

I tried to modify the original instructions written by spaceghost, but realized that a quicker condensed version of the instructions were needed. Here they are:

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Assumptions:

- ✓ You are installing a set top box (STB) with via firewire to use as a SageTV tuner. If you are not – wrong doc.
- ✓ Your tuner has an active firewire port, and your cable company is not 5c'ing all the channels. (no way to know this unless you try)
- ✓ Your system has enough CPU horsepower and a good enough graphics card to record and play back HD content. (see all the other posts for requirements, but suffice it to say a newer model CPU and a directX 9 compatible video card like the geforce 6X00 and / or the ATI 9x00.
- ✓ If you are configuring this remotely, your bandwidth is sufficient. --Read 100 MB.

First – install some software that we will need.

Graphedit

<http://www.digital-digest.com/dvd/downloads/graphedit.html>

http://www.apacity.com/tivo/graphedit_dx9.zip

Download graphedit from the first link above. Or google search for graphedit and download from your own source. You need proppage.dll – which is not included in the first link. Find that file as well. It is included in the second link for example. If you used the first link, which comes with several filters, open a command, unzip it into a directory you can easily get to through a command prompt. Go there and execute register. This will register all the filters. Now put proppage.dll in the same directory – and execute regsvr32 proppage.dll. You should see a successful registry of the file.

Open graphedit and see if it works. If it opens – close it and continue.

Connecting the Set Top Box

<http://www.thegreenbutton.com/community/shwmessage.aspx?ForumID=26&MessageID=104152&TopicPage=1>

Connect your firewire port on the set top box to your PC. If your port is active, you will see 3 or 4 newly detected devices. When prompted by windows to install drivers, hit cancel on everything.

Go to the link above and download firewire.zip. Install the program to an easy to work in directory – such as c:\getHD. That will be my example for this doc. Reboot. When asked to install drivers for the detected hardware, automatically install drivers for the Tuner, and the Panel device. On the one or two unknown devices, choose cancel. Now go into your device manager, and disable the one or two unknown devices so they don't bother you every time you boot. All you need is support for your tuner device and the panel device.

Now you are done connecting your set top box. Let's test it to see if we get video.

Testing with the VideoLan Media Player

Download VLC media player (this is really optional – but useful for testing). If you are like me – I like opening my media files in certain programs. When you install VLC – it can sometimes hijack certain types of media files. If it gives you an option to associate file types, clear them. We just want the player to test with.

VLC can be found here:

<http://www.videolan.org/vlc/>

Install it. Open the vlc player. Choose File – open capture device. Next to video device name, click refresh. Your tuner should now be in the list. Select it. Hit play. With your remote (or if you have skipped ahead and read the firewire channel change section, change the channels on your set top box and see if you are getting video. If nothing is playing on any channel, you likely have a problem I cannot fix – or your cable company is 5c'ing all the content. If you are getting video – congrats – you can capture this and use it in Sage. Let's get the channel change working through the firewire. If you are using girder or using a usb-irt, then please see those sections in the original spaceghost directions located here:

<http://forums.freytechnologies.com/forums/showthread.php?p=91976&postcount=355>

I use the firewire to control the channels – it works very well.

Channel Change via Firewire.

This is very simple – so I will go over this quickly.

Open a command prompt and change to the directory where you installed the support for your set top box. Mine is [c:\GetHD](#). In there you will find two programs – channel.exe and channelw.exe. Execute the following:

```
Channel /v
```

Your output will show you the tuners and the panels you have installed in the system, and tell you the control numbers for them. For most, it will tell you that the tuner is device 1, and the panel is device 2. You change the channel through the panel device. To test – execute `channel /v 2 704`. I use 704 as an example for channel 704. Substitute as you need for the panel number and the channel. You should be changing the channel on your set top box.

Channelw.exe is the same command – but a windows version that does not pop up a dos box. We will use this version later with sgraphrecorder for use in Sage.

I used the command version, with VLC running and playing, to figure out which channels I could get via firewire. About 3 quarters of my channels were protected with 5c (meaning I got nothing through vlc). Make note of the channels that work. For me – I just use this to get the HD content.

Now lets install Sgraphrecorder and work to get this working in Sage TV.

