Inca IP Video Platform

Live Linear and ABR Solution

- ✓ Transcode between MPEG-2, MPEG-4 and HEVC
- ✓ Receive ATSC, ASI, IP, SRT, ABR sources
- ✓ Output video as multicast IP, HLS, MPEG-DASH or SRT
- ✓ Automatic service failover, chassis and power redundancy

Increase visibility with VidiOS™ - includes video thumbnails, stream downloads and integrated analytics

Save big on power costs for high-density deployments - less than 200 W per chassis

Profit from using a modular platform - upgrade functionality at any time

Applications

- ✓ Receive, decrypt and re-multiplex ABR sources at the edge to deliver IP video using existing hospitality site infrastructure.
- ✓ Improve video quality for ABR deployments with advanced de-interlacing and by uprating to 50/59.94 fps.
- ✓ Enable efficient UHD, HD and SD video distribution by transcoding high bitrate sources to optimized MPEG-4 AVC or HEVC.
- ✓ Distribute video easily and securely from broadcaster sites or between remote sites using the low latency SRT protocol.
- ✓ Receive ATSC 1.0 or ATSC 3.0 off-air signals and output IP transport stream to feed existing networks, with bulk Widevine decryption of ATSC 3.0 signals, and optional transcoding between MPEG-2, MPEG-4 AVC or HEVC.
- ✓ Launch new live OTT services, eliminate set-top boxes and expand your subscriber base beyond your existing distribution network.
- ✓ Streamline OTT deployment. Package streams and serve player devices directly or feed a cache or CDN.

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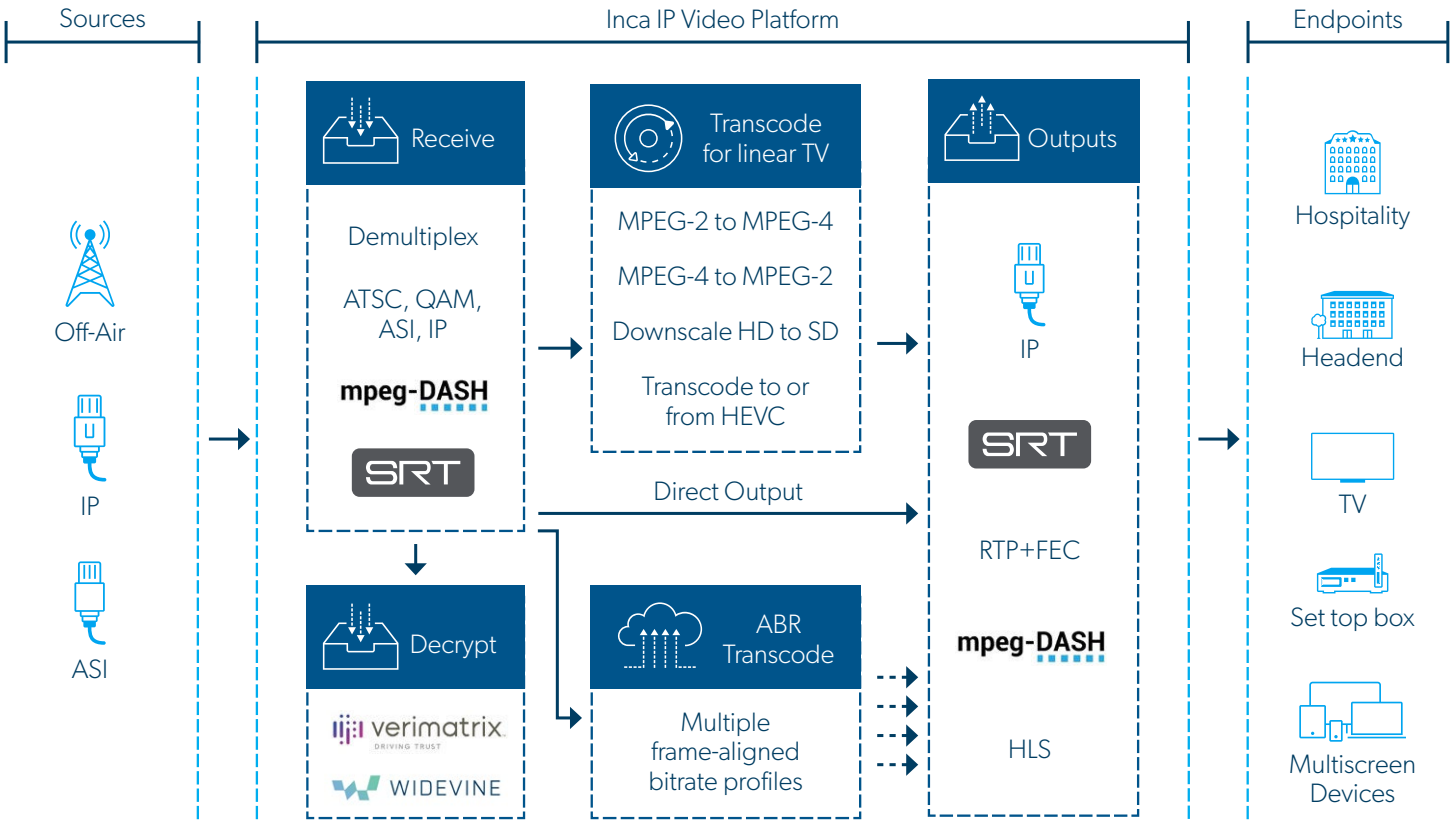
High-Density IP Processing for Linear or ABR Applications



