

## [2.6 patch] remove comx driver docs

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*Source:* <http://linux.derkeiler.com/Mailing-Lists/Kernel/2007-11/msg01398.html>

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- *From:* Adrian Bunk <bunk@xxxxxxxxxx>
  - *Date:* Mon, 5 Nov 2007 18:04:45 +0100
- 

The drivers have already been removed 3.5 years ago.

Signed-off-by: Adrian Bunk <bunk@xxxxxxxxxx>

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```
Documentation/networking/00-INDEX | 2
Documentation/networking/comx.txt | 248 -----
Documentation/networking/slicecom.hun | 371 -----
Documentation/networking/slicecom.txt | 369 -----
4 files changed, 990 deletions(-)
```

```
89b45c57a2a74c6497cd808e15f9ef33077bf352
diff --git a/Documentation/networking/00-INDEX b/Documentation/networking/00-INDEX
index f5a5e6d..c48892e 100644
--- a/Documentation/networking/00-INDEX
+++ b/Documentation/networking/00-INDEX
@@ -26,8 +26,6 @@ baycom.txt
- info on the driver for Baycom style amateur radio modems
bridge.txt
- where to get user space programs for ethernet bridging with Linux.
-comx.txt
- - info on drivers for COMX line of synchronous serial adapters.
cops.txt
- info on the COPS LocalTalk Linux driver
cs89x0.txt
diff --git a/Documentation/networking/comx.txt b/Documentation/networking/comx.txt
deleted file mode 100644
index d1526eb..0000000
--- a/Documentation/networking/comx.txt
+++ /dev/null
@@ -1,248 +0,0 @@
-
- COMX drivers for the 2.2 kernel
-
-Originally written by: Tivadar Szemethy, <tiv@xxxxxx>
-Currently maintained by: Gergely Madarasz <gorgo@xxxxxx>
-
-Last change: 21/06/1999.
```

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- 
- INTRODUCTION
- 
- This document describes the software drivers and their use for the
- COMX line of synchronous serial adapters for Linux version 2.2.0 and
- above.
- The cards are produced and sold by ITC-Pro Ltd. Budapest, Hungary
- For further info contact <info@xxxxxx>
- or <http://www.itc.hu> (mostly in Hungarian).
- The firmware files and software are available from <ftp://ftp.itc.hu>
- 
- Currently, the drivers support the following cards and protocols:
- 
- COMX (2x64 kbps intelligent board)
- CMX (1x256 + 1x128 kbps intelligent board)
- HiCOMX (2x2Mbps intelligent board)
- LoCOMX (1x512 kbps passive board)
- MixCOM (1x512 or 2x512kbps passive board with a hardware watchdog an
- optional BRI interface and optional flashROM (1-32M))
- SliceCOM (1x2Mbps channelized E1 board)
- PciCOM (X21)
- 
- At the moment of writing this document, the (Cisco)-HDLC, LAPB, SyncPPP and
- Frame Relay (DTE, rfc1294 IP encapsulation with partially implemented Q933a
- LMI) protocols are available as link-level protocol.
- X.25 support is being worked on.
- 
- USAGE
- 
- Load the comx.o module and the hardware-specific and protocol-specific
- modules you'll need into the running kernel using the insmod utility.
- This creates the /proc/comx directory.
- See the example scripts in the 'etc' directory.
- 
- /proc INTERFACE INTRO
- 
- The COMX driver set has a new type of user interface based on the /proc
- filesystem which eliminates the need for external user-land software doing
- IOCTL calls.
- Each network interface or device (i.e. those ones you configure with 'ifconfig'
- and 'route' etc.) has a corresponding directory under /proc/comx. You can
- dynamically create a new interface by saying 'mkdir /proc/comx/comx0' (or you
- can name it whatever you want up to 8 characters long, comx[n] is just a
- convention).
- Generally the files contained in these directories are text files, which can
- be viewed by 'cat filename' and you can write a string to such a file by
- saying 'echo \_string\_ >filename'. This is very similar to the sysctl interface.
- Don't use a text editor to edit these files, always use 'echo' (or 'cat'
- where appropriate).
- When you've created the comx[n] directory, two files are created automagically
- in it: 'boardtype' and 'protocol'. You have to fill in these files correctly

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–for your board and protocol you intend to use (see the board and protocol  
–descriptions in this file below or the example scripts in the 'etc' directory).  
–After filling in these files, other files will appear in the directory for  
–setting the various hardware– and protocol–related informations (for example  
–irq and io addresses, keepalive values etc.) These files are set to default  
–values upon creation, so you don't necessarily have to change all of them.  
–  
–When you're ready with filling in the files in the comx[n] directory, you can  
–configure the corresponding network interface with the standard network  
