iPlex™

iPlex
mPlex
MPEG-4 AVC
MPEG-2
HD
SD
Encoding
Transcoding
Transrating
Interfaces

Video Processing Platform

The TANDBERG iPlex™ is a high density, multi-functional, high performance IPTV video processing platform. It is designed for the unique requirements of telco operators, and is also suitable for cable and satellite operators looking to augment their service delivery using IPTV over DSL infrastructure.

The iPlex video processing platform has a compact 1RU form factor with up to 8 encoded or 36 transrated streams, making it an ideal choice for small or large head-end deployments alike. The iPlex supports a comprehensive set of stream processing options, including MPEG-2 SD encoding and transrating, MPEG-4 AVC SD and HD encoding, and MPEG-2 to MPEG-4 transcoding for SD and HD streams. The platform's modular design allows service providers to upgrade functionality and add new services incrementally, avoiding costly head-end upgrades. The iPlex is also unique in its support of multiple network interfaces and multiple program outputs, allowing it to be deployed in a mixture of Ethernet, ATM, PON or FTTN environments.

The iPlex video processing platform offers service providers the most advanced video and audio compression technology available today and is part of TANDBERG Television's portfolio of products including receivers, decoders, and descramblers all seamlessly integrated into a complete head-end system with TANDBERG nCompass Control.

PRODUCT OVERVIEW

Market Leading Performance

Extensive video pre-processing and an array of tools to fine tune the encoding process allow service providers to offer a superior picture quality, even with challenging feeds. A proven history of providing customers with in-field performance improvement upgrades over time keeps TANDBERG Television's customers ahead of the market.

Flexible, Modular Architecture Allows for Customization and Upgradeability

The iPlex does not confine service providers to specific video architectures. The modular technology of the iPlex allows service providers to obtain a highly customized system now, and adapt it incrementally over time to support the changing needs. The iPlex uses a tray-based system and offers a complete selection of submodules that offer service providers MPEG-2 SD encoding and transrating, MPEG-4 AVC SD and HD encoding, transcoding and Picture-in-Picture (PiP) service generation simultaneously from the same chassis.

Multi-functional, Dense Video Encoding, Processing, and Routing

iPlex features up to 8 professional quality MPEG-2 or MPEG-4 AVC encoders, transcoders or PiP encoders and 2 built-in Gigabit Ethernet interfaces in a compact 1RU chassis. The iPlex is capable of streaming identical programming to multiple network interfaces simultaneously, i.e., GigE, ATM, or ASI, supporting hybrid network environments with ease. The iPlex also supports advanced features for IPTV, such as low resolution encoding, low bit-rate simultaneous PiP service generation, and direct IP Multicasting from the chassis.

BASE UNIT FEATURES

iPlex (N20001)

- Future-proof design makes upgrades and new configurations easy
- NEBS Level 3 certified chassis for telco environment installation
- Self managed 1:1 hot-standby redundancy configuration available, also n+m redundancy with TANDBERG nCompass Control
- Software and hardware upgrades with no system downtime when using 1:1 redundancy
- 2 built-in Gigabit Ethernet interfaces for traffic I/O
- 2 built-in Fast Ethernet interfaces and Serial port for management
- Up to 8 submodules for video processing and additional input and output interfacing
- Up to 4 MPRG-4 AVC UltraCompression encoders
- Up to 4 MPEG-4 AVC UltraCompression transcoders

Platform Processing Capacities

- Up to 8 MPEG-2 or MPEG-4 AVC encoders
- Up to 16 ASI interfaces
- Up to 8 ATM interfaces
- Up to 36 MPEG-2 SD transrated streams
- Up to 8 MPEG-2 to MPEG-4 AVC transcoded streams

HARDWARE / SOFTWARE OPTIONS

ATM In/Out (N011014, N011031)

- OC-3c / STM-1 support
- Single-mode Fiber version (N011031)
- Multi-mode Fiber version (N011014)
- SC connector

DS-3 or E-3 In/Out (N011045, N011046)

- 1 BNC input port, 1 BNC output port
- DS-3 operation version (N011045)
- E-3 operation version (N011046)

ASI In (N011006)

- Two independent transport stream inputs
- 2 x BNC ASI input ports per, software selectable
- 160 Mbps aggregate capacity

ASI Out (N011007)

- 2 independent transport stream outputs
- 2 x BNC ASI output ports, software selectable
- 160 Mbps aggregate capacity

Ethernet Output SFP Modules (N20005, N20006, N20007)

- Single-mode Fiber SFP (N20005)
- Multi-mode Fiber SFP (N20006)
- Electrical SFP, RJ-45 connector (N20007)

