

TeVii DVB-S/S2 PCI-E Card S470 Add Digital TV Reception to Your PC



In the past several years one development in particular has become more and more popular: the incorporation of digital receivers in a PC and of course the digital receivers with built-in PC's.

We are keeping an eye out on the development of set-top boxes that, in addition to the normal function of receiving digital TV and radio content via satellite, can also connect to the Internet so that video clips or IPTV can be played back. These home multimedia powerhouses would also be able to display your pictures, play back music and even allow you to play games.

At the same time, more and more homes are warming up to the idea of PC reception. There are a number of reasons for this: receiving satellite TV through a PC is less expensive than with a stand-alone set-top box, recording digital content can take place directly on the hard drive of the PC – this saves the user time when burning a DVD in that the data doesn't first have to be transferred over to a PC. Then there are those households that despite having an LCD monitor that they use with their PC's, they still have an older TV that is used for normal TV viewing. And since watching HDTV programming without a high resolution LCD or plasma TV makes no sense, this content is also viewed through a PC.

the motherboard via a PCI-E slot. This is a modification of the well-known PCI slot in that much higher transmission speeds are now possible; perfect for HDTV reception. PCI-E slots come in two different heights, and TeVii even provides the S470 with both brackets: the standard one for regular PCs and the low profile bracket, which is ideally suited for the new slim PCs.

We began by installing the card in a typical PC. For us this turned out to be an older Pentium IV 3 GHz PC with 1GB RAM. According to the manufacturer, the minimum PC requirements are a 2 GHz CPU for SDTV or 2.4 GHz for HDTV, 512 MB RAM for SDTV and 1GB for HDTV as well as a graphics card with 128 MB of memory. Our test PC falls just within these requirements. Naturally, the TeVii card supports the Windows XP and Vista as well as Linux operating systems. The MyTeVii software is only compatible with Windows; Linux users must find suitable alternatives in the Internet. We were happy to see that TeVii included 64-bit drivers for Windows.

The TeVii card is delivered in a handy box. Included is a remote control with batteries, an IR receiver, a software CD and fold-out installation instructions. The TeVii S470 is plug&play compatible and for

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Turkish	Türkçe	www.TELE-satellite.com/TELE-satellite-0909/tur/tevíi.pdf

Available online starting from 31 July 2009

The Taiwanese company TeVii recognized this trend a long time ago and has strengthened their development of TV and radio reception solutions for PC's. This wouldn't be the first time that TELE-satellite introduced a TeVii product; one of these was the TeVii S650 USB box.

This time it's the new S470 PC Card. This new model is not connected externally; instead it is linked directly to

TEVii



TELE SATELLITE
AWARD & BROADBAND
 08-09/2009

TEVii DVB-S/S2
PCI-E CARD S470
 An elegant solution for normal
 and HDTV reception on a PC

Alternative Reception Software for the TeVii S470:

ProgDVB
DVBViewer
DVBDream
WatchTVPro
SmartDVB
TSReader
SkyGrabber
Tuner4PC

www.progdvb.com
www.dvbviewer.com
www.dvbdream.org
www.watchtvp-pro-experience.de
www.smartdVB.net
www.tsreader.com
www.skygrabber.com
www.tuner4pc.com

our test PC this meant installing the card in an available PCI-E slot and then putting the cover back on the PC.

The included remote control sits very nicely in your hands, is clearly labeled and left us with a very favorable impression in terms of its workmanship.

We quickly connected a satellite cable from one of our signal distributors to the IF input on the card and last but not least connected the IR receiver. Now it was time to play. After turning on the PC, Windows XP immediately found the new hardware. Instead of letting Windows search for matching drivers, the installation CD was inserted into the appropriate drive. The installation assistant appeared and began installing the necessary drivers as well as the MyTeVii software.

Software Setup

When the TeVii software is started for the first time, it initially greets the user with a blank screen. A pre-programmed channel list isn't activated nor does the software ask the user to perform a channel scan. Considering that the TeVii S470 is being distributed around the world and that a preprogrammed channel list would probably not make sense anyway, it would have been nice if the user was directed to an automatic or manual channel scan.

