

Introduction

This project is slightly different from the others you can find on this website as it is only partially related to audio. I decided to build a Home Theater PC using off-the-shelf components. After some investigation I decided to use XBMC as media center software based on a Ubuntu 11.04 operating system. I used mostly computer hardware that I already had lying around, but as the system is meant for the living room a nice case and display were needed (improved wife-acceptance-factor). This article will be work-in-progress, so please visit later to follow my progress. But first let's list the components.

Cabinet

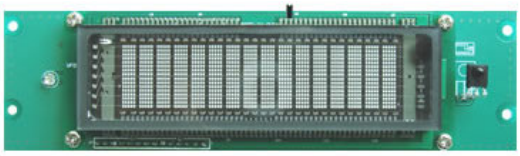
It turned out to be quite difficult to find a suitable case that was looking good, not too deep (less than 40cm), not too high (less than 14 cm) and has space for both a 5.25" DVD drive and a VFD display. I found one beautiful case in the Origin AE S10V, but the price (over 300 euro) was just too high. Being a DIY audio builder the cases of Hi-Fi 2000 had already grabbed my attention and their CD21 case was about perfect for the job. Also the price of about 100 euro (excl VAT) was quite reasonable.

Below are some photographs of the case, I ordered the one with 10mm black aluminium front plate.



VFD display and IR receiver

A HTPC is not


complete without a display and infrared receiver. Behind the plexiglass of the case is room to mount a display. A VFD display looks very professional and luckily I found a second-hand OrigenAE VF210 module, which has Linux drivers through Irtrans. This module consists of a large 2x16 character VFD display with an included infrared receiver. Cables are included to be able to power the machine from the couch using your favourite remote control (buttons on any remote control can be learned using Irtrans).

PC hardware

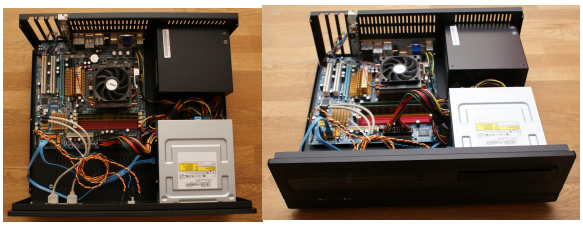
This is the list of used PC hardware:

- Gigabyte GA-MA78GM-S2H mainboard with integrated ATI Radeon HD3200 graphics adapter
- AMD Phenom 9850 quad-core processor
- 2x2 Gb DDR2 memory
- Maxtor 200Gb harddisk
- DVD writer
- BeQuiet PurePower 350W power supply

Building

First mounting

Below are some photos after the main components were mounted.

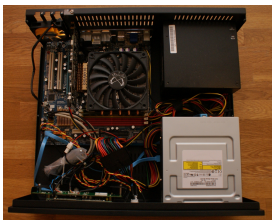


Modifications

The HTPC worked well, but for the living room it turned out to be more noisy than acceptable, therefore I made some modifications:

- The standard CPU fan becomes very noisy when the system is loaded. I replaced it with a Scythe Big Shuriken 2, which uses a 120mm fan and can be operated between 500 (9 dBA) and 2000rpm (33 dBA). As the HTPC is not stressed much, fan speed never exceeds 1000 rpm and can not be heard in a quite room.
- Added 70 mm case(16 dBA @ 2000 rpm) and 80 mm rpm controlled fan to let air flow to side and rear out of the cabinet.
- Added Asus Xonar DX sound card, which improves overall sound quality a lot compared to the onboard sound card (especially after one channel was blown up for some reason)

Picture after the modification:



Software

TODO