Cisco D9854-I Advanced Program Receiver

Product Overview

The Cisco® D9854-I Advanced Program Receiver (Figure 1) is designed for satellite and terrestrial content distribution applications requiring Digital Video Broadcasting - Satellite (DVB-S), Digital Video Broadcasting - Satellite - Second Generation (DVB-S2) and IP reception capabilities with advanced digital outputs for digital tier program distribution. A built-in decoder can decode an MPEG-2 or MPEG-4 Advanced Video Coding (AVC) high definition (HD) program for analog monitoring, or a standard definition (SD) down-conversion for composite. MPEG-2 or MPEG-4 AVCSD programs can also be decoded for analog and SDI output. D9854-I comes with RF, ASI and MPEGoIP input combined with a high-quality SDI or HD-SDI output and optional MPEGoIP output.

Figure 1. Cisco D9854-I Advanced Program Receiver

Digital Program Distribution

The Asynchronous Serial Interface (ASI) transport output or the optional MPEGoIP output provides a number of output modes and can carry a decrypted program for digital tier distribution. This capability helps ensure that compressed video programs are efficiently distributed to households equipped with digital set-top boxes.

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 tuning. 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 alternate 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.

Main Features

- Four L-band inputs
- New H/W with up to 180 Mbps throughput/bandwidth
- MPEGoIP Input with Redundancy (1 MPTS or 1 SPTS)
- MPEGoIP Output with Redundancy (1 MPTS or 16 SPTS)
- Supports Forward Error Correction (FEC) based on SMPTE 2022 for MPEGoIP input and Output
- DVB-S quaternary phase shift keying (QPSK) demodulation
- DVB-S2 QPSK and eight phase shift keying (8PSK) demodulation

- Cisco PowerVu® conditional access with Data Encryption Standard (DES) or DVB descrambling
- Support for Basic Interoperable Scrambling System (BISS) conditional access
- DVB-CI support for CAM-based conditional access
- 4:2:0 HD MPEG-4 AVC and MPEG-2 1080i and 720p decoding
- 4:2:0 SD MPEG-4 AVC and MPEG-2 decoding
- Aspect ratio conversion (4:3, 16:9, 14:9) with Active Format Descriptor (AFD) control for SD programs
- AFD support for down-conversion of HD programs with aspect ratio conversion
- User-configurable redundant ASI, SDI, or HD-SDI outputs
- SDI or HD-SDI video output with embedded audio
- Closed captioning support for EIA-608 and EIA-708
- MPEG and Dolby Digital audio decoding
- DVB or Imitext subtitling
- Four audio outputs providing either two stereo pairs or four mono channels of balanced, audio, each with the ability to use part of the output for applications such as second audio program (SAP), cue tones, etc.
- Utility data up to 38.4 kbps using RS-232
- Uplink addressable decoder output control, including vertical blanking interval (VBI) data, audio routing, DPI, and ASI output)
- Fingerprint trigger
- Field upgradeable software and security
- Simple Network Management Protocol (SNMP) for setup, control, and monitoring
- Front panel liquid crystal display (LCD) for control and monitoring
- Web browser interface for easy setup, control, and monitoring
- DVB-VBI and SCTE-127 support
- CAM Interface software
- Dual-tone multifrequent (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

Specifications

Table 1 provides product specifications for the Cisco D9854-I Advanced Program Receiver.

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 RF inputs	
Number of RF inputs	4 (1 active at a time)
Input level	-25 to -65 dBm per carrier

Feature	Description
Frequency range	950 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 Cisco)

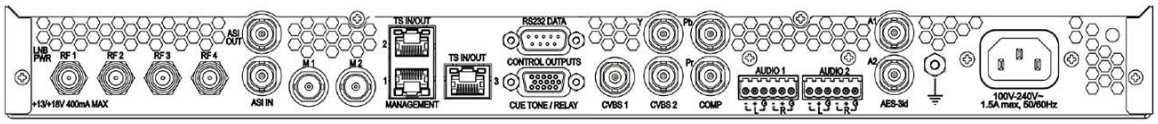
Carrier capture range	≥ ±3.0 MHz (1-10 Msymbols) ≥ ±5.0 MHz (10-30 Msymbols)
Satellites	C-band and Ku-band
Input impedance	75 Ohm
ASI input	
MPEG-2 transport input	EN50083-9, DVB-ASI coaxial, 188/204 byte packets
MPEGoIP Input	
Physical	RJ-45
Ethernet	100BASE-T Ethernet, and 1000BASE-T Ethernet
FEC	FEC based on SMPTE 2022 for MPEGoIP input
Input modes	UDP Raw, RTP, FEC
Analog Outputs	
Analog HD Video Output	
Number of channels	1
Video decompression type	MPEG-2 4:2:0 and MPEG-4 AVC 4:2:0 (Optional)
Video standard	1080i at 29.97 frames per second (fps), 1080i at25 fps, 720p at59.94 fps, and 720pat 50 fps
Horizontal video resolutions	1080i: 1920, 1440, and 1280 720p: 1280, 960, and 640
Analog SD Video Output	
Number of channels	1 (2 identical outputs)
Video decompression type	MPEG-2 4:2:0 and MPEG-4 AVC 4:2:0
Video standard	NTSC and PAL B/G/I/D/M/N
Maximum video resolution	720x480 and 576 digital audio and video output (future)
Analog Audio Output	
Number of channels	2 stereo pairs or 4 mono channels and 5.1 channel down-mix
Audio decompression	MPEG or Dolby Digital (AC-3) HE-AAC single stereo pair or Dolby Digital Plus single stereo pair available in anticipated software release
Output level	Balanced, adjustable audio outputs are factory set for unity gain (0 dBm out over 600 ohms for 0 dBm in). Output is adjustable at the front panel by ±6.0 dB (ref. 100 kilohms) and is factory calibrated to +18 dBu (at full scale).
Frequency response	±0.5 dB, 20 Hz to 20 kHz (ref. 100 kilohms)
Total harmonic distortion	< 0.3% at 1 kHz (ref. 100 kilohms)
Dynamic range	85 dB (CCIR average response meter [ARM] weighting)
Crosstalk	80 dB at 1 kHz (typical)
Digital Outputs (Optional)	
Digital HD Video Output	
Number of channels	1
User selectable output ports	2
Output type	BNC

