

Slingbox

Links Your Satellite Receiver to the Internet



Virtual Remote Control

is limited by its transmission footprint on the ground. This simply means that even though you might be able to theoretically receive a satellite, it could happen that the signal is so weak where you are that it would take an extremely large antenna to get a workable signal (if at all). Most likely, you'd end up in a location that makes it impossible to receive your home satellites.

Cable system operators and digital terrestrial distribution also wouldn't work since they can typically only deal with local

Imagine that your boss sends you away on an overseas business trip for several months – in a world that gets closer and closer every day, this scenario is not exactly unrealistic. Naturally, while you're away, you'd like to continue watching your favorite TV channels from home. But it won't take long for the disappointment to set in; even though our world is getting smaller and smaller, this is not really true for TV reception.

The fact remains that because of your geographical position not all satellites from around the world can be received; more precisely, a relatively small range of about 140° are above the horizon.

Add to this the fact that a signal from a satellite is

programming due to cost and space limitations. Only a few years ago, reception of your home TV channels in another part of the world was a problem that had no solution. But thanks to ever faster Internet connections and ever higher bandwidths, a new TV reception possibility has slowly but surely established itself: IPTV.

Many of you have probably already heard of the term IPTV; it has to do with a technology whereby a TV channel in digital form from a service provider is delivered to your home via the Internet and routed to either your PC or to a specialized set-top-box for your TV. In this form, it becomes possible to watch not only regular TV channels, but also feature films, sporting events, etc., for a fee.

And as long as we're on the subject of money, access to this form of TV is not exactly cheap and is usually restricted to your Internet providers own network and not, for example, in a hotel room while on vacation or if you're away on a business trip.

Sling Media began developing their own IPTV system several years ago exactly for

these applications that anyone can easily install at home. The Slingbox takes care of encoding and compressing the input signal from almost any source and placing it in an audio/video stream that can be carried via a network or the Internet without any problems.

At first we were a little skeptical if such a system would even work, especially via the Internet. Naturally, we were quite anxious to get started when the delivery truck showed up with the Slingbox package.

At first glance, the box did not appear all that spectacular; the front of the box sported nothing more than two LEDs that showed its current status. The right LED indicated the box's power status while the left LED showed an active network connection.

On the rear panel you will find in addition to audio/video and S-video outputs, also a VHF/UHF tuner connection (our test box used "F" connectors) as well as a port for an external IR receiver and naturally the network interface RJ45 jack. Power is supplied via the included adapter; the box is happy with 6V.



Slingplayer



The Slingbox converts any TV signal into an

IPTV stream



Slingbox connections

are, there is one problem that even you cannot solve: only one signal can be connected at any one time.

The Sling Media designers didn't want to accept that so easily so they came up with a rather clever solution to this problem: the included IR transmitter. It is simply placed in front of the reception diode of the desired A/V box and then connected to the SlingBox.

A virtual remote control can be displayed via the Sling Box software and includes almost all of the same functions of the real remote control. If, for example, you decide to push the P+ button to switch channels, the Slingplayer takes that command and routes it to the SlingBox via the network which then sends it to the IR transmitter on the particular A/V box. The remote control codes from a large variety of entertainment electronic equipment were already preprogrammed so we had no trouble operating our satellite receiver from a distance.

The Slingbox needs about five seconds to convert and encode the input signal. As a result, the actual A/V signal reaches the Slingplayer with only a minor delay.

Even though these five seconds, when compared to professional equipment that doesn't really operate that much faster, is actually quite good, it is unfortunately a little too slow to operate the units from afar. For this reason Sling Media implemented a so-called Control Mode that

Overall, the workmanship of the Slingbox left us with a very positive impression. All necessary connector cables as well as a detailed user manual and CD with the required software are included in the package.

Everyday Use

The connection and initial turn on of the Slingbox is self-explanatory. All you need is a free network connection on your router and a connection to an A/V box. Before actually using the box over the Internet, the manufacturer suggests first performing a thorough test using your internal network; we thought this was a good idea.