Available Modules

Up to 4 modules can be installed in a single Inca chassis. Modules can be mixed and matched to support different applications.

ATSC 1.0, ATSC 3.0 and QAM Receiver Modules	
Tuners	4x ATSC 1.0 or DVB-C Annex B QAM (J.83B) ATSC 3.0, up to 4x PLPs per receiver, with software license
Input Connectors	4x RF 75 ohm F-Type
ATSC 1.0 Input Signal	GIAT34 -80 to 0 dBm (29 to 108 dBμV) GI8VSB4 -65 to -15 dBm (44 to 94 dBμV)
SNR	GIAT34 > 20 dB GI8VSB4 > 25 dB
Payload	UHD/HD/SD, MPEG-2/MPEG-4 AVC/ HEVC SPTS/MPTS

ASI Receiver Module	
ASI Fixed Input Ports	6x
Input Connectors	6x 75 ohm BNC
Bitrate	Up to 108 Mbps per port
Payload	UHD/HD/SD, MPEG-2/MPEG-4 AVC/HEVC SPTS/MPTS

XC3 Transcode Module	
Transcode/Transrate/Downscale	Linear - up to 12x HD or 30x SD inputs Adaptive bitrate - 6x HD to 4x ABR profiles *(other configurations available)*
De-interlacing options	Weave, bob
Codecs	MPEG-4 AVC and MPEG-2

HXC Transcode Module	
Transcode/Transrate/Downscale	Linear - up to 10x HD or 20x SD inputs Adaptive bitrate - 6x HD sources to 6x ABR profiles *(other configurations available)*
De-interlacing options	Advanced, weave, bob Convert 25/29.97 fps to 50/59.94 fps *(Module density is impacted when using advanced de-interlacing or uprating)*
Codecs	HEVC, MPEG-4 AVC and MPEG-2

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Chassis Specifications

4440 Chassis Density	
Linear Transcoding	Up to 4x UHD, 48x HD or 90x SD sources
ABR Transcoding	Multi-bitrate profiles: Up to 4x UHD sources to 2x ABR profiles Up to 24x HD sources to 6x ABR profiles Up to 80x SD sources to 2x ABR profiles
Video Network Interfaces	4x 1000 Base-T 2x 10 Gig SFP+ VLAN tagging supported for video network interfaces
ATSC/QAM Receivers (optional)	Up to 16 tuners
ASI Input Ports (optional)	Up to 24 ports

