Optibase’s MPEG-4 AVC/H.264 encoding module enables live encoding and transcoding of next generation CODECs with Optibase’s MGW IPTV platforms. The MPEG-4 AVC module is a high-performance real-time encoder that can process any analog, digital or DVB (MPEG-2) video input into MPEG-4 AVC. This module is part of a system specifically designed to address applications where high availability, full redundancy and no single point of failure are all crucial parameters.

Key Features

MPEG-2 DVB-ASI Transcoding
Service providers that already support MPEG-2 signals from satellite TV feeds can now process these same channels into MPEG-4 AVC without changing their existing head-end infrastructure. The MPEG-4 AVC module has on-board transcoding capabilities and requires no additional video decoding or processing components.

CODEC Flexibility
Each MPEG-4 module utilizes a strong set of on-board state-of-the-art DSP processors that encode and multiplex video and audio streams according to MPEG-4 AVC/H.264 industry standard. The MPEG-4 module is software upgradeable to other next-generation algorithms such as VC1.

Carrier-Grade Design
Each module in Optibase’s IPTV platforms is a stand-alone unit, controlled through a dual-star IP backplane and totally independent from other encoding modules. A real-time operating system controls each module separately, assuring constant streaming of live TV content. Modules can be configured to 1+1 and N+K redundancy according to application demands. All parts are hot swappable and support hot-standby redundancy.

Main and Baseline Profile
Through its ability to encode Baseline and Main profiles, the same MPEG-4 AVC module can address low resolution and low bit-rate applications. The Baseline profile provides very low latency (mandatory for military and surveillance applications) and dramatically low video bit-rates (ideal for mobile and PC streaming).
Technical Specifications

Inputs
Video  
• 1 or 2 video channels per board
  • Serial digital SDI (625/525)
  • Analog composite and S-video (PAL/NTSC)
Audio  
• Stereo pair per channel
  • Balanced or unbalanced (user configurable)
  • AES-EBU or embedded audio for SDI
Transcoding  
• 2 DVB-ASI inputs per board
  • MPEG-2 Transport stream over DVB/ASI

Output (MGW5100/1100 platforms)
• MPEG Transport stream
• CBR or VBR bit-rate control
• IP (10/100/1000Mbps)
• ATM (Native or IPoA)

Video CODEC
ISO/IEC 14496-10 (MPEG-4 part 10, AVC) / H.264
• Main profile level up to 3 (MP@L3) – Latency 300 msec
• Main profile (MP@L3, MP@L3.1, MP@L3.2)
• Baseline profile (BP@L1, BP@L2)
• Bit-rate range: 256K to 2.5Mbps
• Interlace support
• Configurable GOP structure with B frame support
• VBV size controlled by user
• Sub-pixel accuracy – Full, Half or Quarter (user defined)

Audio CODEC
• AAC or AAC+ (user configurable)
• MPEG-1 L2
• Bit-rate range: 48 -256 Kbps
• Sampling rate: 32 - 48 KHz

Transport Stream Multiplexer
ISO/IEC 13818-1 H.222.0
• Audio and data PID pass-thru (Dolby® Digital Audio, MPEG-1 Layer 2 and MP3)
• Transport stream headers – configurable spacing
• Configurable PSI/SI information table (PID re-mapping)

Video Resolutions
• Main Profile - Half D1 to Full D1 (Horizontal 720, Vertical 576 or 480)
• Baseline Profile – CIF up to Full D1

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