

## *FIRST DRIVER STATION KERNEL LOADER UPDATE INSTRUCTIONS*

### **1 Introduction**

This document describes steps to change the boot-up logo on the Driver Station (DS) v1.0. The updated kernel loader (KL) is required in order to perform this procedure. The KL must be version 1.2 or later.

By this time, you should be familiar with how-to connect to the DS using the low-level serial clip. This document assumes you already have the terminal window up and running with a live connection to the DS.

#### **1.1 Documentation**

It is assumed the steps in the KL document have been completed already:

[http://www.kwikbyte.com/driverstation/doc/DS\\_kernelLoaderv12.pdf](http://www.kwikbyte.com/driverstation/doc/DS_kernelLoaderv12.pdf)

#### **1.2 Equipment**

You need:

- 1) A means of communicating with the DS at a low-level. This document uses the DS USB Adapter Clip with supplied USB extension cable.
- 2) A PC. The host OS can be Windows® or Linux. Other OS may work, but have not been tested.

#### **1.3 Software**

You need:

- 1) A host PC terminal emulator program like HyperTerm, minicom, Kermit, etc.
- 2) The bmpConversion utility program:  
<http://www.kwikbyte.com/driverstation/binary/bmpToLogo.bin>
- 3) A Windows® formatted bitmap image for the new logo. This must be monochrome image of size 128x64. We will call this image newlogo.bmp.

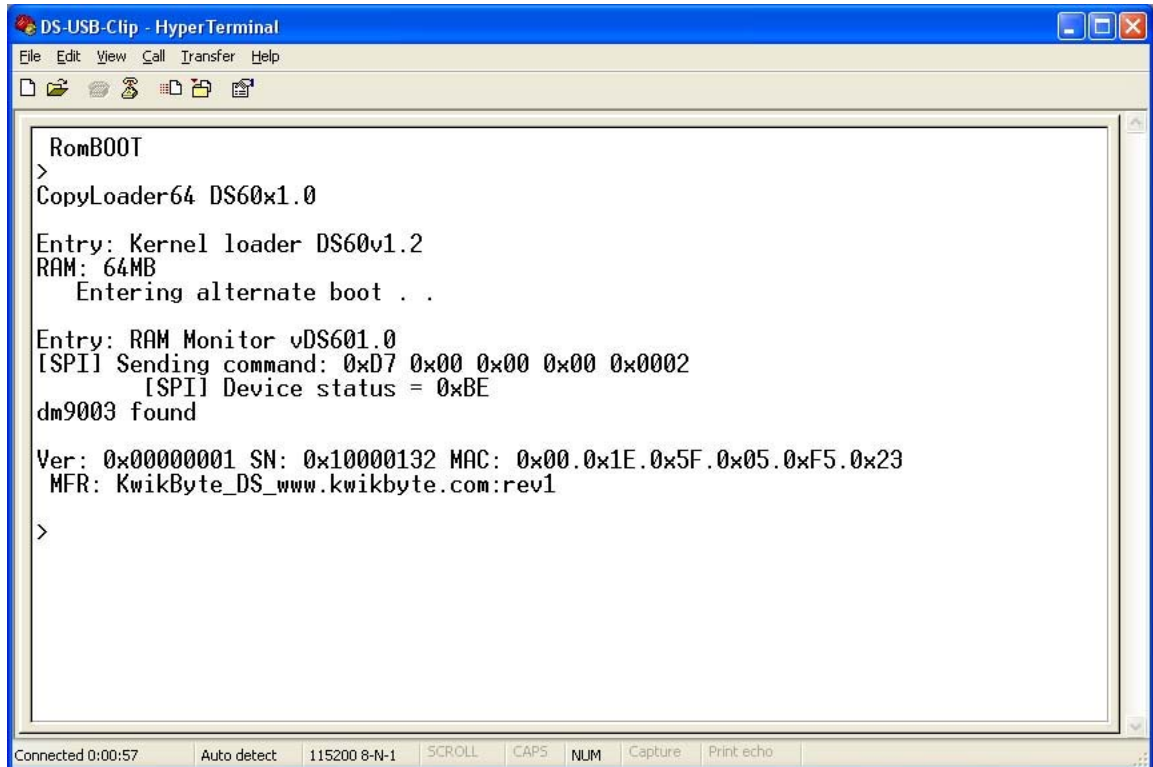
#### **1.4 Support**

Please read the instructions carefully. If you have questions or helpful comments, please send them to [driverstation@kwikbyte.com](mailto:driverstation@kwikbyte.com).

