Cisco D9858-1 Advanced Receiver Transcoder

Product Overview

Deliver MPEG-4 high definition (HD) services to MPEG-2 cable television (CATV) headends with the Cisco® D9858-1 Advanced Receiver Transcoder (Figure 1). The Cisco D9858-1 extends the distribution options for MPEG-4 Advanced Video Coding (AVC) HD from MPEG-4 only environments to existing MPEG-2 networks. Like the award-winning Cisco D9858 Advanced Receiver Transcoder, the Cisco D9858-1 can be used as a single-channel receiver for applications that require less density. It can also be used to provide a down-converted standard definition (SD) MPEG-2 program instead of the HD transcoded program, using either manual or Active Format Descriptor (AFD) control of the aspect ratio conversion. Video and two audio outputs are available for analog down-conversion of the decrypted incoming MPEG-4 HD program.

Figure 1. Cisco D9858-1 Advanced Receiver Trancoder

Digital Program Distribution

On the Cisco D9858-1 Advanced Receiver Transcoder, the Asynchronous Serial Interface (ASI) and MPEGoIP transport outputs are individually configurable, and they can carry a decrypted transcoded program 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 a transcoded program.

Digital Program Mapping

Digital Program Mapping allows programmers to substitute programs at the uplink. It maintains predictable and compliant transport output during service replacement, network information table (NIT) retuning, 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 the transcoded program.

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 a single program 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
- 4:2:0 HD 1080i and 720p video decoding
- Active Format Descriptor (AFD) support for down-conversion of an HD program with aspect ratio conversion
- Dolby Digital (AC-3) audio decoding
- Closed captioning pass-through of EIA-608 and EIA-708 for a transcoded program
- Audio pass-through synchronization for a transcoded program
- Additional ASI outputs for redundancy
- MPEGoIP output for network connectivity
- DVB subtitle pass-through with a transcoded program
- DVB subtitle burn-in support
- Contact closure terminals for simple alarm monitoring
- Dual-tone multifrequency (DTMF) cue tone and cue trigger outputs for advertisement insertion
- 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)
- Digital program mapping providing uplink control for service replacements in blackout areas
- Cisco Live Event Controller support
- Fingerprint support in transcoded output
- On screen display support in transcoded output
- Satellite Disaster Recovery support with Cisco PowerVu Network Center uplink control (Release 12.5 or higher)

Product Specifications

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

Table 1. Product Specifications

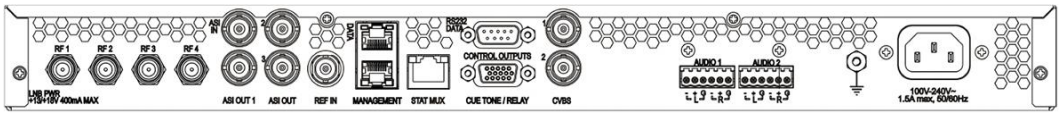
Feature	Description
System	
Standards	MPEG-2/DVB compatible EN 300 421, EN 300 468
Demodulation	DVB-S QPSK, DVB-S2 QPSK, and 8 PSK
Tuner	
Number of RF inputs	4 (1 active at a time)
Input level	25 to -65 dBm per carrier
Frequency range	950 to 2150 MHz
Symbol rate range	• DVB-S: ◦ 1 to 45 Msymbols per second • DVB-S2: ◦ 10.0 to 30 Msymbols per second ◦ 1.0 to 10 Msymbols per second
Carrier capture range	≥ ±3.0 MHz (1-10 Msymbols) ≥ ±5.0 MHz (10-30 Msymbols)
Satellites	C-band and Ku-band
Input impedance	75Ω
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	75Ω
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

Feature	Description
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	720/704/544/528
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
Audio Output	
Number of channels	2
Compression format	MPEG or Dolby Digital (AC-3)
VBI Data Output	
Transmission format	EIA-708 and 608
Inputs/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 and Unicast
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 ±3 dB, 600ohms
Output impedance	< 50ohms
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°F-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

Feature	Description
Power	
Voltage range	100 to 240 VAC
Line frequency	50/60 Hz
Power consumption	110W maximum
LNB power on RF1	+13 V/+18 V @ 400 mA maximum

Figure 2 shows the rear panel of the Cisco D9858-1 Advanced Receiver Transcoder.

Figure 2. Cisco D9858-1 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 D9858-1 PID	Part Number
1CH Advanced Receiver Transcoder 1RU with ATP-ISE	D9858-1CH-ATP-1RU
1CH Advanced Receiver Transcoder 1RU with GEN-ISE	D9858-1CH-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 the Cisco D9858-1 Advanced Receiver Transcoder, contact your local account representative or go to Digital Receivers/Decoders.

Read more about the Cisco End-of-Life Policy and Subscribe to receive end-of-life and end-of-sale information.

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Printed in USA C78-728202-02 10/14