



**Hauppauge!**<sup>®</sup>

# CableCARD TV receivers: Brief history of innovations

Presented by: Brad Love, Hauppauge

# Microsoft Windows Media Center

- Built into all copies of Windows 7 since Oct 2009
  - Approximately 100 million copies of Windows Media Center installed in the U.S. as part of Windows 7
- Optional on Windows 8

**Windows Media Center uses  
CableCARD to watch and record live  
cable TV**

# Microsoft Windows Media Center

- Windows Media Center with a CableCARD receiver includes:
  - Parental Control
  - Close captions
  - 'Do not record' broadcast flag support (added by Microsoft at the request of NBC)
  - Output protection from a PC ('Protected Media Path')
  - Encrypted path from a USB CableCARD receiver to the PC (or encryption over the PCI Express bus in the case of internal CableCARD receivers)
- Windows Media Center does not include:
  - Two way cable support (no PPV, no VOD)
  - Sideloaded recordings

Watch and record cable TV programs on your laptop or desktop PC ... including HBO, Showtime and any other channels subscribed to



# Easy to use UI ... designed for laptop and desktop PCs

The screenshot displays a Windows Media Center interface. The background is a video player showing a scene from the animated show 'Bob the Builder'. The character Scoop is visible, looking at a large pile of dirt. The video player includes a progress bar and a play/pause button. Below the video player is a program guide for Friday, March 27. The guide shows the following schedule:

Time	Channel	Program	Time	Program	Time	Program
1:44 PM	21.1 WLIWDT	Bob the Builder	2:00 PM	Antiques Roadshow	2:30 PM	Charlie Rose
2:00 PM	21.2 WLIWDT2	Sing for Your Sup	2:30 PM	Ciao Italia	3:00 PM	Joanne Weir's Co
2:30 PM						Globe Trekker

The video player shows the following details for the selected episode:

- Bob the Builder**
- Fun at Work (Repeat)
- Scoop decides he wants to be an artist; the team rebuilds the Fixham Rovers

The video player also shows a small thumbnail of the episode and a progress bar indicating the current position at 1:44 PM.

# Built-in Electronic Program Guide provided by Microsoft ... showing program information and scheduled recordings

guide

Fri, Mar 27

		1:45 PM	2:00 PM	2:30 PM	3:00 PM	
VIEW CATEGORIES	21.1	WLIWDT	Bob the Builder	Antiques Roadshow	Charlie Rose	
	21.2	WLIWDT2	Sing for Your Sup	Ciao Italia	Joanne Weir's Co Globe Trekker	
	21.3	WLIWDT3	Closer to Truth	NOVA		
	25.1	WNYEDT	The Farm With la	\$9.99	Blueprint: NYC	Neighborhood S
	25.2	WNYEDT2	< The Council			
	25.3	WNYEDT3	< The Wild West	Great Irish Authc	Art Through Tim	Arts in the City
	31.1	WPXNDT	< Ghost Whisp	<b>Ghost Whisperer</b>	Ghost Whisp	

