Cisco D9824 Advanced Multi Decryption Receiver

The Cisco® D9824 Advanced Multi Decryption Receiver is designed for satellite content distribution applications requiring DVB-S and DVB-S2 reception capabilities with advanced digital outputs for digital tier program distribution. A built-in decoder is capable of decoding a MPEG-2 or MPEG-4 AVC High Definition (HD) program for analog monitoring, or a Standard Definition (SD) down-conversion for composite. Decoding of an MPEG-2 or MPEG-4 AVC SD program is also available for analog. With the support of decrypting up to 32 PowerVu® encrypted programs, the D9824 receiver allows users to efficiently receive and distribute multiple programs through their network using a single receiver.

Figure 1. Cisco D9824 Advanced Multi Decryption Receiver

Digital Program Distribution

The ASI transport output provides a number of output modes including the capability of carrying decrypted programs for digital tier distribution. This helps ensure that compressed video programs are efficiently distributed to households equipped with digital set-top boxes.

Digital Program Mapping

The 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) re-tune, and 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

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

Features

- Four L-Band inputs
- DVB-S QPSK demodulation
- DVB-S2 QPSK/8PSK demodulation
- PowerVu conditional access with DES or DVB descrambling
- Supports Basic Interoperable Scrambling System (BISS) conditional access for a single key for 32 programs
- DVB-CI support for CAM based conditional access
- 4:2:0 High Definition MPEG-4 AVC and MPEG-2 1080i and 720p decoding
- 4:2:0 Standard Definition 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
- ASI output
- Closed Captioning support for EIA-608 and EIA-708
- MPEG and Dolby™ Digital (AC-3) audio decoding
- DVB or Imitext subtitling
- Four audio outputs providing either two stereo pairs (four mono channels) of balanced audio, each with the ability to use part of their output for applications such as SAP, cue tones, etc.
- Uplink addressable decoder output control (VBI, audio routing, DPI, and ASI output)
- Fingerprint Trigger for the decoded program
- Field upgradeable software and security
- SNMP for setup, control, and monitoring
- Front panel LCD for control, and monitoring
- Web browser interface for easy setup, control, and monitoring
- DVB-VBI and SCTE-127 support
- DTMF cue tone and cue trigger outputs for ad-insertion
- Digital Program Mapping providing uplink control for service replacements in blackout areas
- Live Event Control Support

Specifications

Table 1. Product Specifications

Feature	Description
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	Four (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 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 ohms
Analog Outputs	
Analog HD Video Output	
Number of Channels	One
Video Decompression Type	MPEG-2 4:2:0 & MPEG-4 AVC 4:2:0
Video Standard	1080i@29.97, 1080i@25, 720p@59.94, 720p@50
Horizontal Video Resolutions	1080i: 1920, 1440, 1280 720p: 1280, 960, 640
Analog SD Video Output	
Number of Channels	One (two identical outputs)
Video Decompression Type	MPEG-2 4:2:0 & MPEG-4 AVC 4:2:0
Video Standard	NTSC & PAL B/G/I/D/M/N
Maximum Video Resolution	720x480/576
Analog Audio Output	
Number of Channels	Two stereo pairs/four mono channels, 5.1 channel downmix
Audio decompression	MPEG or Dolby Digital (AC-3) HE-AAC single stereo pair or Dolby Digital Plus single stereo pair
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). 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/Arm weighting)
Crosstalk	80 dB at 1 kHz (typical)
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

Feature	Description
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
Conditional Access	
PowerVu CA	DES or DVB
DVB Descrambling	BISS Mode 1/E
DVB-CI	Interface: 2 CI slots – EN 50221 CA Method: Multicrypt, Simulcrypt CAS: Irdeto, Viaccess, Nagravision, Conax, MediaGuard, Cryptoworks
Other Outputs	
MPEG-2 Transport Input	EN50083-9, DVB-ASI coaxial, 188/204 byte packets
Ethernet Output for Control & Monitoring	100/1000BASE-T
MPEG-2 Transport Output	EN 50083-9, DVB-ASI coaxial, 188 byte packets
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	< 50 ohms
Cue Trigger Outputs	
Number of Outputs	Eight
Type	Open Collector
Environmental/Physical	
Operating Temperature	0° – 50°C (32° – 122°F)
Storage Temperature	-20° – 70°C (-4° – 158°F)
Physical Dimensions	1.72 in. H x 17.35 in. W x 13.78 in. D (4.37 cm H x 44.07 cm W x 35.0 cm D) 1RU high, 19 in. EIA rack mountable
Weight	10 lbs (4.5 kg) approx.
Power	
Voltage Range	100 V to 240 V AC
Line Frequency	50/60 Hz
Power Consumption	37 W maximum
LNB Power on RF#1	+13 V/+18 V @ 400 mA max.

Figure 2. D9824 Rear Panel

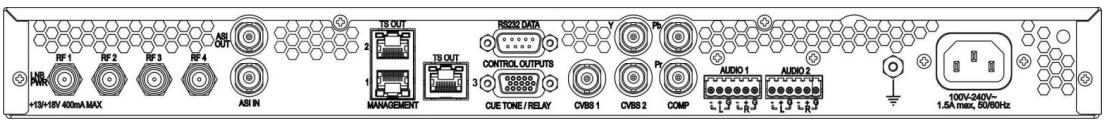

Table 2. Ordering Information

Description	Part Number
Configured Model	
D9824 4 RF Inputs, DVB-S/S2, ASI In/Out, SD/HD MPEG-2/H.264, Generic ISE, No Power Cord	403827400150000
D9824 4 RF Inputs, DVB-S/S2, ASI In/Out, SD/HD MPEG-2/H.264, Generic ISE, North American Power Cord	403827400150001
D9824 4 RF Inputs, DVB-S/S2, ASI In/Out, SD/HD MPEG-2/H.264, Generic ISE, European Power Cord	403827400150005
D9824 4 RF Inputs, DVB-S/S2, ASI In/Out, SD/HD MPEG-2/H.264, Generic ISE, Argentinean Power Cord	403827400150013
D9824 4 RF Inputs, DVB-S/S2, ASI In/Out, SD/HD MPEG-2/H.264 (MDR[1] ISE), No Power Cord	403827400150200
D9824 4 RF Inputs, DVB-S/S2, ASI In/Out, SD/HD MPEG-2/H.264 (MDR[1] ISE), North American Power Cord	403827400150201
Common Interface Modules[2]	
Aston Professional CAM[2], for Descrambling CONAX (maximum 12 services)	4016669
Aston Consumer CAM for Descrambling CONAX (maximum 2 services)	4016670
CAM for Descrambling CryptoWorks	V9523361
SMiT Professional CAM for Descrambling Irdeto (maximum 8 services)	4037372
SMiT Consumer CAM for Descrambling Irdeto	4037371
Aston Professional CAM for Descrambling MediaGuard (maximum 12 services)	V9528197
Aston Consumer CAM for Descrambling MediaGuard (maximum 2 services)	V9528198
Aston Professional CAM for Descrambling Viaccess (maximum 12 services)	V9528199
Aston Consumer CAM for Descrambling Viaccess (maximum 2 services)	V9528240
Country Specific Power Cords	
Argentina	207340
China	745415
Australia	1000897
Europe	3989835
United Kingdom	3989836
United States	3989838
Italy	3993130
Japan	3993133

[1] MDR – Multi Decryption Receiver

[2] CAMs for Nagra have to be purchased from Conditional Access System vendors or the program provider. Cisco does not guarantee the operation of CAMs not sold by Cisco.

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed by technology and by network complexity to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

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.

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