

Cisco D9858 Advanced Receiver Transcoder

Product Overview

The Cisco® D9858 Advanced Receiver Transcoder (Figure 1) can deliver MPEG-4 high definition (HD) services to MPEG-2 cable television (CATV) headends. The Cisco D9858 extends the distribution options for MPEG-4 Advanced Video Coding (AVC) HD from solely MPEG-4 environments to existing MPEG-2 networks. Support for simultaneous dual-channel decryption and transcoding provides density for locations requiring more than a single channel. The Cisco D9858 can be used to provide a down-converted standard definition (SD) MPEG-2 program instead of one or both of the available HD transcoded programs. Video and two audio outputs are available for analog down-conversion for one of the decrypted incoming MPEG-4 HD programs.

Figure 1. Cisco D9858 Advanced Receiver Transcoder



Digital Program Distribution

The Asynchronous Serial Interface (ASI) and MPEGoIP transport outputs are individually configurable and can carry up to two decrypted transcoded programs for digital tier distribution. This helps distribute the compressed video programs efficiently to subscribers equipped with digital set-top boxes. Digital audio pass-through is synchronized to the transcoded program output. Compliant Program Specific Information (PSI) and Service Information (SI) regeneration provide integration into a digital tier distribution network for two transcoded programs.

Digital Program Mapping

Digital Program Mapping allows programmers to “transparently” substitute programs at the uplink. It maintains predictable and compliant transport output during service replacement, network information table (NIT) retuning, and channel changes, including forced tunings. This feature remaps the packet identifier (PID) information from the primary service to an alternate service, allowing downstream devices to continue to operate without headend operator intervention. This helps ensure availability of alternative programming in the digital tier.

Digital Advertisement Insertion

Digital program insertion (DPI) information is available along with the video and audio PIDs for external advertisement insertion in compressed digital format on both transcoded programs.

Main Features

- Four L-band inputs
- Digital Video Broadcasting - Satellite (DVB-S) demodulation for quaternary phase shift keying (QPSK)
- Digital Video Broadcasting - Satellite - Second Generation (DVB-S2) demodulation for QPSK and eight phase shift keying (8PSK)
- Cisco PowerVu® conditional access with Data Encryption Standard (DES) or DVB descrambling

- Support for Basic Interoperable Scrambling System (BISS) conditional access
- Decryption and transcoding of up to two programs for digital transport output
- Program transcoding to support down-conversion of a MPEG-4 HD program to a MPEG-2 SD program
- PSI/SI regeneration for both programs
- 4:2:0 HD 1080i and 720p video decoding
- Active Formal Descriptor (AFD) support for down-conversion of a decoded HD program with aspect ratio conversion
- Dolby Digital (AC-3) audio decoding
- Closed captioning pass-through of EIA-608 and EIA-708 for transcoded programs
- Audio pass-through synchronization for transcoded programs
- Additional ASI outputs for redundancy
- MPEGoIP output for network connectivity
- DVB subtitle pass-through with transcode programs
- DVB subtitle burn-in support
- Contact closure terminals for simple alarm monitoring
- Simple Network Management Protocol (SNMP) for setup, control and monitoring
- Field upgradeable software
- Front panel liquid crystal display (LCD) for control and monitoring
- Web browser interface for easy setup, control, and monitoring
- Uplink addressable decoder output control, including vertical blanking interval (VBI) data, audio routing, DPI, and ASI output)
- Dual-tone multifrequency (DTMF) cue tone and cue trigger outputs for advertisement insertion
- Digital program mapping providing uplink control for service replacements in blackout areas
- Live Event Control support
- Satellite Disaster Recovery support

Product Specifications

Table 1 provides product specifications for the Cisco D9858 Advanced Receiver Transcoder.

Table 1. Product Specifications

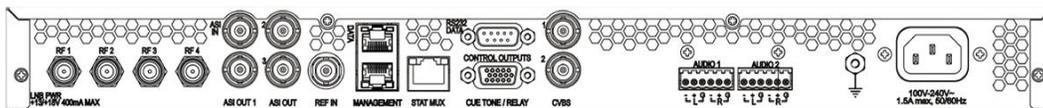
Feature	Description
System	
Standards	MPEG-2 and DVB compatible EN 300 421, EN 300 468
Demodulation	DVB-S QPSK, DVB-S2 QPSK, and 8PSK
Tuner	
Number of RF inputs	4 (1 active at a time)
Input level	25 to -65 dBm per carrier
Frequency range	950z to 2150 MHz