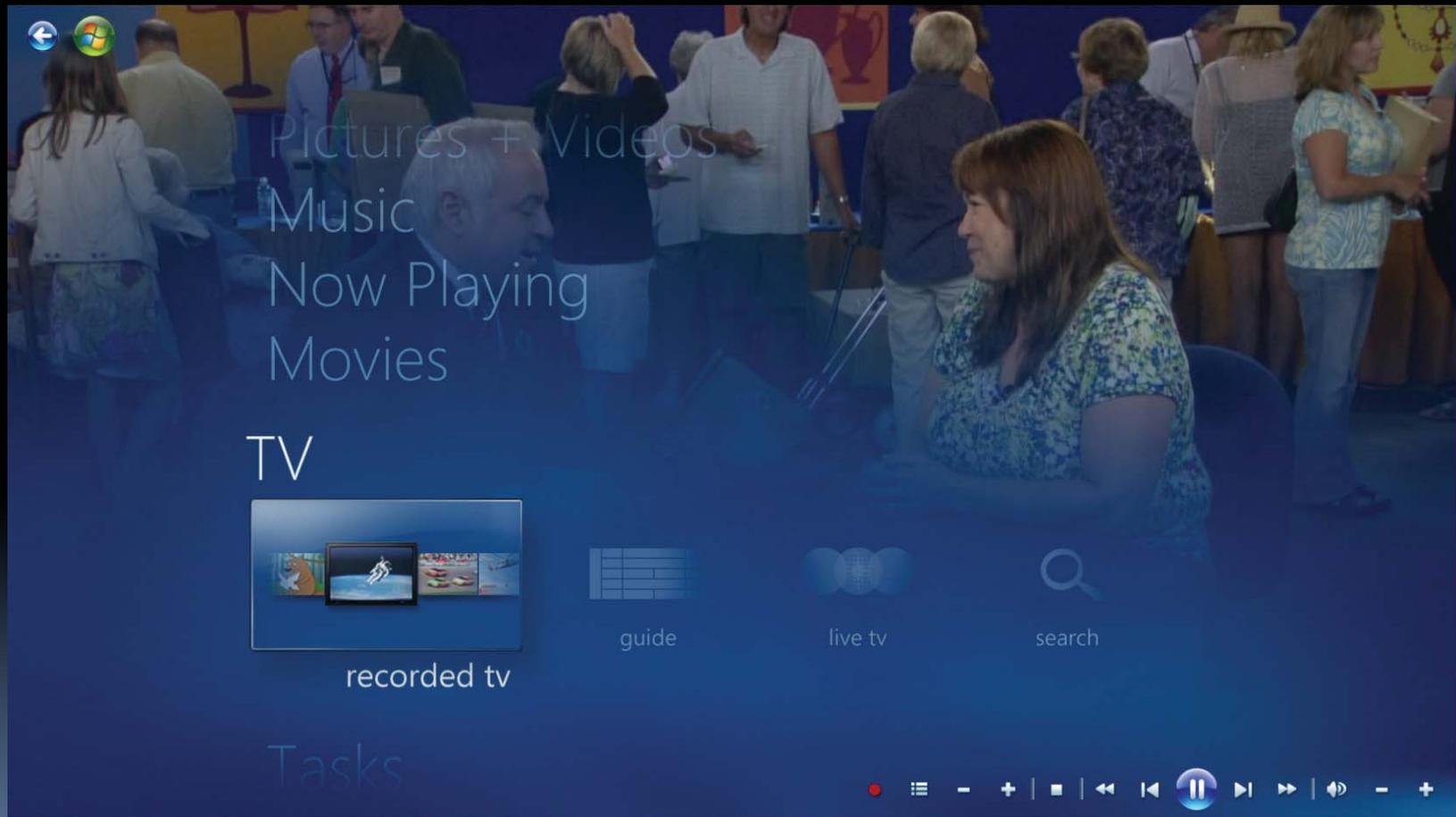
1:45 PM

**Ghost Whisperer**

All Ghosts Lead to Grandview (Repeat)  
Melinda tries to help a girl and her family understand the important gift she has been given.  
2:00 PM - 3:00 PM

Media control bar:

Cable TV recordings: Playback TV recordings on your PC screen, no limit on disk size, and you can even use a NAS drive



Netflix integrated into the UI ... Watch live TV, watch a TV recording or watch Netflix, all within the same UI



# Windows Media Center supports CableCARD

- Windows Media Center systems are certified by CableLabs
- Allows viewing of all subscribed programs, including premium programs
- Allows recording of Copy Free and Copy Once
  - Copy Free recordings are portable
- Windows Media Center uses Microsoft WMDRM for protection
  - Approved by MPAA

# Windows Media Center supports CableCARD

- Three main companies sell Windows Media Center CableCARD receivers:
  - Hauppauge
  - Ceton
  - Silicon Dust
- All designed for the “install it yourself” end user
  - No truck rolls required
- Available through Amazon, Best Buy and other retailers
- Retail prices start at \$99.-

# Windows Media Center supports CableCARD

The screenshot shows the Amazon product page for the Hauppauge WinTV DCR-2650 Dual Tuner Cable Card TV Tuner. The page includes the Amazon Prime logo, a search bar with the query "hauppauge dcr-2650", and a navigation menu with categories like "All Electronics", "Deals", "Best Sellers", "TV & Video", "Audio & Home Theater", "Computers", "Camera & Photo", "Wearable Technology", "Car Electronics & GPS", "Portable Audio", "Cell Phones", and "Office Electronics".

The product title is "Hauppauge WinTV DCR-2650 Dual Tuner Cable Card TV Tuner" by Hauppauge. It has a 4.5-star rating from 147 customer reviews and 36 answered questions. The list price is \$139.99, and the current price is \$112.99 with Prime shipping. The product is in stock and ships from and sold by Amazon.com. It is available for gift-wrap and can be ordered with One-Day Shipping by March 28.

