MCS9865

Linux Driver User Manual

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Revision history: 9

1. Introduction

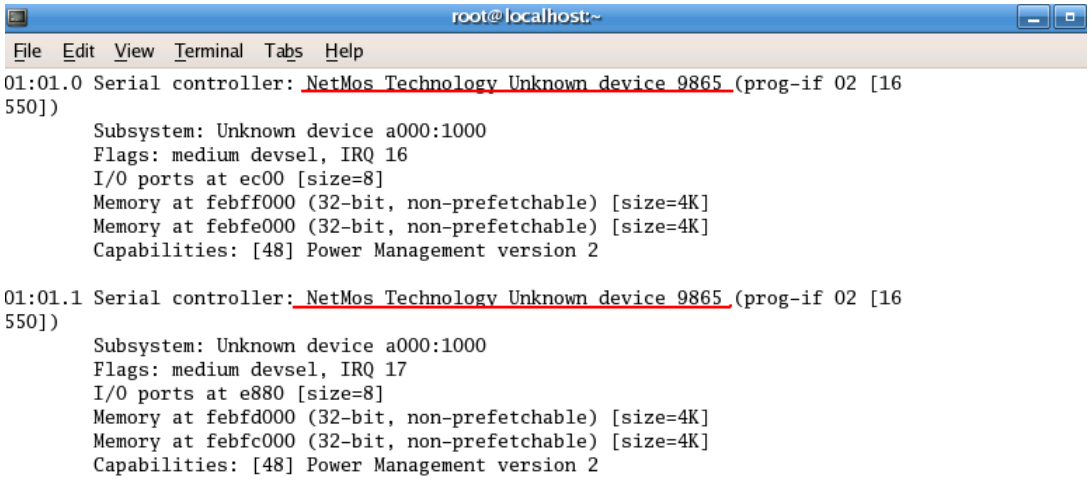
This document describes the software driver installation / Un-installation procedure for MosChip MCS9865 PCI to Serial / Parallel products or other manufacturer's product based on MosChip MCS9865 series on Linux OS.

2. Drivers Location

MCS9865 Linux source code can be downloadable from www.moschip.com.

