

Program DRAGON-12 with HCS12 Serial Monitor

(a simplified sample of using
Wytec DragonBDM)



Given:

Wytec Company **Dragon-12** HCS12 evaluation board loaded with I/O devices.

Requirement:

Use Wytec **DragonBDM** in POD mode and program Dragon-12 with HCS12 Serial Monitor. So it can be use to download and test drive codes by using uBUG12 serial monitor.

PROCEDURES:

1. Use MiniIDE as terminal program. (Note: ASMIDE can also be used)
2. Hook DragonBDM as host (POD mode) and Dragon12 board asTarget CPU
3. Power up Dragon -12, will see,

Can't Communicate With Target CPU

- 1) Set Target Speed (48000 KHz)
 - 2) Reset Target
 - 3) Reattempt Communication
 - 4) Erase & Unsecure
 - 5) Enter BDM debugger
- ? 1

(for Dragon-12)

Enter Target Crystal Frequency (kHz): 4000

- 1) Set Target Speed (4000 KHz)
 - 2) Reset Target
 - 3) Reattempt Communication
 - 4) Erase & Unsecure
 - 5) Enter BDM debugger
- ? 2

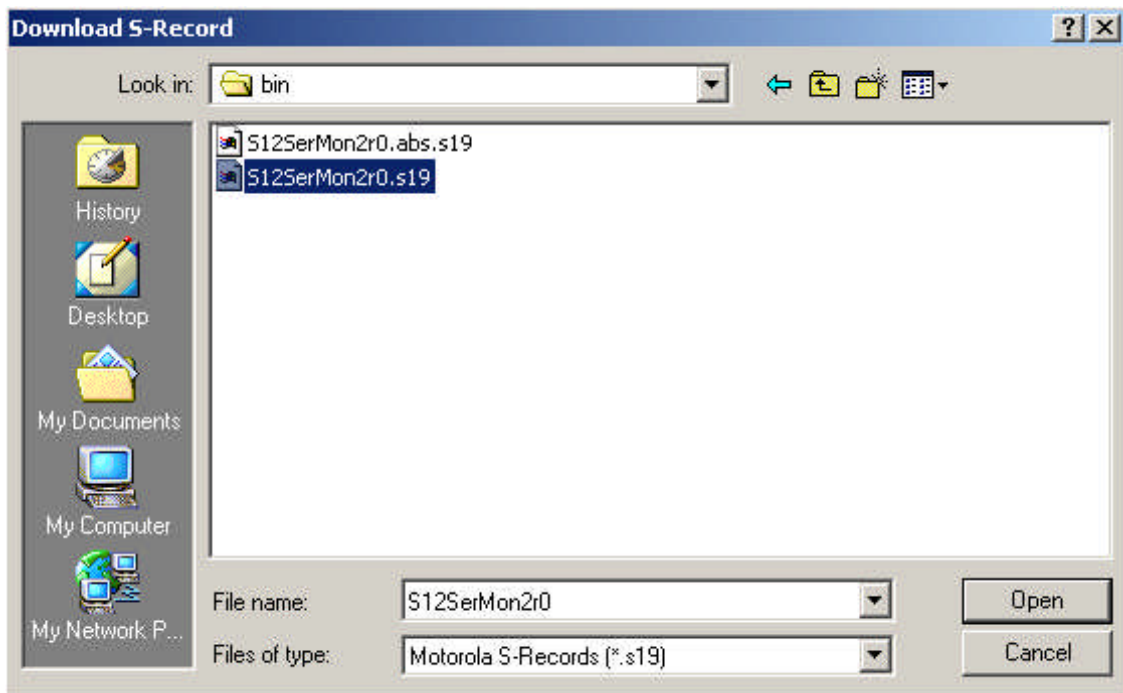
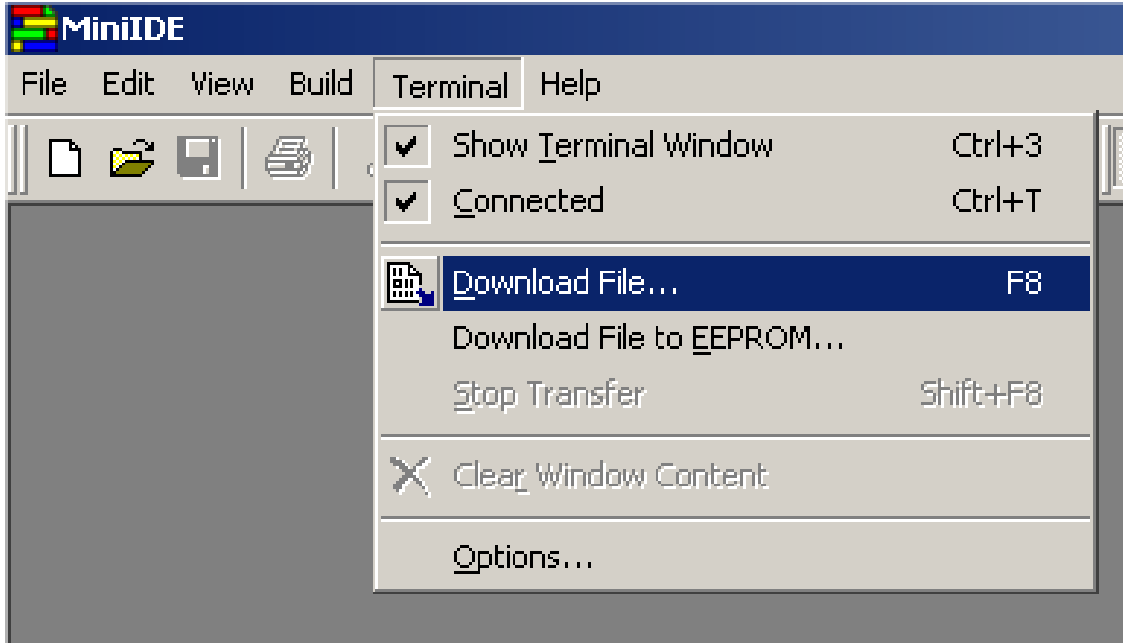
this erases 'all' FLASH, including any bootloader