The product features include:

- Cable card tv tuner
- Watch and record premium cable TV on your PC
- Simple to install via USB
- Works with Windows 7 media center
- Dual tuner

The product is priced at 27 new from \$110.85 and 2 used from \$84.00. The page also includes a "Frequently Bought Together" section and a "Share" button.

# Windows Media Center supports CableCARD

www.amazon.com/Hauppauge-1467-WinTV-DCR3250-CableCARD/dp/B00FAYD3R8/ref=sr\_1\_1?ie=UTF8&qid=1427479153&sr=8-1&keywords=hauppauge+dcr-3250

amazon Prime ken's Amazon.com Today's Deals Gift Cards Sell Help Prime Instant Video Unlimited streaming of movies and TV Watch now

Shop by Department Search All hauppauge dcr-3250 Hello, ken Your Account Your Prime Wish List Cart

Computers Brands Best Sellers Laptops & Tablets Desktops & Monitors Hard Drives & Storage Computer Accessories Tablet Accessories PC Components PC Gaming Deals All Electronics

Back to search results for "hauppauge dcr-3250"

 WinTV DCR3250 CableCARD Tuner by Hauppauge ★★★★★ 1 customer review

List Price: \$170.40  
Price: **\$139.39** & FREE SHIPPING  
You Save: \$31.01 (18%)

**Note:** Not eligible for Amazon Prime.

**Only 2 left in stock.**  
Ships from and sold by antonline.

**Estimated Delivery Date:** April 2 - 7 when you choose Standard at checkout.

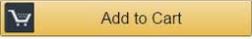
- CableCARD Tuner White Box

8 new from \$133.98

Share    

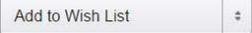
Qty: 1

**\$139.39** + Free Shipping  
In Stock. Sold by antonline.

 Add to Cart

[Turn on 1-Click ordering](#)

**Shipping Address**  
ken plotkin- DIX HILLS

 Add to Wish List

**Other Sellers on Amazon**

<b>\$139.39</b> + Free Shipping Sold by: Galactics	
<b>\$133.98</b> + \$5.49 shipping Sold by: FastMarketPro	

Click to open expanded view

**Customers Who Viewed This Item Also Viewed**

Page 1 of 11

# Windows Media Center supports CableCARD

The screenshot shows the Amazon product page for the Ceton InfiniTV 6 ETH. The page features a navigation bar with the Amazon Prime logo, a search bar containing the word "ceton", and various account and shopping options. The main content area displays the product name, a large image of the device, and detailed pricing information. The product is currently on sale for \$249.00, down from \$299.00. The page also includes customer reviews, a list of key features, and a "Frequently Bought Together" section.

www.amazon.com/Ceton-InfiniTV-ETH-6-channel-CableCARD/dp/B00CBXEKZ0/ref=sr\_1\_1?ie=UTF8&qid=1427479175&sr=8-1&keywords=ceton

amazon Prime

ken's Amazon.com Today's Deals Gift Cards Sell Help

Prime Instant Video Watch now Unlimited streaming of movies and TV

Shop by Department Search All ceton Hello, ken Your Account Your Prime Wish List Cart

Computers Brands Best Sellers Laptops & Tablets Desktops & Monitors Hard Drives & Storage Computer Accessories Tablet Accessories PC Components PC Gaming Deals All Electronics

Back to search results for "ceton"



Ceton InfiniTV 6 ETH - 6-channel Cable TV Ethernet Tuner for CableCARD

by Ceton

★★★★☆ 95 customer reviews | 37 answered questions

Price: ~~\$299.00~~  
Sale: **\$249.00** Prime  
You Save: \$50.00 (17%)

**In Stock.**  
Sold by CETON and Fulfilled by Amazon. Gift-wrap available.

**Want it tomorrow, March 28?** Order within **3 hrs 15 mins** and choose **One-Day Shipping** at checkout. Details

- Turn your PC into the ultimate cable box & DVR. Works with any U.S. cable TV provider.
- Watch and/or record 6 HD cable TV channels simultaneously, including premium channels.
- Lower your cable bills and get TV & DVR in any room.
- Share tuners between more than 1 PC and stream live TV to multiple PCs.
- **\*\*\* IMPORTANT \*\*\*** Make sure "Sold by CETON" is shown above. Otherwise you're buying no-support/no-warranty products from an unauthorized grey-market dealer. Click the "new" link below to find "Sold by CETON" versions if it's not shown above.

