

AB 3DBox Converter

- Converts normal 2D TVs into 3D monitors
- All 2D channels are presented in 3D
- Simple and intuitive operation
- Can process all 3D variants
- Perfect lip synchronization



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The Magic Box

A Box That Magically Turns Two Dimensions into Three Dimensions

Do you have to buy a new 3D TV for 3D programming? Which channels are already available in 3D and what possibilities are there for older programs not recorded in 3D?

Since there aren't that many real 3D films or 2D to 3D converted films available in the first place, it could be that you have no interest in these questions. But what would you say if there was a technical solution that would let you

watch all 2D programming in 3D right now and, on top of that, with your current normal TV?

AB-COM, a company headquartered in Topolcany in Slovakia, recognized the 3D trend some time ago and the result is a 12.5 x 9 x 3 cm box called AB 3DBox Converter that found its way to our TELE-satellite testing labs.

This converter box comes with a four-digit segment

display on the front panel that indicates its current operational status along with a variety of necessary connectors on the rear panel. There you'll find two HDMI signal inputs, an HDMI signal output, a jack for the external 5V power supply as well as a connector for the included infrared receiver.

This separate infrared receiver makes it possible to place the converter box inconspicuously somewhere

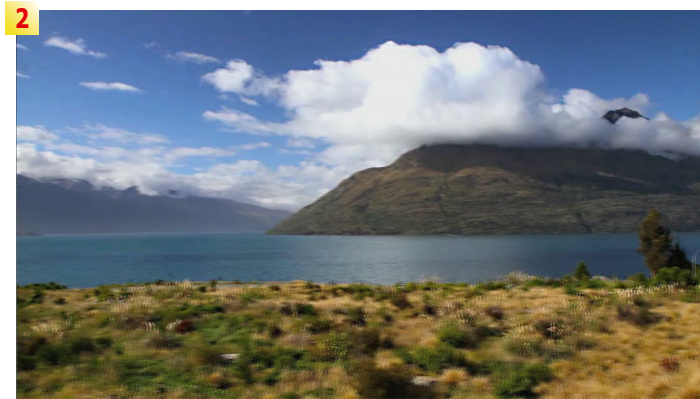
in your TV cabinet or hide it behind your receiver or TV.

The remote control supplied by the manufacturer does the job but it seems to be lacking some ergonomic characteristics. It has a total of 16 buttons that among other things let you switch back and forth between the two HDMI inputs as well as make it easy to choose the desired 3D mode. Even a Standby button found its place on the remote control.

What the remote control lacks in looks is made up for by the pocket guide that was printed directly on the remote control so that you can actually use the converter box without first having to refer to the information pamphlet that came with the package.

The AB 3DBox can operate in five different operational modes depending on if a 2D or 3D TV is used. Yes, you read that correctly, the AB 3DBox Converter can even supply 3D signals to your older 2D TV set, although, whatever type of TV you end up using,





1. 3D display in side-by-side mode for a 3D compatible TV
2. 3D display in line-by-line mode for a 3D compatible TV
3. The original picture via HDMI

it must have at least one HDMI input. In each operational mode, the box takes the HDMI video signal and manipulates it such that a 3D effect is the result.

Thanks to the HDMI input with HDCP support, all content delivered via these interfaces, whether it comes from a satellite receiver, cable box, DVD player or Blue Ray player, can be presented three-dimensionally.

If you already have a 3D TV, it was supplied with the matching glasses (either

polarized glasses or shutter lens glasses). The only thing you need to start enjoying the 3D experience is the processed 3D content.

The converter box delivers 3D content in two modes: Side-by-Side for 3D TVs that used shutter lens glasses and line-by-line for those 3D TVs that use polarized glasses.

As you can see by the pictures included with this test report, the converter box in side-by-side mode splits the video image into two halves and thus produces



4. 3D Signal (side-by-side) via TURKSAT 42° east
5. Conversion of a 3D side-by-side signal into 2D
6. 3D display of a 3D side-by-side signal as an anaglyphic picture for 2D TVs

a picture for the left and right eyes. In line-by-line mode the two split images are not as easy to recognize; the reduced sharpness of the image shows that the converter box is doing its work.