SgraphRecorder

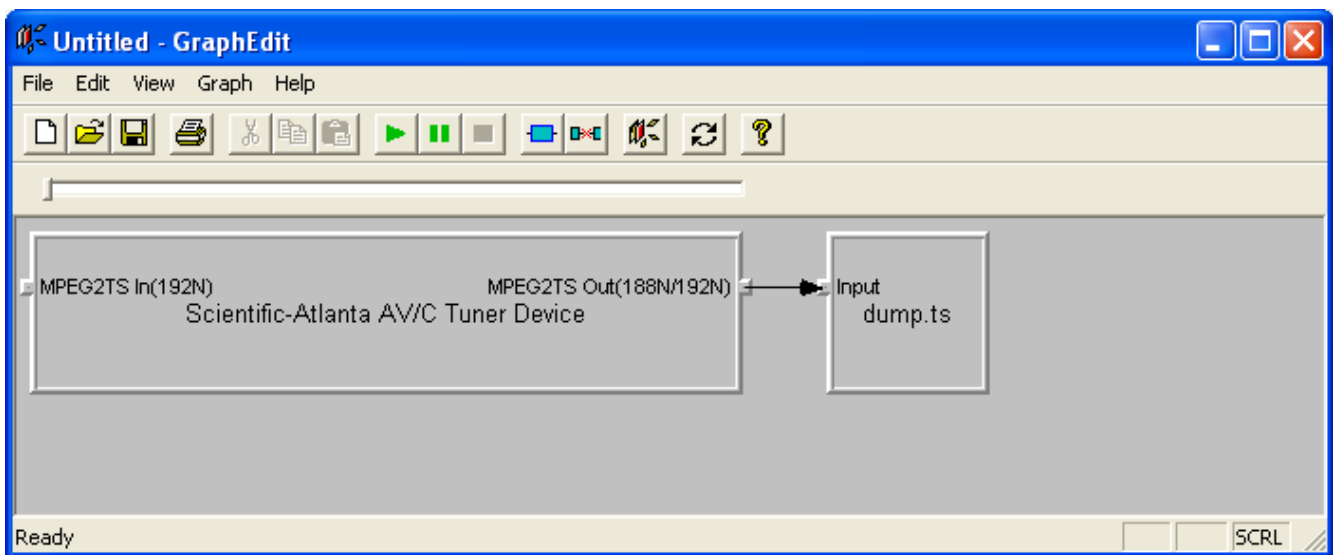
<http://www.nolberger.se/Sage/GraphRecorder/>

Go to the link above and download SgraphRecorder. Unzip the contents into the same directory that you installed support for your set top box (in my case [c:\getHD](#)). Go there and execute `regdumpflter`. Or execute `regsvr32 dump.ax`. Now – before we continue configuring Sage, lets stop and test with Graphedit to see if we can capture and playback HD content.

Testing HD Capture.

Open Graphedit. We are going to create a simple graph that captures the video stream coming from the firewire and dumps that to a file.

In Graphedit – the screen should be clear. Choose Graph – Insert Filters. Expand Video Capture Sources and choose your TUNER device. (not the panel). It will place that filter into your graph. Now choose graph, insert filter again. Expand Directshow Filters, and choose SBDARecorderDump. It will ask for a file. For now – choose any file location. Such as `c:\getHD\dump.ts`. Yes I use a .TS extension. Now connect the two filters by clicking on the output from the capture device and dragging the line to the input of the dump file. It should look like this:



Now push play. In another window, open up explorer and browse your directory. Keep hitting F5 to refresh and you should see your dump.ts growing. Of course you need to be on a channel where you are getting HD video (see last testing section).

Once you have captured some – hit stop. Open that file in Windows Media Player and see if it plays. If it does – great job. If it does not play – or does not play well – it might be a video decoder issue.

Now this is important. Right mouse click on the dump.ts filter in graphedit – and edit the file location. Change this location to the directory (and drive letter) of your sageTV recording directory. Name the file anything – such as dump.ts – or null.ts. Now in graphedit, save as graph, and save the graph as c:\GetHD\gethd.grf.

A couple of points here. If you are configuring this on a remote system – (on a separate system than your Sage server, then your drive letters must match. For instance, on my server, I have a dedicated G: drive that I have formatted correctly (64k clusters), that I use for my recordings. I have a [g:\recordings](#) directory, and Sage uses this to store recordings. I have shared this drive out at the root for my remote recorders, and I map that share on the remote systems as G:. So both my sage server and the clients see the same [g:\recordings](#). If you have done something silly like installed Sage on the server to store everything on the C: drive, you need to reconfigure things. You can change drive letters in windows XP to whatever you want on the server to make things easier on the clients – and to avoid things like local cd drives, etc.

