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# Clearview™ Transcoder Series

*SUPERIOR VIDEO QUALITY AT LOW BIT RATES*

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# Clearview™ 4:2 Application

This primary **Clearview 4:2 Transcoding** application provides digital television compatibility at a hotel or similar commercial lodging property.

## Satellite Distribution



Technicolor COM3000/2000  
Commercial Satellite Video  
Management System



IP MPEG-4  
HD Programs

COM System  
Video P Link  
Protection

IP MPEG-2 HD or SD Programs with  
Preserved Watermarking Content



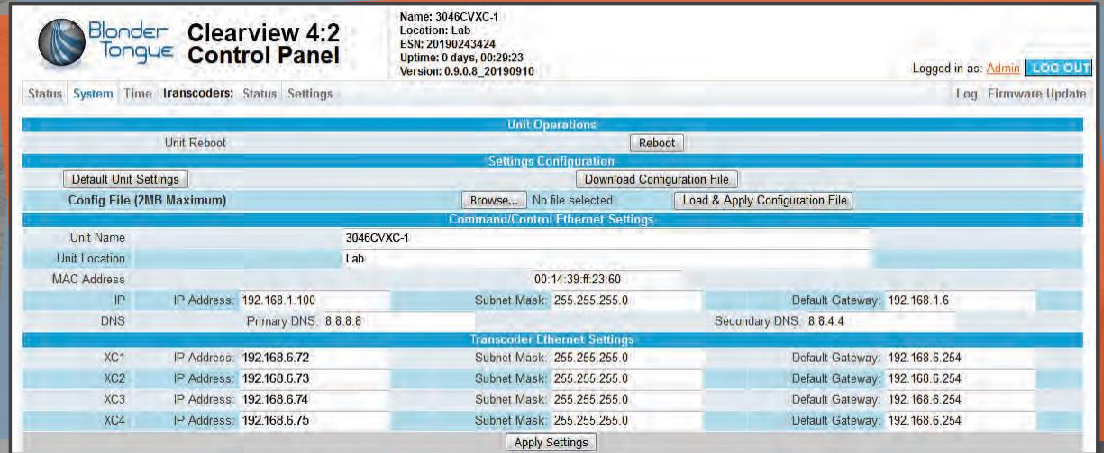
**BT Labs Clearview 4:2**  
Transcodes up to 24 channels  
MPEG-4 HD/SD input to  
MPEG-2 HD/SD output



**BT Labs Clearview 4:2 12**  
Transcodes up to 12 channels  
MPEG-4 HD/SD input to  
MPEG-2 HD/SD output



**BT Labs Clearview 4:2 SD**  
Transcodes up to 24 channels  
MPEG-4 HD/SD input to  
MPEG-2 SD (480i) output



**Clearview 4:2 Control Panel**

Name: 3046CVXC-1  
Location: Lab  
ESN: 20190243424  
Uptime: 0 days, 00:26:23  
Version: 0.9.0.8\_20190910

Logged in as: Admin [LOG OUT](#)

Log Firmware Update

Unit Reboot

Settings Configuration

Default Unit Settings

Config File (ZMR Maximum)  No file selected

Command/Control Ethernet Settings

Unit Name	3046CVXC-1		
Unit Location	Lab		
MAC Address	00:14:39:ff:23:60		
IP	IP Address: 192.168.1.100	Subnet Mask: 255.255.255.0	Default Gateway: 192.168.1.6
DNS	Primary DNS: 8.8.8.8	Secondary DNS: 8.8.4.4	
<b>Transcoder Ethernet Settings</b>			
XC1	IP Address: 192.168.6.72	Subnet Mask: 255.255.255.0	Default Gateway: 192.168.5.254
XC2	IP Address: 192.168.6.73	Subnet Mask: 255.255.255.0	Default Gateway: 192.168.5.254
XC3	IP Address: 192.168.6.74	Subnet Mask: 255.255.255.0	Default Gateway: 192.168.5.254
XC4	IP Address: 192.168.6.75	Subnet Mask: 255.255.255.0	Default Gateway: 192.168.5.254



The **Clearview products** have an easy-to-use interface, with the capability of downloading and uploading configuration files for multi-unit deployments.

# Clearview+™ Applications

The **Clearview+** differs from the **Clearview 4:2** in that it will accept all major MPEG compression formats as inputs, supports transcoding and transrating to all major MPEG formats on the output, and will support a variety of professional Dolby® Audio functionality.

