APPENDIX F

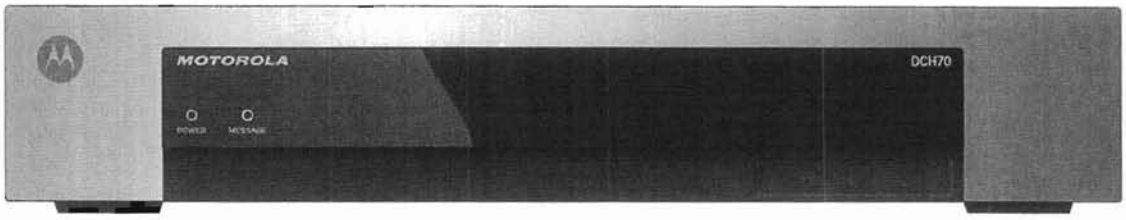
MOTOROLA

DCH70

All-Digital, SDTV, M-Card™ Host Set-top

FEATURES

- M-Card (Multi-stream CableCARD) Host support for conditional access
- Compatible with Motorola DCT legacy APIs
- Single 54 to 864 MHz video tuner
- Digital video (64 QAM/256 QAM)
- MPEG-2 digital standard-definition (SD) video processor
- Video scaling (Picture-in-Graphics)
- Accelerated graphics
- 8 MB Flash
- 32 MB DRAM total
- SCTE 55-1 out-of-band (OOB) data transmitter/receiver
- On-screen diagnostics
- Macrovision™ copy protection



The Motorola DCH70 all-digital Host set-top provides a full set of standard-definition television (SDTV) features and interfaces. The DCH70 supports a wide range of current and future interactive applications running on Motorola's existing DCT legacy APIs.

MOTOROLA

DCH100

All-Digital, SDTV, M-Card™ Host, Whole-Home–Capable Set-top

FEATURES

M-Card (Multi-stream CableCARD) Host support for conditional access

OpenCable Application Platform (OCAP™)-capable

Compatible with Motorola DCT legacy APIs

Integrated MoCA® home-networking interface

Single 54 to 864 MHz video tuner

Digital video (64 QAM/256 QAM)

MPEG-2 digital standard-definition (SD) video support

Video scaling (Picture-in-Graphics)

Accelerated graphics

Dolby™ Digital 5.1 and PCM audio

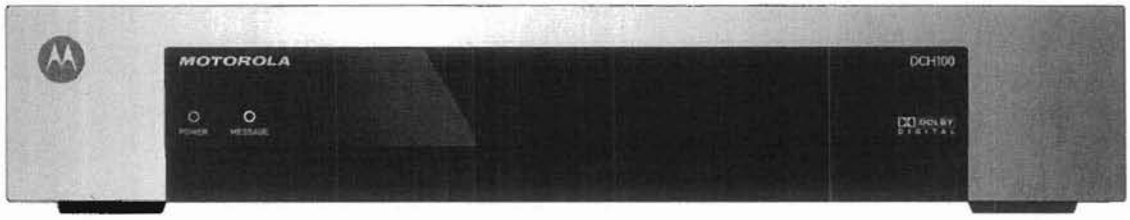
32 MB Flash (standard)

128 MB DRAM total (standard)

RF out-of-band (OOB) data transmitter/receiver

On-screen diagnostics

Macrovision™ and CGMS-A content protection



The Motorola DCH100 all-digital Host set-top provides a full set of standard-definition television (SDTV) features and interfaces. It also features a built-in MoCA home networking interface that allows consumers to access content and resources from other set-tops over the home's existing cable infrastructure. The DCH100 supports a wide range of current and future interactive applications running on Motorola's existing DCT legacy APIs or OpenCable Application Platform (OCAP).

MOTOROLA

DCH200

Analog/Digital, SDTV, M-Card™ Host Set-Top

FEATURES

M-Card (Multi-stream CableCARD) Host support for conditional access

OpenCable Application Platform (OCAP™)-capable

Compatible with Motorola DCT legacy APIs

Single 54 to 864 MHz video tuner

Digital video (64 QAM/256 QAM)

Analog video (NTSC)

MPEG-2 digital standard-definition (SD) video support

Video scaling (Picture-in-Graphics)

Accelerated graphics

Dolby™ Digital 5.1 and PCM audio

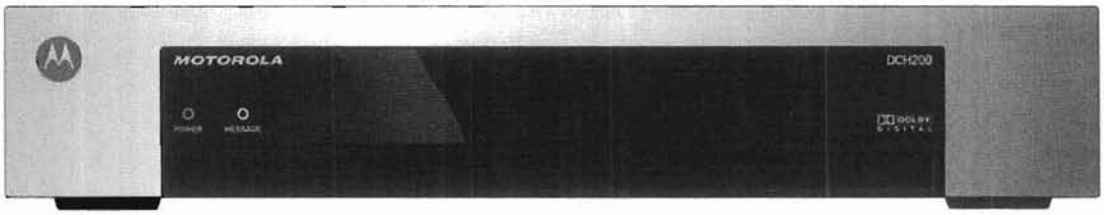
32 MB Flash (standard)

128 MB DRAM total (standard)

RF out-of-band (OOB) data transmitter/receiver

On-screen diagnostics

Macrovision™ and CGMS-A content protection



The Motorola DCH200 analog/digital Host set-top provides a full set of standard-definition television (SDTV) features and interfaces. The DCH200 supports a wide range of current and future interactive applications running on Motorola's existing DCT legacy APIs or OpenCable Application Platform (OCAP).

MOTOROLA

DCH3200

All-Digital HDTV M-Card™ Host Set-top

FEATURES

M-Card (Multi-stream CableCARD) Host support for conditional access

OpenCable Application Platform (OCAP™)-capable

Compatible with Motorola DCT legacy APIs

Standard-definition (SD), enhanced definition (ED), and high-definition (HD) MPEG-2 video support with output scaled to 480i, 480p, 720p, or 1080i

Single 54 to 864 MHz video tuner

Digital video (64 QAM/256 QAM)

Video scaling (Picture-in-Graphics)

Accelerated graphics

Motion-adaptive de-interlacing

Dolby™ Digital 5.1 and PCM audio

32 MB Flash (standard)

128 MB DRAM total (standard)

DOCSIS® 2.0 cable modem with support for DSG

RF out-of-band (OOB) data transmitter/receiver

On-screen diagnostics

Macrovision™, HDCP, 5C DTCP, and CGMS-A content protection schemes on the respective interfaces

Full-featured front panel display and controls

The Motorola DCH3200 all-digital HD Host set-top provides a full set of SDTV, HDTV, and data features and interfaces. The DCH3200 supports a wide range of current and future interactive applications running on Motorola's existing DCT legacy APIs or OpenCable Application Platform (OCAP).

