

Subscriber Networks

Explorer® 4250HD™ Home Gateway

Description

Scientific Atlanta's Explorer® 4250HD™ Home Gateway merges high-definition (HD) video capability and broadband digital video services to deliver a broad range of entertainment, information, and communications services.

The 4250HD decodes all 18 ATSC digital formats, including the four high-definition formats for HDTV. All standard-definition digital formats and all analog video services are decoded as well. This comprehensive level of decoding capability in one set-top box enables service providers to quickly scale HDTV video services for both analog and digital consumers.

Taping an HD broadcast to a standard-definition (SD) analog VCR is seamless with the 4250HD. The set-top simultaneously displays the HD image and downconverts it to SD through the NTSC outputs. Consumers simply output the HD content to their VCR and the 4250HD automatically handles the SD conversion for the VHS tape.

With its internal DOCSIS® cable modem, the 4250HD provides a high-speed data path for boosting performance of interactive TV applications. The DOCSIS modem delivers significantly faster out-of-band (OOB) data for interactive applications than the DAVIC OOB path.



Description Continued

Features

- Integrated DOCSIS Cable Modem
- 500 MIPS with Dual CPUs
- 32 MB Applications DRAM
- Analog Component HDTV Outputs
- Composite Audio/Video Outputs
- S-Video Output
- Coaxial Digital Audio Output
- Back Panel USB Port
- HDMI™ Digital HDTV Output
- Dual IEEE 1394 Digital Outputs
- Ability to Process All Analog and Digital Services
- IR Port for VCR Commander™ Service

Explorer 4250HD Home Gateway



Description, continued

To meet the demands of existing and future network configurations, the 4250HD offers power, capacity, and compatibility. The combination of an integrated internal DOCSIS cable modem and the DAVIC OOB channel supports a broad range of entertainment, information, and communications services. The 72 MB of application and program memory, along with dual 250 MHz SPARC microprocessors, manage multiple program tasks and applications with speed and power. The USB port offers fast interconnectivity to consumer peripherals. And the 4250HD is backward compatible with existing Scientific Atlanta digital set-tops and headends.

The 4250HD can output video to the HDTV display in four resolutions: 480i, 480P, 720P, or 1080i. These resolutions, or scan rates, allow consumers to select the scan rate best suited for their HDTV set. Consumers can also stretch and zoom the video picture to maximize its viewable area on the HDTV display.

4250HD Front Panel



Front Panel—Standard	
Controls	IR Receiver, 10 Buttons: Power, Vol-, Vol+, Ch+, Ch-, Select, Guide, Info, Exit, Settings
Indicators	Power, Channel Number, Time of Day, Message, HDTV, BYPASS, Auto, 1080i, 720p, 480p, 480i
Branding	Provision for Service Provider Branding
Front Panel—Optional	
Connection	USB Port



To maximize the screen image for a standard 4:3 HDTV set, change the scan rate to 480i from the Quick Settings menu.




To maximize the screen image for non-HD channels on a widescreen HDTV set, click “stretch” and then “zoom” from the Quick Settings menu.

Back Panel Connectors



Back Panel—Standard	
Connections—In	Cable In
Connections—Out	Cable Out, YPbPr Video Out, Digital Audio Out, L/R Audio Out and Video Out, S-Video Out, HDMI, USB, Dual IEEE 1394
Power Input	Polarized 2-prong modular cord plug, 120 VAC, 60 Hz
Power Output	Polarized 2-prong outlet, at input line voltage, software controlled

Specifications

Tuning and Decoding	
Analog Component HDTV Outputs	Provides YPbPr outputs for quick and easy connection to most HDTV sets
Dual Audio Outputs with Composite Video Output	Allows simultaneous connection to the audio inputs on the HDTV as well as the audio and video inputs on a VCR
Enhanced Graphics Engine	65,000 colors, 640 x 480 IPG graphics resolution, simultaneous scale MPEG-2 video
Reverse Path Data Transmitter for DOCSIS and DAVIC Communication	<ul style="list-style-type: none"> Allows IP-based, real-time two-way communication between the 4250HD and the service provider's headend Supports interactive services such as <i>anything</i>-On-Demand (xOD), video-on-demand (VOD), and subscription VOD (SVOD)
MPEG-2 MP@HL Digital Video Decompression	<ul style="list-style-type: none"> Allows decompression and presentation of audio and video Delivers video resolutions up to 1920 x 1080
AC-3 Digital Audio and Part 3 Audio Support	Supports leading digital audio standards
Improved Automatic Scaling of MPEG-2 Video for the Interactive Program Guide (IPG) Window	 <p>Scales MPEG-2 video for optimal viewing in the IPG window regardless of whether the subscriber is watching an HD or SD channel on either a widescreen or standard 4:3 TV</p>
Analog and Digital Service Tuner	Allows both analog and digital channels to be tuned and displayed