At this point it is also possible to select whether just the drivers and MyTeVii software should be installed or if the TeViiData program should also be installed. This program permits the use of Internet via satellite services but more on that later. After clicking the OK button it takes only a few seconds before all of the required data has found its way to our test PC. If for any reason you don't happen to like the TeVii software, a demo version of ProgDVB can also be found on the installation CD. We will have more on this program and other alternative programs a little later.

The TeVii developed user interface provided us with a very clean and organized impression. On the right side are the channel list and available satellites; the currently selected channel is displayed to the left. An EPG bar at the bottom of the display window provides information on the currently running program. The size of the playback window can be adjusted to your liking; the TV picture can also be viewed in full-screen mode.

Clicking the right mouse button opens the Options menu giving the user access



Main MyTeVii window with all channels |



Main MyTeVii window - Channel list sorted by transponder |



Perfect SCPC reception of TÜRKSAT at 42° east |



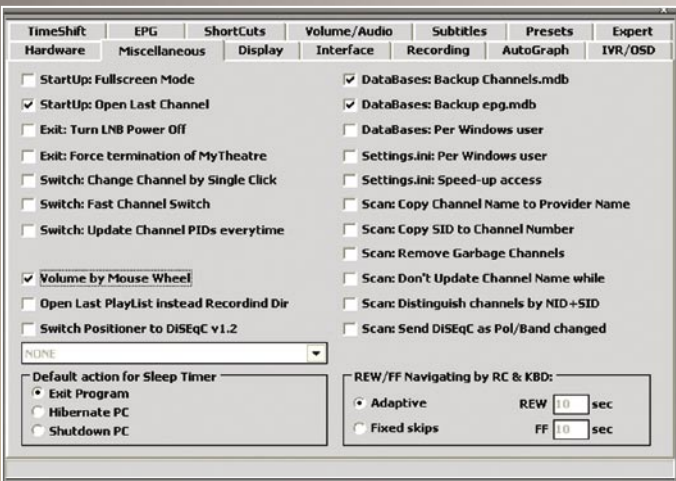
Even ProgDVB works perfectly with the TeVii card |



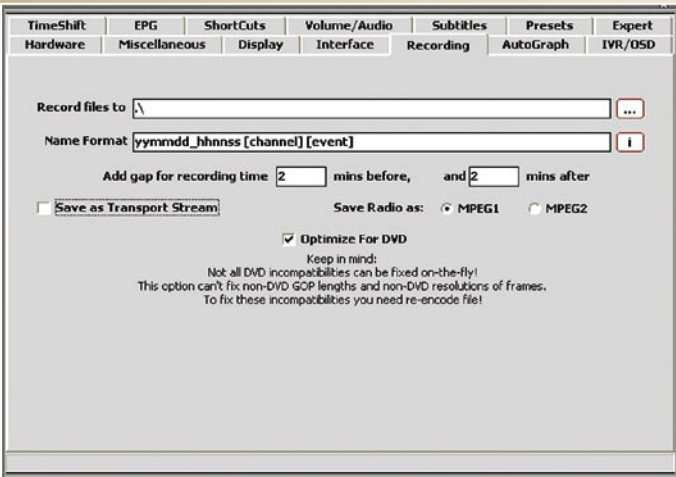
Alternative Software WatchTVPro Experience |



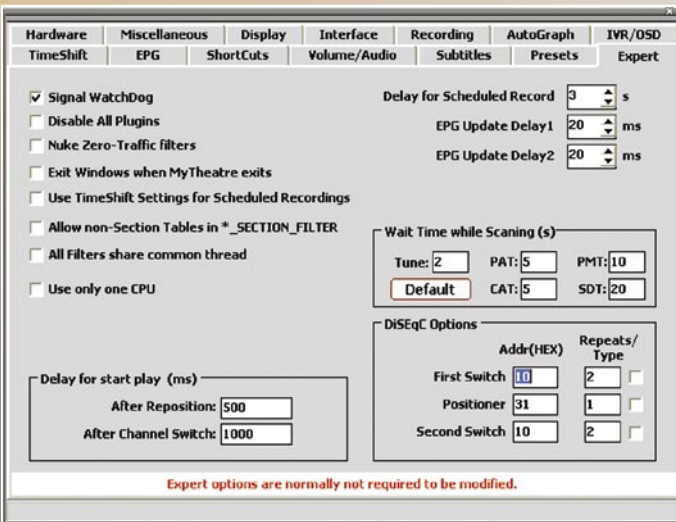
A preprogrammed list of 177 satellites at your fingertips!



