ROM-monitor settings and information

Kickstart Card settings
The jumper JP4 must be mounted for the ROM-monitor communication to work.

Embedded Workbench project settings

- You need a specially adapted linker command file for use with the ROM-monitor, called LPC2106_ROMmonitor.xcl. It is selected by default by the current project in the IAR Embedded Workbench.
- The serial port transfer rate for the ROM-monitor must be 9600 baud. To set it, choose Project>Options and click the IAR ROM-monitor tab in the C-SPY Debugger category.

ROM-monitor hardware resource usage
The ROM-monitor uses the following hardware resources of the LPC210x microcontroller:

- UART0
- VIC vector 0
- 4 Kbytes Flash ROM memory in the address range 0x0-0x00000FFF
- 1 Kbyte RAM memory in the address range 0x40000000-0x400003FF.

Your application must not use any of the above resources. This means that:

- all UART0 registers must be untouched by user code.
- pclk must be kept at the XTAL frequency divided by 4. This is the default after reset. If the PLL configuration and VPBDIV is altered this ratio must be maintained.
- PINSEL0: Bits 0:3 must be set to 0x5.
- MEMMAP should always be 0x1. (Exception vectors at start of Flash, address 0x0.) Note that the exception vectors for the user code are remapped by the ROM-monitor to the start of user RAM.
- your application must never clear UART0 interrupt enable bit (bit 6 in VICIntEnable). In other words, you may never write a 1 to bit 6 in VICIntEnClr. (Writing a 0 to bit 6 in VICIntEnable is of course allowed, that doesn't change the interrupt enable status.)
- if IRQs are disabled for a long time (seconds) you will not be able to stop execution of your application by clicking the Stop button in C-SPY during that time. If you click Stop (or choose Debug>Stop Debugging) when IRQs have been disabled for seconds or more, the ROM-monitor communication with C-SPY might fail.
- you must not write to ROM-monitor RAM in the range 0x40000000-0x400003FF.
- you must not erase/write to ROM-monitor Flash in the range 0x0-0x00000FFF.

User memory

User Flash and breakpoints
User Flash starts at 0x00001000. It is not possible to set breakpoints in Flash memory; thus user code in Flash cannot be debugged by the ROM-monitor.

User RAM and exception vectors
User RAM starts at 0x40000400. The ROM-monitor remaps the start of the user exception vectors to the start of the user RAM.
Undefined exceptions
Because undefined exceptions are used for handling breakpoints, it is currently not possible to set breakpoints or step in an undefined exception handler.

Troubleshooting
If the ROM-monitor does not work as intended, make sure that your application isn’t using any of the hardware resources described under ROM-monitor hardware resource usage.

If you are unable to find the cause of a problem, try resetting the Kickstart Card using the reset button on the card. Then restart the C-SPY Debugger in the Embedded Workbench IDE. You can also try disconnecting and reconnecting the power to the Kickstart Card, pressing the reset button and then restarting C-SPY.