Front Panel	On/Standby and Message indicators, output video format indicator, 4-character 7-segment display, IR remote control sensor, USB 2.0 Host Type A port
Rear Panel	F-connector for cable input, M-Card slot, RF remodulated output (Ch 3/4), HDMI output, YPbPr component output, baseband composite video output, S-video output, L/R audio output, coaxial and optical S/PDIF digital audio outputs, USB 2.0 Host Type A port, 1394a interfaces (2), 10/100 Mbps Ethernet interface, mini-phone serial port

MANUFACTURING OPTIONAL FEATURES

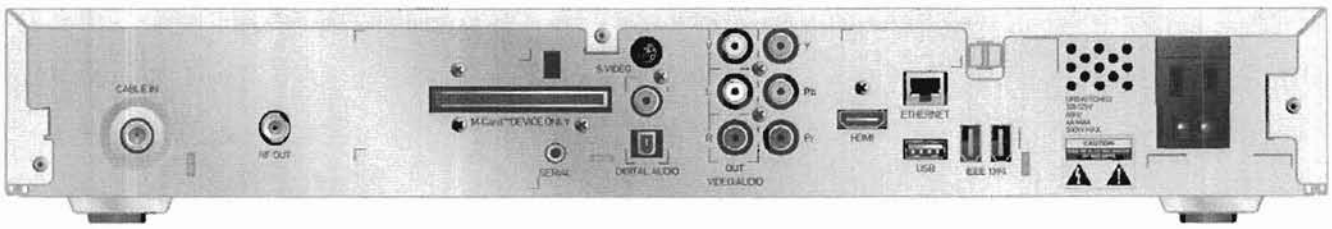
M-Card pre-installed, 256 MB DRAM (upgrade from 128 MB)

SPECIFICATIONS

RF Input Frequency (video and audio)	54 to 864 MHz
Memory	32 MB Flash; 128 MB DRAM standard unified
Legacy Platform	Supported
OCAP Platform	Supported
Video	Up to 32-bit color, accelerated 2-D support, and scalable video-in-graphics
Processor	MIPS, RISC-based
Graphics Resolution	
SD Outputs	4:3 up to 720x480
HD Outputs	16:9 up to 1920x1080
Video Resolution	480i, 480p, 720p, 1080i
Operating Temperature	15 °C to 42 °C (50 °F to 108 °F)
Operating Humidity	5 to 90% (non-condensing)
AC Voltage	105 to 125 VAC, 60 Hz
Power Dissipation	32 W AC (depending on features)
Accessory Outlet	Unswitched 4 A maximum, 500 W maximum, 105 to 125 VAC, 60 Hz
OOB Modulation	OPSK
Frequency	Agile receiver 70 to 130 MHz
Bandwidth	2.0 MHz maximum
Level	–15 to 15 dBmV
Digital Input Level	
64 QAM	–15 to 15 dBmV
256 QAM	–12 to 15 dBmV
Dimensions	17.02 in W x 12.70 in D x 2.76 in H (43.23 cm x 32.26 cm x 7.01 cm)
Weight	12.0 lb (5.4 kg)

Certain features may not be activated by your service provider, and/or their network settings may limit the feature's functionality. Additionally, certain features may require a subscription. Contact your service provider for details.

All features, functionality, and other product specifications are subject to change without notice or obligation.



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DOLBY DIGITAL

HDMI

SPECIFICATION SHEET

DCH3416

All-Digital, HDTV, Dual-Tuner DVR, M-Card™ Host Set-top

The Motorola DCH3416 all-digital HD DVR Host set-top provides a full set of SDTV, HDTV, and data features and interfaces. The DCH3416 supports a wide range of current and future interactive applications running on Motorola's existing DCT legacy APIs.

Features

M-Card (Multi-stream CableCARD) Host support for conditional access

Digital Video Recording (DVR) with support for dual recording and watch-and-record functionality

160 GB hard drive with shock mounting and fan

Compatible with Motorola DCT legacy APIs

Standard-definition (SD), enhanced-definition (ED), and high-definition (HD) MPEG-2 video support with output scaled to 480i, 480p, 720p, or 1080i

Dual 54 to 864 MHz video tuners

Digital video (64 QAM/256 QAM)

Video scaling (Picture-in-Graphics)

Accelerated graphics

Motion-adaptive de-interlacing

Dolby™ Digital 5.1 and PCM audio

16 MB Flash (standard)

128 MB DRAM total (standard)

DOCSIS® 2.0 cable modem with support for DSG

RF out-of-band (OOB) data transmitter/receiver

On-screen diagnostics

Macrovision™, HDCP, 5C DTCP, and CGMS-A content protection schemes on the respective interfaces

Full-featured front panel display and controls

SPECIFICATION SHEET
DCH3416 Set-top Box

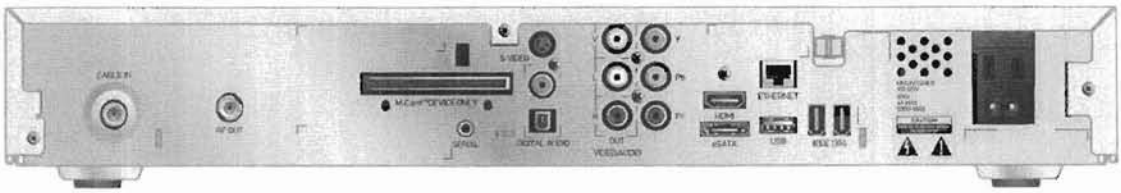
STANDARD INTERFACES	
Front Panel	On/Standby and Message indicators, output video format indicator, 4-character 7-segment display, 2 recording indicators, IR remote control sensor, USB 2.0 Host Type A port
Rear Panel	F-connector for cable input, M-Card slot, RF remodulated output (Ch 3/4), HDMI output, YPbPr component output, baseband composite video output, S-video output, L/R audio output, coaxial and optical S/PDIF digital audio outputs, USB 2.0 Host Type A port, 1394a interfaces (2), 10/100 Mbps Ethernet interface, eSATA interface, mini-phone serial port

