The ITV-AS180c Adaptive Bit Rate Transcoder is a highly flexible appliance tailored to adaptive streaming based Broadcast, Web, and Mobile video applications. The ITV-AS180c gives video service providers a proven, easy to deploy real time adaptive streaming solution.

**Business Benefits**

**Cost Effective**
With its modular and scalable architecture, the ITV-AS180c provides an adaptive bit rate transcode solution with unmatched CAPEX / OPEX advantages.

**Future Proof**
With real time multistandard codec support, the transcoder is able to seamlessly adapt services from MPEG-2 and MPEG-4 AVC systems.

**Flexible Networking**
The ITV-AS180c supports adaptive rate streaming technologies including TS, RTMP and HTTP Live Streaming permitting reliable video delivery to virtually any device and over any network.

**Control & Monitoring**
The DashBoard Network Control & Monitoring software is a free application designed for remote control & monitoring of the open architecture, openGear® platform.

For larger deployments where multiple units are deployed, the DashBoard application or SNMP may be used for firmware updates and monitoring.

**Application**
The ITV-AS180c Adaptive Bit Rate Transcoder is a powerful real time transcoding solution designed to meet rapidly evolving demands of adaptive rate streaming video delivery applications. The product meets the challenge by providing high quality video to a wide variety of viewing devices over a wide variety of networks and network conditions and meets the demanding requirements of Broadcast, Web, and Mobile video services delivery.

As sports, movies, and other programming is more commonly viewed on PCs, tablet computers, smart phones, and IP enabled set-top boxes, dynamic adaptive rate streaming technology enables a new paradigm in video service delivery. Employing cutting edge adaptive rate streaming protocols, the ITV-AS180c permits video services to be delivered to any device, anywhere, and over any IP network.

The scalable and cost effective modular design is capable of simultaneously transcoding and formatting video services into multiple segmented adaptive profiles ranging from full HD down to sub-SD resolutions. An elegant streaming protocol permits a video decoder to seamlessly and dynamically adapt to the profile best suited to it capabilities and current network conditions.

ImmediaTV’s Adaptive Bit Rate Transcoder is equipped with the latest advances in video compression technology. State of the art video processing combined with our unique encoding technology permits the best possible video quality at a given resolution and bit rate profile.

Up to three ITV-AS180c units can be installed in a 1RU rack mount tray. Using ImmediaTV’s unique transcoding architecture, multiple adaptive rate streaming profiles can be supported in a compact modular unit.

**Base Features**

**ITV-AS180c Base Unit (ITV-AS180c/BAS)**
The ITV-AS180c base module is able to transcode a single program received from IP or ASI. The program can be output using multiple resolution and rate profiles over IP interfaces using the adaptive rate streaming protocol of choice. A flexible licensing model allows for easy addition of feature options expanding the capabilities of each module.

- Single multi-standard (MPEG-2 or MPEG-4 AVC) HD/SD transcoder
- RTP/UDP, UDP, RTMP and HTTP Live Streaming (HLS) protocol support
- Four adaptive rate resolution/rate profiles
- MPEG-1 Layer II, AAC, and Dolby AC-3 input audio
- Management and control via openGear® Dashboard software or SNMP
- IP unicast/multicast input, ASI Inputs

**Licensable Options**

Additional adaptive streaming profiles (4) license (ITV-AS180c/ASP4)

Dolby Audio Conversion (ITV-AS180c/DLB)
Inputs and Outputs
2x 1000Base-T RJ-45 ports, auto-negotiate or fixed speed
2x ASI Inputs
2 x ASI Outputs

Network Transport Protocols
UDP/IP (Unicast and Multicast)
RTP/IP (Unicast and Multicast)
RTMP (Flash)
HTTP Live Streaming (HLS): populates an external web server through FTP or SFTP
Internal Web server available
Up to 8 resolution/rate profiles per unit

Video Transcoding
Input
MPEG-4 AVC HP@L4.0, HP@L4.2 (HD)
MPEG-4 AVC MP@L3.0 (SD)
MPEG-2 MP@HL (HD)
MPEG-2 MP@ML (SD)
Output
MPEG-4 AVC HP@L4.0, HP@L4.2 (HD)
MPEG-4 AVC MP@L3.0 (SD)
CBR & VBR
1.5Mbps to 10 Mbps (profile dependent)