Various system settings let you match the MyTeVii software to your needs!



Recording Settings!



Settings for the Professionals!

to all of the necessary settings. The TeVii software itself is very international; it can communicate with the user in a variety of languages: English, French, German, Arabic, Chinese, Finnish, Italian, Polish, Russian, Spanish and Swedish. With this many choices, no one should have any problems finding a matching language.

The settings menu comes with a variety of options and settings possibilities. Nearly every aspect of the software can be matched to the users requirements, such as, how content is displayed, the storing and operation of the channel lists, the control of LNBs, the use of multiple monitors, setting up recordings and time shifting, the video and audio Codec's, the IR receiver, the parameters for the EPG display and last but not least an Expert menu that provides access to the basic parameters of the software. Despite all of these settings possibilities, the Main menu has remained clear and easy to understand. TeVii accomplished this thanks to the window architecture that is part of MS Windows. It would not be possible to clearly present so many settings in a standard set top box. Once all of the needed settings are taken care of, the TeVii card must then become acquainted with the antenna system with which it will be used.

Since the card works with all the different DiSEqC protocols, it can be used with a typical multifeed antenna (DiSEqC 1.0), a Wavefrontier antenna with up to 16 LNBs (DiSEqC 1.1) as well as a motorized system (DiSEqC 1.2 and USALS) without any problems. The S470 comes with a large selection of preprogrammed satellites that includes 170 American, European and Asian satellites. It's not very often that we see

a receiver that comes with so many satellites to choose from that are also for the most part very up to date. Thanks to the easy to understand OSD structure it is quite easy to match the necessary parameters (DiSEqC, LOF, etc.) to each individual satellite. It's also just as easy with just a few mouse clicks to access, delete or edit transponders. The same holds true for the satellite settings.

To make sure that the signal from the LNB can be processed correctly, it is necessary to provide the correct local oscillator frequency (LOF) and switching point between low and high band. The MyTeVii software comes preprogrammed with a number of LOF values for the Ku-band and C-band and if you happen to be using an LNB with a non-standard LOF, it can simply be entered in manually. When all the parameters from your antenna system have been entered, the next step takes you to a channel scan. At this point you can perform a manual transponder scan or let the TeVii S470 handle all of the scanning work automatically.

Since the S470 is a PC solution, the size of the channel memory is for all practical purposes unlimited and almost begs to be filled with channel data. The card is both DVB-S and DVB-S2 compatible and therefore, in addition to QPSK modulation in DVB-S, it also supports 8PSK in DVB-S2. The "Auto" setting switches between the two by itself. An automatic scan of HOTBIRD at 13° east was completed in just a little over six minutes in our tests. Not bad at all considering this is a PC solution. The TeVii card also gallantly passed one of our toughest tests with the horizontal transponders on NILESAT at 7° west. The S470

also performed perfectly with our SCPC test; it was able to process the narrow band signals on TÜRKSAT 42° east without any difficulties.

Everyday Use

Thanks to the extremely fast data connection through the PCI-E bus, the S470 can switch between channels very quickly; it makes channel surfing a lot of fun. It doesn't matter if you're switching between HD channels or SD channels or if you're switching from HD to SD or vice versa, the switching time is just a little over one second. This is actually quite good considering this is a PC solution and it even leaves some set top boxes in the dust. When in Windows mode, the software, if desired, blends in EPG information on the current program at the bottom of the display.

It is also possible to make this EPG information as well as channel data visible on the on-screen display. This is especially practical when the PC monitor is being used in full-screen mode as a TV and the TeVii software is being controlled from the couch via the remote control. The perfect design of the TeVii soft-

ware is only further confirmed in the channel list. It can be sorted and modified a number of ways so that, for example, channels can be grouped by package, transponder or satellite or Favorites lists can be filled with channels that you watch more often. Unwanted channels can be marked and deleted with just a single click. Adult channels can be locked out with a PIN code so that kids can't accidentally stumble on those channels.