MANUFACTURING OPTIONAL FEATURES
M-Card pre-installed, 256 MB DRAM (upgrade from 128 MB); 32 MB Flash (upgrade from 16 MB)

SPECIFICATIONS	
RF Input Frequency	54 to 864 MHz
Memory	16MB Flash; 128MB DRAM standard unified
Legacy Platform	Supported
Video	Up to 32-bit color, accelerated 2-D support, and scalable video-in-graphics
Processor	MIPS, RISC-based
Graphics Resolution	
SD Outputs	4:3 up to 720x480
HD Outputs	16:9 up to 1920x1080
Video Resolution	480i, 480p, 720p, 1080i and 1080p 24/30 (HDMI only)
Operating Temperature	15 °C to 42 °C (50 °F to 108 °F)
Operating Humidity	5 to 90% (non-condensing)
AC Voltage	105 to 125 VAC, 60 Hz
Power Dissipation	35 W (depending on features)
OOB Modulation	QPSK
Frequency	Agile receiver 70 to 130 MHz
Bandwidth	2.0 MHz maximum
Level	–15 to 15 dBmV
Digital Input Level	
64 QAM	–15 to 15 dBmV
256 QAM	–12 to 15 dBmV
Dimensions	17.2 in W x 12.70 in D x 2.76 in H (43.23 cm x 32.26 cm x 7.01 cm)
Weight	12.0 lb (5.4 kg)

Certain features may not be activated by your service provider, and/or their network settings may limit the feature's functionality. Additionally, certain features may require a subscription. Contact your service provider for details.

All features, functionality, and other product specifications are subject to change without notice or obligation.



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DOLBY DIGITAL HDMI

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DCH6200

Analog/Digital, HDTV, M-Card™ Host Set-top

The Motorola DCH6200 analog/digital HD Host set-top provides a full set of SDTV, HDTV, and data features and interfaces. In addition to high-definition digital video, the DCH6200 provides superior analog picture quality with dual-channel 3-D comb filters and motion-compensating noise reduction. The DCH6200 supports a wide range of current and future interactive applications running on Motorola's existing DCT legacy APIs.

Features

M-Card (Multi-stream CableCARD) Host support for conditional access

Compatible with Motorola DCT legacy APIs

Standard-definition (SD), enhanced-definition (ED), and high-definition (HD) MPEG-2 video support with output scaled to 480i, 480p, 720p, or 1080i

Single 54 to 864 MHz video tuner

Digital video (64 QAM/256 QAM)

Video scaling (Picture-in-Graphics)

Accelerated graphics

Motion-compensating temporal filter video noise reduction

Motion-adaptive de-interlacing
Integrated 3-D comb filter for state-of-the-art color and resolution

Single-channel MPEG-2 encoder for analog content

Dolby™ Digital 5.1 and PCM audio

32 MB Flash (standard)

128 MB DRAM total (standard)

DOCSIS® 2.0 cable modem with support for DSG

RF out-of-band (OOB) data transmitter/receiver

On-screen diagnostics

Macrovision™, HDCP, 5C DTCP, and CGMS-A content protection schemes on the respective interfaces

Full-featured front panel display and controls

SPECIFICATION SHEET
DCH6200 Set-top Box

STANDARD INTERFACES	
Front Panel	On/Standby and Message indicators, output video format indicator, 4-character 7-segment display, IR remote control sensor, USB 2.0 Host Type A port
Rear Panel	F-connector for cable input, M-Card slot, RF remodulated output (Ch 3/4), HDMI output, YPbPr component output, baseband composite video output, S-video output, L/ R audio output, coaxial and optical S/PDIF digital audio outputs, USB 2.0 Host Type A port, 1394a interfaces (2), 10/100 Mbps Ethernet interface, eSATA interface, mini-phone serial port

MANUFACTURING OPTIONAL FEATURES
M-Card pre-installed, 256 MB DRAM (upgrade from 128 MB)

SPECIFICATIONS	
RF Input Frequency	54 to 864 MHz
Memory	32 MB Flash; 128 MB DRAM standard unified
Legacy Platform	Supported
Video	Up to 32-bit color, accelerated 2-D support, and scalable video-in-graphics
Processor	MIPS, RISC-based
Graphics Resolution	
SD Outputs	4:3 up to 720x480
HD Outputs	16:9 up to 1920x1080
Video Resolution	480i, 480p, 720p, and 1080i
Operating Temperature	15 °C to 42 °C (50 °F to 108 °F)
Operating Humidity	5 to 90% (non-condensing)
AC Voltage	105 to 125 VAC, 60 Hz
Power Dissipation	42 W (depending on features)
OOB Modulation	QPSK
Frequency	Agile receiver 70 to 130 MHz
Bandwidth	2.0 MHz maximum
Level	–15 to 15 dBmV
Digital Input Level	
64 QAM	–15 to 15 dBmV
256 QAM	–12 to 15 dBmV
Dimensions	17.2 in W x 12.70 in D x 2.76 in H (43.23 cm x 32.26 cm x 7.01 cm)
Weight	12.0 lb (5.4 kg)

Certain features may not be activated by your service provider, and/or their network settings may limit the feature's functionality. Additionally, certain features may require a subscription. Contact your service provider for details.

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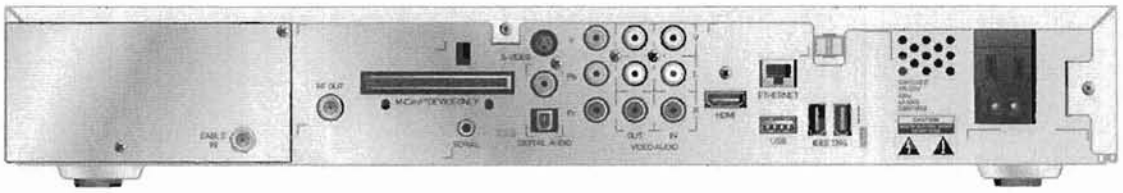

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DCH6416

Analog/Digital, HDTV, Dual-Tuner DVR, M-Card™ Host Set-top

The Motorola DCH6416 analog/digital HD DVR Host set-top provides a full set of SDTV, HDTV, and data features and interfaces. In addition to high-definition digital video, the DCH6416 provides superior analog picture quality with dual-channel 3-D comb filters and motion-compensating noise reduction. The DCH6416 supports a wide range of current and future interactive applications running on Motorola's existing DCT legacy APIs.