## 2 Logo Update Instructions

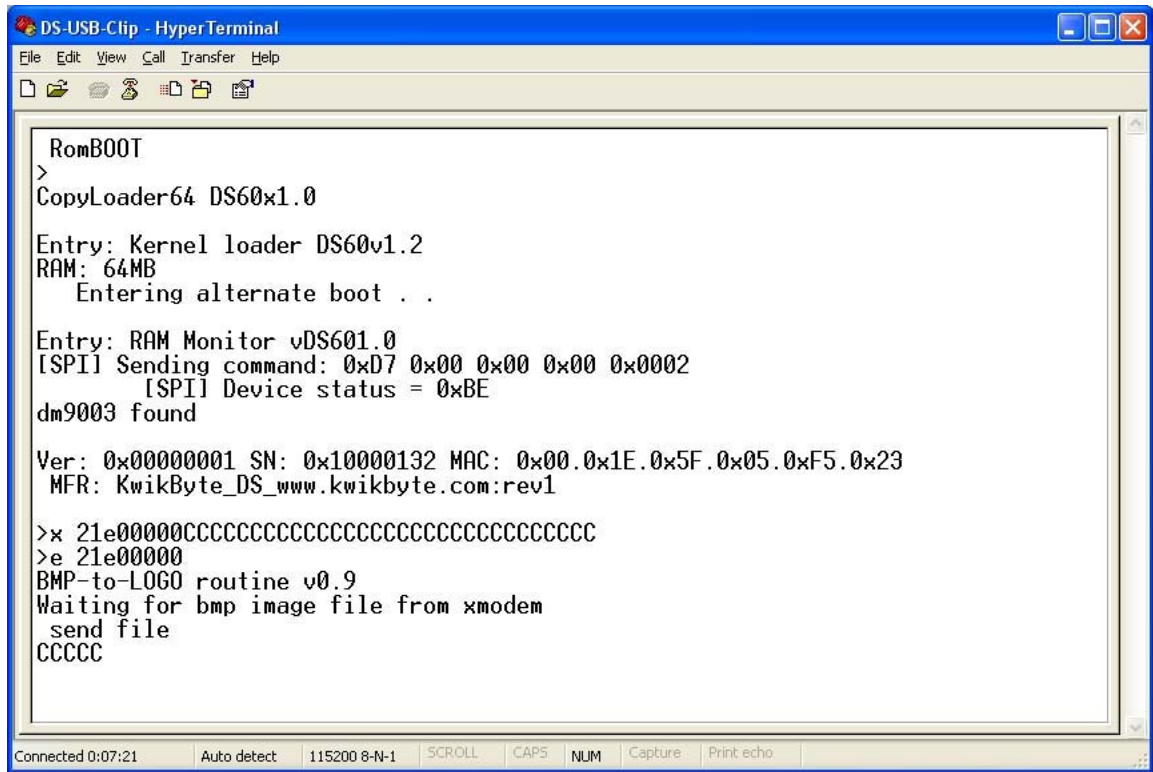
### 2.1 Boot the Alternate Loader

- 1) Hold down the 'UP Arrow' and 'SELECT' buttons while applying power (cold-boot) to the DS. You should see this screen:



```
DS-USB-Clip - HyperTerminal
File Edit View Call Transfer Help
RomBOOT
>
CopyLoader64 DS60x1.0
Entry: Kernel loader DS60v1.2
RAM: 64MB
  Entering alternate boot . . .
Entry: RAM Monitor vDS601.0
[SPI] Sending command: 0xD7 0x00 0x00 0x00 0x0002
[SPI] Device status = 0xBE
dm9003 found
Ver: 0x00000001 SN: 0x10000132 MAC: 0x00.0x1E.0x5F.0x05.0xF5.0x23
MFR: KwikByte_DS_www.kwikbyte.com:rev1
>
```

- 2) Start a transfer to address 0x21e00000 by typing **x 21e00000 Enter**. Notice the 'C' characters indicating the DS is waiting for a Xmodem transfer.
- 3) Send the bmpToLogo.bin file to the DS using Transfer->Send File with Xmodem protocol. This takes about 4 seconds once the transfer is started.
- 4) Now, execute the utility by typing **e 21e00000 Enter**.



```
DS-USB-Clip - HyperTerminal
File Edit View Call Transfer Help

RomBOOT
>
CopyLoader64 DS60x1.0

Entry: Kernel loader DS60v1.2
RAM: 64MB
  Entering alternate boot . .

Entry: RAM Monitor vDS601.0
[SPI] Sending command: 0xD7 0x00 0x00 0x00 0x0002
[SPI] Device status = 0xBE
dm9003 found

Ver: 0x00000001 SN: 0x10000132 MAC: 0x00.0x1E.0x5F.0x05.0xF5.0x23
MFR: KwikByte_DS_www.kwikbyte.com:rev1

>x 21e00000CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
>e 21e00000
BMP-to-LOGO routine v0.9
Waiting for bmp image file from xmodem
  send file
CCCCC

Connected 0:07:21  Auto detect  115200 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

- 5) Send the newlogo.bmp file to the DS using Transfer->Send File with Xmodem protocol (just like before). If the file is in the correct format and size, you will see this screen reporting 'Conversion complete':

DS-USB-Clap - HyperTerminal

File Edit View Call Transfer Help

>x 21e00000CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC  
 >e 21e00000  
 BMP-to-LOGO routine v0.9  
 Waiting for bmp image file from xmodem  
 send file  
 CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC  
 Checking BMP format  
 Converting to LCD format  
 Writing to SPI flash Flash write operation extended to end on page boundary.  
 [SPI] Sending command: 0x53 0xFF 0xF8 0x00 0x0004  
 [SPI] Sending command: 0xD7 0x00 0x00 0x00 0x0002  
 [SPI] Device status = 0xBE  
 Page read  
 [SPI] Sending command: 0xD7 0x00 0x00 0x00 0x0002  
 [SPI] Device status = 0xBE  
 [SPI] Sending command: 0x82 0xFF 0xF8 0x00 0x0004  
 [SPI] Sending command: 0xD7 0x00 0x00 0x00 0x0002  
 [SPI] Device status = 0xBE  
 Buffer written  
  
 Conversion complete. Please 'reset'  
  
 >\_

Connected 0:09:53 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo

- 6) Now type **reset Enter** and watch the DS boot with your new logo. You can repeat this process to update the logo again. You can change the polarity of the image with your favorite image editing software program.

### 3 Revisions

19JAN2009    Creation