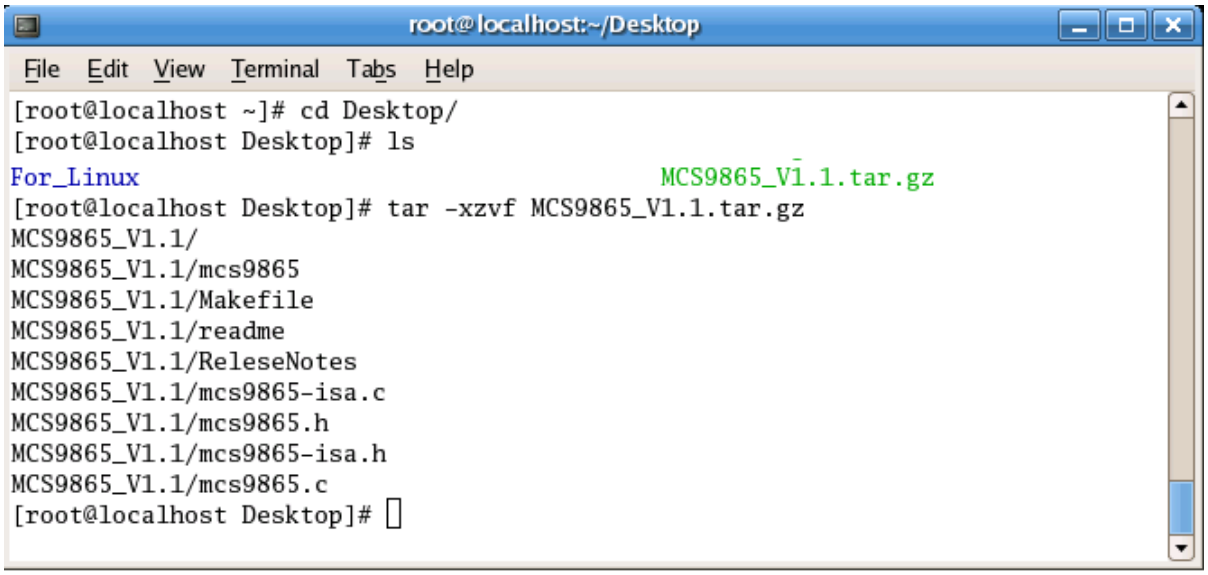
3. Serial Port Installation

- Copy the downloaded driver disk to the desktop.
- Shutdown the PC, insert the MCS9865 based PCI card into PCI Slot and then Switch ON the PC.
- Check for the MCS9865 PCI Card detection by typing the following command in terminal window. "**lspci –v** ". This will show the list of all PCI ports. Check for the Product ID 9865 as shown below.



- Untar (Uncompress) the driver disk copied to the desktop by using following command. Make sure that you change the path of terminal on to the desktop.

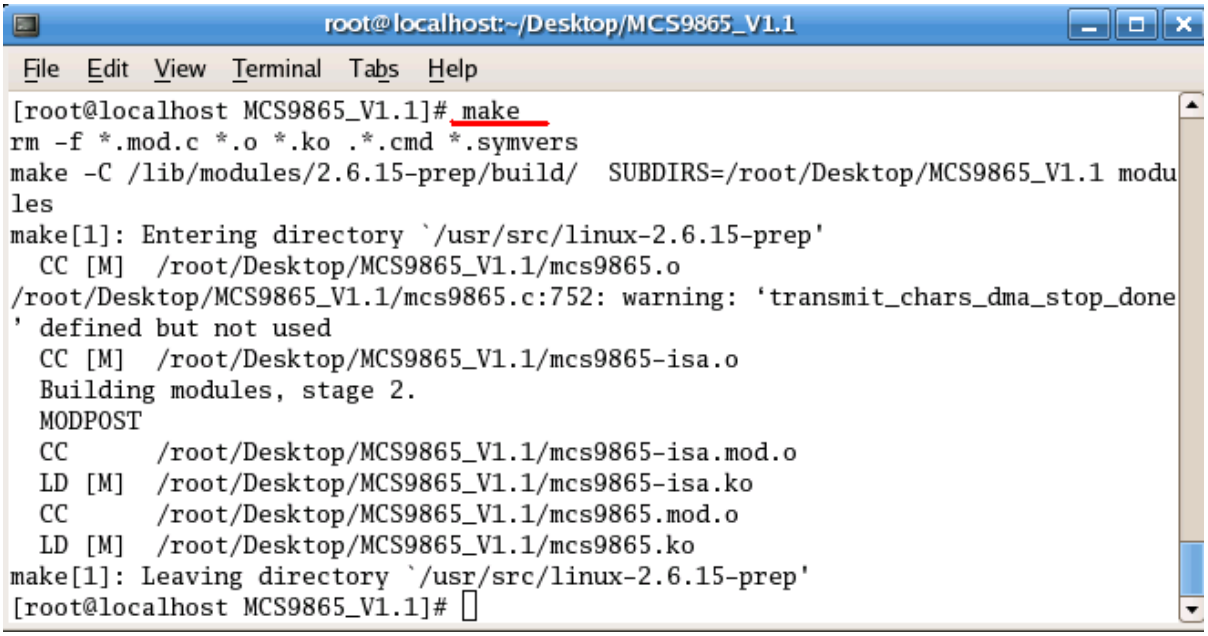
$ tar –xzvf MCS9865_V1.2.tar.gz



- Change the path of the terminal to the path of extracted files.