–configuration utilities. If you're unable to bring the interfaces up, look up  
–the various kernel log files on your system, and consult the messages for  
–a probable reason.  
–  
–EXAMPLE  
–  
–To create the interface 'comx0' which is the first channel of a COMX card:  
–  
–insmod comx  
–# insmod comx–hw–comx ; insmod comx–proto–ppp (these are usually  
–autoloaded if you use the kernel module loader)  
–  
–mkdir /proc/comx/comx0  
–echo comx >/proc/comx/comx0/boardtype  
–echo 0x360 >/proc/comx/comx0/io <– jumper–selectable I/O port  
–echo 0x0a >/proc/comx/comx0/irq <– jumper–selectable IRQ line  
–echo 0xd000 >/proc/comx/comx0/memaddr <– software–configurable memory  
– address. COMX uses 64 KB, and this  
– can be: 0xa000, 0xb000, 0xc000,  
– 0xd000, 0xe000. Avoid conflicts  
– with other hardware.  
–cat </etc/siol1.rom >/proc/comx/comx0/firmware <– the firmware for the card  
–echo HDLC >/proc/comx/comx0/protocol <– the data–link protocol  
–echo 10 >/proc/comx/comx0/keepalive <– the keepalive for the protocol  
–ifconfig comx0 1.2.3.4 pointopoint 5.6.7.8 netmask 255.255.255.255 <–  
– finally configure it with ifconfig  
–Check its status:  
–cat /proc/comx/comx0/status  
–  
–If you want to use the second channel of this board:  
–  
–mkdir /proc/comx/comx1  
–echo comx >/proc/comx/comx1/boardtype  
–echo 0x360 >/proc/comx/comx1/io  
–echo 10 >/proc/comx/comx1/irq  
–echo 0xd000 >/proc/comx/comx1/memaddr  
–echo 1 >/proc/comx/comx1/channel <– channels are numbered  
– as 0 (default) and 1  
–  
–Now, check if the driver recognized that you're going to use the other  
–channel of the same adapter:  
–

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–cat /proc/comx/comx0/twin  
–comx1  
–cat /proc/comx/comx1/twin  
–comx0

–  
–You don't have to load the firmware twice, if you use both channels of  
–an adapter, just write it into the channel 0's /proc firmware file.

–  
–Default values: io 0x360 for COMX, 0x320 (HICOMX), irq 10, memaddr 0xd0000

### –THE LOCOMX HARDWARE DRIVER

–  
–The LoCOMX driver doesn't require firmware, and it doesn't use memory either,  
–but it uses DMA channels 1 and 3. You can set the clock rate (if enabled by  
–jumpers on the board) by writing the kbps value into the file named 'clock'.  
–Set it to 'external' (it is the default) if you have external clock source.

–  
–(Note: currently the LoCOMX driver does not support the internal clock)

### –THE COMX, CMX AND HICOMX DRIVERS

–  
–On the HICOMX, COMX and CMX, you have to load the firmware (it is different for  
–the three cards!). All these adapters can share the same memory  
–address (we usually use 0xd0000). On the CMX you can set the internal  
–clock rate (if enabled by jumpers on the small adapter boards) by writing  
–the kbps value into the 'clock' file. You have to do this before initializing  
–the card. If you use both HICOMX and CMX/COMX cards, initialize the HICOMX  
–first. The I/O address of the HICOMX board is not configurable by any  
–method available to the user: it is hardwired to 0x320, and if you have to  
–change it, consult ITC–Pro Ltd.

### –THE MIXCOM DRIVER

–  
–The MixCOM board doesn't require firmware, the driver communicates with  
–it through I/O ports. You can have three of these cards in one machine.

### –THE SLICECOM DRIVER

–  
–The SliceCOM board doesn't require firmware. You can have 4 of these cards  
–in one machine. The driver doesn't (yet) support shared interrupts, so  
–you will need a separate IRQ line for every board.  
–Read Documentation/networking/slicecom.txt for help on configuring  
–this adapter.

### –THE HDLC/PPP LINE PROTOCOL DRIVER

–  
–The HDLC/SyncPPP line protocol driver uses the kernel's built-in syncppp  
–driver (syncppp.o). You don't have to manually select syncppp.o when building  
–the kernel, the dependencies compile it in automatically.

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–  
–  
–EXAMPLE  
–(setting up hw parameters, see above)  
–  
–# using HDLC:  
–echo hdlc >/proc/comx/comx0/protocol  
–echo 10 >/proc/comx/comx0/keepalive <– not necessary, 10 is the default  
–ifconfig comx0 1.2.3.4 pointopoint 5.6.7.8 netmask 255.255.255.255  
–  
–(setting up hw parameters, see above)  
–  
–# using PPP:  
–echo ppp >/proc/comx/comx0/protocol  
–ifconfig comx0 up  
–ifconfig comx0 1.2.3.4 pointopoint 5.6.7.8 netmask 255.255.255.255  
–  
–  
–THE LAPB LINE PROTOCOL DRIVER  
–  
–For this, you'll need to configure LAPB support (See 'LAPB Data Link Driver' in  
–'Network options' section) into your kernel (thanks to Jonathan Naylor for his  
–excellent implementation).  