Features

M-Card (Multi-stream CableCARD) Host support for conditional access

Digital Video Recording (DVR) with support for dual recording and watch-and-record functionality

160 GB hard drive with shock mounting and fan

Compatible with Motorola DCT legacy APIs

Standard-definition (SD), enhanced-definition (ED), and high-definition (HD) MPEG-2 video support with output scaled to 480i, 480p, 720p, or 1080i

Dual 54 to 864 MHz video tuners

Digital video (64 QAM/256 QAM)

Video scaling (Picture-in-Graphics)

Accelerated graphics

Motion-compensating temporal filter video noise reduction

Motion-adaptive de-interlacing

Dual channel 3-D comb filter for state-of-the-art color and resolution

Dual MPEG-2 encoders for analog content

Dolby™ Digital 5.1 and PCM audio

16 MB Flash (standard)

128 MB DRAM total (standard)

DOCSIS® 2.0 cable modem with support for DSG

RF out-of-band (OOB) data transmitter/receiver

On-screen diagnostics

Macrovision™, HDCP, 5C DTCP, and CGMS-A content protection schemes on the respective interfaces

Full-featured front panel display and controls

SPECIFICATION SHEET
DCH6416 Set-top Box

STANDARD INTERFACES	
Front Panel	On/Standby and Message indicators, output video format indicator, 4-character 7-segment display, 2 recording indicators, IR remote control sensor, USB 2.0 Host Type A port
Rear Panel	F-connector for cable input, M-Card slot, RF remodulated output (Ch 3/4), HDMI output, YPbPr component output, baseband composite video output, S-video output, L/ R audio output, coaxial and optical S/PDIF digital audio outputs, USB 2.0 Host Type A port, 1394a interfaces (2), 10/100 Mbps Ethernet interface, eSATA interface, mini-phone serial port

MANUFACTURING OPTIONAL FEATURES
M-Card pre-installed, 256 MB DRAM (upgrade from 128 MB)

SPECIFICATIONS	
RF Input Frequency	54 to 864 MHz
Memory	16 MB Flash; 128 MB DRAM standard unified
Legacy Platform	Supported
Video	Up to 32-bit color, accelerated 2-D support, and scalable video-in-graphics
Processor	MIPS, RISC-based
Graphics Resolution	
SD Outputs	4:3 up to 720x480
HD Outputs	16:9 up to 1920x1080
Video Resolution	480i, 480p, 720p, and 1080i
Operating Temperature	15 °C to 42 °C (50 °F to 108 °F)
Operating Humidity	5 to 90% (non-condensing)
AC Voltage	105 to 125 VAC, 60 Hz
Power Dissipation	46 W (depending on features)
OOB Modulation	QPSK
Frequency	Agile receiver 70 to 130 MHz
Bandwidth	2.0 MHz maximum
Level	–15 to 15 dBmV
Digital Input Level	
64 QAM	–15 to 15 dBmV
256 QAM	–12 to 15 dBmV
Dimensions	17.2 in W x 12.70 in D x 2.76 in H (43.23 cm x 32.26 cm x 7.01 cm)
Weight	12.0 lb (5.4 kg)

Certain features may not be activated by your service provider, and/or their network settings may limit the feature's functionality. Additionally, certain features may require a subscription. Contact your service provider for details.

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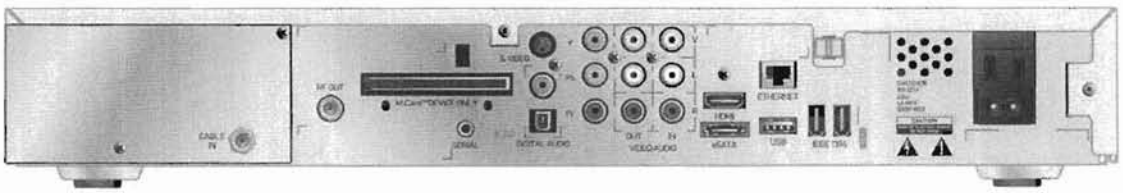

MOTOROLA

DOLBY DIGITAL HDMI

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DCT700

All Digital Set-top

MOTOROLA
intelligence everywhere™

The DCT700 is an all-digital set-top that provides operators with a quick and cost-effective means of realizing the benefits of an all-digital network. These benefits include increased bandwidth for high-definition and video-on-demand (VOD) content, on-demand information and entertainment services, as well as a reduction in theft of video services.