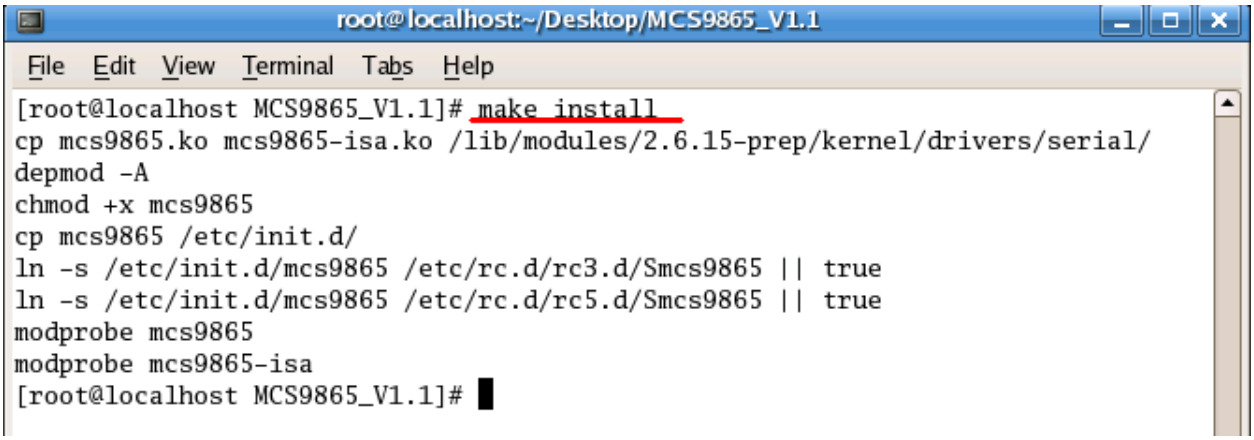
  $ cd /MCS9865

- Compile the driver using the command “**make**”. No errors should be displayed.

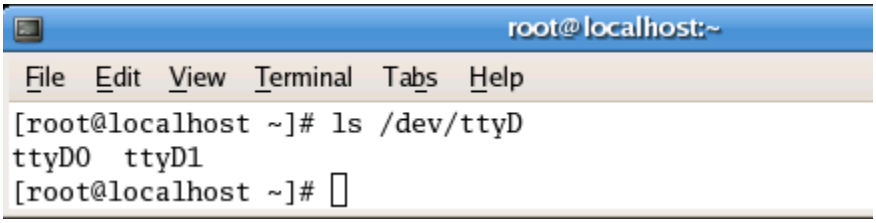


- Install the driver using the following command

  $ **make install**



- MCS9865 PCI Card installation is complete and the device is ready to use.
- Type "**ls /dev/ttyD**" command in the terminal window and press "**Tab**" key twice to see the MCS9865 serial ports installed on the machine.



4. Serial Port Settings

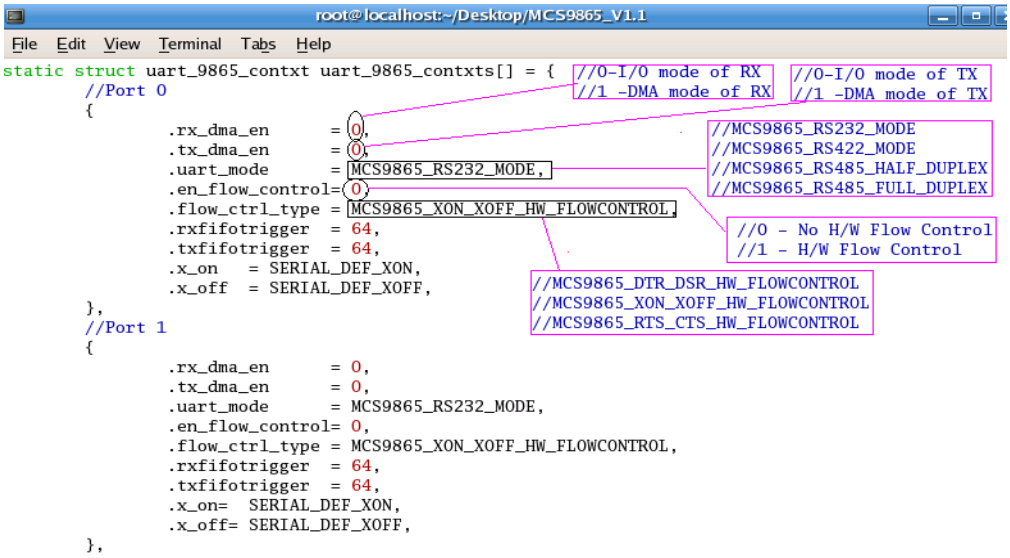
The serial port settings can be changed by editing the "**MCS9865.c**" file. To edit the file use the command:

$ **vim** MCS9865.c

Note: Make sure that the path of the terminal points to the same folder where **MCS9865.c** file is present.

MCS9865 Serial Ports supports following configurable serial features like:

- Serial port mode
- DMA in RX
- DMA in TX
- Enable/Disable Flow control
- Flow control type



Note: To set the mode from RS-232 mode to RS-422/485 mode or vice versa, we need to compile the driver. If the driver is already installed, uninstall the driver, compile (Make) and install the driver.

By default MCS9865 Serial port properties will be set to RS-232 mode, DMA enabled and Hardware Flow Control disabled.

To change the Serial port settings the values must be edited accordingly as Follows:

To enable Receive DMA of the selected serial port replace 0 with 1 against "r**x_dma_en"** field.
To enable Transmit DMA of the selected serial port replace 0 with 1 against "t**x_dma_en"** field.
To configure the Serial in different Modes change the entire string "**MCS9865_RS232_MODE**" as follows:

- For RS 232 Mode: **MCS9865_RS232_MODE**
- For RS 422 Mode: **MCS9865_RS422_HALFDUPLEX** (For Half duplex Functionality)
- For RS 485 Mode: **MCS9865_RS485_FULLDUPLEX** (For Full duplex Functionality)

The values can be seen in the same document. The first screen shot displays the setting modes.
For example: RX DMA can be disabled by replacing 0 with 1. All other values can be changed in the same way.

Port 0 in the above picture represents the settings for the first port and similarly other numbers represent the same for other ports.
After editing this file save and exit the file by using the command:
Press "**Esc**" key and type **:wq!** and press enter.

Note: The present Linux serial driver supports only up to **2x baud rate.**

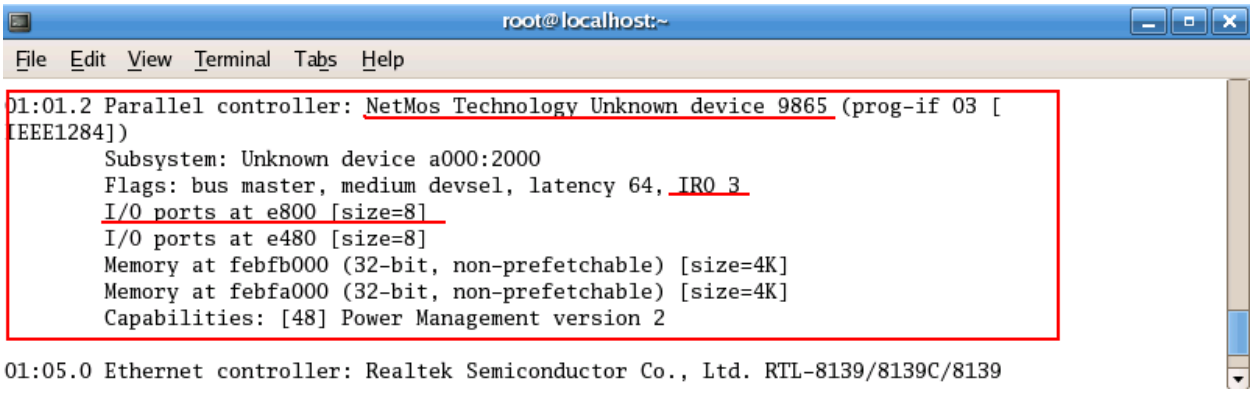
5. Parallel port installation

To install the parallel port use the following command

modprobe parport_pc io=0xe800, 0xdd00 irq =3

The first io address 0x378 and the first irq address points the standard parallel port and the second io and irq addresses points the MCS9865 io and irq values.