It is quite practical that the editing of the entire channel list takes place directly in the MyTeVii software window thus making any changes immediately visible. In addition to the playback of live TV, the S470 naturally also comes with recording and time shift functions. For one thing, recordings can be manually started. They can also be started at a specific time through the EPG or programmed manually. Thanks to the time shift function, you won't miss any of the action in that movie you're watching should the telephone ring. The movie is simply paused and when you've had enough of talking with your favorite Aunt, you can pick up watching that movie where you left off.

The TeVii software can store recordings as a transport stream or in MPEG compatible format so that it can be played back with any video player. The EPG was designed with clarity and simplicity in mind. It displays all of the information provided by a broadcaster in an easy-to read and logically sorted format. Ideally, this would let you see programming information up to seven days in advance with data on each individual program such as content, provider, etc.

For the most part, the TeVii software appears to be perfect, but TeVii kept in mind that good can always be made better. For this reason the engineers included a plug-in interface that with the help of the software will let you add a variety of extra features.

How much of a load does this card put on the processor?

A big question is this: if you plan to do other work with your PC while the TeVii software is playing back video, how much does this TV reception affect the running of other programs? In SD mode, a PC with half way decent hardware will have no problems at all. But with HDTV the outlook is different. If it involves HDTV in 720p format, our older Intel Pentium IV did not have any problems and was able to produce an interference-free picture with a processor load of about 75%.

But in 1080i mode, video dropouts were the norm and the CPU load climbed to nearly 100%. At the same time, doing other work on the PC was not really possible while TV playback was in operation. We therefore decided to test the card in a more modern PC (Intel Core2Duo). The

result was as expected: the card was able to realize its full potential and played back HDTV in 1080i format without any problems at all. With that in mind, we want to make it clear that the manufacturer's hardware requirements for HD reception are really the minimum requirements.

If you are more experienced in handling your software settings and if your video card supports H264 acceleration, then TeVii has some tricks on hand, how to bring down processor load significantly. This is what's needed to do: Go to main menu: Settings, Directshow Filters, Cyberlink, Video and in the properties mark "Use Hardware Accelerator" or "DXVA" (depending on your system). Apply the changes and go to the main settings menu of MyTeVii, go to Autograph and proceed like this: If you are using Vista or Windows 7 choose "Enhanced Video Renderer". If you are using XP choose Video Mixing Renderer 7. That's all, close settings windows, and restart MyTeVii. Note that the enhanced Video Renderer is not compatible with the IVR mode and thus will work only in simple mode, this means no OSD.

Alternative Software

The only feature that was missing from the TeVii S470 PCI-E card was a CI slot. For you, the end user, this means that PayTV reception is not possible. However, there are two solutions to this! You may wait till 3rd Quarter 2009 and TeVii will introduce the S475, which is a DVB-S2 low profile PCI-E card with CI daughter board. It will feature a CAN tuner with a loop through. The other possibility is software. There are quite a few TV viewers available that work well with the TeVii S470,



TeViiData for Internet via Satellite

the most popular and most widely used of these would of course be ProgDVB. Obviously, ProgDVB can't magically pull a CI slot out of a hat, but it is possible to access another receiver through card sharing using a valid SmartCard. It could work like this: you have a valid PayTV subscription card that is inserted in a receiver in your living room. You set up your PC in such a way that it has access to this receiver through a network connection. With the proper plug-ins, this will let you access the SmartCard in your receiver with the TeVii S470 and thereby share that SmartCard with your living room receiver and the TeVii card.

ProgDVB isn't the only one out there. There are a number of other programs that together with the S470 will provide you with TV reception. Refer to Table 1 for the necessary links. In meantime, the new MyTeVii 4.xx software, which was not yet available at time of this test, will also support all kind of plugins including softcams, card sharing and so on. We also don't want to forget the radio lovers out there. The TeVii S470 is not just for TV reception; it naturally can also be used for top-quality satellite radio reception. And just like TV channels, radio channels can also be recorded and digitally stored.

