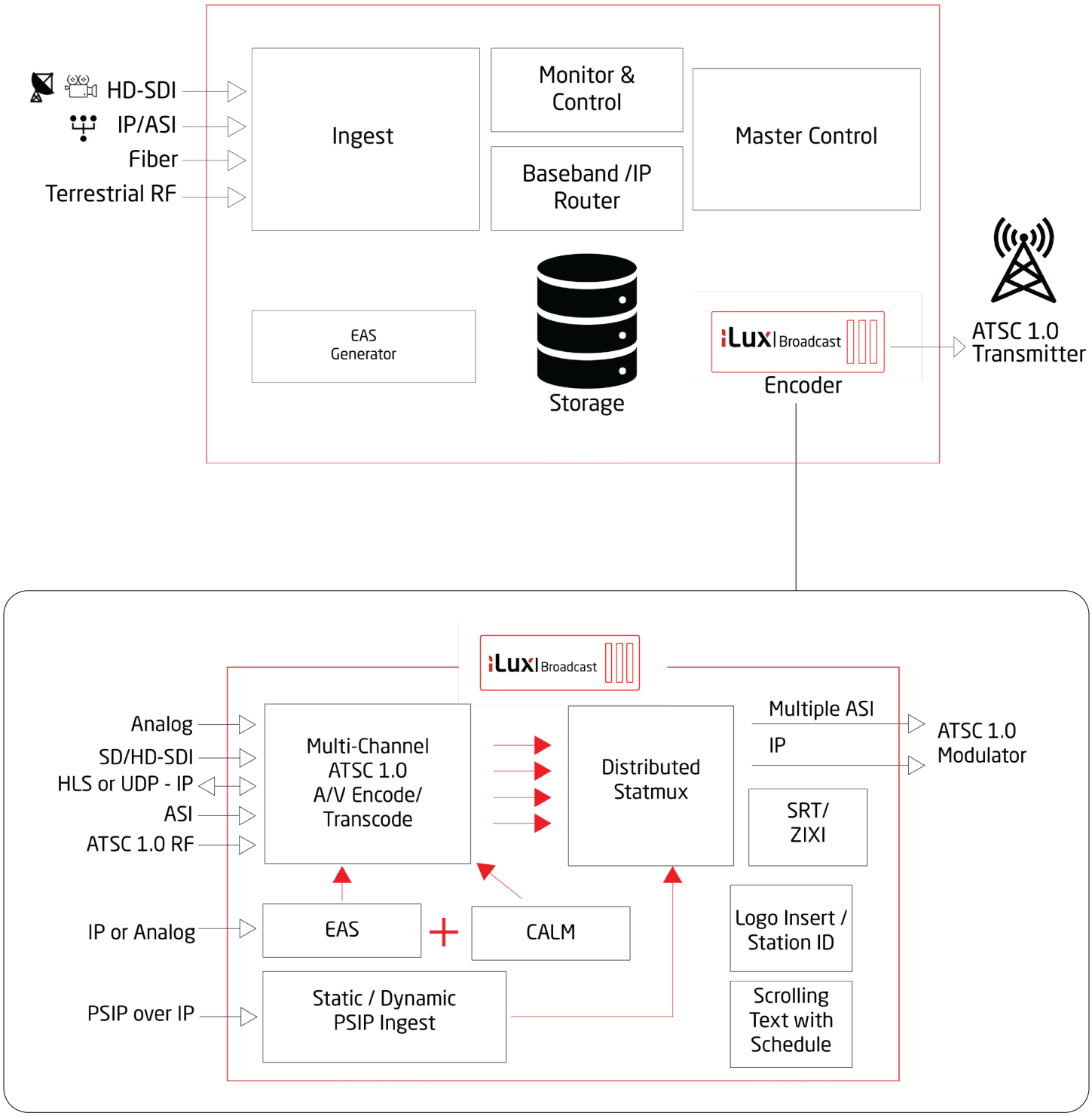
Workflow



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Specifications

Video

Video Compression Input	MPEG-2 simple, main, and main profile @ high level H.264 Baseline, Main, High , High 10 , High 422
Video Compression Output	MPEG-2 simple, main, and main profile @ high level (HD only) H.264 Baseline, Main, High Profile
Video Processing	Progressive, Interlace GOP Structure I only, IPPP, IBBP Fixed or Adaptive GOP with scene change detection Lanczos Cropping/Scaling MCTF Noise Filtering with strength options Brightness, Hue, Saturation, Contrast adjustable per channel

Resolutions and Frame Rates

IP Input Formats Flexible - QCIF to 4Kp60 Common Resolutions:	240p, 288p,480p,576p @ 10,12.5,15,20,23.976,29.97,30,50 and 59.94 and 60 Hz 576i and 480i x 720, 544 and 352 pixels @ 23.976, 24, 25, 29.97 and 30 Hz 1080i x 1920, 1440, 1280 and 960 pixels @ 23.976, 24, 25, 29.97 and 30 Hz 720p x 1280, 960 and 640 pixels @ 23.976, 24,29.97,30, 50, 59.94, and 60 Hz 1080p x 1920,1440,1280, and 960 pixels @ 23.976, 24,29.97,30, 50, 59.94, 60 Hz
SDI Input Formats	SD : 625i50 (PAL), 525i59.94 (NTSC) HD 1280x720 : 720p60, 720p59.94, 720p50, 720p30, 720p29.97, 720p25, 720p24 ,720p23.98 HD 1920x1080 : 1080i60, 1080i59.94, 1080i50, 1080p30, 1080p29.97, 1080p25, 1080p24, 1080p23.98, 1080psf30, 1080psf29.97, 1080psf25, 1080psf24, 1080psf23.98, 1080p60 A/B, 1080p59.94 A/B, 1080p50 A/B, 1080p60, 1080p59.94, 1080p50. 2K 2048x1080 : 1080p30, 1080p29.97, 1080p25, 1080p24, 1080p23.98, 1080psf30, 1080psf29.97, 1080psf25, 1080psf24, 1080psf23.98, 1080p60, 1080p59.94, 1080p50, 1080p48, 1080p47.952

