How to burn ROS boot via serial

Boot from the UART0 interface is defined as a sample at reset configuration.

The BootROM firmware senses the UART0 interface (Rx side) looking for a unique stream of data. UART should be configured as 115,200-8N1 baud rate (8N1—8-bits of Data, No parity, 1 stop bit)

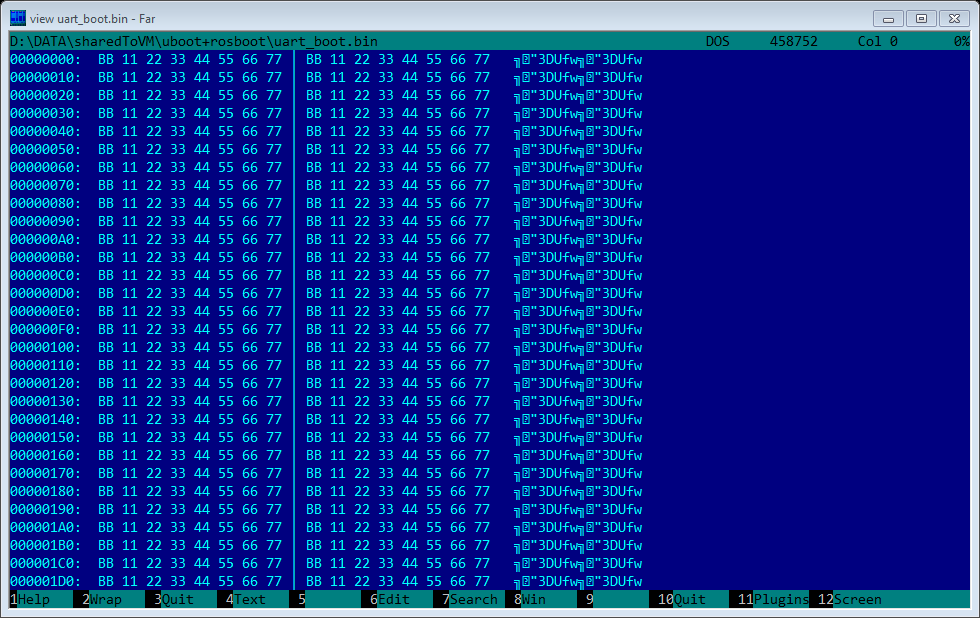
If the BootROM detects the 64-bit UART boot pattern (0xBB 0x11 0x22 0x33 0x44 0x55 0x66 0x77) injected by the user, as an indication to start the Xmodem protocol and the UART boot process; it starts the Xmodem protocol to load the image from UART to the DDR

Loading process consists of steps:

* Prepare soft and files
* Load U-Boot in RAM
* Load Ros boot in RAM
* From U-Boot console write Ros boot in flash

# For UART boot device you need:

File with boot sequence (0xBB 0x11 0x22 0x33 0x44 0x55 0x66 0x77) uart\_boot.bin:



Special U-Boot for boot from Xmodem, for example:

u-boot-uart.bin

Ros boot for burning to flash, for example:

XXX\_boot-1010\_32M.bin

Terminal applications :

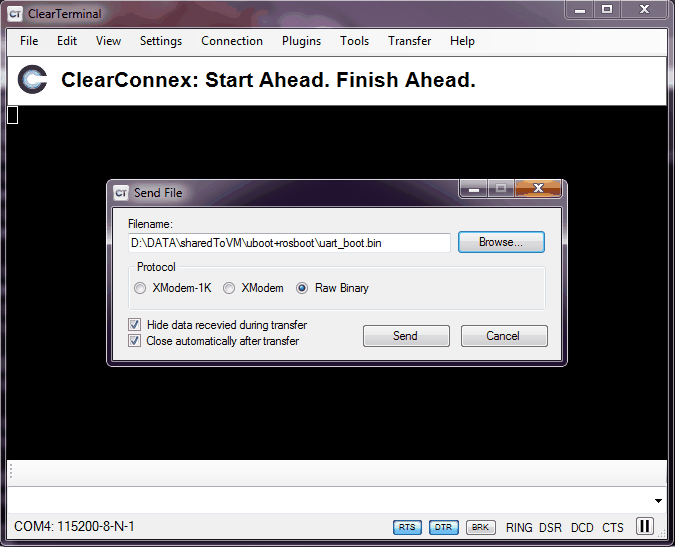
* ClearTerminal: <http://www.clearconnex.com/content/clearterminal>
* TerraTerm: <http://ttssh2.sourceforge.jp/>