## Cable or IPTV Provider Source



BT Labs NXG Digital Video Signal Processing Platform

IP MPEG-2;  
H.264 (AVC);  
H.265 (HEVC)  
HD/SD Programs

IP MPEG-2;  
H.264 (AVC);  
H.265 (HEVC)  
HD/SD Programs

## Satellite, MSO, and Telcos



Video Router

IP MPEG-2;  
H.264 (AVC);  
H.265 (HEVC)  
HD/SD Programs

IP MPEG-2;  
H.264 (AVC);  
H.265 (HEVC)  
HD/SD Programs



BT Labs Clearview+ - Transcodes up to 24 channels -  
HD/SD input to HD/SD output, with professional Dolby® audio decode and encode capability.



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# LIVE TV

Perfect for **Live Linear Broadcasting**, the **Clearview** + ultra-low latency hardware-based video compression technology provides superior transcoding quality at low bit rates, emphasizing the advanced full range of MPEG transcoding and Dolby functions - while including the support of multicast output protocols.



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# Clearview™ 4:2

advanced media technologies®

## 24 Channel MPEG-4 to MPEG-2 High-Def. IP Transcoder

### Key Features

- » H.264/MPEG-4 to MPEG-2 Transcodes up to **24** HD or SD programs
- » Full 1080p HD support, IP input to IP output
- » Compatible with Technicolor's COM3000 DirecTV receivers
- » Compatible with BT Labs' NXG to support on-site bulk transcoding applications



1x Bi-directional RJ45 (IP Video Port, Input/Output) | 1x Bi-directional RJ45 (Control Interface)  
 1RU Form Factor, 9.5 lbs | Power: 110/230 VAC, 0.9/0.45A, 60/50 Hz | Power Consumption: 60 W

The **Clearview 4:2** can Transcode up to **twenty-four (24)** HD or SD programs from H.264 (MPEG-4) sources to MPEG-2 output in 1RU. The unit accepts Unicast H.264 IP transport streams and re-encodes the video content to MPEG-2 transport streams for IP Unicast delivery.

The Clearview product line has an easy-to-use interface, with the capability of downloading and uploading configuration files for multi-unit deployments.

**Clearview 4:2** can be configured to receive up to **twenty-four (24)** H.264 AES-128 encrypted P channels from Technicolor COM3000/2000 satellite receivers. The Clearview 4:2 decrypts the AES-128 content and Transcodes the decrypted H.264 content into MPEG-2, while preserving the DirecTV 'forensic watermarking' and returns the content to the Technicolor

# Clearview+™



## 24 Channel MPEG-2, H.264, or H.265 IP Transcoder

### Key Features

- » Accepts up to 24 HD or SD programs
- » Accepts IP video transport in MPEG-2, H.264, or H.265 formats
- » **Dolby® Digital Audio** capability



1x Bi-directional RJ45 (IP Video Port, Input/Output) | 1x Bi-directional RJ45 (Control Interface)  
1RU Form Factor, 9.5 lbs | Power: 110/230 VAC, 0.9/0.45A, 60/50 Hz | Power Consumption: 64 W

Perfect for Live Linear Broadcasting, the **Clearview+** hardware-based video compression technology provides superior Transcoding quality at low bit rates. The Clearview+ is designed to support a wide range of video and audio inputs and outputs, including **Dolby® Digital** audio encoding.

The **Clearview+** accepts up to **twenty-four (24)** HD or SD programs simultaneously, using up to 1Gb of data throughput. The unit can accept IP video transport streams in MPEG-2, H.264, or H.265 and output these streams to **any combination** of MPEG-2, H.264, and H.265 formats.

Product features include transrating capability of specific video bit rates and specific video resolutions.



# Clearview™ 4:2 12

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## 12 Channel MPEG-4 to MPEG-2 High-Def. IP Transcoder

### Key Features

- » H.264/MPEG-4 to MPEG-2 Transcodes up to 12 HD or SD programs
- » Full 1080p HD support, IP input to IP output
- » Compatible with Technicolor's COM3000 DirecTV receivers



1x Bi-directional RJ45 (IP Video Port, Input/Output) | 1x Bi-directional RJ45 (Control Interface)  
1RU Form Factor, 9.5 lbs | Power: 110/230 VAC, 0.9/0.45A, 60/50 Hz | Power Consumption: 60 W

The **Clearview 4:2 12** can Transcode up to **twelve (12)** HD or SD programs from H.264 (MPEG-4) sources to MPEG-2 in 1RU. The unit accepts Unicast H.264 IP transport streams and re-encodes the video content to MPEG-2 transport streams for IP Unicast delivery.