R>reset <enter>
S>FBULK<enter>

"S12SerMon2r0.S19" (S1 filetype)

University of Adelaide serial monitor

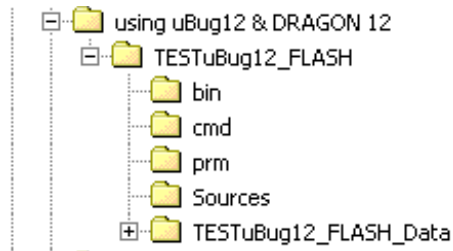
S>FLOAD ;B



```
S>FLOAD ;B
*****
S>
```

Test Drive the DRAGON-12, using uBUG12

Use working sample, "main.c" in the Source folder of,



Name	Size	Type	Modified
isr_vectors	5 KB	C source file	7/2/2004 2:20 PM
lcd	6 KB	C source file	2/2/2005 5:20 PM
lcd	1 KB	C header file	2/2/2005 5:21 PM
main	1 KB	C source file	2/2/2005 5:11 PM
pll	3 KB	C source file	7/10/2004 8:48 PM
pll	2 KB	C header file	7/10/2004 9:37 PM
Start12	15 KB	C source file	8/8/2003 10:05 AM

```
/* Example program for the Wytec Dragon 12 (MC9S12DP256C) */

#include <mc9s12dp256.h>          /* derivative information */
#include "pll.h" /* defines _BUSCLOCK, sets bus frequency to _BUSCLOCK
MHz */
#include "lcd.h"                 /* LCD_init(), writeLine() */

void main(void) {

    /* set system clock frequency to _BUSCLOCK MHz (24 or 4) */
    PLL_Init();

    /* set port B as output (LEDs) */
    DDRB = 0xff;                // Port B is output
    PORTB = 0x55;               // switch on every other LED

    /* initialize LCD display */
    LCD_init();

    /* Initialisation complete, now write stuff */
    writeLine("Hello World!    ", 0); // top line
    writeLine("I have a plan!   ", 1); // bottom line

    /* forever */
    for(;;){}
}
```

Execute uBUG12,

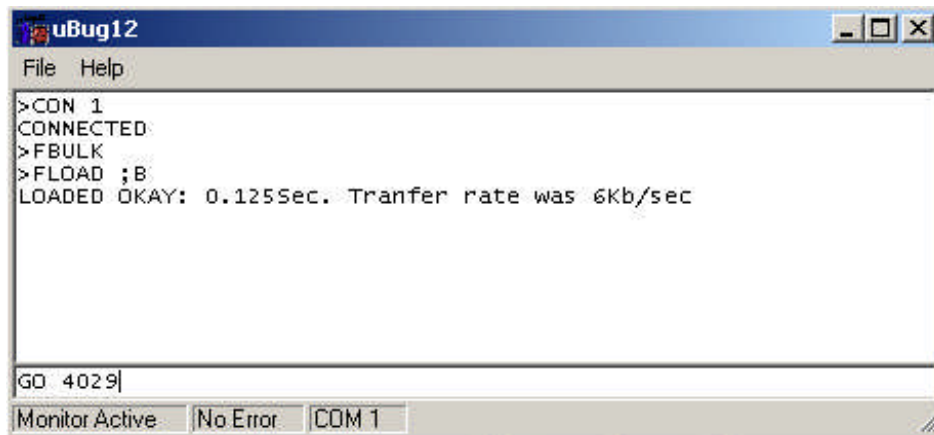


```
uBug12
File Help
>COM 1
CONNECTED
>FBULK
>FLOAD ;B
```

SmartLinder Map File 'Monitor.map' below, reveal program entry point at 4029, (...skip...)

```
*****
STARTUP SECTION
-----
Entry point: 0x4029 (_Startup)
_startupData is allocated at 0x4039 and uses 23 Bytes
extern struct _tagStartup {
    unsigned flags          0
    _PFunc    main          0x407A    (main)
    long      stackOffset   0x13FF
    unsigned  nofZeroOut    0
    _Copy     *toCopyDownBeg 0x41AC
    int       nofLibInits    0
    _LibInit  *libInits      0x4050
    int       nofInitBodies 0
    _Cpp      *initBodies    0x4052
    int       nofFiniBodies 0
    _Cpp      *finiBodies    0x4052
} _startupData;
***** (...skip...)
```

Run the sample program,



```
uBug12
File Help
>CON 1
CONNECTED
>FBULK
>FLOAD ;B
LOADED OKAY: 0.125Sec. Transfer rate was 6Kb/sec

GO 4029|
Monitor Active No Error COM 1
```

Observe result on Dragon-12 two row LCD, four 7-segment LED and the eight LEDs.