–comx–proto–lapb.o provides the following files in the appropriate directory  
–(the default values in parens): t1 (5), t2 (1), n2 (20), mode (DTE, STD) and  
–window (7). Agree with the administrator of your peer router on these  
–settings (most people use defaults, but you have to know if you are DTE or  
–DCE).  
–  
–EXAMPLE  
–  
–(setting up hw parameters, see above)  
–echo lapb >/proc/comx/comx0/protocol  
–echo dce >/proc/comx/comx0/mode <– DCE interface in this example  
–ifconfig comx0 1.2.3.4 pointopoint 5.6.7.8 netmask 255.255.255.255  
–  
–  
–THE FRAME RELAY PROTOCOL DRIVER  
–  
–You DON'T need any other frame relay related modules from the kernel to use  
–COMX–Frame Relay. This protocol is a bit more complicated than the others,  
–because it allows to use 'subinterfaces' or DLCIs within one physical device.  
–First you have to create the 'master' device (the actual physical interface)  
–as you would do for other protocols. Specify 'frad' as protocol type.  
–Now you can bring this interface up by saying 'ifconfig comx0 up' (or whatever  
–you've named the interface). Do not assign any IP address to this interface  
–and do not set any routes through it.  
–Then, set up your DLCIs the following way: create a comx interface for each  
–DLCI you intend to use (with mkdir), and write 'dlci' to the 'boardtype' file,  
–and 'ietf–ip' to the 'protocol' file. Currently, the only supported  
–encapsulation type is this (also called as RFC1294/1490 IP encapsulation).

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- Write the DLCI number to the 'dlci' file, and write the name of the physical
- COMX device to the file called 'master'.
- Now you can assign an IP address to this interface and set routes using it.
- See the example file for further info and example config script.
- Notes: this driver implements a DTE interface with partially implemented
- Q933a LMI.
- You can find an extensively commented example in the 'etc' directory.
- 
- FURTHER /proc FILES
- 
- boardtype:
- Type of the hardware. Valid values are:
- 'comx', 'hicomx', 'locomx', 'cmx', 'slicecom'.
- 
- protocol:
- Data-link protocol on this channel. Can be: HDLC, LAPB, PPP, FRAD
- 
- status:
- You can read the channel's actual status from the 'status' file, for example
- 'cat /proc/comx/comx3/status'.
- 
- lineup\_delay:
- Interpreted in seconds (default is 1). Used to avoid line jitter: the system
- will consider the line status 'UP' only if it is up for at least this number
- of seconds.
- 
- debug:
- You can set various debug options through this file. Valid options are:
- 'comx\_events', 'comx\_tx', 'comx\_rx', 'hw\_events', 'hw\_tx', 'hw\_rx'.
- You can enable a debug options by writing its name prepended by a '+' into
- the debug file, for example 'echo +comx\_rx >comx0/debug'.
- Disabling an option happens similarly, use the '-' prefix
- (e.g. 'echo -hw\_rx >debug').
- Debug results can be read from the debug file, for example:
- tail -f /proc/comx/comx2/debug
- 
- 
- diff --git a/Documentation/networking/slicecom.hun b/Documentation/networking/slicecom.hun
- deleted file mode 100644
- index bed2f04..0000000
- a/Documentation/networking/slicecom.hun
- +++ /dev/null
- @@ -1,371 +0,0 @@
- 
- SliceCOM adapter felhasznaloi dokumentacioja – 0.51 verziohoz
- 
- Bartók István <bartoki@xxxxxx>
- Utolso modositás: Wed Aug 29 17:26:58 CEST 2001
- 
- 
-

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```
-Hasznalata:
-
-Forditas:
-
-Code maturity level options
-[*] Prompt for development and/or incomplete code/drivers
-
-Network device support
- Wan interfaces
- <M> MultiGate (COMX) synchronous
- <M> Support for MUNICH based boards: SliceCOM, PCICOM (NEW)
- <M> Support for HDLC and syncPPP...
-
-
-A modulok betoltese:
-
-modprobe comx
-
-modprobe comx-proto-ppp # a Cisco-HDLC es a SyncPPP protokollt is
- # ez a modul adja
-
-modprobe comx-hw-munich # a modul betoltodeskor azonnal jelent a
- # syslogba a detektalt kartyakrol
-
-
-Konfigurallas:
-
-# Ezen az interfeszen Cisco-HDLC vonali protokoll fog futni
-# Az interfeszhez rendelt idoszeletek: 1,2 (128 kbit/sec-es vonal)
-# (a G.703 keretben az elso adatot vivo idoszelet az 1-es)
-#
-mkdir /proc/comx/comx0.1/
-echo slicecom >/proc/comx/comx0.1/boardtype
-echo hdlc >/proc/comx/comx0.1/protocol
-echo 1 2 >/proc/comx/comx0.1/timeslots
-
-
-# Ezen az interfeszen SyncPPP vonali protokoll fog futni
-# Az interfeszhez rendelt idoszelet: 3 (64 kbit/sec-es vonal)
-#
-mkdir /proc/comx/comx0.2/
-echo slicecom >/proc/comx/comx0.2/boardtype
-echo ppp >/proc/comx/comx0.2/protocol
-echo 3 >/proc/comx/comx0.2/timeslots
-
-...
-
-ifconfig comx0.1 up
-ifconfig comx0.2 up
-
```