Scrambling capability (N012030 (HW), N012031 (SW))

- DVB-CSA scrambler with simulcrypt support
- Multiple MPTS and SPTS scrambling capability
- 160Mbps aggregate capacity

MPEG-2 SD Transrating (N011011H (HW), N011051-8 (SW))

- Reduce or clamp the bit-rate of MPEG-2 SD pre-compressed sources
- Up to 12 services per submodule, bit-rate dependent

MPEG-2 SD Encoder (N011032)

- SDI, composite and S-Video video inputs
- MPEG-2 MP@ML encoding at 2-15 Mbps video bit-rate
- 2 x stereo audio encoding with MPEG-1 Layer II + Dolby Digital® (AC-3) support

MPEG-4 AVC SD Encoder (N012026)

- SDI, composite and S-Video video inputs
- MPEG-4 AVC MP@L3 encoding at 0.5-2.5 Mbps video bit-rate
- 2 x stereo audio encoding with MPEG-1 Layer II, AAC-LC support

MPEG-2 to MPEG-4 AVC SD transcoder (N012023)

- Transcode pre-compressed MPEG-2 SD sources to MPEG-4 AVC SD
- Transcoding of video and audio services
- Cross carriage and re-syncing of metadata services such as closed captions, Teletext and DVB subtitles

MPEG-4 AVC SD UltraCompression Encoder [N012008]

- SDI, composite and S-Video video inputs
- Best performance MPEG-4 AVC MP@L3 encoding at 0.250-10 Mbps video bit-rate
- Up to 6 x stereo audio encoding and optional multi-channel audio encoding
- Options for audio encoding, PiP service generation, and Clarus™ pre-processing

MPEG-4 AVC SD UltraCompression Encoder (SDI) (N012040)

- SDI only video input
- Best performance MPEG-4 AVC MP@L3 encoding at 0.250-10 Mbps video bit-rate
- Up to 6 x stereo audio encoding and optional multi-channel audio encoding
- Options for audio encoding, PiP service generation, and Clarus™ pre-processing
- Software upgradeable to MPEG-4 AVC HD operation

MPEG-4 AVC HD UltraCompression Encoder (N012010)

- HD-SDI and SDI video input
- Best performance MPEG-4 AVC HD and SD encoding
- Up to 6 x stereo audio encoding and optional multi-channel audio encoding
- Options for audio encoding, PiP service generation, and Clarus™ pre-processing
-

MPEG-4 AVC SD Transcoder (N012041)

- Multi-format MPEG-2 / MPEG-4 AVC integrated decoder
- Best performance MPEG-4 AVC SD encoding
- Up to 6 x stereo audio encoding and optional multi-channel audio encoding
- Options for audio encoding, PiP service generation, and Clarus™ pre-processing
-

MPEG-4 AVC HD Transcoder (N012043)

- Multi-format MPEG-2 / MPEG-4 AVC integrated decoder
- Best performance MPEG-4 AVC HD and SD encoding
- Up to 6 x stereo audio encoding and optional multi-channel audio encoding
- Options for audio encoding, PiP service generation, and Clarus™ pre-processing

SPECIFICATIONS

Output Interfacing

Output
2 x Ethernet via SFP modules

Streaming

RTP/UDP, unicast or multicast

Configurable packet size

IPv4, IPv6 supported

VLAN tagging

Management

2 x Electrical Ethernet (10/100BaseT)

SNMP v1/v2/v3, HTTPS, SSH, Telnet protocols supported

User management via front panel, web browser, command line, serial console port

TANDBERG nCompass Control support with device level n+m redundancy

1:1 Hot standby configuration

Physical and Power

Dimensions (H x W x D)
23.50 x 17.40 x 1.75 inches (59.69 x 44.20 x 4.45 cm)

Weight
24.5 lbs (11.14 kg) fully-configured

Input Voltage
100-240 V AC 50/60 Hz @ 6 Amps

Environmental Conditions

Operating Temperature
0°C to +45°C

Storage Temperature
-40°C to +85°C

Relative Operating Humidity
10% to 90% (non-condensing)

Compliance

Network Equipment Building System (NEBS) Level 3 Certified

Safety
UL60950 3rd edition, CSA 950 EN60950, IEC 60950 CB Certificate

Emissions
EN 55022A, CFR47 PART 15A (FCC)

Immunity: NEBS GR-1089-Core Level 3, EN55024, EN55082-1, EN300-386

Environmental
NEBS GR-63-Core Level 3, ETS 300 019-2-x compliant

ISTA-2A Transportation and Handling

03-2008-v5