Video Formats
Input
1080 x 1920p 60/50
1080 x 1920/1440 25 29.97/30
720 x 1280/960 50/59.94
576 x 720/704/640/528 25
640x480, 480x270, 320x240, 320x180

Audio Transcoding
Input
MPEG-1 Layer II stereo
MPEG-4 AAC-LC stereo and 5.1
MPEG-4 HE-AAC 5.1
Dolby AC-3 stereo, 5.1, 7.1
Output
MPEG-1 Layer II
MPEG-4 AAC-LC
Pass through
Conversion
5.1 to 2.0
7.1 to 2.0

Transcode Modes
Multi-codec capable
MPEG-2 to MPEG-4 AVC
MPEG-4 to MPEG-4 AVC

Video Processing
Integrated down conversion - HD to SD
- Sub-SD resolutions
Adaptive de-interlacer
Frame rate reduction
AFD handling
Closed captions and VBI pass-through

Management and Control
100/1000Base-T Ethernet (RJ-45)
Configuration import/export
Visual fault indicator
SNMP v1,v2

Physical
Dimensions:
(W x D x H) 146 x 356 x 44mm
Desktop or 1RU rack mountable tray available—3 modules per tray
Power:
16 Watts total power consumption
AC input 100-240 VAC 47-63Hz
Convection cooling

Environmental
Operating Temperature:
0°Cto 50°C (32°F to 122°F)
Operating Humidity:
5% to 95% (non-condensing)

Compliance
EMC: EN55022, EN55024, EN61000, FCC Part 15
SAFETY: IEC 60950
ROHS: 2011/65/EU
WEEE: 2012/19/EU

Note: ITV-AS180c specifications are subject to change.
The **ITV-XC440c Multistandard Broadcast Transcoder** is a highly flexible transcoding appliance that delivers superb SD and HD video quality. This transcoding solution allows broadcasters to seamlessly adapt or repurpose compressed audio and video services in real time within their delivery networks.

### Business Benefits

**Cost Effective**

With its modular and scalable architecture, the ITV-XC440c provides rich audio / video transcoding support with unmatched CAPEX / OPEX advantages.

**Future Proof**

With real time ‘any-to-any’ multistandard codec support, the transcoder adapts services from both MPEG-2 and MPEG-4 AVC systems.

**Flexible Networking**

The transcoder supports a rich set of standard video networking protocols permitting reliable video delivery over any IP network.

ImmediaTV’s direct processing technology delivers enhanced IP network jitter and latency performance.

**Control & Monitoring**

The DashBoard Network Control & Monitoring software is a free application designed for remote control & monitoring of the open architecture, openGear® platform.

A complete SNMP MIB is also included for any SNMP based management system.

### Application

The ITV-XC440c is a powerful and flexible real time transcoding solution supporting MPEG-2 and MPEG-4 AVC video codecs and a wide variety of audio codecs. It is ideally suited for any content repurposing, edge transcoding, or video distribution network bandwidth optimization application. The product has been designed to meet the demanding requirements of the IPTV, professional broadcast, enterprise video delivery, and streaming video markets.

The scalable and cost effective modular design is capable of simultaneously transcoding up to four Standard or High Definition video services. If desired, up to three units can be installed in a 1RU rack mount tray. Using ImmediaTV’s unique transcoding architecture, operators can transcode multiple High Definition and Standard Definition services in a compact modular unit.

ImmediaTV’s multistandard broadcast transcoder is equipped with the latest advances in video compression technology to deliver excellent video quality at low bitrates. State of the art video processing combined with our unique encoding technology enables new open system architectures to be created. Simultaneous support of DVB-ASI, and video over IP content to be freely distributed over virtually any video network.

