

Cisco D9858-1 Advanced Receiver Transcoder

Description

The PowerVu® Model D9858-1 Advanced Receiver Transcoder provides the ability to deliver MPEG-4 HD services to MPEG-2 CATV headends. The D9858-1 receiver extends the distribution options for MPEG-4 AVC HD from solely MPEG-4 environments to existing MPEG-2 networks. The D9858-1 receiver shares the same capabilities of the award winning D9858 Advanced Receiver Transcoder as a single channel receiver for applications which require less density. The D9858-1 can be utilized to provide a down-converted Standard Definition (SD) MPEG-2 program instead of the HD transcoded program, utilizing 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 Advanced Receiver Transcoder



Digital Program Distribution

The ASI and MPEGoIP transport outputs are individually configurable and provide the capability of carrying a decrypted transcoded program for digital tier distribution. This helps the compressed video programs to be efficiently distributed to subscribers equipped with digital set-top boxes. Digital audio pass-through is synchronized to the transcoded program output. Compliant PSI/SI regeneration provides 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) retune, channel changes, including force tunes. This feature remaps the 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 alternate programming in the digital tier.

Digital Ad-insertion

Digital Program Insertion (DPI) information is available along with the video and audio PIDs (Packet Identifiers) for external ad insertion in compressed digital format on the transcoded program.

Key Features

- Four L-Band inputs
- DVB-S Demodulation for QPSK
- DVB-S2 Demodulation for QPSK and 8PSK
- PowerVu conditional access with DES or DVB descrambling
- Supports 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 High Definition 1080i and 720p video decoding
- 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
- Contact closure terminals for simple alarm monitoring
- DTMF cue tone & cue trigger outputs for ad-insertion
- SNMP for setup, control and monitoring
- Field upgradeable software
- Front panel LCD for control & monitoring
- Web browser interface for easy setup, control and monitoring
- Uplink addressable decoder output control (VBI, audio routing, DPI, and ASI output)
- Digital Program Mapping providing uplink control for service replacements in blackout areas

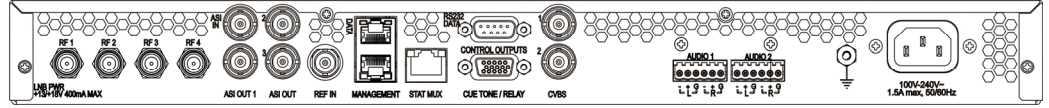
Specifications

Table 1. Product Specifications

Parameter	Value
System	
MPEG-2/DVB Compatible EN 300 421, EN 300 468	
De-modulation	DVB-S QPSK, DVB-S2 QPSK & 8PSK
Tuner	
Number of RF Inputs	4 (one active at a time)
Input Level	25 dBm to -65 dBm per carrier
Frequency Range	950 MHz to 2150 MHz
Symbol Rate Range	DVB-S: 1.0 to 45 MSymbols/s DVB-S2: 10.0 to 30 MSymbols/s 1.0 to 10 MSymbols/s - contact SA
Carrier Capture Range	$\geq \pm 3.0$ MHz (1-10 Msym) $\geq \pm 5.0$ MHz (10-30 Msym)
Satellites	C-band and Ku-band
Input Impedance	75 Ω
Analog Outputs	
Analog SD Video Output	
Number of Channels	One down-converted source HD program
Video Decompression Type	MPEG-4 4:2:0
Output Level	1.0 V pp \pm 5%
Output Impedance	75 Ω
Analog Audio Output	
Number of Channels	Two stereo pairs/four mono channels
Audio Decompression	MPEG or Dolby Digital (AC-3)
Transcoder Channel Inputs	
HD Video Input	
Compression Format	MPEG-4 part 10
V Resolutions	1080, 720
H Resolutions	1080i: 1920, 1440 720p: 1280, 960
Input Bit Rate	3 Mb/s to 20 Mb/s Main Profile 3 Mb/s to 25 Mb/s High Profile
Audio Input	
Number of Channels	Two Audio Channels
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
V Resolutions	Same as input
H Resolutions	1080i: 1920, 1440 720p: 1280, 960

Parameter	Value
Output Bit Rate	10 Mb/s to 25 Mb/s
Down-converted SD Video Output	
Compression Format	MPEG-2
V Resolutions	480, 576
H Resolutions	720/704/544/528
Output Bit Rate	2 Mb/s to 15 Mb/s
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	Two Audio Channels
Compression Format	Same as input
VBI Data Output	
Transmission Format	EIA-708 and 608
Inputs/Outputs	
MPEG-2 Transport Input	EN50083-9, DVB-ASI coaxial, 188/204 byte packets
MPEG-2 Transport Output	EN50083-9, DVB-ASI coaxial, 188 byte packets
MPEGoIP Output	
Ethernet Type	1000 Base-T
Format	UDP/IP or RTP
IP Addressing	Multicast
TS Streaming	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 Ω
Output Impedance	< 50 Ω
Programmable Relay Output	Alarm or configurable to one of the 8 open collector outputs
Environmental/Physical	
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Physical Dimensions	1.75 in. H x 19.0 in. W x 20.5 in. D (4.4 cm H x 48.3 cm W x 52.1 cm D) 1RU high, 19 in. EIA rack mountable
Weight	16 lbs (7.2 kg) approx.
Power	
Voltage Range	100 to 240 VAC
Line Frequency	50/60 Hz
Power Consumption.	110 W max.
LNB Power on RF#1	+13 V/+18 V @ 400 mA max.

Figure 2. PowerVu Model D9858-1 Advanced Receiver Transcoder



Ordering Information

Table 2. Ordering Information

Description	Part Number
Single-channel Transcode 4 RF Inputs, ASI In, 3 ASI out MPEGoIP out, NA ¹ power cord.	402476602010001 ²
Single-channel Transcode 4 RF Inputs, ASI In, 3 ASI out MPEGoIP out, (ATP ³ ISE) NA power cord.	402476603010001 ²
Power Cords	
No power cord	00
North American (NA)	01
Japan	02
China	03
Australia	04
European (EU)	05
Russia	06
Brazil	07
Chile	08
India	09
South Africa	10
Israel	11
Mexico	12
Argentina	13
UK	14
Ireland	15
Singapore	16
Taiwan	17
Switzerland	18
Korea	19

¹ The last two digits of part number denote the power cord. When ordering, refer to the Power Cords in the table for your country-specific power cord

² NA – North American

³ ATP – Advanced Transcoder Pool

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