The Clearview product line has an easy-to-use interface, with the capability of downloading and uploading configuration files for multi-unit deployments.

The **Clearview 4:2 12** can be configured to receive up to **twelve (12)** H.264 AES-128 encrypted IP channels from Technicolor COM3000/2000 satellite receivers. The Clearview 4:2 12 decrypts the AES-128 content and Transcodes the decrypted H.264 content into MPEG-2, while preserving the DirecTV 'forensic watermarking' and returns the content to the Technicolor COM3000/2000 devices.





# Clearview™ 4:2 SD

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## 24 Channel MPEG-4 to SD(480i) MPEG-2 IP Transcoder

### Key Features

- » H.264/MPEG-4 to MPEG-2 Transcodes up to 24 HD or SD programs
- » Accepts HD/SD input, IP input to IP output with constrained SD (480i) output
- » Compatible with Technicolor's COM3000 DirecTV receivers



1x Bi-directional RJ45 (IP Video Port, Input/Output) | 1x Bi-directional RJ45 (Control Interface)  
1RU Form Factor, 9.5 lbs | Power: 110/230 VAC, 0.9/0.45A, 60/50 Hz | Power Consumption: 64 W

The **Clearview 4:2 SD** can Transcode up to **twenty-four (24)** HD or SD programs from H.264 (MPEG-4) sources to SD MPEG-2 output in 1RU. The unit accepts Unicast H.264 IP transport streams and re-encodes the video content to SD MPEG-2 transport streams for IP Unicast delivery.

The Clearview product line has an easy-to-use interface, with the capability of downloading and uploading configuration files for multi-unit deployments.

The **Clearview 4:2 SD** can be configured to receive up to **twenty-four (24)** H.264 AES-128 encrypted IP channels from Technicolor COM3000/2000 satellite receivers. The Clearview 4:2 SD decrypts the AES-128 content and Transcodes the decrypted H.264 content into MPEG-2, while preserving the DirecTV 'forensic watermarking' and returns the content to the Technicolor COM3000/2000 devices.

# Specifications



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## Clearview 4:2

INPUT	
IP	Connector: <b>1xFront Panel RJ45</b> (IP Video Port, Input/Output)
	Standard: <b>1000Base-T (GbE)</b>
	Protocols Supported: <b>UDP</b>
Stream Protocols	Standard: <b>ISO/IEC 13818-1 Systems</b>
	Decryption: <b>AES-128</b>
	TS Packet Length: <b>188 bytes</b>
	Sync Rate: <b>0x47</b>
	Bit Rate: <b>Constant</b>
	TS Supported: <b>24 SPTS</b>
	CODEC: <b>H.264, MPEG-4, AVC</b>
	Input Resolution: <b>480i (30 FPS)</b> <b>720p (60 FPS)</b> <b>1080i (30 FPS)</b> <b>1080p (30/60 FPS)</b>
	Audio: <b>Pass-through</b>
	Routing Protocol: <b>Unicast</b>

OUTPUT	
IP	Connector: <b>1xFront Panel RJ45</b> (IP Video Port, Input/Output)
	Standard: <b>1000Base-T (GbE)</b>
	Protocols Supported: <b>UDP</b>
Stream Protocols	Standard: <b>ISO/IEC 13818-1 Systems</b>
	Content Protection: <b>Watermarking</b>
	TS Packet Length: <b>188 bytes</b>
	Sync Byte: <b>0x47</b>
	Bit Rate: <b>Constant</b>
	TS Supported: <b>24 SPTS</b>
	CODEC: <b>MPEG-2</b>
	Output Resolution: <b>480i (30 FPS)</b> <b>480p (30/60 FPS)</b> <b>720p (30/60 FPS)</b> <b>1080i (30 FPS)</b>
	Audio: <b>Pass-through</b>
	Routing Protocol: <b>Unicast</b>

## Clearview 4:2 12

INPUT	
IP	Connector: <b>1xFront Panel RJ45</b> (IP Video Port, Input/Output)
	Standard: <b>1000Base-T (GbE)</b>
	Protocols Supported: <b>UDP</b>
Stream Protocols	Standard: <b>ISO/IEC 13818-1 Systems</b>
	Decryption: <b>AES-128</b>
	TS Packet Length: <b>188 bytes</b>
	Sync Rate: <b>0x47</b>
	Bit Rate: <b>Constant or VBR</b>
	TS Supported: <b>12SPTS</b>
	CODEC: <b>H.264, MPEG-4, AVC</b>
	Input Resolution: <b>480i (30 FPS)</b> <b>720p (60 FPS)</b> <b>1080i (30 FPS)</b> <b>1080p (30/60 FPS)</b>
	Audio: <b>Pass-through</b>
	Routing Protocol: <b>Unicast</b>

