

M32C87 external memory array.



Tisho 20 posts since

Oct 28, 2008

Hello,

How to use "unsigned long" in external RAM array?

here is the example code:

```
#pragma ADDRESS ext_mem 200000H // External RAM start address
```

```
far unsigned long ext_mem;
```

```
void main (void) {
```

```
ext_mem = 0x12345678;
```

```
}
```

After check address 200000H i saw strange results in address 200000H has correct results(1234H), but in address 200001H the results is diferent than 5678H.

External ram is 16 bit wide, NC308 has not give errors.

What i wrong? 🤔



DJ Delorie 307 posts since

Mar 12, 2009 1. Re: **M32C87 external memory array.** Jul 30, 2009 11:01 AM

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A couple of observations...

First off, you need to use `0x12345678L` (note the L) to create a "long" constant; otherwise you may end up accidentally truncating it.

Second, the m32c is little-endian, so memory contents should be as follows (all hex):

200000 78

200001 56

200002 34

200004 12

If you look at them as 16-bit locations:

200000 5678

200002 1234

If you're not getting these values, it's time to check the hardware. For 16-bit memory, make sure you did NOT use the A0 address line. Also, double check your timing. Try this program (assuming you have a suitable printf), first WITHOUT the pragma (to see how it should work), then WITH (to test the memory connections):

```
#include <stdio.h>
```

```
unsigned long x;
```

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```
main()
{
    unsigned char *cp;
    int i;

    x = 0x12345678;
    cp = (unsigned char *)&x;
    for (i=0; i<4; i++)
        printf(" %02x", cp[i]);
    printf("\n");
}
```



[Tisho](#) 20 posts since

Oct 28, 2008 2. Re: **M32C87 external memory array.** Jul 31, 2009 4:31 AM

Thanks for reply. 😊

I solve problem. In sect308.inc i change a far RAM data area address and declare variable in that way:

```
far unsigned long x;
```

This work fine. 😊