Technical Specifications

Transport Stream Processing		
Inputs	MPEG-2 SPTS/MPTS transport stream Multicast / Unicast UDP IP, SRT, MPEG-DASH Optional ATSC/QAM, ASI	
Outputs	MPEG-2 transport stream Multicast / Unicast UDP IP, SRT, MPEG-DASH, HLS Transcode to SPTS Demux or pass through to SPTS/MPTS Up to 160 MPEG transport stream IP outputs	
Input Codecs	HEVC	Main profile, 8-bit, 4:2:0 Main 10 profile, 8-bit, 10-bit, 4:2:0 Main 4:2:2 10 profile, 10-bit, 4:2:2
	MPEG-4 AVC	Baseline, Main, High profile, 8-bit, 4:2:0
	MPEG-2	Main profile, 8-bit, 4:2:0
Output Codecs	HEVC	Main profile, 8-bit, 4:2:0
	MPEG-4 AVC	Main, High profile, 8-bit, 4:2:0
	MPEG-2	Main profile, 8-bit, 4:2:0
	Pass through: All codecs and formats	
Resolutions and Frame Rates	Standard UHD, HD and SD broadcast frame sizes and frame rates for sources and outputs De-interlace to progressive for multiscreen	
Transport Stream Optimizations	PID and program filter and remap, jitter correction, strip null padding, transport rate *VBR <--> CBR conversion (XC modules)* *VBR --> CBR conversion (HXC modules)*	
Transport Modes	Constant, variable, peak	
Closed Captions	EIA 608/708 passed through if present in source *(708 available in XC modules only)*	
DVB Subtitle PID	Passed through if present in source	
SCTE Ad markers	Passed through if present in source	
3rd Party Packager Support	Compatible with ecosystem partners: Anevia, Broadpeak, Cryptoguard, Edgeware, Innovative Systems, Vecima, XPERI, TV2, Wowza *(For information about other integrations, please inquire)*	
ABR Decryption	Bulk decrypt Widevine from Cryptoguard, Innovative Systems, Minerva Networks (Verimatrix Multi-DRM), TiVo Managed IPTV Service	

Demux to IP and TS Probes	
From IP Sources (MPEG transport stream)	10x included. License option to add up to 144x direct outputs or probes (154x total per 4440 chassis)
From ATSC, QAM, ASI, SRT and ABR Sources	Included

Power	
Type	Dual redundant hot swap
Input	AC Input: 100 ~ 240 VAC @ 50 - 60 Hz DC Input (optional): -36 to -72 VDC
Power	< 200 W typical

Physical	
Mounting	19", 4 post rack, 1RU Slide rails included
Dimensions	438 x 44 x 525 mm 19" x 1.75" x 20.7"
Rack Rail Depth	620 - 805 mm 24.4" - 31.8"
Weight	15 kg / 33.1 lb
Operating Temp.	0 ~ 40 °C

Audio Transcoding (optional - licensed per stream)	
Source Audio Codecs	AC-4, AC-3, EC-3, AAC (ADTS & LATM), MPEG 1/2 Audio Layer I/II
Source Audio Channels	7.1, 5.1, 2.0, 1.0
Output Audio Codec	AC-3, EC-3, AAC (ADTS & LATM), MPEG-1/2 Audio Layer I/II
Output Channels	5.1, 2.0, 1.0
Audio Processing	Nielsen watermark extraction and ID3 tag insertion Audio level normalization and loudness target

Redundancy Options	
Service Failover (Licensed per output)	Automatic failover to backup source Automatic recovery to primary source
N+1 Chassis Redundancy (Licensed per chassis)	Automatic failover to spare chassis Automatic recovery to primary chassis

Management	
Configuration	Powerful VidiOS™ web-based user interface
Visual Mosaic Monitoring	Compatible with All Seeing Eye monitoring product - All Seeing Eye probe capability included
Management Network Interface	1000 Base-T IPv4 or IPv6
NIC Redundancy	LACP, active failover, round robin
SNMP	SNMP trap forwarding

Regulatory Compliance	
EMC Standards	FCC Part 15 Class A, EN 50083-2
Safety Standards	IEC/CSA/UL 62368-1

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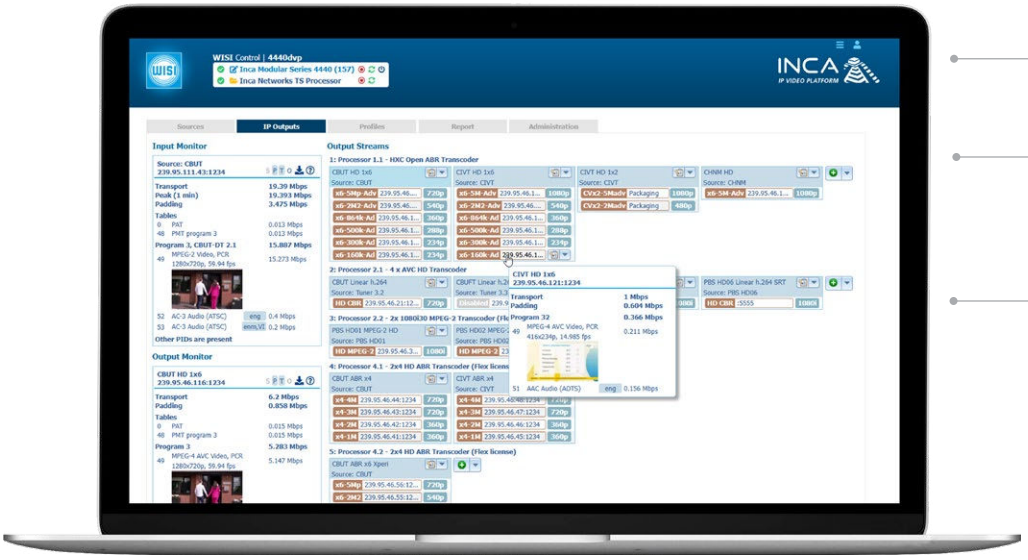
VidiOS™ Management & Monitoring Tools