Roll over image to zoom in

7 new from \$241.50 2 used from \$198.00

Share

Qty: 1

Add to Cart

Turn on 1-Click ordering

**Shipping Address**  
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Add to Wish List

**Other Sellers on Amazon**  
9 used & new from \$198.00

Have one to sell? Sell on Amazon

**Sponsored by GreatCall**

**Frequently Bought Together**

# Windows Media Center supports CableCARD

www.amazon.com/Ceton-InfiniTV-PCIe-6-channel-CableCARD/dp/B00D97B9BU/ref=sr\_1\_2?ie=UTF8&qid=1427478988&sr=8-2&keywords=ceton

amazon Prime

ken's Amazon.com Today's Deals Gift Cards Sell Help

Prime Instant Video Unlimited streaming of movies and TV Watch now

Shop by Department Search All ceton

Computers Brands Best Sellers Laptops & Tablets Desktops & Monitors Hard Drives & Storage Computer Accessories Tablet Accessories PC Components PC Gaming Deals All Electronics

Back to search results for "ceton"



Ceton InfiniTV 6 PCIe - 6-channel Internal Cable TV Tuner for CableCARD  
by Ceton  
★★★★☆ 107 customer reviews | 40 answered questions

Price: ~~\$299.00~~  
Sale: **\$249.00** Prime  
You Save: \$50.00 (17%)

**In Stock.**  
Sold by CETON and Fulfilled by Amazon. Gift-wrap available.

**Want it tomorrow, March 28?** Order within **3 hrs 18 mins** and choose **One-Day Shipping** at checkout. Details

- Watch & record 6 HD cable TV channels simultaneously, including premium cable channels. Works with any U.S. cable TV provider.
- Brings cable TV services to the PC, enabling cable + DVR + Internet TV and more, all on one device.
- Eliminates costly cable box lease and DVR fees.
- Low-profile PCIe card that also works in full-height PC cases.
- **\*\*\* IMPORTANT \*\*\*** Make sure "Sold by CETON" is shown above. Otherwise you're buying no-support/no-warranty products from an unauthorized grey-market dealer. Click the "new" link below to find "Sold by CETON" versions if it's not shown above.

3 new from \$249.00

Share

Qty: 1

Add to Cart

Turn on 1-Click ordering

**Shipping Address**  
ken plotkin- DIX HILLS

Add to Wish List

**Other Sellers on Amazon**

3 new from \$249.00

Have one to sell? Sell on Amazon

**Sponsored by Antec**

Antec Mini-ITX Case ISK110-VESA  
★★★★☆ (63)

Frequently Bought Together

# Windows Media Center supports CableCARD

www.amazon.com/SiliconDust-HDHomeRun-Compatible-Streaming-HDHR3-CC/dp/B004HKIB6E/ref=sr\_1\_1?ie=UTF8&qid=1427479094&sr=8-1&keywords=silicon+dust+cablecard

amazon Prime

ken's Amazon.com Today's Deals Gift Cards Sell Help

Prime Instant Video Watch now Unlimited streaming of movies and TV

Shop by Department Search All silicon dust cablecard

Hello, ken Your Account Your Prime Wish List Cart

All Electronics Deals Best Sellers TV & Video Audio & Home Theater Computers Camera & Photo Wearable Technology Car Electronics & GPS Portable Audio Cell Phones Office Electronics

Back to search results for "silicon dust cablecard"

Share

**SiliconDust HDHomeRun PRIME 3-Tuner DLNA/UPnP Compatible Streaming Media Player, HDHR3-CC**  
by SiliconDust  
★★★★★ 871 customer reviews | 253 answered questions

List Price: \$244.99  
Price: **\$99.99** Prime  
You Save: \$115.00 (53%)

**Note:** Available at a lower price from other sellers, potentially without free Prime shipping.

**In Stock.**  
Sold by CYCLERY.INC and Fulfilled by Amazon. Gift-wrap available.

**Want it tomorrow, March 28?** Order within **2 hrs 16 mins** and choose **Saturday Delivery** at checkout. [Details](#)

Style: **3 Tuners**

2 Tuners HD \$149.42 Prime	2 Tuners Standard \$95.89 Prime	3 Tuners \$99.99 Prime
-------------------------------	------------------------------------	---------------------------

Roll over image to zoom in

- No need to rent set-top boxes for every room
- Watch live HD TV on up to 3 devices together on your wifi or wired network
- Works with all popular DVR software so you can watch, pause and record
- Access premium cable subscription channels using CableCARD
- Stream Live SD premium subscription TV directly to your Android device with our HDHomeRun VIEW app
- Cable TV subscription required

See more product details

**Buy new:** \$99.99  
Qty: 1  
 Include 3-Year Protection for \$8.34  
 Include 2-Year Protection for \$6.70  
**Add to Cart**  
Turn on 1-Click ordering

**Shipping Address**  
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**Buy used:** \$84.46  
**Add to Wish List**

Other Sellers on Amazon

# Windows Media Center supports CableCARD

Hauppauge WinTV DCR-2650 Dual Tuner Cable Card TV Tuner  
\$112.99 Prime | In Stock. Ships from and sold by Amazon.com. Gift-wrap available.