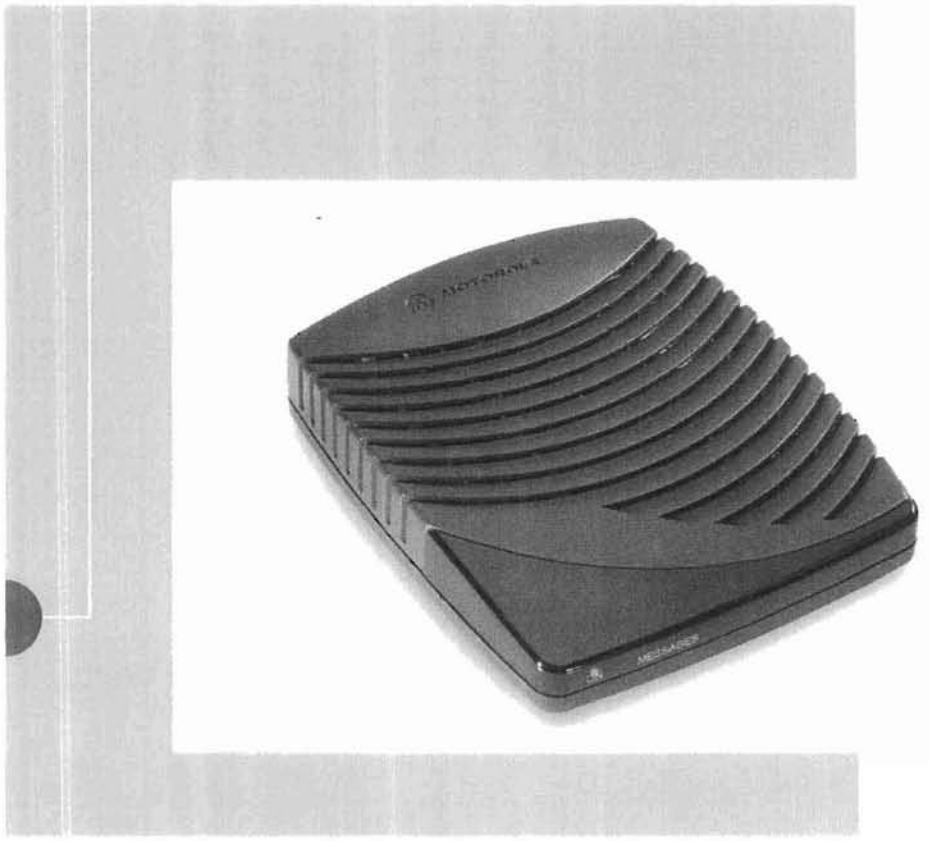
Operators can leverage the strength of their two-way networks by deploying the DCT700 to provide interactive services such as electronic program guides (EPGs), interactive pay-per-view (IPPV), and VOD. By reclaiming bandwidth allocated to analog channels, the DCT700 provides operators with the additional bandwidth needed for services such as high-speed data, VOD and high definition content.

Implementation of an all-digital video network requires that operators furnish a set-top for every television in the home

The DCT700 provides revenue-generating interactivity for the all-digital network.

HIGHLIGHTS INCLUDE:

- Supports services such as an EPG, IPPV and VOD
- Reclaims bandwidth allocated to analog channels
- Combats analog piracy
- Compatible with Motorola's award winning secure MediaCipher conditional access technology
- Provides a real-time return path
- MPEG-2 Digital Video Processor
- ATSC standard Dolby Digital (AC-3)



STANDARD FEATURES

MPEG-2 Digital Video Processor

ATSC standard Dolby® Digital (AC-3) audio processor

ITU standard 64/256 QAM/FEC/enhanced adaptive equalizer

On-board real-time RF return (256 Kbps)

Bitmapped graphics display (4-/8-bit)

90-860 MHz tuner

DES Based encryption/OCII access control

Digital diagnostics

Frequency agile 2.048 Mbps out-of-band data receiver

Macrovision copy protection

IR support for remote control

STANDARD INTERFACES

RF remodulator output (ch. 3, 4)

Baseband video and audio outputs

OPTIONAL FEATURES

Motorola Universal Remote Control (DRC450)

Specifications are subject to change without notice.

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MGBI

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The product features set forth above are subject to change by Motorola, Inc

Motorola, Inc
Broadband Communications Sector
101 Tournament Drive
Horsham, PA 19044
1.800 523.6678
www.motorola.com/broadband

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DCT-1000/1200 MPEG-2/Digital Consumer Terminal

Picture of Actual DCT-1000/1200

FEATURES

- **HYBRID DIGITAL/ANALOG TERMINAL**
- **MPEG-2 VIDEO & DOLBY DIGITAL AUDIO**
- **OPEN ARCHITECTURE SUPPORTS DOWNLOADED THIRD PARTY SOFTWARE APPLICATIONS**
- **HIGH RESOLUTION ON-SCREEN GRAPHICS DISPLAY**
- **SUPPORTS REAL TIME INTERACTIVITY FOR USE IN VOD SYSTEMS AND INTERNET ACCESS**

DESCRIPTION

General Instrument, the worlds leading supplier of addressable systems, now offers the next generation of addressable set-top converters. The DCT-1000/1200 utilizes state-of-the-art digital compression technology to provide a wealth of new revenue generating services to the cable industry. The DCT-1000/1200's 64 QAM, and optional 256 QAM for the 1200, digital processing technology vastly increases channel capacity over existing cable plants, while providing significantly improved audio and video quality. In addition, the DCT-1000/1200 can be configured to support real time reverse path communications providing the user a gateway to interactive services such as VOD, Internet Access, Home Shopping, and more. The advanced user features and capabilities of the DCT provide a host of new services and an unparalleled level of flexibility and control. In addition, the DCT line employs the latest in access control technology ensuring the maximum level of system security.

CONSUMER FEATURES

The DCT-1000/1200 is truly a "consumer friendly" terminal. By providing a platform for many of today's advanced third party program guides and on screen navigators, the DCT-1000/1200 offers consumers an entirely new and exciting means of interacting with their television. In addition to providing sophisticated program guide capabilities, these navigators are capable of providing a number of on-screen menus to help guide consumers through the many DCT functions and services. Many of the new features included in today's program guides include Impulse Pay Per View, Near Video on Demand, VCR programming, sleep/wake timers, favorite channel programming, parental control setup and one touch VCR programming through an optional IR blaster. The terminals also feature a four digit LED display for time and channel information, and front panel, twelve button full feature access.

STATE-OF-THE-ART AUDIO AND VIDEO COMPATIBILITY

The DCT-1000/1200 offers the latest in audio and video technology. The MPEG-2 video decoder ensures the highest picture quality available while providing compatibility with a wide range of programming sources.

General Instrument

The terminal is also capable of displaying wide screen aspect ratio programming, providing subscribers with a "movie like" video display for those televisions equipped to receive it. The DCT supports both Dolby digital audio and MUSICAM digital audio (optional) and is capable of providing surround sound to a properly equipped receiver.

DCT-1000/1200

MPEG-2/Digital Consumer Terminal

TWO-WAY COMMUNICATIONS

The DCT-1000/1200 may be configured with either a STARFONE telephone return or STARVUE II RF return path modem. This option allows the system operators to choose the communications method which best supports current and future system designs. These modems may be used to collect purchase information as well as return interactive data. These modules are easily installed by a field service technician or the DCT may be ordered with the modules pre-installed at the factory. This return communications path opens the door to the world of interactive services allowing operators to provide a wide range of new services including: IPPV, NVOD, VOD, and home shopping to name a few.