Meet VidiOS™, Inca's advanced processing and monitoring engine that provides unique visibility into every step of the video processing chain.

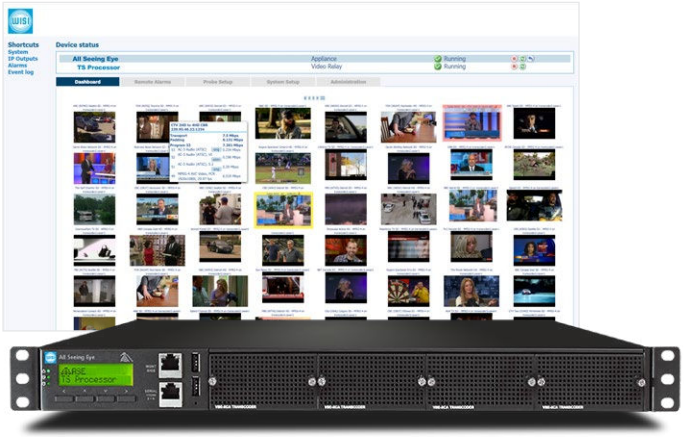


Enables rapid configuration and deployment

Experience deep visibility and efficient troubleshooting

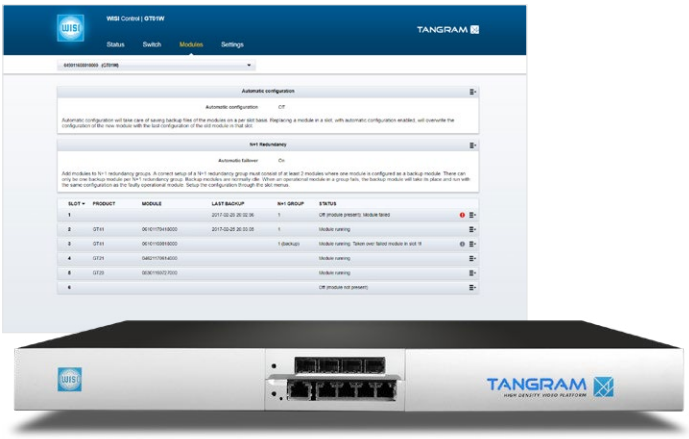
Experience effective diagnostic tools with video thumbnails, stream sample downloads, detailed stream statistics including PID and payload details, warnings and errors

Pair with the All Seeing Eye for confidence monitoring



- ✓ Visual monitoring of all headend streams
- ✓ Efficient troubleshooting with visual highlighting of impairments, email notifications
- ✓ Overview mosaic of video thumbnails

Pair with the Tangram for more output options



- ✓ Enable Verimatrix, Pro:Idiom, Samsung LYNK or BISS encryption
- ✓ Combine modules in a 1RU chassis to meet specific application needs
- ✓ Bridge between digital and RF - migrate to IP distribution and connect to existing edge networks

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Ordering Part Numbers

Inca IP Video Platform

GI01R4440	4x bay modular video processing chassis One network interface option required Add up to 4x transcode/receive modules Up to 90x video transcodes per chassis
GI44SPSDC	DC power supply unit to upgrade chassis to redundant, hot swappable DC power

Network Interface Options

GINIC1G4	4x GigE network card
GINIC10G2	2x 10G SFP+ network card

Transcode and Receiver Modules

GIHXC200	HXC transcode module for MPEG-2, MPEG-4 AVC and HEVC inputs/outputs Includes advanced de-interlacing
GI30	High-density transcode module for MPEG-2/MPEG-4 with 3x transcode processors
GIAT34	Quad ATSC 1.0/3.0/QAM receiver module Enable ATSC 3.0 reception with software license VFE-AT3-RCV-LIC, Widevine decryption with security module VSM-INCA
GI8VSB4P2	Quad ATSC 1.0/QAM tuner interface with 2x transcode processors
VMA-ASI-6-XC**	Six port ASI interface with 1x transcode processor