Audio

Audio Inputs	**IP Input Formats** MPEG-1 layer 2 MPEG-2 layer 3 (mp3) AAC-LC, AAC-HEv1, AAC-HEv2 AC-3 stereo and 5.1 **Analog** Stereo Audio (dual RCA) **SDI** Multiple programs per channel, configurable SDI audio slots PCM embedded AC3
Audio Outputs	AC3 5.1 or Stereo Calm Processing and Loudness Control 5.1 Downmix control bitrate setting per audio program manual dialnorm setting adjustable static volume control adjustable

Transport Processing Inputs

MPEG2-TS over UDP	Unicast or multicast, SPTS or MPTS IP or ASI input, VSB, satellite, or QAM Redundant IP input
HLS	Single Profile HLS input
	RTP/RTSP
SDI/ CVBS	CVBS with Stereo Audio Input 3G-SDI for SD or HD
Scrambling	BISS 0/1/E decryption per PID, BISS -CA
FEC	SRT input decode CoPv3 FEC ZIXI

Transport Processing Outputs

MPEG2-TS over UDP	Unicast or multicast, SPTS or MPTS IP and simultaneous ASI output Redundant IP output
FEC	SRT input decode ZIXI

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Specifications Continued

Statistical Multiplex

Minimum, Average, and Maximum bitrate configurable per Channel
Mix channels from any clock domain (genlocks unsynchronized inputs)

Overlay Graphics and Text Generator

Station Call Sign Overlay with Scheduling (e.g. once per hour)
Logo Insertion
Scrolling Text Insertion with Scheduling ability

Ancillary data

EIA608 & EIA708 closed captioning
embedded AC3 on SDI

Program Guide Insertion (PSIP)

Static PSIP Generation

Dynamic PSIP Generation Options	1- Native support (requires PCMP format from guide data service such as Titan) 2- IP input for third party generators (Triveni, others)

Emergency Alert System Insertion (EAS input)

IP input from Dasdec generator
analog input from Dasdec, Gorman, or Sage generator
Fullscreen or scrolling text modes

Configuration and Management

Web Based User Interface
IPMI hardware management
SNMP Mibs, downloadable from GUI
Channel configuration backup and restore
User Interface Login Lockable
Downloadable Logs
Video Thumbnail and Parameter Status
Software Updates

Physical

Dimensions	1U standard chassis : 1.7 x 17.2 x 28.5 28 pounds 2U Dense IO Chassis : 3.4 x 17.2 x 26 30 pounds
Power	400 to 700 Watt power supply depending on chassis
Environmental Spec.	Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F) Non-operating Temperature: -40°C to 60°C (-40°F to 140°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing) Cooling front to back
Redundancy	1+1, N+1 redundancy capable IP watchdog based redundancy ASI passthrough redundancy option

BackPanel Connectors

Standard Configuration	2x Gigabit Ethernet (configurable for input, output and system management) 1x 100 bT ethernet (IPMI chassis hardware management) VGA/USB for KVM Dual Redundant hot-swap AC Power Supply
Hardware Options	1,2,4,8, 12 or 16 3G-SDI (SMPTE-424M) (up to 16 SD, HD or 4 4Kp60) 1,4,8,12, or 16 CVBS inputs (with stereo audio connectors) 1,2, or 4 ASI input 1,2, or 4 ASI output 4x 1 Gig Ethernet (copper or SFP+) 2 or 4x 10 Gig Ethernet (copper or SFP+) 1 to 4 SMA (F) 50 ohm ATSC VSB Demodulator Input (4,8,12 or 16 tuners) 1 to 4 SMA (F) 50 ohm Satellite Demodulator Input (1 to 4 tuners) 1 to 4 SMA (F) 50 ohm QAM Demodulator Input (4,8,12 or 16 tuners)

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Our Mission

First and foremost, igolgi is an engineering and development company. Our engineering staff has years of experience in every type of compression and encoding technology, and we are experts in software control and interface. Our principal engineers hold over 200 patents in compression related projects. For over a decade we have provided innovative, flexible, and high-quality solutions for the broadcast, cable, LPTV and government markets.

igolgi is an American company - all development, engineering, production, and support is based in the USA.

As ATSC 3.0, IP, and compression technologies evolve, igolgi is a partner you can count on to ensure every aspect of your design and implementation meets today's needs and is ready for future growth and expansion.

This is our "sweet spot". Let us help you.

Call or email us for a no-obligation discussion of your current and future needs.

Our Promise

Highest Quality.
Our advanced Codecs and optimized software algorithms assure the best quality in any resolution.

Simplest to Use.
Our enhanced user interface makes set up, monitoring, and changes fast and simple.

Most Configurable.
SD. HD-SDI, ASI, IP are all configurable for maximum flexibility.

Easiest Upgrade.
Update the software and change out hardware (if required) to keep you future proofed.

Superior Support.
Our support is USA-based, and our PremierPlus ® gives you 24x7x365 expanded support and service.

Best Value.
igolgi has it all: technology, flexibility, expandability, and support... at a price that will surprise and please you.

Stay Connected

info@igolgi.com

www.igolgi.com

/company/igolgi-inc/

609-334-5978

1250 South Grove Avenue
Suite 102
Barrington IL, 60010