BACKWARD COMPATIBILITY

The DCT-1000/1200 is flexible enough to be implemented into any existing cable systems that meet the minimum standards for transmission of analog carriers. Clear analog processing is standard in all DCTs and with the addition of the optional analog descrambling module, full backward compatibility may be achieved with existing services. Additionally, the DCT architecture supports software downloads allowing for continuing improvements in DCT functionality.

UPGRADABLE

The DCT line has been designed to change as technology and the needs of cable operators change. As operators make the transition to digital systems, the DCTs will support this transition without the need to replace their set-top-box investment. The Application Interface Port (AIP) allows network operators to protect their investment by providing a mechanism through which the base DCT platform can be upgraded to incorporate future capabilities and services. The port will allow the operator to provide an entirely new class of interactive, revenue generating products and services to the subscriber. The AIP is composed of a variety of interfaces which allow the extension of video, audio and data transport facilities to an external device. The DCT is also equipped to provide system operators with a means for upgrading security using the TV Pass™ Card renewable security system. Digital technology is revolutionizing the cable industry and the General Instrument's DCT-1000/1200 are leading the way.

STANDARD FEATURES:

- MPEG-2 Main Profile Main Level Video Decoding
- ATSC Standard Dolby Digital (AC-3) Audio Processor
- J.83 Annex B Compliant QAM/FEC/Adaptive Equalizer
- 64 QAM (256 QAM also supported on the DCT-1200)
- 768 kB DRAM, for Application Data Memory
- 384 kB Total NVMEM (Non-Volatile Memory) for Application Code Download
- Messaging Capabilities
- Renewable Security Connector
- Clear Analog Channel Processing
- 54-860 MHz Tuner
- DES Based Encryption
- Digital Diagnostics
- 2.048 Mbps Out of Band Data Receiver
- Macrovision Anti-Copy Protection
- Wide Screen Video Support (16x9)
- RF, Baseband (Video, L/R Audio) Ports
- Internal Application Interface Port
- Low Power IR Blaster Port
- 4 Digit LED Display
- Switched Accessory Outlet
- High and Low Speed Data Output Ports (27 and 2.048 Mbps)
- Full Feature Access from Front Panel
- Bit Mapped Graphics (352 x 480) for high resolution on screen display capability
- Line 21 closed caption pass through plus three additional lines of VBI support.

OPTIONAL FEATURES:

- Analog Descrambling
- BTSC Stereo Decoder for Analog Programs
- High Power IR Blaster Port
- High or Low Power tethered IR Blaster module
- RF Bypass Switch
- A/B Switch
- Auxiliary Audio Input Connectors
- MUSICAM Audio Support (to be developed)
- STARVUE II RF return modem
- STARFONE telephone return modem
- Serial data connector

General Instrument

DCT-1000/1200 MPEG-2/Digital Consumer Terminal

SPECIFICATIONS

Channel Tuner Performance Characteristics:	
Input Level	0 dBmV to 15 dBmV (analog carriers) -10 dBmV to 5 dBmV (digital carriers)
Input Range	54 to 860 MHz
Out of Band Data	
Modulation	QPSK
Out of Band Frequency (Standard)	75.25 MHz Center Frequency
(Optional)	72.75 MHz , 104.2 MHz
Rate	2.048 Mbps
Input/Output Connectors (Standard):	
RF in/RF out	F type
Video Baseband	RCA type
Audio Left/Right Baseband	RCA type
IR Blaster (low power)	Mini phone jack
High Speed Cable Interface (HSCI)	Mini phone jack
Out of Band Data Channel	Mini phone jack
Switched/Unswitched AC Power Outlet	
Optional Connectors	
High Power IR Blaster	Mini phone jack
Applications Interface Port	Access Slot in rear panel
Two-Way Return Modules:	
STARFONE - Telephone Return	RJ11
STARVUE II - RF Return	F-Type
Digital Video RF Carrier Characteristics:	
C/N Ratio	31 dB (recommended)
Transfer Rate	27 Mbps information rate
Modulation Scheme	64 QAM
Mechanical:	
Operating Temperature	0 to 40°C (32 to 104°F)
Storage Temperature	-40 to 60°C (-40 to 140°F)
Humidity	5 to 95%, non-condensing
Altitude	0 to 2500 m
Construction	Modular approach to facilitate factory and/or service center upgrades
Cooling	Convection
Color	Charcoal
Weight	10 lbs
Size	17.13"W X 2.75"H X 13.25"D
Electrical Specifications:	
Voltage Range	105 to 125 VAC (110 VAC nominal)
Frequency	50 - 60 Hz
Power Consumption	45 watts
Certification	UL/FCC/CSA Certified

General Instrument

DCT1700

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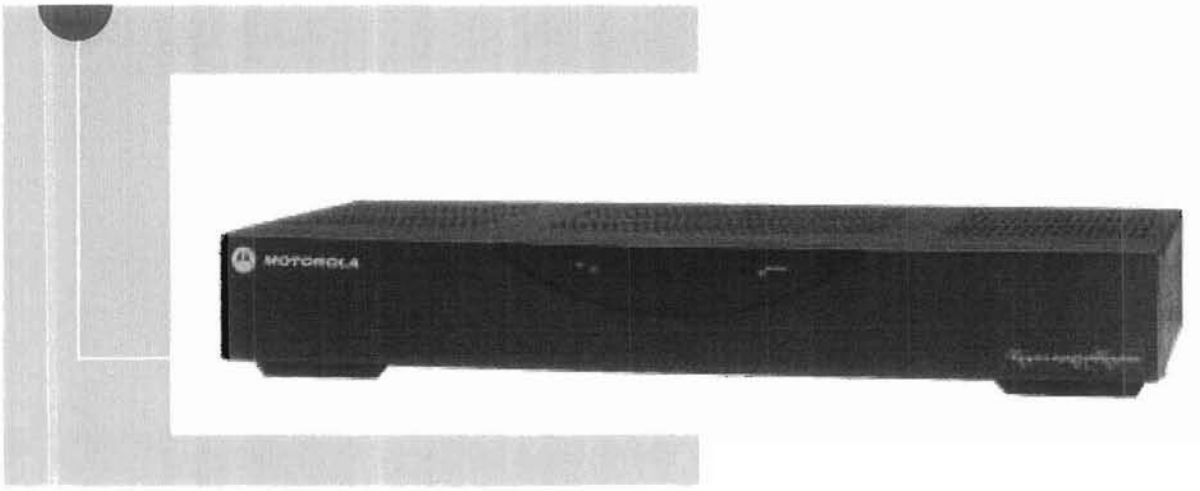
The Motorola DCT1700 offers a low-end interactive digital set-top solution for operators who want a smart, economical means of offering interactive services such as Video-on-Demand (VOD), Internet access, e-mail, e-commerce, chat rooms, impulse pay-per-view, and Electronic Program Guides (EPGs). Based on the Motorola DCT2000, the Motorola DCT1700 offers the full application functionality of its predecessor, and includes Motorola's Emmy-award-winning access control and encryption technology DigiCipher® II. Motorola's DCT1700 incorporates a streamlined design that features fewer I/O ports and works entirely via remote control instead of using front panel control. Perfect when used as an additional cable outlet within the household or simply as a low-cost offering to provide digital interactive services to your customer base.

