

FLASH access/FMD question.

Source:

<http://www.tech-archive.net/Archive/WindowsCE/microsoft.public.windowsce.platbuilder/2004-09/0321.html>

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Hi,

We have a Renesas SH7727 CPU on a custom SBC. It was derived from a MobyTel platform with a few modifications. The reset vector starts executing code from H'00000000; this is the FLASH. The bootloader determines if it is executing from FLASH or RAM; if FLASH, copies itself to RAM then jumps to RAM and boots --- nothing unusual here.

>From our application, we want to write a single block at the end of the FLASH, 0x3FeFFF to 0x3Fffff and read it back. We don't need BinFS or a full file system overlay; we just need one block for some statistics tracking.

We have code to access the FLASH. It does things like enable chip, write, disable chip. However, any memory access (from an application or driver) it makes fails with 0xC0000005 access violation.

I've researched this on the NG, PB Help, and the SH7727 hardware manual and have a couple of questions.

On the NG, the suggestion for accessing FLASH was to use HalTranskateBusAddress/MmMapIoSpace or TransBusAddrToVirtual. This takes a bus number. I'm guessing Internal or ProcessorInternal. What is the difference?

Since the boot loader can access the FLASH and our apps and drivers can't, I'm wondering if there is something that happens after the boot loader and before the OS is up to change access to the FLASH. CPU privilege, MMU, or something like that.

Here's the config.bib, do I need to reserve memory for accessing the FLASH device in "raw" mode?

Thanks,
Nick.

MEMORY
IF IMGFLASH !

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```
NK 8D000000 00280000 RAMIMAGE
RAM 8D280000 00570000 RAM
ENDIF
```

```
IF IMGFLASH
IF IMGEBOOT
NK 80080000 01000000 RAMIMAGE
ENDIF
IF IMGEBOOT !
NK 80000000 03f00000 RAMIMAGE
ENDIF
RAM 8d000000 007fffff RAM
ENDIF
```

```
; Common RAM areas
DISPLAY 8c008000 00013000 RESERVED
EDBG 8c030000 00020000 RESERVED
DRV_GLB 8c150000 00010000 RESERVED
FRAMEBUF 8C300000 00096000 RESERVED
```

CONFIG

```
IF IMGFLASH !
AUTOSIZE=ON
ENDIF
```

```
; @CESYSGEN IF !NK_NKNOCOMP
COMPRESSION=ON
; @CESYSGEN ENDIF !NK_NKNOCOMP
; @CESYSGEN IF NK_NKNOCOMP
COMPRESSION=OFF
; @CESYSGEN ENDIF NK_NKNOCOMP
```

```
IF IMGPROFILER
PROFILE=ON
ENDIF
IF IMGPROFILER !
PROFILE=OFF
ENDIF
```

```
KERNELFIXUPS=ON
```

```
;
; ROMFLAGS is a bitmask of options for the kernel
; ROMFLAGS 0x0001 Disallow Paging
; ROMFLAGS 0x0002 Not all KMode
; ROMFLAGS 0x0010 Trust Module only
;
IF IMGTRUSTROMONLY
IF IMGNOTALLKMODE
ROMFLAGS=12
```

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```
ENDIF
IF IMGNOTALLKMODE !
    ROMFLAGS=10
ENDIF
ENDIF

IF IMGTRUSTROMONLY !
    IF IMGNOTALLKMODE
        ROMFLAGS=2
    ENDIF
    IF IMGNOTALLKMODE !
        ROMFLAGS=0
    ENDIF
ENDIF

IF IMGFLASH !
IF STORE_RAM_TO_FLASH
ROMOFFSET=F3F1F000
BOOTJUMP=A0000000
ENDIF
ENDIF
```