

## DIRECTV® HD Transcoder

## Pro:Idiom® Headend Equipment



DIRECTV HD PROGRAMMING  
tunes and receives DIRECTV satellite service  
(DIRECTV HD service purchased separately)

REQUIRES ONE UNIT PER DIRECTV HD CHANNEL

OUTPUT BASEBAND ASI MPEG-2 OR MPEG-4 H.264  
Transport Stream is encrypted with Pro:Idiom  
content protection system

ASI OUTPUT INTERFACE  
compatible with VSB or QAM modulator

ASI OUTPUT COMPATIBLE FOR MULTIPLEXING  
multiple programs on a single RF channel

1 YEAR LIMITED WARRANTY  
(parts and labor)

## COMPATIBLE LG TVs

MPEG-2 ONLY*		MPEG-2/MPEG-4	
22LG3DCH	32LX3DC	32LC50C/CS/CB	42LB50C
26LG3DCH	32LX3DCS	32LC5DC	42LB5DC
32LG3DCH	32LX4DC	32LC5DCB	42LC50
20LH1DC1	32LX4DCS	32LC5DCS	42LC5DC
26LH1DC1	42PX7DC	32LX50C/CS	42PG60C/65C
26LH1DC3	DU-42PX12XD	32LX5DC	42PX8DC
26LH1DC4		32LX5DCS	
32LH1DC	HCS5610	37LC50C/CB	
32LP1DC	HCS5650	37LC5DC	
32LP2DC		37LC5DCB	

\*Note: MPEG-2 compatible sets are not equipped to receive MPEG-4 programming.



# REQUIREMENTS

## PROVIDING DIRECTV HD CONTENT

### AVAILABLE TO PROPERTIES WITH Pro:Idiom LICENSED \*\* PAY-PER-VIEW (PPV) PROVIDER (Requires Pro:Idiom compatible TVs or STBs)

- Access to DIRECTV premium HD content
- Access to DIRECTV local channels
- Digital RF channels coexist with analog RF channels
- PPV Provider system controls content protection system
- Channel mapping available from PPV Provider system

### AVAILABLE TO PROPERTIES PROVIDING FREE-TO-GUEST (FTG) PREMIUM HD CONTENT (without PPV system) (Requires Pro:Idiom Transcoder License \*\* and Pro:Idiom compatible TVs and STBs)

- Access to DIRECTV premium HD content
- Access to DIRECTV local channels
- Digital RF channels coexist with analog RF channels
- Requires FTG solution to control content protection system and provide channel mapping
  - LG's HCS1410 FTG card purchased separately
  - Other TV vendors must be contacted for their FTG solution

\*\*In order to obtain a Pro:Idiom license, please contact your LG salesperson. DIRECTV service must be purchased separately from DIRECTV.

### NECESSARY STEPS TO PROVIDE DIRECTV HD CONTENT

- Validate that you have an appropriate Pro:Idiom license (if HCS6000RA is purchased by end user, a Transcoder license is required which can be obtained by contacting your LG salesperson)
- Determine the number of programs required for your system and the channel lineup on the RF cable system (one HCS6000RA is required for each DIRECTV HD program)
- Verify that the corresponding modulator and up-converter have been purchased from an authorized third party vendor
- Obtain a DIRECTV access card, which will be delivered separate from the HCS6000RA, after validation of Pro:Idiom license
- Install the HCS6000RA into the head-end along with the VSB or QAM modulator and up-converter for each channel
- Activate your DIRECTV HD subscription for each HCS6000RA
- Tune each HCS6000RA to the appropriate HD channel on DIRECTV (composite video port is provided for the initial configuration)
- Review the list of compatible LG and Zenith TV models to verify MPEG-2 and MPEG-4 capability (if another TV vendor is used, verify capability with them)

### ITEMS NEEDED TO BE PURCHASED FROM THIRD PARTY VENDORS

- DIRECTV 3 or 5 Low Noise Block (LNB) dish system with subscription. Five LNB is required for MPEG-4 support and reception.
- VSB or QAM modulator with ASI input, (Multiplexers can be used in front of the modulator if multiple programs are desired and 256-QAM modulation is used)
- Up-converter compatible with digital modulation
- 19-inch rack system for mounting
- Miscellaneous cables and installation cost



### LG/ZENITH FREE-TO-GUEST CARD (HCS1410)

The optional HCS1410 card is purchased separately. It installs into the MPI slot on LG/Zenith televisions or set-top-boxes. It is to be used by properties without a Pay-Per-View system, but still want to provide Pro:Idiom encrypted free-to-guest high-definition channels to their guests.