68 of 71 people found the following review helpful

★★★★★ **Good CableCard tuner for the price**  
By J. Fendrick on September 13, 2011

I just received this tuner today, and have had it running for about four hours, so I will edit if I encounter any issues in the next few weeks.

Preliminary review - good tuner for its price range. If you don't need the four tuners in the Ceton InfiniTV, or the three tuners in the SiliconDust HDHomeRun Prime, this two-tuner box from Hauppauge is worth the look. As for me, I already had a card for ClearQAM, so I didn't really need more than two tuners. HD quality on my HTPC is equal to the quality from the cable company DVR (which is going back tomorrow!).

First things first - don't even mess with the CD in the box, download the latest software and firmware directly from Hauppauge. The firmware has been updated at least twice in the last two weeks, and will probably be updated quite frequently as more features are added.

Following the instructions in the box, installation went smoothly. I did encounter a bit of a hiccup in getting my CableCard activated, but it is a known issue with activating CableCard equipment on Cox's network (short version - just ask the tech to send two "cold hits" to your box, about five to ten minutes apart - it seemed to work for me).

If your cableco uses SDV / tuning adapters, you may want to wait - Hauppauge is still working on getting tuning adapter support. However, I don't, so it was a non-issue for me.

You'll probably want to run a clean line to this box - no splitters - just to make sure you have sufficient strength and quality of signal.

Overall, my early impression from this box is very favorable. If it continues to work well, I will be recommending that all my friends abandon the cable company DVR and build their own HTPC's. [Read more](#)

**Intel® Wireless-AC**  
Inside Your Next PC  
3X Faster Wi-Fi  
[SHOP NOW](#)

Ad feedback

**Customer Images**

**Most Recent Customer Reviews**

★★★★★ **Short and Sweet - It works as advertised**  
Short and Sweet -

It works as advertised. I updated all the firmware and drivers as instructed. [Read more](#)

# Windows Media Center supports CableCARD

www.amazon.com/Ceton-InfiniTV-ETH-6-channel-CableCARD/dp/B00CBXEKZ0/ref=sr\_1\_1?ie=UTF8&qid=1427479175&sr=8-1&keywords=ceton

**Ceton InfiniTV 6 ETH - 6-channel Cable TV Ethernet Tuner for CableCARD**  
\$249.00 Prime | In Stock. Sold by CETON and Fulfilled by Amazon. Gift-wrap available.

### Most Helpful Customer Reviews

40 of 43 people found the following review helpful

★★★★★ **Works great with Surface Pro... or even Virtualize your Media Center PC**  
By Artie on May 18, 2013

**Verified Purchase**

This is the CableCard tuner the Windows Media Center enthusiast like myself have been waiting for. Especially those of us whose cable companies went to switched Digital that require the bulky tuning adaptors. Finally it's possible to ditch the cable companies crappy DVRs (and the monthly fees that come with it).

The beauty of the InfiTV6 is that this device is entirely self-contained and gigabit Ethernet based and supports dynamic tuner pooling. This eliminated the requirement to have a host PC which the tuner and Coax would be tethered to. Now households that only have Windows laptops or tablets like the Surface Pro can use those devices to watch and or record their digital cable channels and roam freely without being tethered to the Coax. You could also use virtualization and consolidate hardware by installing Windows 7 or 8 Media Center in a VM and run it on the same box as you Windows Home server, or Windows 2008R2/2012 using HyperV, or of course Virtual Box or VMware.

The previous Ceton USB and PCIe tuners, did support network sharing of the tuners... But it required an always on Windows 7, Windows 2008 R2, or Home Server 2011 server and the tuners would have to be permanently assigned to any portable device wanting access to the tuners. This static tuner assignment is no longer required with this model.

