COMDRVLNX-283 Driver Rev 2.0 Installation on RedHawk 6.0-6.3 for Contec Serial board

Release Notes

July 8, 2020

1. Introduction:

This document assists the user in installing the Contec Co., Ltd **Linux COM Driver** driver and test programs on a RedHawk 6.0.x,6.3.x for use with the Contec's board.

2. Requirements:

The COM-xxxx, an EIA RS-232(TIA/EIA-232)/RS-485 (TIA/EIA-485)/RS-422 (TIA/EIA-422) compliant asynchronous serial communications product for PCI-based computers. It must be physically installed in the system.

- RedHawk Revision 6.0,6.3
- Contec Serial board installed
    <PCI board>
        COM-2(PCI)H
        COM-4(PCI)H
        COM-8(PCI)H
        COM-2P(PCI)H
        COM-4P(PCI)H
        COM-2PD(PCI)H
        COM-4PD(PCI)H
        COM-1(LPCI)H
        COM-2(LPCI)H
        COM-4(LPCI)H
        COM-1PD(LPCI)H
        COM-2PD(LPCI)H
        COM-2CL-PCI
        COM-4CL-PCI
        COM-2DL-PCI
        COM-4DL-PCI
        COM-8C-LPCI
    <PCIe board>
        COM-2C-PE
        COM-4C-PE
        COM-8C-PE
        COM-2PC-PE
        COM-4PC-PE
        COM-2PD-PE
        COM-4PD-PE
        COM-1C-LPE
        COM-2C-LPE
        COM-4C-LPE
        COM-8C-LPE

3. Installation:

The **COMDRVLNX283** driver is designed to support IRQ sharing. If this devices IRQ is being shared by another device then this driver's performance could be compromised. Hence, as far as possible, move this board into a PCI slot whose IRQ is not being shared with other devices. A **'lspci -v'** command can be used to determine the IRQs of various devices in the system.

The **COMDRVLNX283** driver is supplied in a RPM format on a CDROM/DVD. It is a dynamically loadable driver that must be loaded with the **modprobe comdrv.ko** command once it has been installed. It can be unloaded by issuing the **modprobe –r comdrv** command.

To extract the driver from a CDROM, typical command is as follows:

```
> === as root ===
```

```
> mount /mnt/cdrom    (an entry must exist in /etc/fstab - most likely, mount point is
                        /mnt/cdrom)
> cd /mnt/cdrom
> rpm -ivh COMDRVLNX-283-2.i686.rpm  (install the package)
or
> rpm -ivh COMDRVLNX-283-2.x86_64.rpm  (install the package)
                             ######################################### [100%]
   1:COMDRVLNX            ######################################### [100%]
Please wait a minute.
Compile Drivers
Load Drivers
220: uart:16550A port:CCE0 irq:30 tx:0 rx:0
221: uart:16550A port:CCE8 irq:30 tx:0 rx:0

comdrv               238709  0



All the source for this product has been installed.
To build and install the objects manually:
the following steps. Then:
To build the driver:

cd /usr/src/contec/comdrv/driver
make clean; make

> umount /mnt/cdrom
```

The **COMDRVLNX283** driver files will be installed into the **/usr/src/contec** directory from the CDROM drive.

If you will need to rebuild the driver:

```
> === log in as root ===
> cd /usr/src/contec/comdrv/driver
> make;make install  (build the driver & install the driver software )
```

NOTE!! If the **make** fails with some module version related error, then you will need to follow the directions *(see below)* **"Building driver on a currently running RedHawk kernel".** Once done, you will then need to re-make the driver as described above.

```
> cat /proc/tty/driver/ContecSio
> serinfo:1.0 driver revision:



> find /lib/modules -print |grep comdrv.ko
/lib/modules/2.6.36-RedHawk-6.0.2/extra/comdrv.ko.gz
/lib/modules/2.6.36-RedHawk-6.0.2-debug/extra/comdrv.ko.gz
/lib/modules/2.6.36-RedHawk-6.0.2-trace/extra/comdrv.ko.gz
```

4. Removal of the Package.

The **COMDRVLNX218** driver is a dynamically loadable driver that can be unloaded as follows:

```
> === as root ===
> rpm -e COMDRVLNX-283-2.i686  (remove the package)
or
> rpm -e COMDRVLNX-283-2.x86_64  (remove the package)
```

```
==== Cleaning ...
Now In /usr/src/contec, to remove source
Now In /usr/lobal/CNC/drivers/comdrvlnx, to remove source
```

NOTE!! If any changes have been made to the driver package, they need to be backed up prior to removing /usr/src/contec directory else all changes will be lost.

特記事項 1

現象：

COM-4PD/COM2-PD の全２重通信を Linux で行う場合、comtest の CRTSCTS フラグを OFF に設定しても、RTS-CTS 線を接続、あるいは DIP-SW で接続しないと、送信が行えない。

ドライバのソースコードでは、正しく

```
if (up->capabilities & UART_CAP_EFR) {
    unsigned char efr = 0;
    /*
     * TI16C752/Startech hardware flow control.  FIXME:
     * - TI16C752 requires control thresholds to be set.
     * - UART_MCR_RTS is ineffective if auto-RTS mode is enabled.
     */
    if (termios->c_cflag & CRTSCTS)
        efr |= UART_EFR_CTS;

    serial_port_out(port, UART_LCR, UART_LCR_CONF_MODE_B);
    if (port->flags & UPF_EXAR_EFR)
        serial_port_out(port, UART_XR_EFR, efr);
    else
        serial_port_out(port, UART_EFR, efr);
}
```

を呼び出していることを確認した。

また、HW マニュアルの出力ポート（ENHANCED REGISTTERS)のオフセット２の上位２ビット(AUTO-CTS|AUTO-RTS)のビットが０で出力されていることも確認した。

つまり、Contec 社のデバイスドライバは、まったく正しい記述であるにも関わらず、HW 的な処理を行う必要がある。

また、 同一チップセットを利用した COM-2C-PE(RS232C)では、同一プログラム(comtest の CRTSCTS フラグを OFF に設定したもの）で、RTS-CTS ケーブル接続無しに通信が成立する、この時、ターミネータは、ON でも OFF でも同じ動作である。

Contec 社からの回答：

ご指摘いただきました COM-2PD-PE および COM-4PD-PE にて CRTSCTS フラグを OFF に設定しても、RTS-CTS 線を接続、あるいは DIP-SW で接続しないと、送信が行えない状況ですが、これは仕様となっております。

送信のゲート制御を RTS 信号で行っているため、RTS 信号が未接続の状態ですと送信のゲート制御が行えないため送信が行えません。

CRTSCTS フラグを OFF にとされた場合でも RTS-CTS 線の接続、または DIP-SW で接続する必要がございます。

お手数ではございますが、RTS-CTS 線の接続、もしくは DIP-SW 設定をされた状態で運用いただけますでしょうか。

なお、RS-232C の COM-2C-PE ではこの仕様としておりませんので RTS 信号が接未続の状態でも送信が可能となっております。