OPTION



## Pro:Idiom®

### DIGITAL RIGHTS MANAGEMENT SYSTEM

The Pro:Idiom system's high-quality security unlocks access to premium content availability to help assure rapid, broad deployment of HDTV and other high value digital content. Pro:Idiom has been designed specifically for industries that use premium HDTV content from cable, satellite or video on demand (VOD) services and as such, could result in lower costs, and reduced maintenance. This system is one of the leading DRM systems embraced by content providers for both of these key programming sources. By using this embedded approach, security is provided and helps eliminate the possibility of customers tampering with or removing needed components.

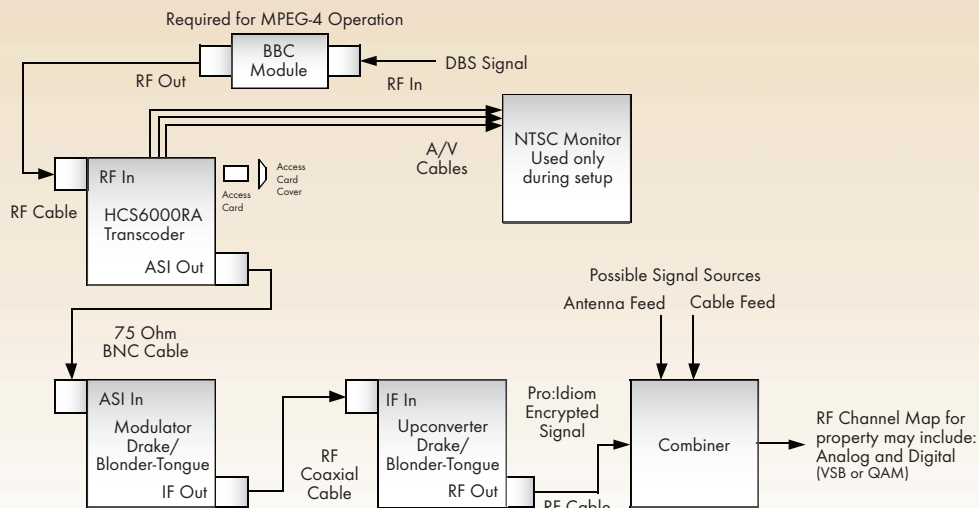
### REMOTE CONTROL



# DISTRIBUTION

PROVIDING DIRECTV HD CONTENT

### TYPICAL SETUP FLOW CHART for single DIRECTV HD Channel



### OVERVIEW OF A TYPICAL DIRECTV HD TRANSCODER SYSTEM

The HCS6000RA, Zenith/LG DIRECTV HD Transcoder, represents a single-channel HDTV solution for commercial and institutional MATV systems (hotels, hospitals, etc.).

#### A TYPICAL DIRECTV TRANSCODER SYSTEM INCLUDES:

- HCS6000RA DIRECTV HD Transcoder for each HD Program offered in the commercial facility MATV system.

#### THE ELEMENTS OF SUCH A SYSTEM COMBINED CAN:

- Receive a selected HD channel from DIRECTV service.
- Transcode the digital video and audio stream to an ATSC A/53E compliant transport stream, or MPEG-4 Part 10 NAL Layer Encapsulated in MPEG-2 Transport Stream.
- Encrypt the received digital data stream.
- Modulate the stream in 64-QAM or multiplexed 256-QAM.

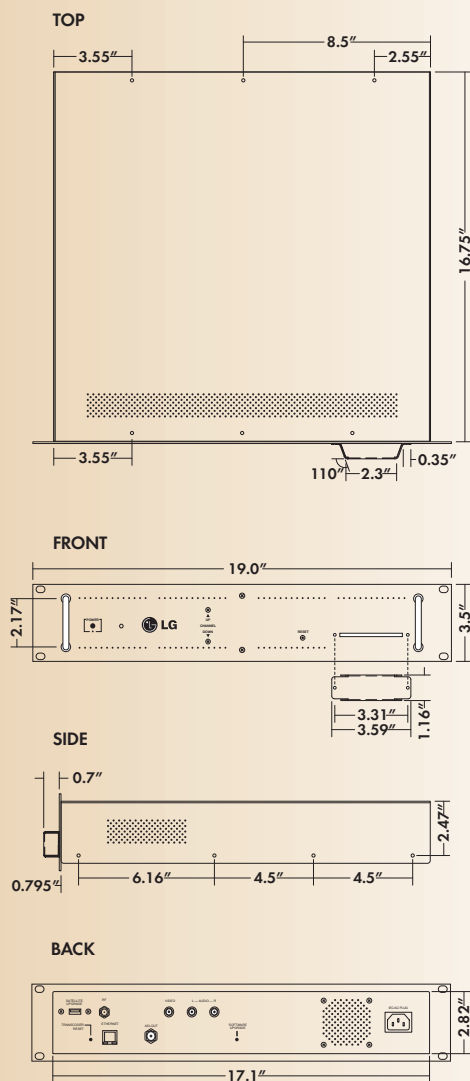
A Pro:Idiom-compatible television, with a QAM/VSB tuner, is required to view premium HD content. The HCS6000RA changes the DIRECTV encryption scheme to a Pro:Idiom encryption scheme. A proper session ID must be set at the TV in order for Pro:Idiom decryption to be enabled. Zenith/LG's PPV alliances can properly set up this session through their interface. Zenith/LG has a free-to-guest card (HCS1410) which is substituted for the supplied MPI (Multiple Protocol Interface) card which can set the session to allow decryption.



## HCS6000RA DIRECTV® HD TRANSCODER



DIMENSIONS



SPECIFICATIONS

**PRODUCT/FEATURES**

Product Usage DIRECTV HD Content Distribution

**TECHNICAL SPECIFICATIONS**

Input RF Interfaces with DIRECTV 5-LNB/multiswitch SAT front end

Input Transport DIRECTV HD/A3 Transport data stream

Video MPEG-2 HL@MP, ML@MP  
H.264/MPEG-4, Part10(AVC)

Audio AC-3 and AAC+

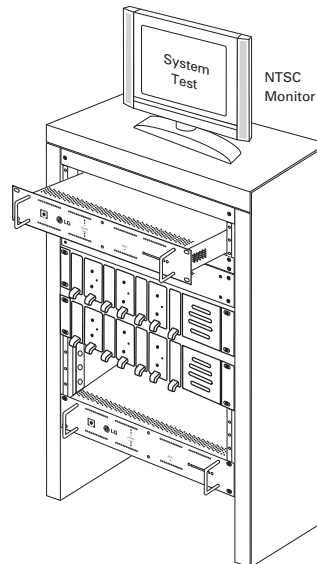
Output Format-DVB-ASI delivery of an ATSC A/53E compliant transport stream, or MPEG-4 Part 10 NAL Layer Encapsulated in MPEG-2 Transport Stream (Single program stream selected by channel) Physical interface-BNC 75Ohm connector

Digital Rights Management Transport stream output encrypted with Pro:Idiom (AES 128 bit keys)  
Ethernet port for Pro:Idiom Key Renewal  
DIRECTV Conditional Access  
AV chip compliant  
DES decryption for DIRECTV legacy stream, AES decryption for A3 stream  
ISO7816 smart card slot behind a door

UPC 0 44642 70268 7

**REQUIRED LISTINGS**

UL cUL Yes

**LIMITED WARRANTY** 1 year (parts/labor)

www.LGcommercial.com



LG Electronics U.S.A., Inc.  
Commercial Products Division  
2000 Millbrook Drive  
Lincolnshire, IL 60069

Customer Service: 888.865.3026

Contact your LG Regional Sales Representative  
Hospitality: 800.228.1236  
Enterprise: 800.897.8788  
Channel: 800.897.8871  
E-mail: LGcommercial@lge.com

SPEC\_HCS6000RA 080811\_PR



**All screen images are simulated.** Dimensions and weights are approximate. Design, features and specifications subject to change without notice.

© Copyright 2008 LG Electronics USA, Inc. All Rights Reserved. Pro:Idiom is a registered trademark and MPI is a trademark of Zenith Electronics Corporation. Zenith-brand products are sold and serviced by LG Electronics, USA, Inc.

All other product and brand names are trademarks or registered trademarks of their respective companies.

Printed in the USA. October 2008