My prior setup consisted of dual quad InfiniTV tuners that required a cable splitter, 2 cable cards, and 2 tuning adaptors all tethered off the main recording PC. [Read more >](#)

12 Comments | Was this review helpful to you?

TV Ethernet Tuner

Qty: 1

Turn on 1-Click ordering

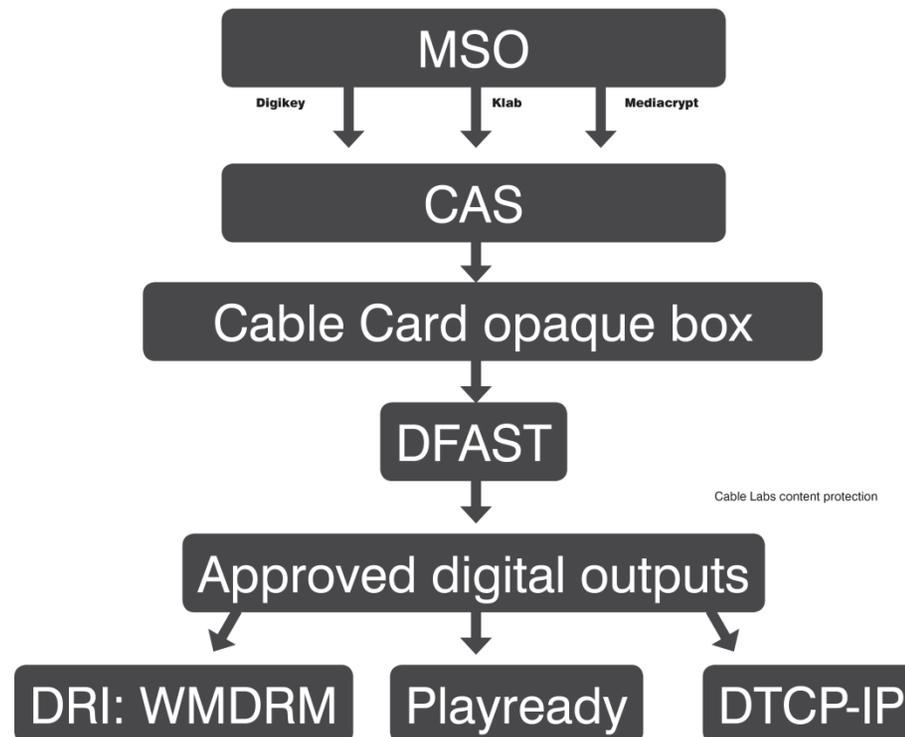
**Shipping Address**  
ken plotkin- DIX HILLS

**Other Sellers on Amazon**  
9 used & new from \$198.00

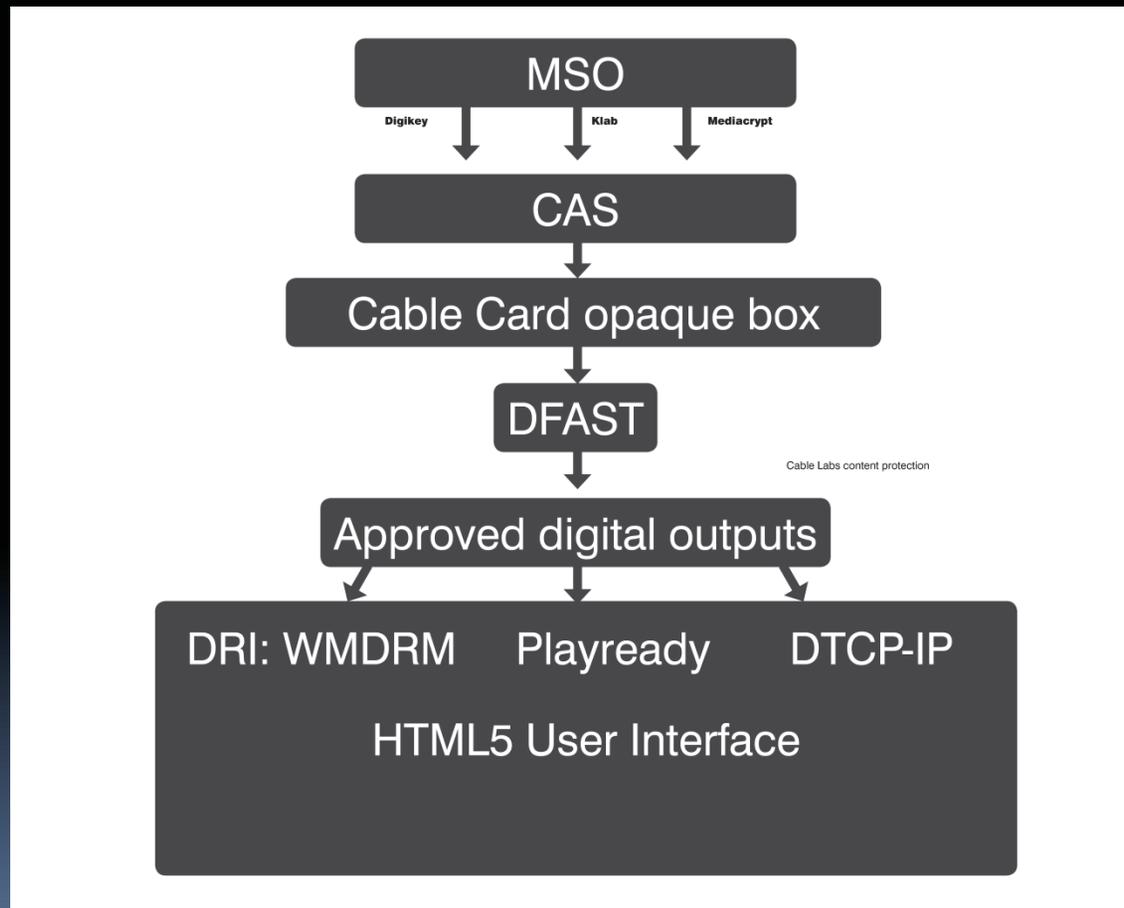
Have one to sell?