Motorola's DCT1700 set-top provides full interactivity at a low cost

HIGHLIGHTS INCLUDE:

- Great value
- Immediately deployable
- Advanced security via Motorola's DC-II, DES based encryption
- MPEG-2 Digital Video Processor
- ATSC standard Dolby® Digital (AC-3) audio processor



STANDARD FEATURES

MPEG-2 Digital Video Processor

ATSC standard Dolby® Digital (AC-3) audio processor

ITU standard 64/256 QAM/FEC/enhanced adaptive equalizer

On-board real-time RF return (256Kbps)

Bitmapped graphics display (2-/4-bit)

2 MB Flash, 4 MB DRAM

Clear Analog Channel Processing

54-860 MHz tuner

DES Based encryption/DCII access control

Digital diagnostics

Frequency agile 2.048 Mbps out-of-band data receiver

Macrovision copy protection

4-line vertical blanking interval pass-through capability

IR support for remote control

Adhesive customer logo for front panel

STANDARD INTERFACES

RF remod output (ch. 3, 4)

TVPASS renewable security connector

Baseband video and audio outputs

OPTIONAL FEATURES

Motorola universal remote control (DRC450)

Keyboard

DVB Digital Video Broadcasting

DOLBY DIGITAL

MOTOROLA

Motorola, Inc.
Broadband Communications Sector
101 Tournament Drive
Horsham, PA 19044
1.800.523.6678
www.motorola.com/broadband

5529-103 1K rev.3

MOTOROLA DCT1800

PRODUCT FEATURES

STANDARD FEATURES

- MPEG-2 Digital Video Processor
- ATSC standard Dolby Digital (AC-3) audio processor
- ITU standard 64/256 QAM/FEC/enhanced adaptive equalizer
- On-board real-time RF return (256Kbps)
- Bitmapped graphics display (4-/8-bit)
- 4 MB Flash, 16 MB DRAM
- Clear Analog Channel Processing
- 54-860 MHz tuner
- DES Based encryption/DCII access control
- Digital diagnostics
- Frequency agile 2.048Mbps out-of-band data receiver
- Macrovision copy protection
- 4-line vertical blanking interval pass-through capability
- IR support for remote control and adhesive customer logo from front panel
- Volume Control

STANDARD INTERFACES

- RF remod output (ch. 3, 4)
- TVPASS™ renewable security connector
- Baseband video and audio outputs
- Switched Accessory Outlet

OPTIONAL FEATURES

- Motorola universal remote control (DRC450)
- Keyboard

The product features set forth above are subject to change by Motorola Inc.
DCT1800 Rev_2 January.08.2003

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MOTOROLA DCT2000 FEATURES AND INTERFACES

FEATURES

Standard Features

- MPEG-2 main level profile video processor
- ATSC standard Dolby Digital® (AC-3) audio processor
- ITU standard 64/256 QAM/FEC/enhanced adaptive equalizer
- On-board real-time RF return (256Kbps)
- High-resolution, bitmapped graphics display (2-/4-/8-bit)
- Clear analog channel processing
- 54-860MHz tuner
- DES-based encryption/DCII access control
- Digital diagnostics
- 2.048Mbps out-of-band data receiver
- Macrovision copy protection
- Wide screen (16 x 9) video support
- 4-line vertical blanking interval pass-through capability (closed caption)
- BTSC stereo decoder
- Full feature access from front panel
- Messaging capabilities

Optional Features

- Motorola and compatible analog descrambling
- RF 1
- IR blaster tether
- RF bypass switch or A/B switch
- Telephone modem (14.4bps)
- S-Video output
- S/PDIF-Dolby AC-3 output
- Optical AC-3 output

INTERFACES

Standard Interfaces

- RF, baseband (video, L/R audio) ports
- Audio loop through connectors
- IR blaster port
- Switched accessory outlet
- RS 232 Serial Port

MOTOROLA

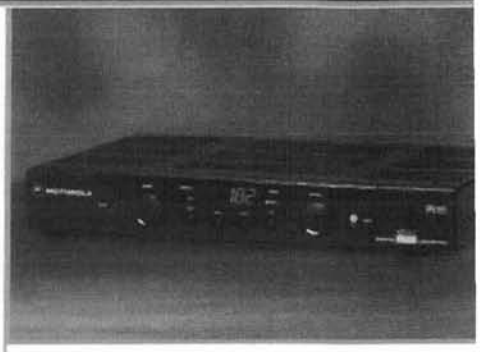
Specifications subject to change.

101 Tournament Drive, Horsham, PA 19044
800.523.6678 www.motorola.com/broadband
5317-051-5K

MOTOROLA

Motorola DCT2000

Motorola's most popular interactive digital set-top terminal boasts a wide array of capabilities, ease of use and affordability.