Next – the dump file you created will never really get used by sgraphrecorder. It will instead grab the graph and send the data through sage and create a normally named file – like all the rest of the files in the recordings directory. It does need to be in the same directory tho.

Now – you have saved that graph in your working directory. Lets configure sgraphrecorder to use that graph, and to change the channel via firewire. Make sure graphedit is closed.

SgraphRecorder config.

Open your working directory ([c:\getHD](#)) where sgr and your support files are installed. You will see and sgraphrecorder.ini file. Open it. It is very easy to understand.

First – portnumber.

```
Port=6969
```

Leave this unless you wish to run this program on another port.

Next – graph.

```
FileName=c:\GetHD\GetHD.grf
```

Place the full pathname reference to the graph you saved out of graphedit.

Next – if you are using the firewire to change channels, make sure UseGirder=0.

Now in this section, configure your channel change options.

```
[ExeTuner]  
UseExeTuner=1  
ExeTunerPath=C:\GetHD\channelw.exe -v 2
```

Make sure useexetuner is set to 1. And use channelw with the options you have tested before.

For these options, you need to test and play with them yourself.

```
TuningDelay=1250  
UnloadGraphOnStop=1  
UnloadGraphOnSwitch=0
```

That is a config that works for me. Leave them as default until you are up and running and can test.

Close the ini file. You are done configuring SGR. Now lets configure SageTV.

SageTV

You need to close Sage TV. And I mean CLOSE IT. If it is running as a service, stop the service.

Now open your sage properties file. That would be sage.prop in your sagemtv directory. You will see mmc/encoders lines for each tuner you have defined, each designated by a unique number. Go to the last line of your mmc/encoders lines, and insert the following under it.

```
mmc/encoders/12346/1/0/available_channels=
```

mmc/encoders/12346/1/0/brightness=-1
mmc/encoders/12346/1/0/contrast=-1
mmc/encoders/12346/1/0/device_name=
mmc/encoders/12346/1/0/hue=-1
mmc/encoders/12346/1/0/last_channel=8
mmc/encoders/12346/1/0/provider_id=0
mmc/encoders/12346/1/0/saturation=-1
mmc/encoders/12346/1/0/sharpness=-1
mmc/encoders/12346/1/0/tuning_mode=Cable
mmc/encoders/12346/1/0/tuning_plugin=
mmc/encoders/12346/1/0/tuning_plugin_port=0
mmc/encoders/12346/1/0/video_crossbar_index=0
mmc/encoders/12346/1/0/video_crossbar_type=10
mmc/encoders/12346/2/0/available_channels=
mmc/encoders/12346/2/0/brightness=-1
mmc/encoders/12346/2/0/contrast=-1
mmc/encoders/12346/2/0/device_name=
mmc/encoders/12346/2/0/hue=-1
mmc/encoders/12346/2/0/last_channel=
mmc/encoders/12346/2/0/provider_id=0
mmc/encoders/12346/2/0/saturation=-1
mmc/encoders/12346/2/0/sharpness=-1
mmc/encoders/12346/2/0/tuning_mode=Cable
mmc/encoders/12346/2/0/tuning_plugin=
mmc/encoders/12346/2/0/tuning_plugin_port=0
mmc/encoders/12346/2/0/video_crossbar_index=0
mmc/encoders/12346/2/0/video_crossbar_type=2
mmc/encoders/12346/2/1/available_channels=
mmc/encoders/12346/2/1/brightness=-1
mmc/encoders/12346/2/1/contrast=-1
mmc/encoders/12346/2/1/device_name=
mmc/encoders/12346/2/1/hue=-1
mmc/encoders/12346/2/1/last_channel=
mmc/encoders/12346/2/1/provider_id=0
mmc/encoders/12346/2/1/saturation=-1
mmc/encoders/12346/2/1/sharpness=-1
mmc/encoders/12346/2/1/tuning_mode=Cable
mmc/encoders/12346/2/1/tuning_plugin=
mmc/encoders/12346/2/1/tuning_plugin_port=0
mmc/encoders/12346/2/1/video_crossbar_index=1
mmc/encoders/12346/2/1/video_crossbar_type=2
mmc/encoders/12346/3/0/available_channels=
mmc/encoders/12346/3/0/brightness=-1
mmc/encoders/12346/3/0/contrast=-1
mmc/encoders/12346/3/0/device_name=
mmc/encoders/12346/3/0/hue=-1
mmc/encoders/12346/3/0/last_channel=
mmc/encoders/12346/3/0/provider_id=0
mmc/encoders/12346/3/0/saturation=-1

```
mmc/encoders/12346/3/0/sharpness=-1
mmc/encoders/12346/3/0/tuning_mode=Cable
mmc/encoders/12346/3/0/tuning_plugin=
mmc/encoders/12346/3/0/tuning_plugin_port=0
mmc/encoders/12346/3/0/video_crossbar_index=0
mmc/encoders/12346/3/0/video_crossbar_type=3
mmc/encoders/12346/audio_capture_device_name=
mmc/encoders/12346/audio_capture_device_num=0
mmc/encoders/12346/capture_config=2058
mmc/encoders/12346/default_device_quality=
mmc/encoders/12346/encoder_merit=0
mmc/encoders/12346/encoding_host=127.0.0.1\6969
mmc/encoders/12346/encoding_host_login_md5=
mmc/encoders/12346/last_cross_index=0
mmc/encoders/12346/last_cross_type=1
mmc/encoders/12346/live_audio_input=
mmc/encoders/12346/never_stop_encoding=false
mmc/encoders/12346/video_capture_device_name=SGraphRecorder
mmc/encoders/12346/video_capture_device_num=0
mmc/encoders/12346/video_compressor=
mmc/encoders/12346/video_encoding_params=Best
```