Feature	Description
Output format	HD-SDI, SMPTE-292M SDI, SMPTE-259M
Embedded audio	2 audio programs, PCM or pass-through 2 digital audio outputs (1 stereo channel each) BNC, AES-3id, SMPTE 276M
Aspect Ratio	
Display aspect ratios	4:3, 16:9
Aspect ratio conversions for down-conversion	**4:3:** 16:9 letterbox, 14:9 letterbox, center cutout **16:9:** Center Cutout
Aspect ratio conversions for SD programs	**4:3:** 16:9 letterbox, 14:9 letterbox, center cutout, none **16:9:** Scale to 16:9
VBI	
NTSC	• Lines 10 to 22, fields 1 and 2 • Line 21 closed captions • NABTS • AMOL I and II (Neilsen) • VITC • WSS
PAL	• Lines 7 to 22, fields 1 and 2 • WST • WSS • VPS • VITC
Data Outputs	
RS-232 asynchronous data	
Rates	300, 1200, 2400, 4800, 9600, 19,200, 38,400 b/s
Ethernet output for IP data	
Connector	RJ-45, 100/1000BaseT
Rates	Up to 10 Mbps
Conditional Access	
Cisco PowerVu conditional access	DES or DVB
DVB descrambling	BISS mode1/E
DVB-CI	
Interface	2 CI slots - EN 50221
CA method	Multicrypt, Simulcrypt
Conditional Access System (CAS)	Irdeto, Viaccess, Nagravision, Conax MediaGuard, Roscrypt, Videoguard and Cryptoworks
Other Outputs	
ASI Output	
MPEG-2 transport output	EN50083-9, DVB-ASI coaxial, 188/204 byte packets
MPEGoIP Output (Optional)	
Physical	RJ-45
Ethernet	100BASE-T Ethernet, and 1000BASE-T Ethernet
Output modes	UDP Raw, RTP, FEC
FEC	FEC based on SMPTE 2022

Feature	Description
Relay output	
Programmable relay output	Alarm or configurable to one of the 8 open collector outputs
Cue Tone Output	
Balanced audio output	-3.0 dBu ±3 dB, 600 ohms
Output impedance	< 50ohms
Cue Trigger Outputs	
Number of outputs	8
Type	Open collector
Environmental Specifications	
Operating temperature	0-50℃ (32-122℉)
Storage	-20-70℃ (-4-158℉)
Chassis Mechanical Specifications	
Height	1.72 in. (4.37 cm) 1RU high, 19 in. EIA rack mountable
Width	17.35 in. (44.07 cm)
Depth	13.78 in. (35.0 cm)
Weight	10 lbs (4.5 kg) approx.
Power	
Voltage range	100 V to 240 VAC
Line frequency	50/60 Hz
Power consumption	50 W typical (without LNB)
LNB power on satellite input	+13 V or +18 V at 400 mA maximum

Figure 2 shows the Cisco D9854-I Advanced Program Receiver

Figure 2. Cisco D9854-I Advanced Program Receiver



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 D9854-I Receiver Features	Part Number
1RU with GEN-ISE, ASI, MPEoIP Input & SDI out	D9854-IPIN-GEN-1RU
1RU with NAP-ISE, ASI, MPEGoIP Input & SDI out	D9854-IPIN-NAP-1RU
D9854-I Add-On License Features	**Part Number**
HD Video Decoding License	LIC-D9854-HD-DEC
MPEG4 Video Decoding License	LIC-D9854-MPEG4
DVB S2 Demodulation License	LIC-D9854-DVB-S2
MPEGoIP Out put License	LIC-D9854-IP-OUT

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

Table 3. Ordering Information: Country-Specific Power Cords

Power Cord Description	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

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San Jose, CA

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Singapore

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The Netherlands

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