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–  
–A COMX driverek default 20 csomagnyi transmit queue–t rendelnek a halozati  
–interfeszekhez. WAN halozatokban ennel hosszabbat is szokas hasznalni  
–(20 es 100 kozott), hogy a vonal kihasznaltsaga nagy terheles eseten jobb  
–legyen (bar ezzel megno a varhato kesleltetes a csomagok sorban allasa miatt):

–  
–# ifconfig comx0 txqueuelen 50

–  
–Ezt a beallitasi lehetoseget csak az ujabb disztribucioik ifconfig parancsa  
–tamogatja (amik mar a 2.2 kernelekhez keszultek, mint a RedHat 6.1 vagy a  
–Debian 2.2).

–  
–A 2.1–es Debian disztribuciohoz a <http://www.debian.org/~rcw/2.2/netbase/>  
–cimrol toltheto le ujabb netbase csomag, ami mar ilyet tamogato ifconfig  
–parancsot tartalmaz. Bovebben a 2.2 kernel hasznalatarol Debian 2.1 alatt:  
–<http://www.debian.org/releases/stable/running–kernel–2.2>

-----  
–  
–A kartya LED–jeinek jelentese:

–  
–piros – eg, ha Remote Alarm–ot kuld a tuloldal  
–zold – eg, ha a vett jelben megtalalja a keretszinkront

–  
–Reszletesebben:

–  
–piros: zold: jelentes:

–  
– – nincs keretszinkron (nincs jel, vagy rossz a jel)  
– – eg "minden rendben"  
–eg eg a vetel OK, de a tuloldal Remote Alarm–ot kuld  
–eg – ez nincs értelmezve, egyelore funkcio nelkul

-----  
–  
–Reszletesebb leiras a hardver beallitasi lehetosegeirol:

–  
–Az altalanos,– es a protokoll–retegek beallitasi lehetosegeirol a 'comx.txt'  
–fajlban leirtak SliceCOM kartyanal is ervenyesek, itt csak a hardver–specifikus  
–beallitasi lehetosegek vannak osszefoglalva:

–  
–Konfigurulasi interfesz a /proc/comx/ alatt:

–  
–Minden timeslot–csoportnak kulon comx\* interfeszt kell létrehozni mkdir–rel:  
–comx0, comx1, .. stb. Itt beallithato, hogy az adott interfesz hanyadik kartya  
–melyik timeslotja(i)bol alljon össze. A Cisco–fele serial3:1 elnevezesek  
–(serial3:1 = a 3. kartyaban az 1–es idoszelet–csoport) Linuxon aliasing–ot  
–jelentenek, ezért mi nem tudunk ilyen elnevezest hasznalni.

–  
–Tobb kartya eseten a comx0.1, comx0.2, ... vagy slice0.1, slice0.2 nevek  
–hasznalhatoak.

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- 
- Több SliceCOM kártya is lehet egy gépben, de saját interrupt kell mindegyiknek,
- nem tud meg megosztott interruptot kezelni.
- 
- Az egész kártyát érintő beállítások:
- 
- Az ioport és irq beállítás nincs: amit a PCI BIOS kioszt a rendszernek,
- azt használja a driver.
- 
- 
- comx0/boardnum – hanyadik SliceCOM kártya a gépben (a 'természetes' PCI
- sorrendben értve: ahogyan a /proc/pci-ban vagy az 'lspci'
- kimenetében megjelenik, általában az alaplapi PCI meghajtó
- áramkörökhöz közelebb eső kártyák a kisebb sorszámúak)
- 
- Default: 0 (0-tól kezdődik a számlálás)
- 
- 
- Bar a következőket csak egy-egy interfészen állítjuk át, mégis az egész kártya
- működését egyszerre állítják. A megkötés hogy csak UP-ban lévő interfészen
- használhatóak, azért van, mert különben nem várt eredményekre vezetne egy ilyen
- parancssorozat:
- 
- echo 0 >boardnum
- echo internal >clock\_source
- echo 1 >boardnum
- 
- Ez a 0-s board clock\_source-at állítaná át.
- 
- Ezek a beállítások megmaradnak az összes interfész torlésekor, de torlódnek
- a driver modul ki/betöltésekor.
- 
- 
- comx0/clock\_source – A Tx órajelforrása, a Cisco-val hasonlatosra készült.
- Használata:
- 
- papaya:# echo line >/proc/comx/comx0/clock\_source
- papaya:# echo internal >/proc/comx/comx0/clock\_source
- 
- line – A Tx órajelet a vett adatfolyamból dekodolja, igyekszik
- igazodni hozzá. Ha nem lát órajelet az inputon, akkor
- atall a saját órajelgenerátorára.
- internal – A Tx órajelet a saját órajelgenerátorára szolgáltatja.
- 
- Default: line
- 
- Normal összeállítás esetén a távközlési szolgáltató eszköze
- (pl. HDSL modem) adja az órajelet, ezért ez a default.
- 
- 
- comx0/framing – A CRC4 ki/be kapcsolása