# Load U-Boot in RAM

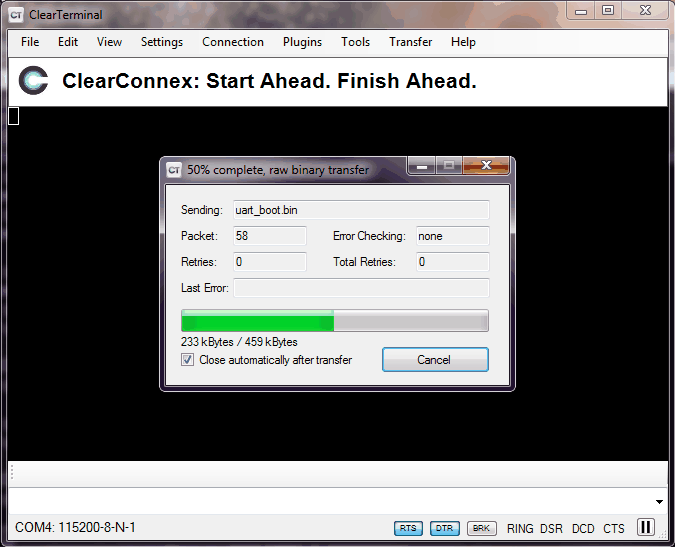
### Sending pattern file

Start ClearTerminal, go to “Connection” menu, create new connection for appropriate port and press “Connect”, then select “Transfer” -> “Send File”

Click “Browse” and point to text file with boot sequence – you can use attached file ”uart\_boot.bin”. Select “Raw Binary”, remove “V” from “Hide data …” and press “Send” button – see screenshot below:



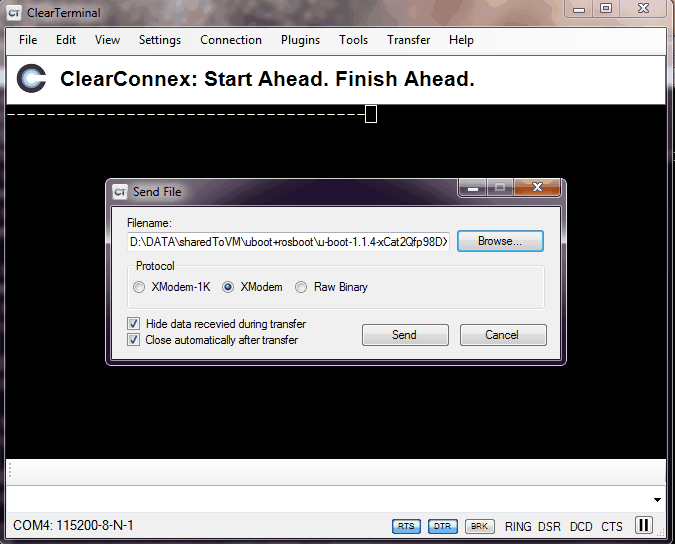
Power on the board before transfer is finished – you have about 40 seconds to do this. Once you see “BootROM: Pattern detected (Boot)” output and “-” signs printed you can press “Cancel” to stop the transfer or wait until it finished and press “Close”:



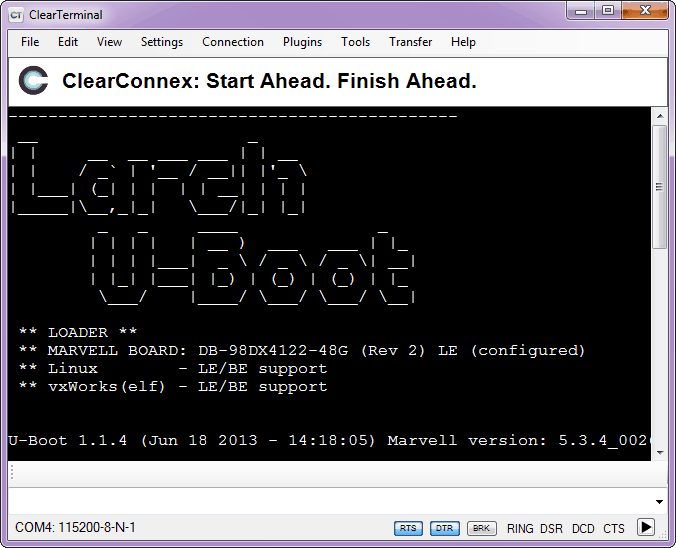
### Burn process – sending U-Boot via Xmodem

From “Transfer” menu select “Send File” again.

Click “Browse” and point to u-boot uart file. Select “Xmodem”, remove “V” from “Hide data …” and press “Send” button – see screenshot below:



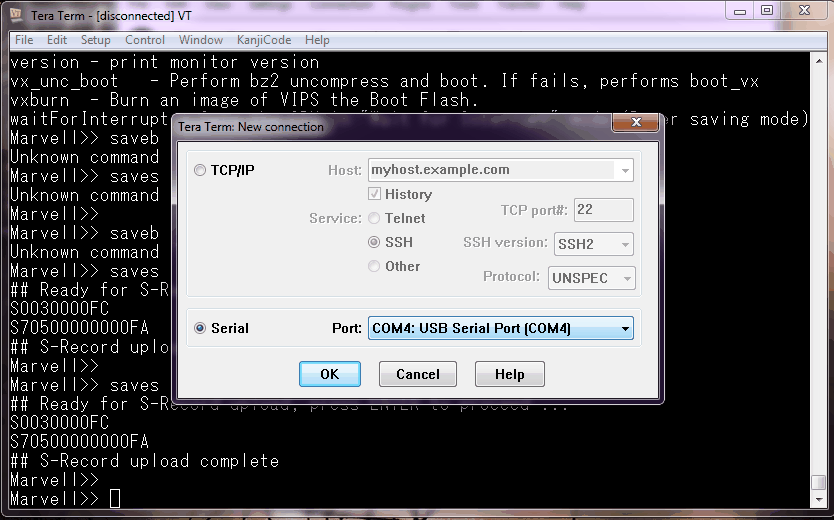
Once transfer completed (it took about 1-2 minutes) press “Close”, mouse left click on the black screen and press Enter. You have just 3 seconds to do this otherwise device will auto-boot:



Now U-Boot is loaded in device RAM.

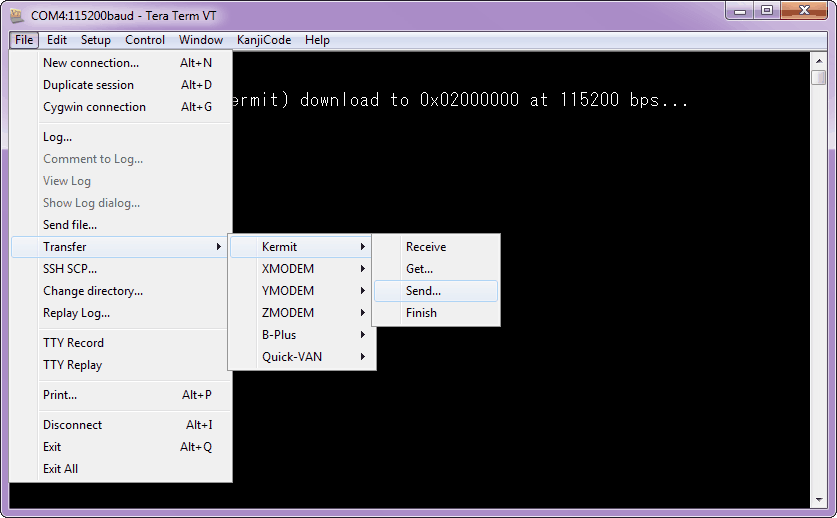
# Load Ros boot in RAM

Close connection in ClearTerminal, and open it in TerraTerm:

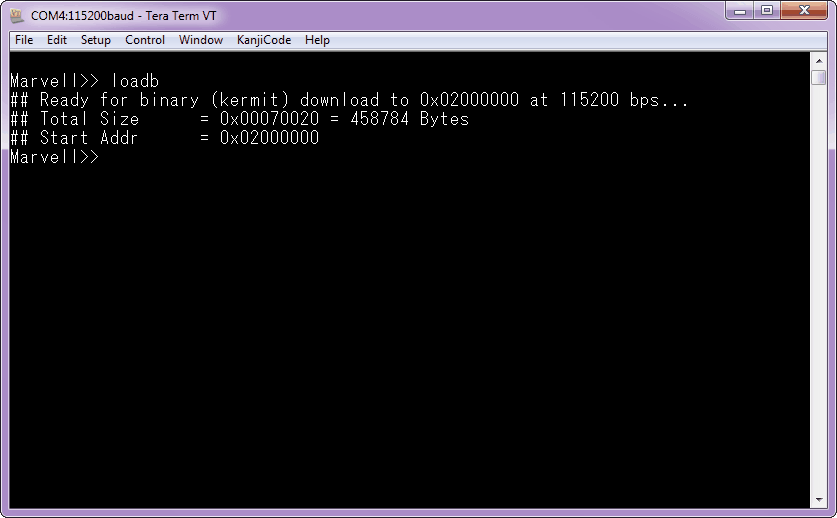


Parameters of connection are same as for ClearTerminal

Input in console “loadb” command. Once you see ”Ready for binary (kermit) download ….”, click “File” -> ”Transfer” -> “Kermit” -> “Send” and select ROS boot (.bin) file.



Wait until file sending finished:



Now you have Ros boot image in memory by address 0x2000000

# Write Ros boot in flash

* Disable protection on flash erase

protect off bank 1

* Erase boot sectors on flash

erase 0xF8000000 +0xC0000

* Copy boot from RAM to flash (byte mode)

cp.b 0x2000020 0xF8000000 0xC0000

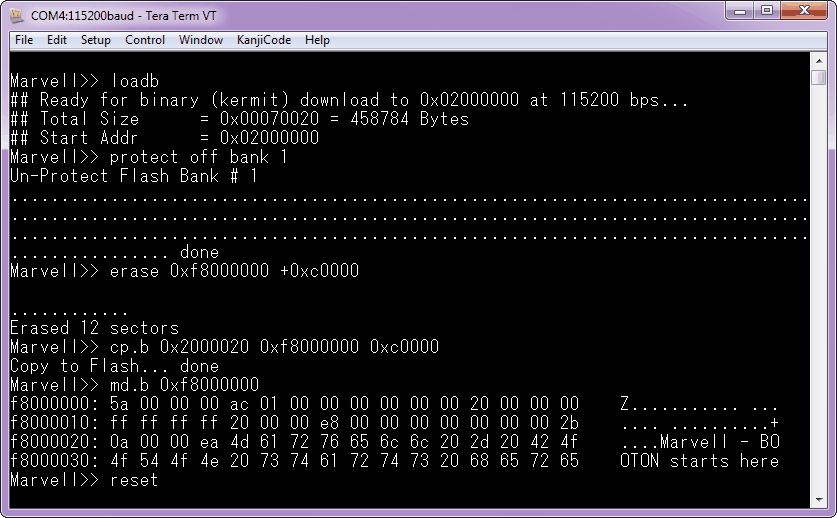
* OPTIONAL: print flash memory - use should see "MARVELL - BOOTON starts here"

md 0xF8000000

* Reset device:

reset

See screenshot below:



After reboot you have to fill MAC address, hardware revision and serial number. Then load ros image via xmodem:

