WORLDCAST SYSTEMS

POWERFUL PERFORMANCE CONTROL SAVINGS SERVICES

APT IP Silver Encoder | Decoder

Budget-Friendly professional Audio Streaming

The APT IP Streamers, featuring advanced analog audio encoding and decoding capabilities, are armed with professional, top-tier technologies unmatched at this price point.

Features such as a range of professional audio formats, APT's proven SureStream technology for IP redundancy, and ScriptEasy's distributed intelligence are typically reserved for more expensive codecs.

With a focus on quality and affordability, the APT IP Silver Range ensures reliable and time-controlled IP audio transmission at a high level.

Designed for versatility, the Silver IP Streamer is well-suited for individual FM feeds as well as multi-frequency broadcasting.

Optimized for mission-critical applications, this solution offers a wide range of wired network connectivity options and explicitly supports the use of 4G/5G modems for connectivity.

Choosing the APT IP Silver Encoder and Decoder means investing in the rock-solid performance that has made APT a trusted name for broadcasters worldwide.

apt X | SURESTREAM | SCRIPTEASY

APT IP SILVER Benefits:

IP Transport Optimization

The APT IP Silver Range is rich in network capabilities, featuring VLAN tagging and sophisticated NAT traversal techniques to accommodate networks with dynamic IP addresses, like the Internet or cellular connections. Additionally, its SureStream technology mitigates packet loss, while NTP-based time alignment minimizes latency fluctuations.

Pristine Audio Quality & Performance

Enhanced aptX™ delivers unparalleled signal fidelity and minimal coding delay while only requiring a quarter of the uncompressed bandwidth. Additional high-quality formats such as linear PCM, MPEG 2/4 HE-AAC and OPUS offer versatility for broadly diversified applications.

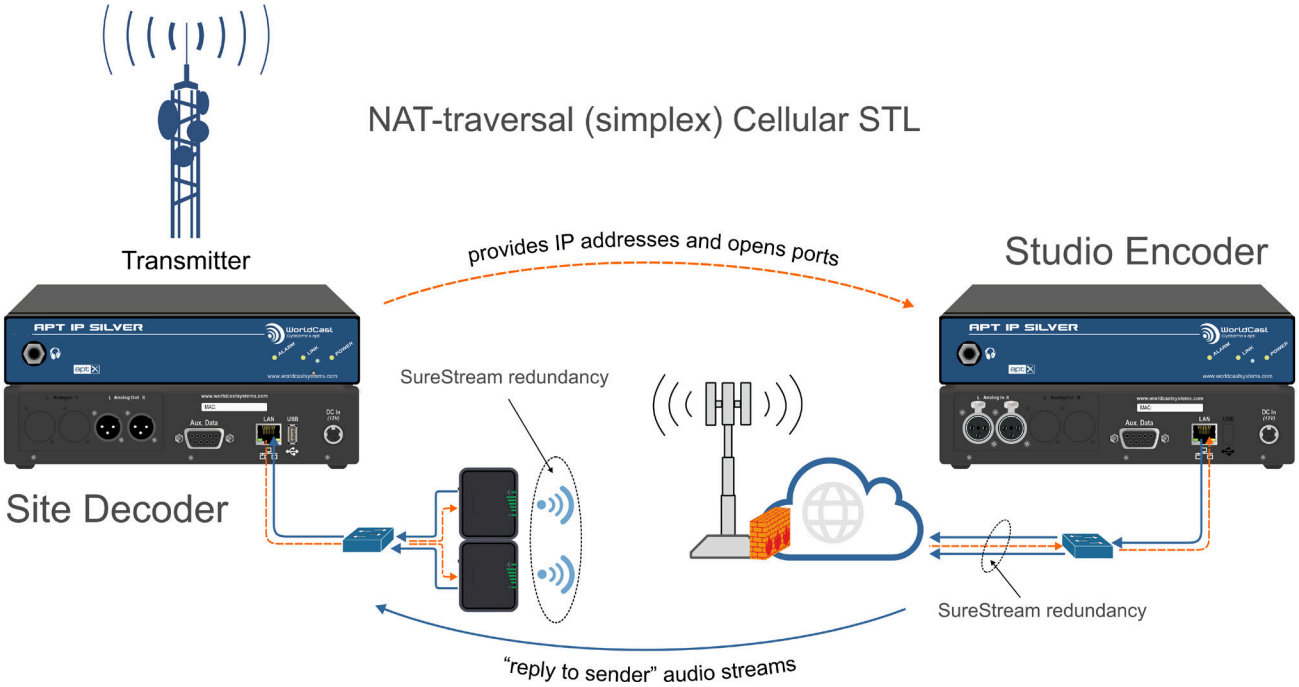
Maximize your Cost Savings

APT IP Silver products are designed to offer significant cost advantages. Featuring state-of-the-art capabilities such as Enhanced aptX, SureStream, and ScriptEasy, these products are integral to the WorldCast Systems ecosystem, delivering reliable, high-quality audio distribution beyond the scope of costly transmission pathways.

IP SILVER **Application & Key features**

Transmitter Link in a Mobile Network

Utilizing SureStream and the NAT traversal feature



IP Silver Encoder | Decoder **Key Features**

- Simplex audio transmission and duplex data communication
- Professional audio formats including Eapt-X™, MPEG 2/4 HE-AAC, OPUS and lin. PCM
- Supports RTP/UDP streaming and SIP Connections
- Point-to-Point and Point-to-Multipoint operation
- Packet redundancy, provided by SureStream, enables reliable transmissions on the Internet
- NTP-based packet timestamping allows to set target latencies per stream
- Supports UPnP IGD protocol for configuration of UPnP enabled gateways (routers)
- The advanced NAT traversal capability overcomes port blockages in the network
- Forwarding and protecting of audio or non-audio UDP Streams, such as EDI or E2X data
- Supports "Diffserv" Quality of Service (QoS) on variable DSCP values
- VLANs and virtual IP interfaces enables multi-network integration
- Performance monitoring on each individual IP stream
- Configurable jitter buffer for receiving IP stream (1 ms to 5000 ms)
- Serial AUX Data in Duplex Communication

Support Level Agreement

To make sure you reap all the benefits of your broadcast investment, you can rely on the WorldCast Systems' Support Agreement program. The range of services available and with the support of our team of experts, you will benefit from maximum uptime, better performance, and overall improve your Total Cost of Ownership!

Contact your Sales Manager for more information

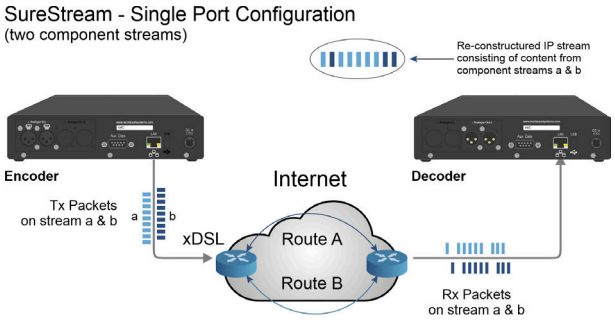
IP SILVER **Key Benefits**

SURESTREAM

Low Latency - Low Costs: With SureStream's capability for redundant streaming, broadcasters can elevate more cost-effective but imperfect services into genuine low-latency, broadcast-grade IP connections.

Single Port and VLAN Configurations: As a VLAN-aware device, the IP Silver has the capability to leverage multiple networks as SureStream paths. When using SureStream on a single network, the statistical diversity generator emulates the desired diversity across component streams.

Scalability and Flexibility: SureStream stands as the most flexible and scalable solution for safeguarding content transmission. It integrates paths from a diverse array of networks, including MPLS, satellite, microwave, xDSL, and cellular (4G/5G), to forge a unified and highly robust connection.



xDSL connections become the broadcast links

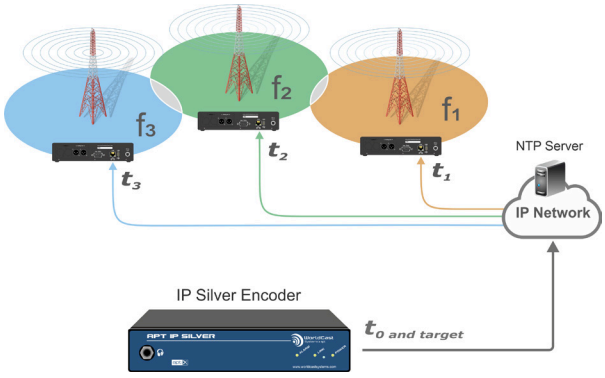
NTP-based Content Time-Alignment

Control Over Target Latency: The NTP-based Content Alignment feature eliminates variable latencies of an IP network within narrow limits*. For program transmissions in multi-frequency networks (MFN), this ensures a seamless program transition between frequencies.

Stable Latency: The timestamp-based transmission requires only a single setting on the IP Silver Encoder to define the general target latency to each Decoder at the transmitter sites.

Fine Adjustment of the Program Playout: Fine-tuning is essential for the optimal alignment of program overlaps in the MFN transmitter network. The IP Silver Decoder offers the flexibility for individual latency adjustments at the transmitter level, down to millisecond steps.

* A swing is possible within the limits of the NTP time stability.



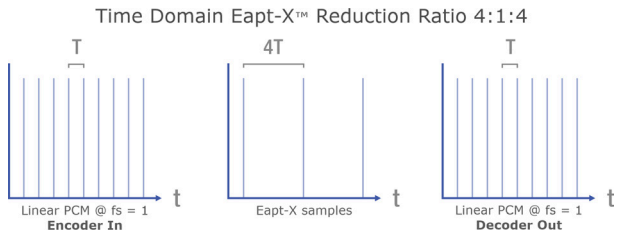
FM-MFN network with time-aligned overlap zones

aptX

Eapt-X™: Offering the highest fidelity and a 4:1 compression ratio in real-time. Eapt-X™ stands as the industry's leading compression algorithm.

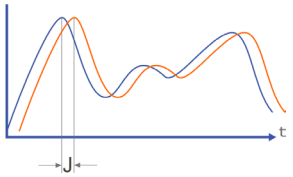
Lowest Delay: Still setting the benchmark with a coding delay of less than 2 milliseconds, it offers performance comparable to linear PCM processing.

Non-Framed: Eapt-X™, as a non-framed algorithm, creates the ideal condition for real-time IP transport. With a minimal packet size of 1 ms, it achieves both high-speed transmissions and robust error resistance in IP networks.



Eapt-X™ Coding Delay

PCM Sampling Frequency	Time Delay (J)
48kHz	1,98ms



SCRIPTEASY

Advanced Telemetry & Facility Management

ScriptEasy is a revolutionary facility control software for connected devices, enabling the automatic correction of any critical errors that may occur. Across its intuitive web interface, ScriptEasy includes management of serial communications, SNMP, logic operators, live user inputs, timers, and more. This enables the "scripting" of site operations for evaluating multiple parameters and automatically engaging back up systems, while simultaneously alerting relevant technical personnel. **Integrated in the APT IP SILVER, ScriptEasy is the core technology that provides the device with its inherent "intelligence".**

Technical specifications

IP Silver Encoder

IP Silver Decoder

AUDIO	
Analog I/O	Electronically balanced, capacitive isolated XLR for Left/Right, Imp. Hi/Lo and 600 Ω, level adjustment in 0.1 dBu steps
Input/Output Clip Level	Input Encoder +24 dBu, Output Decoder +24 dBu
Audio Bandwidth	10 Hz to 22.5 kHz, mono or stereo
Multi Algorithm Suite	Eapt-X 16/24 Bit, lin. PCM 16/20/24 Bit, MPEG 2/4 HE-AAC v1/2 and OPUS (auto-detect)
Signal Processing	24 Bit AD/DA conversion
STREAMING MODES	
Stream Types	Multiple (Tx) stereo and mono Audio, UDP and RTP forwarding, Reply-to-Sender, NAT traversal mode
Casting Modes	unicast, multicast, multiple unicast, multiple multicast
Stream Forwarding	Bidirectional UDP or RTP (re-encapsulation capability)
SIP Modes	Peer-to-peer & SIP-Server mode, multiple SIP user accounts, asymm. SIP profiles
Jitter Buffer	1 - 5000 ms with packet re-sequenzer
QoS	DiffServ (RFC 2474) per stream
Redundant Streaming	SureStream, multi-stream packet-by-packet redundancy
Unit Clocks	Internal Media Clock and NTP-based Time Reference
Target Latency	NTP-based up to 4.5 sec.
MANAGEMENT	
Web Browser GUI	
APT NMS	
Connect Kybio (SNMP-based Manager)	
SNMPv2c	
APT API	
ScriptEasy	
MONITORING & ALARMS	
Adjustable Silence Detectors on Inputs (Enc.) and Outputs (Dec.)	
Event Logs	
SNMP Traps / Notifications	
PHYSICAL INTERFACES	
Audio	XLR L / R analog In (Enc.), analog Out (Dec.)
Headphone	1/4" (6.3 mm) Jack Socket (front)
AUX Data	D-Type 9-pin connector
Ethernet	RJ45
Power Connector	DC Connector with interlock
USB (Decoder)	5V DC supply of ext. equipment, and future options

NETWORK	
IP Interface	10/100BaseT / Tx, Ethernet IEEE 802.3x, IP4, Auto MDI-X
Port Speed (FE)	Full-auto, restricted-auto and hard coded
Virtual IP Interfaces	VLAN Tagging according to IEEE 802.1q
IP Alias	Multiple virtual IP addresses and gateways
Dynamic DNS	Multiple DDNS clients selectable
Standard Protocols	RTP, UDP, DHCP, FTP, HTTPS, ICMP, IGMP v2/3, SMTP, SNMPv2c, NTP, UPnP (IGD)
Net Security	TLS 1.1 and higher, Service Filter and Firewall
DATA	
Serial Data (bidirectional	RS 232 embedded up to 9600 Baud via UDP stream up to 115.200 Baud
AUX Data via UDP	UDP forwarding PAD/E2X or private Data
BACKUP OPTIONS	
RTP Stream	Multiple RTP backup streams
Redundant Streaming	SureStream, multi-stream packet-by-packet redundancy
PHYSICAL SPECIFICATIONS	
Dimensions (H x W x D)	44 x 223 x 163 mm (1.73" x 9.5" x 6.3")
Weight	1.0 kg / 2.2 lbs
Power Supply	12 VDC, external PSU, wall-mount 100-264 VAC / 50-60 Hz
Power Consumption	5 W
Env. Temperatures Operation Storage Humidity	 0 °C - +55 °C -30 °C - +80 °C 95 % (non-condensing)

Order information

REF	DESCRIPTION
TFP0103-A1	APT IP Encoder Silver
TFP0104-A1	APT IP Decoder Silver
SPP00015	Rack Mounting Kit for APT IP Encoder/Decoder Silver

This document is not contractual. All specifications are subject to change without notice.

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