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- - A CRC4: 16 PCM keret (A PCM keret az, amibe a 32 darab 64 kilobites csatorna van bemultiplexalva. Nem összetevesztendő a HDLC kerettel.) 2x8 –as csoportokra osztanak, és azokhoz 4–4 bites CRC–t számolnak. Először a vonal minőségének a monitorozására szolgál.
  - 
  - papaya:~# echo crc4 >/proc/comx/comx0/framing
  - papaya:~# echo no-crc4 >/proc/comx/comx0/framing
  - 
  - Default a 'crc4', a MATAV vonalak általában így futnak. De ha nem egyforma is a beállítás a vonal két végén, attól a forgalom általában at tud menni.
  - 
  - 
  - comx0/linecode – A vonali kódolás beállítása
  - 
  - papaya:~# echo hdb3 >/proc/comx/comx0/linecode
  - papaya:~# echo ami >/proc/comx/comx0/linecode
  - 
  - Default a 'hdb3', a MATAV vonalak így futnak.
  - 
  - (az AMI kódolás igen ritka E1–es vonalaknál). Ha ez a beállítás nem egyezik a vonal két végén, akkor előfordulhat hogy a keretszinkron összejön, de CRC4–hibák és a vonalakon átvitt adatokban is hibák keletkeznek (amit a HDLC/SyncPPP szinten CRC–hibával jelez)
  - 
  - 
  - comx0/reg – a kártya aramkoreinek, a MUNICH (reg) és a FALC (lbireg) –comx0/lbireg regisztereinek közvetlen elérése. Használata:
  - 
  - echo >reg 0x04 0x0 – a 4–es regiszterbe 0–t ír
  - echo >reg 0x104 – printk()–val kiírja a 4–es regiszter tartalmát a syslogba.
  - 
  - WARNING: ezek csak a fejlesztéshez készültek, sok galibát lehet velük okozni!
  - 
  - 
  - comx0/loopback – A kártya G.703 jelenek a visszahurkolására is van lehetőség:
  - 
  - papaya:# echo none >/proc/comx/comx0/loopback
  - papaya:# echo local >/proc/comx/comx0/loopback
  - papaya:# echo remote >/proc/comx/comx0/loopback
  - 
  - none – nincs visszahurkolás, normál működés
  - local – a kártya a saját maga által adott jelet kapja vissza
  - remote – a kártya a kívülről vett jelet adja kifelé
  - 
  - Default: none
  -
-

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–  
–Az interfeszhez (Cisco terminológiában 'channel-group') kapcsolodo beallitasok:  
–  
–comx0/timeslots – mely timeslotok (idoszeletek) tartoznak az adott interfeszhez.  
–  
– papaya:~# cat /proc/comx/comx0/timeslots  
– 1 3 4 5 6  
– papaya:~#  
–  
– Egy timeslot megkeresese (hanyas interfeszbe tartozik nalunk):  
–  
– papaya:~# grep ' 4' /proc/comx/comx\*/timeslots  
– /proc/comx/comx0/timeslots:1 3 4 5 6  
– papaya:~#  
–  
– Beallitasa:  
– papaya:~# echo '1 5 2 6 7 8' >/proc/comx/comx0/timeslots  
–  
– A timeslotok sorrendje nem szamit, '1 3 2' ugyanaz mint az '1 2 3'.  
–  
– Beallitashoz az adott interfesznek DOWN-ban kell lennie  
– (ifconfig comx0 down), de ugyanannak a kartyanak a tobbi interfesze  
– uzemelhet kozben.  
–  
– Beallitaskor leellenorzi, hogy az uj timeslotok nem utkoznek-e egy  
– masik interfesz timeslotjaival. Ha utkoznek, akkor nem allitja at.  
–  
– Mindig 10-es szamrendszerben tortenik a timeslotok ertelmezese, nehogy  
– a 08, 09 alaku felirast rosszul ertelmezze.  
–  
-----  
–  
–Az interfeszek es a kartya allapotanak lekerdezese:  
–  
– A '-szel kezdodo sorok az eredeti kimenetet, a //–rel kezdodo sorok a  
–magyarazatot jelzik.  
–  
– papaya:~\$ cat /proc/comx/comx1/status  
– Interface administrative status is UP, modem status is UP, protocol is UP  
– Modem status changes: 0, Transmitter status is IDLE, tbusy: 0  
– Interface load (input): 978376 / 947808 / 951024 bits/s (5s/5m/15m)  
– (output): 978376 / 947848 / 951024 bits/s (5s/5m/15m)  
– Debug flags: none  
– RX errors: len: 22, overrun: 1, crc: 0, aborts: 0  
– buffer overrun: 0, pbuffer overrun: 0  
– TX errors: underrun: 0  
– Line keepalive (value: 10) status UP [0]  
–  
–// Itt kezdodik a hardver-specifikus resz:  
– Controller status:  
– No alarms

## [2.6 patch] remove comx driver docs

```
-
-// Alarm: hibajelzes:
-//
-// No alarms – minden rendben
-//
-// LOS – Loss Of Signal – nem erzekelem jelet a bemeneten.
-// AIS – Alarm Indication Signal – csak egymás utáni 1-esek jönnek
-// a bemeneten, a tuloldal igy is jelezheti hogy meghibasodott vagy
-// nincs inicializalva.
-// AUXP – Auxiliary Pattern Indication – 01010101.. sorozat jon a bemeneten.
-// LFA – Loss of Frame Alignment – nincs keretszinkron
-// RRA – Receive Remote Alarm – a tuloldal el, de hibát jelez.
-// LMFA – Loss of CRC4 Multiframe Alignment – nincs CRC4–multikeret–szinkron
-// NMF – No Multiframe alignment Found after 400 msec – ilyen alarm a no–crc4
-// es crc4 keretezesek eseten nincs, lasd lentebb
-//
-// Egyeb lehetséges hibajelzesek:
-//
-// Transmit Line Short – a kartya ugy erzi hogy az adasi kimenete rovidre
-// van zarva, ezert kikapcsolta az adast. (nem feltetlenul veszi eszre
-// a kulso rovidzarat)
-
-// A veteli oldal csomagjainak lancolt listai, debug celokra:
-
- Rx ring:
- rafutott: 0
- lastcheck: 50845731, jiffies: 51314281
- base: 017b1858
- rx_desc_ptr: 0
- rx_desc_ptr: 017b1858
- hw_curr_ptr: 017b1858
- 06040000 017b1868 017b1898 c016ff00
- 06040000 017b1878 017b1e9c c016ff00
- 46040000 017b1888 017b24a0 c016ff00
- 06040000 017b1858 017b2aa4 c016ff00
-
-// A kartyat hasznalo tobbi interfesz: a 0–s channel–group a comx1 interfesz,
-// es az 1,2,...,16 timeslotok tartoznak hozza:
-
- Interfaces using this board: (channel–group, interface, timeslots)
- 0 comx1: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
- 1 comx2: 17
- 2 comx3: 18
- 3 comx4: 19
- 4 comx5: 20
- 5 comx6: 21
- 6 comx7: 22
- 7 comx8: 23
- 8 comx9: 24
- 9 comx10: 25
- 10 comx11: 26
```