TeViiData

TeVii doesn't only specialize in satellite TV and radio reception products; there's also a completely different application. The magical phrase here is Internet via Satellite. The technology behind this is quite simple: the user sets up a connection via modem or ISDN. The speed of this connection can be a mere 56kbps but it only plays a very small role. If the user surfs the Inter-

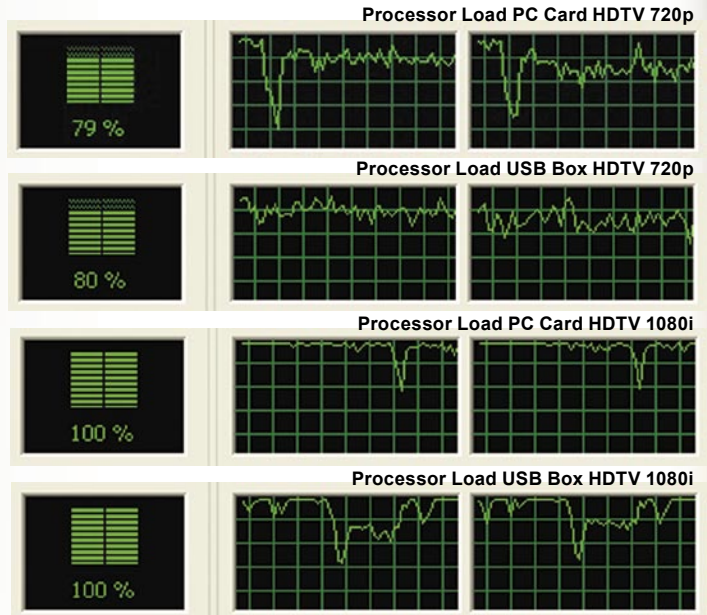
net or starts a download, the request is sent via modem to the Internet via Satellite provider which then retrieves the data via a high-speed connection and routes it to a satellite. The customer at the other end only sends the information request via modem to his provider; the information he needs is sent back to him at high speed via satellite.

The only drawback is that every person that can receive the same satellite can also receive the data you requested. Yes, the data is encrypted and only meant for you to receive but there is software available that will bypass this encryption so that the data can be seen by others as well. In our tests, data reception using the TeVii software functioned flawlessly. We didn't expect anything else.

What's better? PCI-E Card or USB Box?

Unlike the S470 PCI-E card, the TeVii's S650 is externally connected to a PC via USB 2.0 and powered by an external power supply. We were interested to find out which of these versions would be better for the end user. To this end we checked the processor load on our Intel Pentium IV PC in SDTV mode as well as in HDTV (720p and 1080i) mode. We discovered that both the USB version and PCI-E version placed about the same load on the PC.

As you can see in the processor load screen shots, both values are in the same range. The variations that can be seen are due to smaller changes in the video (the same scene shown for a longer period of time) resulting in less of a load on the processor. For the end user the choice ultimately comes



down to personal taste. The USB box is clearly more flexible and can also be used on camping trips together with a laptop. The PCI-E version has

the advantage that it doesn't need an external power supply and doesn't have an external box that takes up valuable space on your desk.

Expert Opinion



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The TeVii S470 PCI-E card is an excellent solution for receiving SDTV and HDTV via satellite on your PC. The included MyTeVii software is very easy to use and functioned perfectly during our tests.

Thanks to the plug-in interface it can easily be enhanced and at the same time the S470 can be used with alternative reception software. With the help of the proper Codec's, feeds in MPEG 4:2:2 format can also be received. This should make DXer's especially happy.

Another plus is TeVii's constant work in improving their products, especially the MyTeVii software.

Updates can be downloaded directly from the manufacturer's web site at no charge.

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Processor load can only be brought down by experienced computer users

TECHNIC

DATA

Manufacturer	TeVii Technology Ltd. Taiwan
Email Sales	patricia@TeVii.com
Email Support	peterson@TeVii.com
Model	S470
Function	PCI-E card for TV reception on the PC in SDTV and HDTV
Channel memory	unlimited
Satellites	177
Symbol rates	2-45 Ms/sec.
SCPC compatible	yes (tested > 2.2 MS/s)
USALS	yes
DiSEqC	1.0, 1.1, 1.2, 1.3
EPG	yes
C/Ku-Band compatible	yes