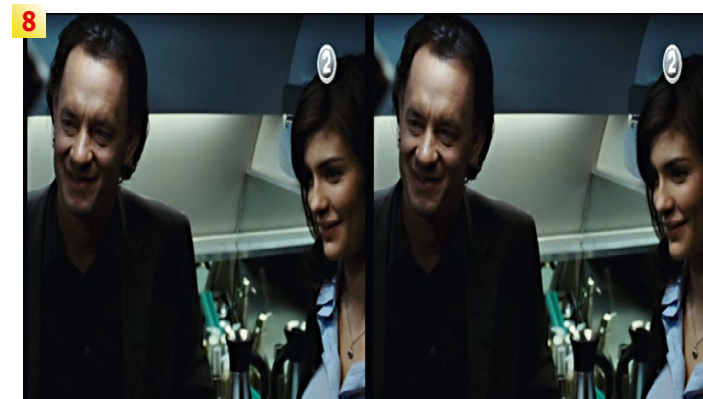
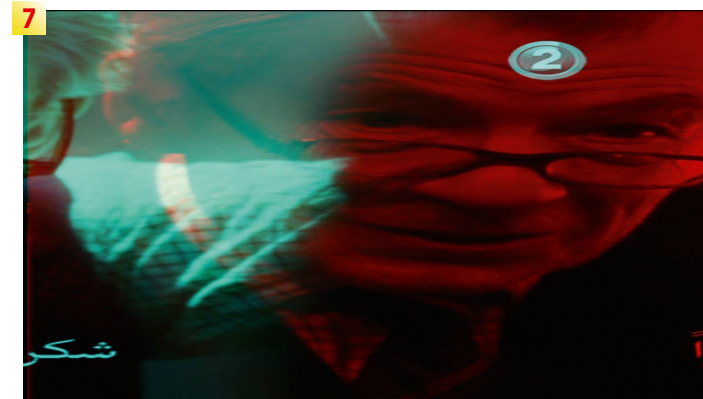
In our tests using a 42" LG 3D TV, we were very delighted with the results. An HD signal received from a satellite receiver that was passed through the converter box remained razor sharp and was perfectly expanded into 3D.

The AB 3DBox comes with

three predefined modes (soft, normal, strong) that adjust the strength of the 3D effect.

You can further customize the 3D effect (viewing angle and depth) by using the corresponding +/- buttons on the remote control. These individual customized settings can be stored to four programmable buttons so that they can be quickly recalled at a later time with the push of just one button.

Since our TV already has an integrated 3D convert-



7. 3D display of an anaglyphic picture for 2D TVs
8. 3D display in side-by-side mode for 3D compatible TVs
9. The original picture via HDMI

er, we naturally wanted to compare this to the capabilities of the AB 3DBox.

The AB 3DBox clearly won this race; this result was confirmed by a number of visitors to our test center that we invited to take part in our tests. According to our testers, the picture from the converter box was more three-dimensional with the overall 3D distribution across the entire picture highly rated by these testers.

The internal converter of our 3D TV simply could not

keep up. Even the individual customized settings capabilities of the AB 3DBox delighted our testers.

So, how does it look when the AB 3DBox is connected to a normal 2D TV? If you just bought a new LCD or plasma 2D TV, you're certainly not going to go out and buy a new 3D compatible TV a few months later.

The AB 3DBox was also designed with this situation in mind; in fact, this is probably where the converter box will be used the most. This is the simplest

way to convert a 2D TV into a 3D TV.

Two techniques are used in 3D TVs that are not compatible in 2D TVs: 3D with shutter lens glasses and 3D with polarized glasses. In the case of 3D with shutter lens glasses, the synchronization interface between TV and glasses is missing in 2D TVs and for 3D with polarized glasses a special coating is needed on the TV screen.

Aside from that, both methods require that the refresh rate of a 3D compatible TV be twice as high as a normal 2D TV, after all, both eyes have to be supplied with two separate images.

At the same time, the image itself needs to be three times brighter to make up for the attenuation of light that occurs through the glasses.

So, what can be used to create a three-dimensional picture on a 2D TV? The alternative is the anaglyphic presentation of images with the help of red/cyan glasses.

And it's exactly these glasses that are included with the AB 3DBox Converter so that the user can get right to using his 2D TV to watch 3D.

The box provides three different modes for 2D TVs:

- The conversion of 2D content into anaglyphic video where the red/cyan glasses would be used.
- The conversion of 3D content in side-by-side mode into anaglyphic video where again the red/cyan glasses would be used.
- The capability to convert 3D content in side-by-side mode into 2D so that these programs can

be viewed without glasses, but of course only in 2D.