## [2.6 patch] remove comx driver docs

```
- 11 comx12: 27
- 12 comx13: 28
- 13 comx14: 29
- 14 comx15: 30
- 15 comx16: 31
-
-// Hany esemenyt kezelt le a driver egy-egy hardver-interrupt kiszolgalasanal:
-
- Interrupt work histogram:
- hist[ 0]: 0 hist[ 1]: 2 hist[ 2]: 18574 hist[ 3]: 79
- hist[ 4]: 14 hist[ 5]: 1 hist[ 6]: 0 hist[ 7]: 1
- hist[ 8]: 0 hist[ 9]: 7
-
-// Hany kikuldendo csomag volt mar a Tx-ringben amikor ujabb lett irva bele:
-
- Tx ring histogram:
- hist[ 0]: 2329 hist[ 1]: 0 hist[ 2]: 0 hist[ 3]: 0
-
-// Az E1-interfesz hiba-szamlaloi, az rfc2495-nek megfeleloen:
-// (kb. a Cisco routerek "show controllers e1" formatumaban:
http://www.cisco.com/univercd/cc/td/doc/product/software/ios11/rbook/rinterfc.htm#xtocid25669126)
-
-Data in current interval (91 seconds elapsed):
- 9516 Line Code Violations, 65 Path Code Violations, 2 E-Bit Errors
- 0 Slip Secs, 2 Fr Loss Secs, 2 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 11 Unavail Secs
-Data in Interval 1 (15 minutes):
- 0 Line Code Violations, 0 Path Code Violations, 0 E-Bit Errors
- 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
-Data in last 4 intervals (1 hour):
- 0 Line Code Violations, 0 Path Code Violations, 0 E-Bit Errors
- 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
-Data in last 96 intervals (24 hours):
- 0 Line Code Violations, 0 Path Code Violations, 0 E-Bit Errors
- 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
-
-----
-
- Nehany kulonlegesebb beallitasi lehetoseg (idovel beepulhetnek majd a driverbe):
- Ezekkel sok galibat lehet okozni, nagyon ovatosan kell oket hasznalni!
-
- modified CRC-4, for improved interworking of CRC-4 and non-CRC-4
- devices: (lasd page 107 es g706 Annex B)
- lbireg[ 0x1b ] |= 0x08
- lbireg[ 0x1c ] |= 0xc0
- - ilyenkor értelmezett az NMF - 'No Multiframe alignment Found after
- 400 msec' alarm.
```

## [2.6 patch] remove comx driver docs

```
- FALC – a vonali meghajto IC
- local loop – a saját adasomat halljam vissza
- remote loop – a kivulrol jovo adast adom vissza
-
- Egy hibakeresesre hasznalhato dolog:
- – 1-es timeslot local loop a FALC-ban: echo >lbireg 0x1d 0x21
- – local loop kikapcsolasa: echo >lbireg 0x1d 0x00
diff --git a/Documentation/networking/slicecom.txt b/Documentation/networking/slicecom.txt
deleted file mode 100644
index c82c0cf..0000000
--- a/Documentation/networking/slicecom.txt
+++ /dev/null
@@ -1,369 +0,0 @@
-
-SliceCOM adapter user's documentation – for the 0.51 driver version
-
-Written by Bartók István <bartoki@xxxxxx>
-
-English translation: Lakatos György <gyuri@xxxxxx>
-Mon Dec 11 15:28:42 CET 2000
-
-Last modified: Wed Aug 29 17:25:37 CEST 2001
-
-----
-
-Usage:
-
-Compiling the kernel:
-
-Code maturity level options
-[*] Prompt for development and/or incomplete code/drivers
-
-Network device support
- Wan interfaces
- <M> MultiGate (COMX) synchronous
- <M> Support for MUNICH based boards: SliceCOM, PCICOM (NEW)
- <M> Support for HDLC and syncPPP...
-
-Loading the modules:
-
-modprobe comx
-
-modprobe comx-proto-ppp # module for Cisco-HDLC and SyncPPP protocols
-
-modprobe comx-hw-munich # the module logs information by the kernel
- # about the detected boards
-
-Configuring the board:
-
```