Sponsored by GreatCall

# Extending the CableCard Chain of Trust



# 3rd party innovation is not limited by CableCard



# Next generation UI: HTML5 for PC, tablet and smart phones

- Hauppauge is moving to HTML5 for our next generation user interface
- HTML5 still gives advanced features and functions for consumers, but is more easily ported to other platforms
- Uses a Hauppauge developed DTCP-IP stack for content protection
  - Encrypted transmission based on CCI
  - Proximity checks for in-house viewing
  - Copy count controls for recording migration
  - Copy Free programs require no DTCP-IP

# Hauppauge UI: HTML5 for PC, tablet and smart phones

Live TV / All channels ⏪ 07:17 pm

<b>2.1 WCBS-HD</b> 	
<b>2.2 CBSNY+</b> 	
<b>5.1 WNYW</b> — Modern Family Modern Family 	
<b>5.2 Movies!</b> — Donovan's Reef The Girl Can't Help It 	
<b>7.1 WABC-HD</b> — Jeopardy! Wheel of Fortune 	
<b>7.2 LivWell</b> — Mexico: One Plate at a Time My Family Recipe Rocks! 	
<b>7.3 LIVWELL</b> — Mexico: One Plate at a Time My Family Recipe Rocks! 	
<b>9.2 WWOR-SD</b> — The Simpsons The Big Bang Theory 	