OUTPUT	
IP	Connector: <b>1xFront Panel RJ45</b> (IP Video Port, Input/Output)
	Standard: <b>1000Base-T (GbE)</b>
	Protocols Supported: <b>UDP</b>
Stream Protocols	Standard: <b>ISO/IEC 13818-1 Systems</b>
	Content Protection: <b>Watermarking</b>
	TS Packet Length: <b>188 bytes</b>
	Sync Byte: <b>0x47</b>
	Bit Rate: <b>Constant</b>
	TS Supported: <b>12SPTS</b>
	CODEC: <b>MPEG-2</b>
	Output Resolution: <b>480i (30 FPS)</b> <b>480p (30/60 FPS)</b> <b>720p (30/60 FPS)</b> <b>1080i (30 FPS)</b>
	Audio: <b>Pass-through</b>
	Routing Protocol: <b>Unicast</b>



## Clearview+

INPUT		OUTPUT	
<b>IP</b>		<b>IP</b>	
Connector:	1x Front Panel RJ45 (IP Video Port, Input/Output)	Connector:	1x Front Panel RJ45 (IP Video Port, Input/Output)
Standard:	1000Base-T (GbE)	Standard:	1000Base-T (GbE)
Protocols Supported:	UDP	Protocols Supported:	UDP
<b>Stream Protocols</b>		<b>Stream Protocols</b>	
Standard:	ISO/IEC 13818-1 Systems	Standard:	ISO/IEC 13818-1 Systems
TS Packet Length:	188 bytes	TS Packet Length:	188 bytes
Sync Byte:	0x47	Sync Byte:	0x47
TS Supported:	24 SPTS	Encoding Type:	CBR/Capped VBR
Video Format:	MPEG-2, H.264 (AVC); H.265 (HEVC)	Video Bit Rates:	2-19 Mbps (0.1 Mbps increments)
Video Resolution:	480i (60 FPS); 480p (30/60 FPS); 720p (30/60 FPS); 1080i (60 FPS); 1080p (30 FPS)	TS Supported:	24 SPTS
Closed Captioning:	EIA608/EIA708	Video Format:	MPEG-2, H.264 (AVC); H.265 (HEVC)
Addressing:	Unicast	Video Resolution:	480i (60 FPS); 480p (30/60 FPS); 720p (30/60 FPS); 1080i (60 FPS); 1080p (30 FPS)
Audio Input Formats:	Dolby® AC3, AAC, MPEG1-Layer2 (Pass-through/Decode only), MP3	Closed Captioning:	EIA608/EIA708
SAP:	Supported	Addressing:	Unicast
Audio Rates:	64, 96, 112, 128, 160, 192, 224, 256, 320, and 384 Kbps	Audio Input Formats:	Dolby® AC3, AAC, MP3 (MPEG1-Layer2 Pass-through only)
		SAP:	Supported
		Audio Bit Rates:	128, 192, and 256 Kbps

## Clearview 4:2 SD

INPUT		OUTPUT	
<b>IP</b>		<b>IP</b>	
Connector:	1x Front Panel RJ45 (IP Video Port, Input/Output)	Connector:	1x Front Panel RJ45 (IP Video Port, Input/Output)
Standard:	1000Base-T (GbE)	Standard:	1000Base-T (GbE)
Protocols Supported:	UDP	Protocols Supported:	UDP
<b>Stream Protocols</b>		<b>Stream Protocols</b>	
Standard:	ISO/IEC 13818-1 Systems	Standard:	ISO/IEC 13818-1 Systems
Decryption:	AES-128	Content Protection:	Watermarking
TS Packet Length:	188 bytes	TS Packet Length:	188 bytes
Sync Rate:	0x47	Sync Byte:	0x47
Bit Rate:	Constant or VBR	Bit Rate:	Constant
TSSupported:	24 SPTS	TSSupported:	24 SPTS
CODEC:	H.264, MPEG-4, AVC	CODEC:	MPEG-2
Input Resolution:	480i (30 FPS) 720p (60 FPS) 1080i (30 FPS) 1080p (30/60 FPS)	Output Resolution:	480i (30 FPS)
Audio:	Pass-through	Audio:	Pass-through
Routing Protocol:	Unicast	Routing Protocol:	Unicast

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