## [2.6 patch] remove comx driver docs

```

-# This interface will use the Cisco-HDLC line protocol,
-# the timeslices assigned are 1,2 (128 KiBit line speed)
-# (the first data timeslice in the G.703 frame is no. 1)
-#
-mkdir /proc/comx/comx0.1/
-echo slicecom >/proc/comx/comx0.1/boardtype
-echo hdlc >/proc/comx/comx0.1/protocol
-echo 1 2 >/proc/comx/comx0.1/timeslots
-
-
-# This interface uses SyncPPP line protocol, the assigned
-# is no. 3 (64 KiBit line speed)
-#
-mkdir /proc/comx/comx0.2/
-echo slicecom >/proc/comx/comx0.2/boardtype
-echo ppp >/proc/comx/comx0.2/protocol
-echo 3 >/proc/comx/comx0.2/timeslots
-
-...
-
-ifconfig comx0.1 up
-ifconfig comx0.2 up
-
-----
-
-The COMX interfaces use a 10 packet transmit queue by default, however WAN
-networks sometimes use bigger values (20 to 100), to utilize the line better
-by large traffic (though the line delay increases because of more packets
-join the queue).
-
-# ifconfig comx0 txqueuelen 50
-
-This option is only supported by the ifconfig command of the later
-distributions, which came with 2.2 kernels, such as RedHat 6.1 or Debian 2.2.
-
-You can download a newer netbase packet from
-http://www.debian.org/~rcw/2.2/netbase/ for Debian 2.1, which has a new
-ifconfig. You can get further information about using 2.2 kernel with
-Debian 2.1 from http://www.debian.org/releases/stable/running-kernel-2.2
-
-----
-
-The SliceCom LEDs:
-
-red - on, if the interface is unconfigured, or it gets Remote Alarm-s
-green - on, if the board finds frame-sync in the received signal
-
-A bit more detailed:
-
-red: green: meaning:
-
```

## [2.6 patch] remove comx driver docs

- no frame-sync, no signal received, or signal SNAFU.
- on "Everything is OK"
- on on Reception is ok, but the remote end sends Remote Alarm
- on - The interface is unconfigured
- 
- 
- 
- A more detailed description of the hardware setting options:
- 
- The general and the protocol layer options described in the 'comx.txt' file
- apply to the SliceCom as well, I only summarize the SliceCom hardware specific
- settings below.
- 
- The '/proc/comx' configuring interface:
- 
- An interface directory should be created for every timeslot group with
- 'mkdir', e.g: 'comx0', 'comx1' etc. The timeslots can be assigned here to the
- specific interface. The Cisco-like naming convention (serial3:1 - first
- timeslot group of the 3rd. board) can't be used here, because these mean IP
- aliasing in Linux.
- 
- You can give any meaningful name to keep the configuration clear;
- e.g: 'comx0.1', 'comx0.2', 'comx1.1', 'comx1.2', if you have two boards
- with two interfaces each.
- 
- Settings, which apply to the board:
- 
- Neither 'io' nor 'irq' settings required, the driver uses the resources
- given by the PCI BIOS.
- 
- comx0/boardnum - board number of the SliceCom in the PC (using the 'natural'
- PCI order) as listed in '/proc/pci' or the output of the
- 'lspci' command, generally the slots nearer to the motherboard
- PCI driver chips have the lower numbers.
- 
- Default: 0 (the counting starts with 0)
- 
- Though the options below are to be set on a single interface, they apply to the
- whole board. The restriction, to use them on 'UP' interfaces, is because the
- command sequence below could lead to unpredictable results.
- 
- # echo 0 >boardnum
- # echo internal >clock\_source
- # echo 1 >boardnum
- 
- The sequence would set the clock source of board 0.
- 
- These settings will persist after all the interfaces are cleared, but are
- cleared when the driver module is unloaded and loaded again.
- 
- comx0/clock\_source - source of the transmit clock

## [2.6 patch] remove comx driver docs

- Usage:
- 
- # echo line >/proc/comx/comx0/clock\_source
- # echo internal >/proc/comx/comx0/clock\_source
- 
- line – The Tx clock is being decoded if the input data stream,
- if no clock seen on the input, then the board will use it's
- own clock generator.
- 
- internal – The Tx clock is supplied by the builtin clock generator.
- 
- Default: line
- 
- Normally, the telecommunication company's end device (the HDSL
- modem) provides the Tx clock, that's why 'line' is the default.
- 
- comx0/framing – Switching CRC4 off/on
- 
- CRC4: 16 PCM frames (The 32 64Kibit channels are multiplexed into a
- PCM frame, nothing to do with HDLC frames) are divided into 2x8
- groups, each group has a 4 bit CRC.
- 
- # echo crc4 >/proc/comx/comx0/framing
- # echo no-crc4 >/proc/comx/comx0/framing
- 
- Default is 'crc4', the Hungarian MATAV lines behave like this.
- The traffic generally passes if this setting on both ends don't match.
- 
- comx0/linecode – Setting the line coding
- 
- # echo hdb3 >/proc/comx/comx0/linecode
- # echo ami >/proc/comx/comx0/linecode
- 
- Default a 'hdb3', MATAV lines use this.
- 
- (AMI coding is rarely used with E1 lines). Frame sync may occur, if
- this setting doesn't match the other end's, but CRC4 and data errors
- will come, which will result in CRC errors on HDLC/SyncPPP level.
- 
- comx0/reg – direct access to the board's MUNICH (reg) and FALC (lbireg)
- comx0/lbireg circuit's registers
- 
- # echo >reg 0x04 0x0 – write 0 to register 4
- # echo >reg 0x104 – write the contents of register 4 with
- printk() to syslog
- 
- WARNING! These are only for development purposes, messing with this will
- result much trouble!
- 
- comx0/loopback – Places a loop to the board's G.703 signals
-