### Base Features

**ITV-XC440c Base Unit (ITV-XC440c/BAS)**

The ITV-XC440c base module is able to transcode two video services (channels) using either MPEG-2 or MPEG-4 AVC codecs in High Definition or Standard Definition format and output MPEG-1 Layer II services. The single program can be output over ASI and IP interfaces individually or on both simultaneously. The flexible licensing model allows for easy addition of feature options to expand the capabilities of each module.

- Dual multi-standard HD/SD transcoder
- MPEG-1 Layer II, AAC-LC, and Dolby AC-3 input audio
- Pass-through, MPEG-1 Layer II or Dolby AC-3 output audio
- Management and control via DashBoard or SNMP
- IP transmission using unicast or multicast

### Licensable Options

- 2 additional transcoding licenses (**ITV-XC440c/XC2HD**)
- Dolby Audio Conversion (**ITV-XC440c/DLB**)
### Inputs and Outputs
- 2x 100/1000Base-T RJ-45 ports, auto-negotiate or fixed speed
- 2x DVB-ASI input ports, BNC 75 ohm
- 2x DVB-ASI output ports, BNC 75 ohm
- 213 Mbit/s maximum ASI TS bit-rate per port

### Network Transport Protocols
- UDP/IP (Unicast and Multicast)
- RTP/IP (Unicast and Multicast)

### Video Transcoding
- **Input**: MPEG-4 AVC HP@L4.0, HP@L4.2 (HD)
- **Output**: MPEG-4 AVC HP@L4.0, HP@L4.2 (HD)
- **Data Rates**: 1.5Mbps to 10 Mbps (profile dependent)

### Video Formats
- **Input**:
  - 1080 x 1920p 60/50
  - 1080 x 1920/1440i 25 29.97/30
  - 720 x 1280/960 50/59.94
  - 960 x 540 25.97
  - 480 x 720/704/640/528 29.97
  - 576 x 720/704/640/528 25
  - 640x480, 480x270, 320x240, 320x180

- **Output**:
  - Arbitrary user-configurable output resolutions
  - Frame rate conversion: same as input, 1/2, 1/3, 1/4 of input rate

### Audio Transcoding
- **Input**: MPEG-1 Layer II stereo
- **Output**: MPEG-1 Layer II

### Transcode Modes
- Multi-codec capable
- MPEG-2 to MPEG-4 AVC
- MPEG-4 AVC to MPEG-2
- SD/HD MPEG-2 to MPEG-2 and AVC to AVC re-encode
  - format conversion
  - rate reduction

### Video Processing
- Integrated down conversion
- HD to SD
- Sub-SD resolutions
- Adaptive deinterlacer
- Frame rate reduction
- AFD handling
- Closed captions and VBI pass-through

### Management and Control
- 10/100/1000Base-T Ethernet (RJ-45)
- Configuration import/export
- Visual fault indicator
- SNMP v1,v2

### Physical
- **Dimensions**: (W x D x H) 146 x 356 x 44mm
- Desktop or 1RU rack mountable tray available—3 modules per tray
- **Power**: AC input 100-240 VAC 47-63Hz
- Self Cooled 16W Max

### Environmental
- **Operating Temperature**: 0°C to 50°C (32°F to 122°F)
- **Operating Humidity**: 5% to 95% (non-condensing)

### Compliance
- **CE**: CE marked in accordance with 89/336/EEC, 72/23/EEC and 1999/5/EEC Directives
- **EMC**: EN55022, EN55024, EN61000, FCC Part 15
- **SAFETY**: IEC 60950
- **ROHS**: 2011/65/EU
- **WEEE**: 2012/19/EU

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Note: ITV-XC440c specifications are subject to change.
The MVN-XC440 Multistandard Broadcast Transcoder is a highly flexible transcoding card that delivers superb SD and HD video quality. This transcoding solution allows broadcasters to seamlessly adapt or repurpose compressed audio and video services in real time within their delivery networks.

**Application**

The MVN-XC440 is a powerful and flexible real time transcoding solution supporting MPEG-2 and MPEG-4 AVC video codecs and a wide variety of audio codecs. It is ideally suited for any content repurposing, edge transcoding, monitoring or video distribution application. The product has been designed to meet the demanding requirements of the IPTV, professional broadcast, enterprise video delivery, and streaming video markets.