The third variant, the conversion of side-by-side 3D content into 2D, functioned without any problems. But it doesn't make much sense since today there are hardly any TV programs available that can only be viewed in 3D. On the other hand, if this should ever occur, then it's nice to know that this setting is available with the AB 3DBox.

Obviously, the other two variants are far more interesting. The conversion of 2D content into anaglyphic images as well as the conversion of 3D side-by-side content into anaglyphic images works surprisingly well although in terms of quality it's not as awe-inspiring as the 3D effect created by polarized or shutter lens glasses.

For one thing, there's a noticeable color shift that can be seen through the red/cyan glasses, and secondly, the separation of the two images is technically not exactly squeaky clean resulting in the appearance of light shadow images. Even so, the 3D effect is remarkable considering you don't need anything more than a converter box and the red/cyan glasses to create 3D images using 2D equipment.

The visitors to our test center that we asked to take part in our tests were mostly all of the opinion that anaglyphic 3D TV was a remarkable experience and that it provided an interesting short-term alternative to 3D via polarized or shutter lens glasses. They all agreed though that if you're going to spend longer periods of time in front of the TV the latter two modes would be better.

During the course of our



tests, we supplied the AB 3DBox Converter with signals with a resolution of up to 1080p; the box had no trouble converting them.

Even the HDCP copy protection did not get in the way of things; all content was presented interference-free.

We were also quite impressed with the converter's lip synchronization. The conversion of the video signal inevitably results in a time delay that would be very noticeable without lip synchronization. The box eliminates this time delay so perfectly that it is totally imperceptible.

The converter's Bypass mode also turned out to be quite useful. It takes the box out of operation and allows the original HDMI signal to pass through. In this way the AB 3DBox acts as a switching point for two HDMI signal sources.

The 3D conversion of the AB 3DBox when used in conjunction with a 3D compatible TV worked the best. The experience was quite overwhelming. Thanks to the numerous individual

settings capabilities, the user can set up the converter box exactly the way they need it. And thanks to the box itself, 3D has become a standard that after only a short period of time you won't want to be without.

When used with normal 2D TVs, the AB 3DBox is an extremely cost-effective way to experience the world of 3D and all of its wonder.

And finally, a quick note: the better the quality of the original program, the better the quality of the 3D effect. If original HD programming is piped through the converter box, you'll get the best possible 3D results.

But the lesser the quality of the original program, the less the converter box can do to take advantage of its 3D capabilities.

The bottom line: the enjoyment of 3D content will depend a lot on the quality of the originally transmitted signal.

Expert Opinion

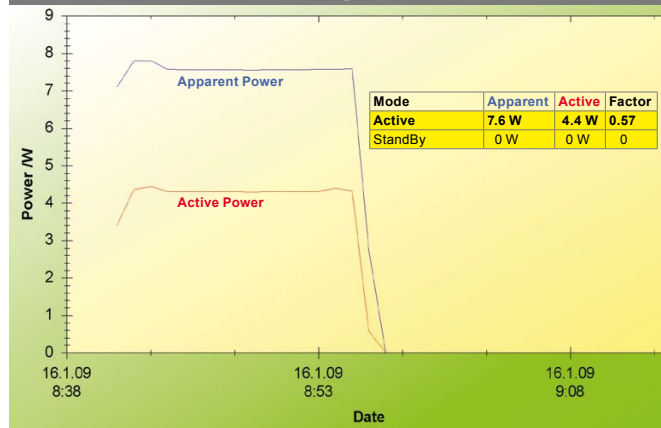
Technically perfect conversion of 2D into 3D
The box comes with all the variations that are technically possible
Individually programmable
Compatible with 2D as well as 3D TVs



Thomas Haring
TELE-satellite
Test Center
Austria

The extent of the 3D experience is strongly related to the quality of the original TV program.

ENERGY DIAGRAM



The first 15 Minutes: Active Operation
The second 15 Minutes: StandBy

TECHNICAL DATA

Manufacturer	AB-COM s.r.o., M. Razusa 4795/34, 955 01 Topolcany, Slovak Republic
Email sales	pblaho@abcomeu.com
Internet	www.abcomeu.com
Model	AB 3DBox Converter
Function	Converts 2D content to 3D content for use on 2D and 3D TVs
3D Side by Side	yes
3D Line by Line	yes
Convert 3D Side by Side to 2D	yes
Convert 3D Side by Side to anaglyphic 3D	yes
HDMI Input	2
HDCP	yes
Power	5V, 1.5A
Dimensions	125 x 90 x 30 mm