You can adjust the name – in line mmc/encoders/12346/video_capture_device_name=SGraphRecorder
You can adjust the port in line mmc/encoders/12346/encoding_host=127.0.0.1\6969

Save your properties file

Now fire up sgraphrecorder. Open the debug window to see debug information (obviously click on the debug boxes.)

Now start Sage TV.

Before we start SageTV and add the new source, lets talk about channel lineup. Since most people will be using this as a second tuner to get HD (I don't think anyone here would recommend you get RID of your existing (nonHD tuners and use only this) – you will likely have a channel lineup issue with regards to the EPG data. I will explain in my configuration. I have a Hauppauge 350 recording from the svideo out of a set top box. I get all the channels off this connection except HD. Now I am adding a firewire connected STB as a second tuner. When I go to add this tuner, it will get only the HD channels and a handful of others that are not 5c protected. However, since both of my tuners are getting cable from the same local provider, with the same channel lineup, I have a problem. I cannot enable my HD channels on the firewire tuner without enabling them on the hauppauge. And if I do enable them, and sage attempts to record an HD channel from the hauppauge, I will miss my recording. Since Sage does not allow you to enable or disable a channel on a specific tuner, rather enable or disable channels on an EPG data lineup, you need to figure out a way to trick sage.

I did some sleuthing and found a nearby city that had nearly the same channel lineup by the same cable provider. When I installed my HD tuner, I put that zip code in for that tuner, which created another EPG data feed. Now I can disable channels on that tuner and not affect my hauppauge. If you cannot

find a similar solution, I don't know what to tell you. If these last couple of paragraphs don't make sense, sorry.

Now start Sage. Under setup, video sources, choose to add new source. You should see sgraphrecorder. Select it and get to configuring. Obviously you should use the 1394 port. As for zip code, see recommendations above. Once in the channel lineup, you can disable all the channels that you don't want or can't get. If you have found another EPG source, and if you have tested as recommended above with VLC, you know which channels you want. Test a couple of channels. Hopefully it works, and you can adjust the settings in sgraphrecorder.ini and in sage as you see fit.

Last Points and Recommendations.

Once I got this working, I realized several of my clients were not up to playing HD content. Using the default Sage decoders that ship with version 4 always seem for me to work well enough and best in some cases. You can try nvidia decoders if you are using nvidia cards, or others to your taste.

I have found on two clients that this hotfix from microsoft helped.

<http://support.microsoft.com/?kbid=888656&SD=tech>

Channel changing on HD content while watching live tv hangs or stutters the stream. I have gotten this to work sporadically, and have no answers other than to hit stop before you change the channel. Recordings work fine.

I have tried to get to sgraphrecorders working on the same system, and have gotten both of them to work. However recording two shows at the same time does not work because of resource constraints. It may be possible to have one remote SGR and on SGR configured on the server and record two streams. I am going to try this when I have time.

There is quite a lot of talk about the GetFileSize messages (you can see them in the SGR debug window) while running sage as a service. I don't run sage as a service so I can't help you.

Lastly, thanks to everyone on this thread. I didn't do anything but write up what worked for me. If anyone deserves thanks, it is the people who worked to get all of this reasonable. The people who wrote the software, the people who troubleshooted it, etc. Thank them.

I will add more notes to this section when I run into other problems.