ATSC 3.0 Receive Options

GIVSM	Inca VidiOS™ security module, 1x per 4440dvp Bulk decrypt Widevine from ATSC 3.0 signals
GIAT3RCV	ATSC 3.0 receive license Receive ROUTE/DASH signals and re-multiplex to MPEG-TS

Redundancy Licenses

GISFOVER	VidiOS™ service failover license Automatic failover to secondary source, with automatic recovery to primary source
GICHARED	License for N+1 chassis redundancy *(1 per redundant chassis)*

Audio Transcode Licenses

GIAUXA3	Multichannel audio transcode license for 5.1 outputs from 5.1 Dolby AC-4/AC-3/EC-3 or AAC sources
GIAUX3XDM	5.1 Dolby audio transcode license for 5.1 Dolby AC-4/AC-3/EC-3 sources
GIAUX3X	2.0 Dolby audio transcode license for stereo Dolby AC-4/AC-3/EC-3 sources
GIAUXCTRC	Audio transcode license between MPEG-Audio and AAC Encode to AAC for additional bitrates

Transcode Licenses for HXC-200 Modules (1x License per module)

GIOPENLIN	Open linear transcode license Transcode between MPEG-2, MPEG-4 AVC, and HEVC sources and outputs
GIOPENABR	Open ABR transcode license Transcode to frame-aligned AVC outputs within the parameters of the utilization meter
GIOPEN2	Open MPEG-2 transcode license Transcode MPEG-4 AVC or MPEG-2 sources to MPEG-2 outputs
GIMUS55	Music transcode license Transcode 55x music services to MPEG-4 AVC

Transcode Licenses for XC Modules (1x License per Transcode Processor)

GITRC4H4	4x MPEG-4 HD linear transcode license Transcode 4x HD streams from MPEG-4/MPEG-2 to MPEG-4
GITRC10S4	10x MPEG-4 SD linear transcode license Transcode 10x SD streams from MPEG-4/MPEG-2 to MPEG-4 interlaced outputs
GIFLEX2	MPEG-2 flex transcode license Transcode 2x HD or 4x SD streams from MPEG-4/MPEG-2 to MPEG-2
GIFLEXABR	ABR flex transcode license Transcode to frame-aligned AVC outputs: 1x HD to 6 (max 1080p 25/29.97 fps or 720p 50/59.94 fps), or 2x HD to 4 (max 720p 25/29.97 fps, two downscales per source), or 2x SD to 5, or 4x SD to 2 bitrate profiles
VBE-XCA-FLEX-ABR-HR-LIC**	ABR high res flex transcode license Transcode to frame-aligned AVC outputs: 1x HD to 6 (max 1080p 25/29.97 fps or 720p 50/59.94 fps), or 2x SD to 5 bitrate profiles

IP Streaming Licenses

GIPRO48	VidiOS™ 48x direct output license Receive full multiplexes via IP, demultiplex all programs
GISTMSRT	SRT connection license, per stream Receive/send 1x encrypted SPTS/MPTS up to 160 Mbps Up to 144x SRT connections at a maximum of 1.6 Gbps per 4440 chassis
GIPKG	Packaging license, per service Generate packaged outputs, with customizable URLs Serve up to 1200 clients directly, or via CDN/cache
GISTMARX	ABR Receive activation license, per stream Receive up to 100x MPEG-DASH streams in a 4440 chassis and convert to Transport Stream
GIVMXBDEC	Verimatrix OTT decryption Decrypt up to 20x ABR streams. Up to 100x streams can be decrypted in a 4440 chassis
GIWVNBDEC	Widevine decryption including streams from Cryptoguard, Minerva Networks (Verimatrix Multi-DRM), Innovative Systems, TiVo Managed IPTV Service Decrypt up to 20x ABR streams. Up to 100x streams can be decrypted in a 4440 chassis

Max progressive output format for linear transcode licenses: 1280x720p 50/59.94 fps. More license options available, including PIP licenses for Mediaroom deployments, ask your sales rep. **Sold in US/Canada only.

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To arrange an online demonstration or to discuss your project, please contact your WISI sales representative.

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