Contrary to other streaming services, Sling Media developed their own Slingplayer for playback of their streams. This is actually necessary in order to take full advantage of all the functions of the box. It also provides an extra measure of security.

After installing the software, the player immediately recognizes all the Slingboxes connected on the local network. Yes, it is possible to operate multiple boxes inde-

pendently from each other. To prevent unauthorized access to the Slingbox, the next step involves setting up an administrator and user password. If a friend wants to access your box via the Internet, you simply need to give him the user password to limit his access to A/V streams. The administrator password would provide access to all of the boxes settings via the Internet.

care of, the Slingbox then asks you to configure all the different input sources. This includes activating the A/V and S-Video inputs that don't require any additional configuration as well as controlling and starting a scan with the help of the integrated tuner. Once everything is correctly set up, the first attempt at streaming can begin.

We used a standard digital satellite receiver with the Slingbox and connected everything to our relatively large internal network. The Slingplayer was started on one of our office PCs and just one mouse-click later we were able to see the A/V signal from the satellite receiver, and all in exceptional video quality.

In our tests we were able to measure datarates of roughly 300 kbps for video

with hardly any motion and 1700 kbps for video with extensive motion.

When used with a local network, these transmission rates were not a problem, that is, we were unable to detect any video breakup or any other type of interference during our tests.

Just a few mouse clicks is all that is needed to switch between the different signal inputs (tuner, A/V input or S-Video input). As practical as these three inputs



A/V Configuration



Channel Scan



Slingplayer Network Settings

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Once these settings have been taken

reduces the video processing to an absolute minimum.

This makes it not as much fun watching a normal TV but the box does typically handle the stream in less than a second and thus makes it much easier to use from afar since the attached receiver reacts almost simultaneously with receiving the IR command.

After such a successful test with our

local office network, we naturally wanted to see how well signals were transmitted via the Internet. For this task we asked our TELE-satellite colleague in the USA to install the Slingplayer on his PC. Back here all we had to do was to configure the Slingbox with just a couple of mouseclicks to accept signals from outside of our network and we also had to identify what port on our router the Slingbox would use so that our fun would not be interrupted by a firewall.

In only just a few minutes we got the good news! Our colleague in the USA was watching German TV in exceptionally good quality and from what we could see on our satellite receiver, he was actually having quite a bit of fun surfing through all the different German channels. This all took place from across the Atlantic Ocean via the Internet and also with the help of the attached IR transmitter on the receiver.

Since our office has an always-on high-speed Internet connection, we also wanted to hook up the Slingbox to a DSL connection to see if it was possible to deliver decent audio and video through this type of broadband connection.

We disconnected the box from our office setup and brought it to the home of one of our employees. We again needed the

assistance of our colleague in the USA who was once again happy to report on the excellent picture quality he was enjoying – but at a price. The DSL connection could not be used for any other simultaneous activity. A typical DSL connection does not offer the same upload speed as it does download speed. It must also be taken into account that a fully loaded upload will also put the brakes on download speed.

At the moment the developers are diligently working on new features and improvements for the Slingbox; as soon as new software becomes available, it can be downloaded into the box via the Internet.

A recent update included the ability to transfer Slingbox A/V content directly to a UMTS compatible mobile phone. Unfortunately, this service does not function as yet all over the world and is currently limited to Great Britain.

It is only just a matter of time before mobile telephone service providers around the world make this feature available to everyone.

Conclusion

Overall the Slingbox functioned very well and can be used almost anywhere. A company or an office, for example, can take the signal from a security camera and

distribute it to dozens of their employees PC's. Just think of all that cabling that would no longer be needed!

The box can be used just as easily to watch TV from any place around the world; you can even control the receiver on the other side of the world via the Internet! The bandwidth available through a typical DSL connection would even be enough although simultaneous surfing of the Internet would only be recommended if you truly have the proper Internet connection.