7:00 pm - 7:30 pm Tuesday 29.04.2014 WNYW

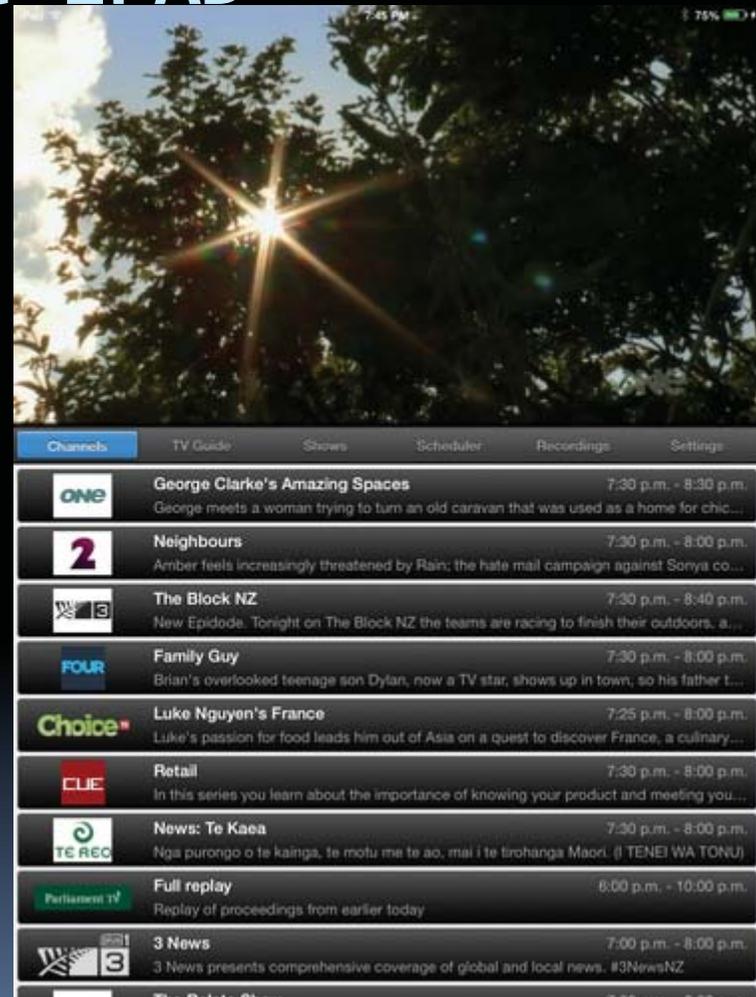
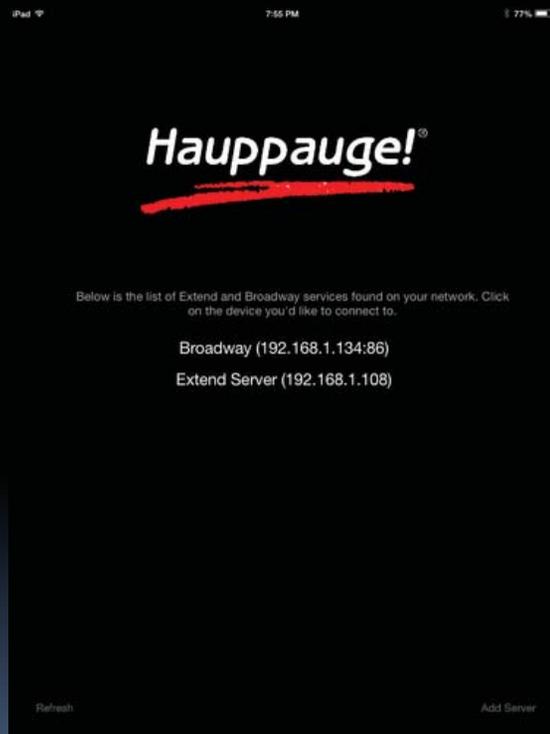
**Modern Family**

**A** **B** **C** **D** EPG

# Hauppauge UI: HTML5 for PC, tablet and smart phones



# Hauppauge UI: DRI+DTCP-IP on the iPad





# Hauppauge UI: DRI+DTCP-IP on the iPad

iPad 7:48 PM 76%

Channels TV Guide Shows Scheduler Recordings Settings

Friday 7 November

	Thu 6	Fri 7	Sat 8	Sun 9	Mon 10	Tue 11	Wed 12
<b>ONE</b>		Selling Houses Australia 15:00 - 15:55	To Kereka 15:55 - 16:25	The Chase 16:25 - 17:25			
<b>2</b>			The Ellen DeGeneres Show 15:30 - 16:29	AKung Fu Panda 16:30 - 17:00	Kickin It 17:00 - 17:30		
<b>3</b>		All New Top Chef Masters 15:05 - 16:00	Entertainment 16:00 - 16:30	Big Brother Australia 16:30 - 18:00			
<b>FOUR</b>	14 15	Franklin And 15:05 - 15:30	Turbo FAST 15:30 - 16:00	Sticky TV 16:00 - 16:30	SMASH! 16:30 - 18:00		
<b>Choice</b>		The Hairy Bikers' Best of British 14:55 - 16:00		Cook the Books 16:00 - 16:30	Turkish Delights with 16:30 - 17:00	Nick Knowles' Origin 17:00 - 18:00	
<b>CLIE</b>		The Real World 15:00 - 15:30	Destination Unknown 15:30 - 16:00	Adventure New 16:00 - 16:30	Retail 16:30 - 17:00	Classic Restos 17:00 - 17:30	
<b>TE REC</b>					Pukora 16:30 - 17:00	Mhars 17:00 - 17:30	
<b>Parliament TV</b>							
<b>3</b>		The Block NZ 14:55 - 16:05		All New Top Chef Masters 16:05 - 17:00		Entertainment 17:00 - 17:30	
<b>ShineTV</b>		Scaly Adventures 15:00 - 15:30	Veggie Tales 15:30 - 16:30		Life FM presents 16:30 - 17:30		
<b>Radio NZ National</b>				The Panel with Jim Mora 16:06 - 17:00		Checkpoint 17:00 - 19:06	
<b>Radio NZ Concert</b>		New CD Masters		Made in New Zealand		New Cadenza	

TV ONE - George Clarke's Amazing Spaces 7:30 p.m. - 8:30 p.m.

George meets a woman trying to turn an old caravan that was used as a home for chickens into an ice cream parlour.