# CPT110 – Introduction to Information Technology Assignment 1

# Glenn Chamberlain S3356661 15/01/2012

## The Case

Selected Case – Cooler Master Elite 341 ($70).

Dave’s requirements for a case called for a sleek black case that was relatively plain in appearance and not overly large. Additionally the case needed to be able to accommodate future expansion to Dave’s system without necessitating a replacement purchase.

The Cooler Master Elite is a straight forward black case which supports Motherboards which conform to the Micro-ATX sizing standard [1].

In terms of size the case comes in at 18.5cm width, 36.5cm high and 40cm depth. This compares favourably to other cases available from Brickworkz Computer Supplies such as the Cooler Master Centurion V II (20.2cm x 44cm x 48.5cm) [2] or the ThermalTake Armor+MX (53.5 x 24 x 49) [3].  
Whilst smaller cases were available the Elite 341 also supported Dave’s request that it cater for future expansion with space to hold up to 4 3.5” drives.

## The PSU

Selected PSU – Antec VP-550P 550W Strictly PSU ($69) [4].

Unfortunately the selection of the Cooler Master Elite 341 poses one slight issue for Dave.  
The Cooler Master Elite 341 does not come bundled with a Power Supply Unit and Brickworkz Computer Supplies does not appear to stock stand alone PSU units.

I have provided Dave with a link to an Antec PSU from a website I have previously used for purchasing individual components.  
This Antec PSU will provide more than enough power for Dave’s final build and will be sufficient for future expansion.

## Processor

Selected Processor – Phenom II X6 1090T ($150).

Dave’s request for his Processor was to get the best bang for his buck in the sub $300 price range.  
The table below demonstrates the AMD Phenom II X6 1090T leads the pack in a price/performance standpoint when using the CPUMarks benchmark standard [5].

Dave expects the most complex task that he will be required to use the PC for is to encode digital video, the Phenom II X6 1090T is very capable of this task being one of the better processors on the market at encoding digital video [6].

Whilst idle the Phenom II X6 1090T consumes approximately 83 watts of power, whilst under load this increases to approximately 229 watts [9].

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| --- | --- | --- | --- | --- |
| **CPU** | **Cost** | **CPUMarks** | **CPUMark/$ Ratio** | **Notes** |
| **Intel** | | | | |
| Core i3 2130 | $147.00 | 4461 | 30.35 |  |
| Core i5 2500 | $220.00 | 6650 | 30.23 |  |
| Core i7 2700K | $368.00 | 10300 | 27.99 | Too expensive |
| Core i7 960 | $314.00 | 6671 | 21.25 | Too expensive |
| Pentium G850 | $90.00 | 2756 | 30.62 |  |
| **AMD** | | | | |
| A6 3500 | $88.00 | 3015 | 34.26 |  |
| FX-6100 | $180.00 | 6060 | 33.67 |  |
| FX-8120 Oct Core | $235.00 | 7243 | 30.82 |  |
| Phenom II X4 960T Black Edition | $138.00 | 4040 | 29.28 |  |
| Phenom II X6 1090T | $150.00 | 6060 | 40.4 |  |

## Motherboard

Selected Motherboard – Gigabyte GA-78LMT-S2P ($66).

For the Motherboard Dave’s request is simple something that works and if possible has some future expansion possibility.

The final choice came down to the Gigabyte GA-78LMT-S2P and the Gigabyte-GA-970A-D3, both of which support the AM3 socket of our chosen Processor [7], [8].

The below table demonstrates some of their basic attributes, as can be identified they share the same amount of SATA connectors. The only place in which they vary which has an impact on Dave is the number of Memory slots.  
Whilst it would be preferable to have the larger capacity of memory slots available in the D3 at the end of the day the decision was simply based around price. For Dave’s purposes I simply could not justify spending over triple the amount for (effectively) only an additional 2 memory slots.

I was unable to locate published power usage figures for this motherboard, however what I did locate was a listing of 6 of the slightly older AM2 socket with the minimum used being 34 watts and the maximum being 43 watts [10].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Motherboard** | **CPU Manu** | **SATA Conn** | **Memory Slots** | **Notes** |
| Asus P8H61-USB3-V3 | Intel | 4 | 2 | Wrong CPU Support |
| Gigabyte GA-78LMT-S2P | AMD | 6 | 2 |  |
| Gigabyte GA-970A-D3 | AMD | 6 | 4 |  |
| Gigabyte GA-A75M-UD2H | AMD | 5 | 4 | Incompatible Socket |
| Gigabyte GA-Z68XP-UD4 | Intel | 6 | 4 |  |

## Memory

Selected Memory – Kingston 8GB 1600HX - $75

Again Dave’s requirement here is simple he just wants something that works.

The Kingston 8GB1600HX is a single 8GB stick of DDR 3 RAM. We have two available slots for DDR 3 RAM included on our selected motherboard.

For the recommendation I have taken into account that our eventual Motherboard only contains 2 Memory Slots. As such I have selected the larger 8GB stick of ram to allow him one free slot for any future expansion which he may like to do.

# Bibliography

[1] Elite 341 – Cooler Master, viewed January 15, 2012 (<http://www.coolermaster.com.au/product.php?product_id=5426>)  
[2] Centurion 5 II – Cooler Master, viewed January 15, 2012 (<http://www.coolermaster.com.au/product.php?product_id=6640>)  
[3] Thermaltakeusa >> Chassis >> Armor Series >> Armor+ >> Armor+ MX: Armor+ MX VH8000BWS, viewed January 15, 2012 (<http://www.thermaltakeusa.com/product.aspx?s=1226&id=1771#Tab1>)  
[4] Umart Online, viewed January 15, 2012 (<http://umart.com.au/pro/products_listnew.phtml?id=10&id2=140&bid=7&sid=82520>)  
[5] Passmark CPU Lookup, viewed January 15, 2012 (<http://www.cpubenchmark.net/cpu_lookup.php?cpu=AMD+Phenom+II+X6+1090T>)  
[6] AnandTech – AMD’s Six-Core Pehnom IIX6 1090T & 1055T Reviewed, viewed January 15, 2012 (<http://www.anandtech.com/show/3674/amds-sixcore-phenom-ii-x6-1090t-1055t-reviewed/6>)  
[7] Gigabyte – Motherboard – Socket AM3+ - GA-78LMT-S2P (rev. 3.1), viewed January 15, 2012 (<http://www.gigabyte.com/products/product-page.aspx?pid=3833#sp>)  
[8] Gigabyte – Motherboard – Socket AM3+ - GA-970A-D3 (rev. 1.x), viewed January 15,2012 (<http://www.gigabyte.com/products/product-page.aspx?pid=3908#sp>)  
[9] Power Consumption : AMD Phenom II X6 1090T and 890FX Platform Review: Hello, Leo, viewed January 15, 2012 (<http://www.tomshardware.com/reviews/amd-phenom-ii-x6-1090t-890fx,2613-13.html>)  
[10] AnandTech – Debunking Power Supply Myths, viewed January 15, 2012 (<http://www.anandtech.com/show/2624>)