The MVN-XC440 is a feature-rich high performance quad-channel video transcoder that delivers up to 40 individual HD/SD channels in a completely hot-swappable, stackable, and fault tolerant chassis. Using ImmediaTV’s unique transcoding architecture, operators can transcode multiple High Definition and Standard Definition services in a compact modular unit.

ImmediaTV’s multistandard broadcast transcoder is equipped with the latest advances in video compression technology to deliver excellent video quality at low bitrates. State of the art video processing combined with our unique encoding technology enables new open system architectures to be created. Simultaneous support of DVB-ASI and IP networks allows content to be freely distributed over virtually any type of video network.

**Base Features**

**MVN-XC440 Base Unit (MVN-XC440/BAS)**

The MVN-XC440 base module is able to transcode two video services (channels) using either MPEG-2 or MPEG-4 AVC codecs in Standard Definition format and output MPEG-1 Layer II services. The single program can be output over ASI and IP interfaces individually or on both simultaneously. The flexible licensing model allows for easy addition of feature options to expand the capabilities of each module.

- Dual multistandard HD/SD transcoder
- MPEG-1 Layer II, AAC-LC, and Dolby AC-3 input audio
- Pass-through, MPEG-1 Layer II or Dolby AC-3 output audio
- Management and control via openGear® chassis using Dashboard or SNMP
- IP transmission using unicast or multicast

**Licensable Options**

2 additional transcoding licenses (MVN-XC440/XC2HD)
Dolby Conversion License (MVN-XC440/DLB)
| **Inputs and Outputs** | 2x 100/1000Base-T RJ-45 ports, auto-negotiate or fixed speed  
2x DVB-ASI input ports, BNC 75 ohm  
2x DVB-ASI output ports, BNC 75 ohm  
213 Mbit/s maximum ASI TS bit-rate per port |
| **Network Transport Protocols** | UDP/IP (Unicast and Multicast)  
RTP/IP (Unicast and Multicast) |
| **Transcode Modes** | Multi-codec capable  
MPEG-2 to MPEG-4 AVC  
MPEG-4 AVC to MPEG-2  
SD/HD MPEG-2 to MPEG-2 and AVC to AVC re-encode  
- format conversion  
- rate reduction |
| **Video Processing** | Integrated downconversion  
- HD to SD  
- Sub-SD resolutions  
Adaptive deinterlacer  
Frame rate reduction  
AFD handling  
Closed captions passthrough |
| **Video Transcoding** | Input  
MPEG-4 AVC HP@L4.0, HP@L4.2 (HD)  
MPEG-4 AVC MP@L3.0 (SD)  
MPEG-2 HP@HL (HD)  
MPEG-2 MP@ML (SD)  
Output  
MPEG-4 AVC HP@L4.0, HP@L4.2 (HD)  
MPEG-4 AVC MP@L3.0 (SD)  
MPEG-2 HP@HL (HD)  
MPEG-2 MP@ML (SD)  
CBR & VBR 1.5Mbps to 10 Mbps (profile dependent)  
| **Management** | 10/100 Base-T Ethernet (RJ-45)  
Configuration import/export  
In-band and out-of-band control  
Visual and audible fault indicator  
SNMP v1,v2  
Dataset™ automated card configuration  
Accurate bit rate control  
Startup to streaming in seconds |
| **Physical** | Dimensions:  
2U (W x D x H) 483 x 400 x 89mm  
Up to 10 cards per chassis  
Power:  
450 Watts max. per chassis  
14 Watts per card  
AC input 100-240 VAC 47-63Hz |
| **Environmental** | Operating Temperature:  
0°C to 40°C (32°F to 104°F)  
Operating Humidity:  
5% to 95% (non-condensing) |
| **Compliance** | CE: CE marked in accordance with 89/336/EEC, 72/23/EEC and 1999/5/EEC Directives  
EMC: EN55022, EN55024, EN61000, FCC Part 15  
SAFETY: IEC 60950  
ROHS: 2011/65/EU  
WEEE: 2012/19/EU |

Note: MVN-440 specifications are subject to change.