To check the "**io"** and "**irq**" addresses use the command **"lspci -v"**.



MCS9865 parallel port supports SPP/CBFIFO/ECP/EPP modes. Parallel port will automatically move into the device mode (SPP/CBFIFO/ECP/EPP) by handshaking.

6. ISA ports installation.

ISA serial and parallel port installation follows the same procedure as serial port and parallel port installation. ISA serial port uses standard drivers and there are no properties like DMA and Flow Control mechanisms also has no support of RS422/RS485 on ISA serial ports. ISA based serial ports has support of 1X speed only.

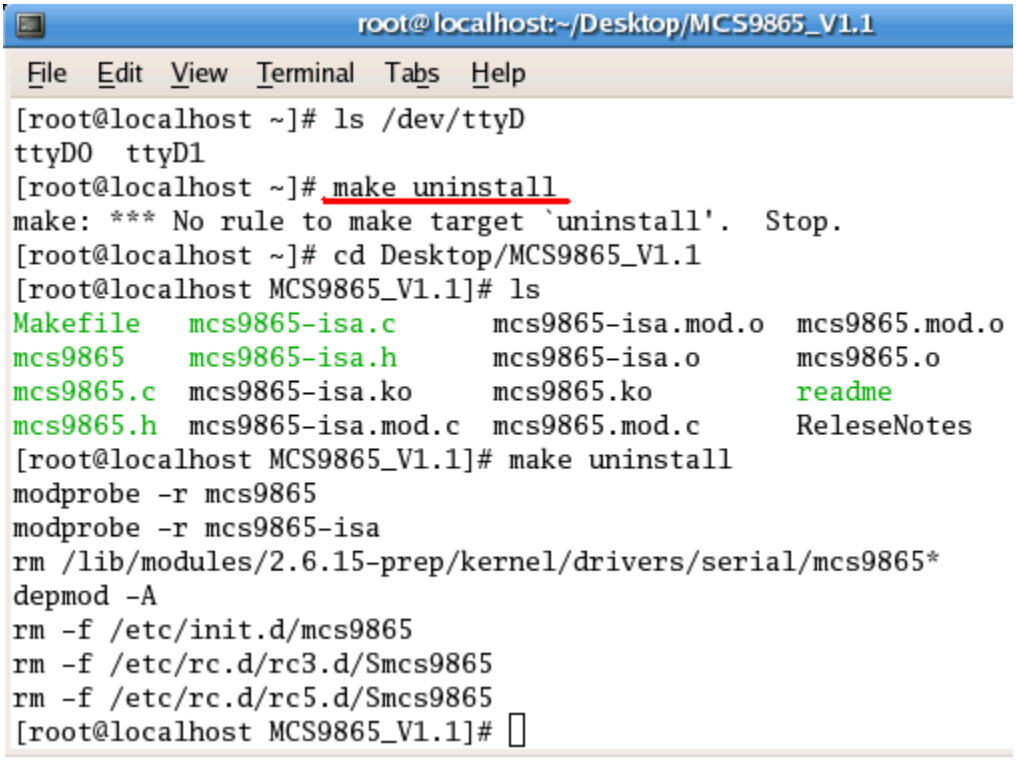
Note: The serial ports using ISA will get detected as ttyS(*x*), where x indicates the port number.

7. Un-installation of the Drivers

To un-install the driver use the command

$ make uninstall

$ Symbol represents the shell prompt in linux.



Note: Use **"make clean"** command before changing the serial property page.

8. Technical Support

Contact sales@moschip.com for commercial details

Write to techsupport@moschip.com for technical queries

Revision history:

Date	Reason for change	Version
6th Jun 2008	Initial Document	1.1

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