Feature	Description
Symbol rate range	<ul style="list-style-type: none"> • DVB-S: <ul style="list-style-type: none"> ◦ 1 to 45 Msymbols per second • DVB-S2: <ul style="list-style-type: none"> ◦ 10.0 to 30 Msymbols per second ◦ 1.0 to 10 Msymbols- per second "contact Cisco"
Carrier capture range	<p>≥ ±3.0 MHz (1-10 Msymbols)</p> <p>≥ ±5.0 MHz (10-30 Msymbols)</p>
Satellites	C-band and Ku-band
Input impedance	75 ohms
Analog Outputs	
Analog SD Video Output	
Number of channels	1 down-converted source HD program
Video decompression type	MPEG-4 4:2:0
Output level	1.0 Vpp ± 5%
Output impedance	75 ohms
Analog Audio Output	
Number of channels	2 stereo pairs or 4mono channels
Audio decompression	MPEG or Dolby Digital (AC-3)
Transcoder Channel Inputs	
HD Video Input	
Compression format	MPEG-4 part 10
Vertical resolutions	1080, 720
Horizontal resolutions	1080i:1920, 1440 720p:1280, 960
Input bitrate	3 to 20 Mbps main profile 3 to 25 Mbps high profile
Audio Input	
Number of channels	2
Compression format	MPEG or Dolby Digital (AC-3)
VBI Data Input	
Transmission format	EIA-708 and 608
Transcoder Channel Outputs	
HD Video Output	
Compression format	MPEG-2
Vertical resolutions	1080, 720
Horizontal resolutions	1080i:1920, 1440 720p:1280, 960
Output bitrate	10 to 25 Mbps
Down-Converted SD Video Output	
Compression format	MPEG-2
Vertical resolutions	480, 576
Horizontal resolutions	720, 704, 544, and 528
Output bitrate	2 to 15 Mbps
SD output aspect ratios	4:3, 16:9
Aspect ratio conversions	4:3: 16:9 letterbox, 14:9 letterbox, center cutout 16:9: center cutout

Feature	Description
Audio Output	
Number of channels	2
Compression format	MPEG or Dolby Digital (AC-3)
VBI Data Output	
Transmission format	EIA-708 and 608
Inputs and Outputs	
MPEG-2 transport input	EN50083-9, DVB-ASI coaxial, with 188 and 204 byte packets
MPEG-2 transport output	EN50083-9, DVB-ASI coaxial, with 188 byte packets
MPEGoIP Output	
Ethernet type	1000BASE-T Ethernet
Format	UDP and IP or RTP
IP addressing	Multicast
TS streaming	Multiple Program Transport Stream (MPTS)
Other Outputs	
Cue Trigger Output	
Number of outputs	8
Type	Open collector
Cue Tone Output	
Balanced audio output	-3.0 dBu \pm 3 dB, 600 ohms
Output impedance	< 50 ohms
Programmable relay output	Alarm or configurable to one of the 8 open collector outputs
Environmental/Physical	
Operating temperature	32-122°F (0-50°C)
Storage temperature	-4-158°F (-20-70°C)
Physical dimensions	1.75 x 19.0 x 20.5 in (4.4= x 48.3= x 52.1 cm) 1RU high, 19 in. EIA rack mountable
Weight	16 lbs (7.2 kg) approximate
Power	
Voltage range	100 to 240 V AC
Line frequency	50/60 Hz
Power consumption	110 W maximum
LNB power on RF1	+13 V or +18 V at 400 mA maximum

Figure 2 shows the rear panel of the Cisco D9858 Advanced Receiver Transcoder.

Figure 2. Cisco D9858 Advanced Receiver Transcoder



Ordering Information

To place an order, visit the [Cisco Ordering Home Page](#). To download software, visit the [Cisco Software Center](#). Table 2 provides ordering information.

Table 2. Ordering Information

Cisco D9858 Features	Part Number
2CH Advanced Receiver Transcoder 1RU with ATP-ISE	D9858-2CH-ATP-1RU
2CH Advanced Receiver Transcoder 1RU with GEN-ISE	D9858-2CH-GEN-1RU

Table 3 provides ordering information on country-specific power cords.

Table 3. Ordering Information: Country-Specific Power Cords

Power Cord Descriptions	Part Number
North American Power Cord (US, IEC, 10AMP, 2.5m)	CAB-PWR-DMN-US
Japan Power Cord	CAB-PWR-DMN-JPN
China Power Cord (IEC)	CAB-PWR-DMN-CHN
Australia Power Cord	CAB-PWR-DMN-AUS
Italy Power Cord	CAB-PWR-DMN-IT
European Power Cord (EU)	CAB-PWR-DMN-EU
Brazil Power Cord	CAB-PWR-DMN-BRA
India Power Cord	CAB-PWR-DMN-IND
Argentina Power Cord	CAB-PWR-DMN-ARG
UK Power Cord (IEC, 10AMP, 2.5m)	CAB-PWR-DMN-UK

For More Information

To learn more about this product, contact your local account representative.

To subscribe to receive end-of-life/end-of-sale information, go to <http://www.cisco.com/cisco/support/notifications.html>.

With respect to each AVC/H.264 product, we are obligated to provide the following notice:

AVC VIDEO LICENSE

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE <http://www.mpegla.com>.

Accordingly, please be advised that service providers, content providers, and broadcasters are required to obtain a separate use license from MPEG LA prior to any use of AVC/H.264 encoders and/or decoders.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

 Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)