State-of-the-art digital compression technology makes it possible for the Motorola DCT2000 to provide a wealth of new revenue-generating services. Platform versatility allows the Motorola DCT2000 to grow as your home broadband access needs grow. Its 64 and 256 QAM digital processing technology significantly boosts channel capacity while delivering stunningly vivid video and audio. The Motorola DCT2000 can be configured to support real-time, reverse path communications, and uses DigiCipher® II, Motorola's Emmy-award-winning access control and encryption technology. This provides worry-free access to such interactive services as VOD, Internet, e-mail, home shopping and more. The advanced user features and capabilities of the Motorola DCT2000 support a host of new services and provide an unparalleled level of flexibility and control.

- Hybrid digital/analog terminal
- MPEG-2 video and Dolby Digital® audio
- Advanced security via Motorola DC-II Conditional Access and Harmony DES-based encryption
- Supports Open Cable/Harmony specifications
- Open architecture supports downloaded third-party software applications
- High-resolution, on-screen graphics display
- Real-time interactivity for use in VOD systems and Internet access

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The Motorola DCT2000 uses DigiCipher® II, Motorola's Emmy-award-winning access control and encryption technology to provide a worry-free gateway.

OPERATOR BENEFITS

Consumer-Friendly

- Platform for advanced third-party program guides and on-screen navigators
- Program guide feature support includes: Impulse PPV, VOD, sleep/wake timers, favorite channel programming, parental control setup and one-touch VCR programming through an optional IR blaster
- The Motorola DCT2000 fully supports GEMSTAR IPGs and also supports other commercially available Interactive Program Guides

Advanced Audio and Video

- Highest picture quality and compatibility with a wide range of programming
- RF (ch 3/4) Baseband and high-quality component S-Video (optional)
- Movie-like video display provided through wide-screen aspect ratio capability
- Dolby Digital Audio® offers access to the digital audio bitstream through an AC-3 S/PDIF interface (optional)

Two-Way Communications

- Configured with an integrated STARVUE II real-time RF return. An optional STARFONE telephone return modem may be added to support IPPV in one-way networks
- Modems can collect purchase information and return real-time interactive data

Backward Compatibility

- Clear analog processing is standard
- Optional analog descrambling module allows full backward compatibility with existing scrambled analog services

Upgradeable

- Architecture supports software downloads TV Pass Card renewable security system provides a means for upgrading system security
- Capable of High Definition with the addition of a Motorola HDD200

DCT2500

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The Motorola DCT2500 is the evolution of the highly popular DCT2000 - the world's most widely deployed digital cable set-top - offering excellent performance and proven reliability at an attractive price point. It provides state-of-the-art digital compression technology, allowing operators a broad range of revenue-generating services.

The DCT2500 can be configured to support real-time, reverse path communications and uses DigiCipher® II, Motorola's Emmy award-winning access control and encryption technology. It can support a wide spectrum of interactive application services including VOD, Internet, Electronic Program Guide (EPG), Impulse Pay-Per-View, e-mail, home shopping and more.

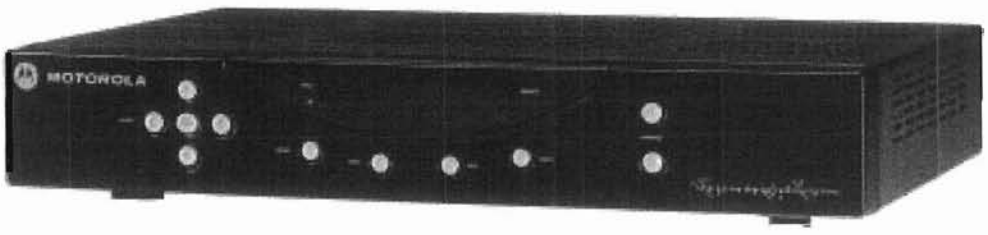
Platform versatility means the Motorola DCT2500 can grow as your home broadband access needs grow. Its 64 and 256 QAM digital processing technology significantly boosts channel capability while delivering unsurpassed digital audio and video quality to TV viewing, giving broadband operators the flexibility and scalability they need.

In summary, the advanced user features and capabilities of the DCT2500 support a host of new services and provide an unparalleled level of reliability, usability and affordability.

The DCT2500 is a full featured digital set-top providing a wide array of capabilities, ease of use and affordability.

HIGHLIGHTS INCLUDE:

- Open architecture supports downloaded third-party software applications
- Scaled video
- High-resolution on-screen graphics
- Enhanced memory
- Advanced security via Motorola DC-II Conditional Access and Harmony DES-based encryption
- MPEG-2 Digital Video Processor
- ATSC standard Dolby® Digital (AC-3) audio processor



Features

- 175 MHz MIPS 32 CPU with 8K instruction and 8K data caches
- High speed, unified memory design with support for up to 64 Mbytes of DDR SDRAM
- 64 PID filters individually assignable to in-band or out-of band streams
- Video decoder with enhanced VBI data processing capability
- Analog/Digital video scaling (picture in graphics)
- High resolution graphics with support for multiple planes as well as current DCT2000 modes
- MPEG-2 Digital Video Processor
- ATSC standard Dolby Digital (AC-3) audio processor
- ITU standard 64/256 QAM/FEC/enhanced adaptive equalizer
- On-board real-time RF return (256 Kbps)
- Clear Analog Channel Processor with BTSC Decoder
- 54-860 MHz tuner
- DES-based encryption/DCII access control
- Digital diagnostics
- Frequency agile 2.048 Mbps out-of-band data receiver
- Macrovision copy protection
- Wide screen (16 x 9) video support
- Full feature access from front panel
- Switched accessory outlet

Optional Features

- Motorola and compatible analog descrambling
- IR blaster tether
- RF bypass or A/B switch
- Telephone modem (14.4 bps)
- S-Video output
- USB Host 1.1 Port
- Universal remote (DRC450)
- Keyboard

Standard Interfaces

- Dolby® 5.1 Digital Audio Output
- RF and Baseband Output (Video, L/R Audio) Ports
- IR Blaster Port
- TVPASS™ renewable security connector
- High/Low speed data output (27 and 2 Mbps)
- RS 232 Serial Port
- 4 digit, 7 segment LED display with IR receiver for remote and/or keyboard

General Specifications

Dimensions	17.13 W x 13.25 H x 2.75 D
Weight	8.6 lbs.

Specifications are subject to change without notice.

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MGBI

Motorola, Inc.
Broadband Communications Sector
101 Tournament Drive
Horsham, PA 19044
1.800.523.6678
www.motorola.com/broadband

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