Tuning and Decoding, continued	
DOCSIS Cable Modem, Internal	Implements the Baseline Privacy Interface and DOCSIS SNMP MIBs. The upstream transmitter can send QPSK and 16-QAM bursts to any headend CMTS that implements DOCSIS 1.1 specifications
BTSC/SAP Decoder	Provides stereo sound on analog channels through the baseband left and right outputs
S/PDIF Digital Audio Interface	Supports interconnection with surround sound receivers
Integrated VCR Commander Service	Automates the recording of selected video programs; requires IR Blaster Cable
HDMI 1.0 Digital Audio/Video Output with HDCP Copy Protection	Provides uncompressed digital video and audio quality in a simple, user-friendly connector. The High Definition Multimedia Interface (HDMI), combined with High-Bandwidth Digital Content Protection (HDCP) provides the optimal, secure connection to an HDTV set that supports the HDMI with HDCP interface. HDMI is backward compatible with the DVI 1.0 with HDCP video interfaces on earlier versions of HDTVs
Dual IEEE 1394 Digital Outputs with Digital Transmission Content Protection (DTCP)	Provide a 400-Mbps interconnection to digital display devices (HDTVs)
Optional RGB Adapter	Converts the video from the YPbPr output into an RGB format with horizontal and vertical sync for HDTVs requiring the RGB input signal

Conditional Access/Operating System	
PowerKEY® Conditional Access System	Secures digital services using symmetric encryption algorithm for content protection and strong authentication and digital signature for entitlement delivery
PowerTV® Operating System with HTML Client Engine	Offers extensive operating system and open Application Programming Interfaces (APIs) to support native applications and third-party middleware applications

Security	
Internal Security Microprocessor	Provides hardware-assisted conditional access functions within a tamper-resistant package
Smart Card Reader	Supports third-party conditional access smart cards as well as the ability to upgrade the native PowerKEY security
Macrovision® Copy Protection Support (licensing not included)	Activation allows system operators to use Macrovision copy protection software that prevents subscribers from making clear analog copies of video

Processors	
Powerful SPARC Processors	Features two 250 MHz processors to perform tasks and applications quickly

Specifications, continued

Memory/Storage	
Over 72 MB Memory	<ul style="list-style-type: none"> • 8 MB Flash • 32 MB Applications DRAM • 32 MB Media DRAM • 4 KB NVM
64 and 256 ITU J.83 Annex B QAM Support	Supports open standards for QAM delivery and demodulation

Operating Conditions	
Placement/Ventilation	Locate with at least 2 inches of open space above and on each side
Room Temperature	32°F to 105°F (0°C to 40°C) during operation







Dimensions	
Product (WxDxH)	12 in. x 9 in. x 3 in. (30.5 cm x 22.9 cm x 7.6 cm)
Product Weight	4.25 lbs (1.9 kg)
Carton (WxDxH)	16 in. x 11 in. x 14.5 in. (40 cm x 28 cm x 37 cm) (carton weight 1.5 lbs)
Weight Including Package (five units per carton)	25 lbs (11.3 kg)

Explorer 4250HD Home Gateway



Ordering Information

Contact your Sales Representative for product availability in your area.

Description	Product Photo	Part Number
Explorer 4250HD Home Gateway with IEEE 1394 Digital Outputs and HDMI 1.0 Digital HDTV Output		4009776
Optional IR Blaster Cable		735994
Optional RGB Adapter, sold in packages of five (cables sold separately)		749790
RGB Adapter Cable with RCA-to-RCA Connectors		749976
RGB Adapter Cable with RCA-to-VGA Connectors		749978
RGB Adapter Cable with RCA-to-BNC Connectors		749977
Optional Spare YPbPr and Audio Left/Right Cable Kit		1000944
Optional AT8560™ AllTouch® Universal Remote Control		4016237

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Part Number 7006963 Rev C
November 2007