## [2.6 patch] remove comx driver docs

```
- # echo none >/proc/comx/comx0/loopback
- # echo local >/proc/comx/comx0/loopback
- # echo remote >/proc/comx/comx0/loopback
-
- none – normal operation, no loop
- local – the board receives it's own output
- remote – the board sends the received data to the remote side
-
- Default: none
-
-----
-
-Interface (channel group in Cisco terms) settings:
-
-comx0/timeslots – which timeslots belong to the given interface
-
- Setting:
-
- # echo '1 5 2 6 7 8' >/proc/comx/comx0/timeslots
-
- # cat /proc/comx/comx0/timeslots
- 1 2 5 6 7 8
- #
-
- Finding a timeslot:
-
- # grep '4' /proc/comx/comx*/timeslots
- /proc/comx/comx0/timeslots:1 3 4 5 6
- #
-
- The timeslots can be in any order, '1 2 3' is the same as '1 3 2'.
-
- The interface has to be DOWN during the setting ('ifconfig comx0
- down'), but the other interfaces could operate normally.
-
- The driver checks if the assigned timeslots are vacant, if not, then
- the setting won't be applied.
-
- The timeslot values are treated as decimal numbers, not to misunderstand
- values of 08, 09 form.
-
-----
-
-Checking the interface and board status:
-
-- Lines beginning with ' ' (space) belong to the original output, the lines
-which begin with '/' are the comments.
-
- papaya:~$ cat /proc/comx/comx1/status
- Interface administrative status is UP, modem status is UP, protocol is UP
- Modem status changes: 0, Transmitter status is IDLE, tbusy: 0
```

## [2.6 patch] remove comx driver docs

```
- Interface load (input): 978376 / 947808 / 951024 bits/s (5s/5m/15m)
- (output): 978376 / 947848 / 951024 bits/s (5s/5m/15m)
- Debug flags: none
- RX errors: len: 22, overrun: 1, crc: 0, aborts: 0
- buffer overrun: 0, pbuffer overrun: 0
- TX errors: underrun: 0
- Line keepalive (value: 10) status UP [0]
-
-// The hardware specific part starts here:
- Controller status:
- No alarms
-
-// Alarm:
-//
-// No alarms - Everything OK
-//
-// LOS - Loss Of Signal - No signal sensed on the input
-// AIS - Alarm Indication Signal - The remote side sends '11111111'-s,
-// it tells, that there's an error condition, or it's not
-// initialised.
-// AUXP - Auxiliary Pattern Indication - 01010101.. received.
-// LFA - Loss of Frame Alignment - no frame sync received.
-// RRA - Receive Remote Alarm - the remote end's OK, but signals error cond.
-// LMFA - Loss of CRC4 Multiframe Alignment - no CRC4 multiframe sync.
-// NMF - No Multiframe alignment Found after 400 msec - no such alarm using
-// no-crc4 or crc4 framing, see below.
-//
-// Other possible error messages:
-//
-// Transmit Line Short - the board felt, that it's output is short-circuited,
-// so it switched the transmission off. (The board can't definitely tell,
-// that it's output is short-circuited.)
-
-// Chained list of the received packets, for debug purposes:
-
- Rx ring:
- rafutott: 0
- lastcheck: 50845731, jiffies: 51314281
- base: 017b1858
- rx_desc_ptr: 0
- rx_desc_ptr: 017b1858
- hw_curr_ptr: 017b1858
- 06040000 017b1868 017b1898 c016ff00
- 06040000 017b1878 017b1e9c c016ff00
- 46040000 017b1888 017b24a0 c016ff00
- 06040000 017b1858 017b2aa4 c016ff00
-
-// All the interfaces using the board: comx1, using the 1,2,...16 timeslots,
-// comx2, using timeslot 17, etc.
-
- Interfaces using this board: (channel-group, interface, timeslots)
```

## [2.6 patch] remove comx driver docs

```
- 0 comx1: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
- 1 comx2: 17
- 2 comx3: 18
- 3 comx4: 19
- 4 comx5: 20
- 5 comx6: 21
- 6 comx7: 22
- 7 comx8: 23
- 8 comx9: 24
- 9 comx10: 25
- 10 comx11: 26
- 11 comx12: 27
- 12 comx13: 28
- 13 comx14: 29
- 14 comx15: 30
- 15 comx16: 31
-
-// The number of events handled by the driver during an interrupt cycle:
-
- Interrupt work histogram:
- hist[ 0]: 0 hist[ 1]: 2 hist[ 2]: 18574 hist[ 3]: 79
- hist[ 4]: 14 hist[ 5]: 1 hist[ 6]: 0 hist[ 7]: 1
- hist[ 8]: 0 hist[ 9]: 7
-
-// The number of packets to send in the Tx ring, when a new one arrived:
-
- Tx ring histogram:
- hist[ 0]: 2329 hist[ 1]: 0 hist[ 2]: 0 hist[ 3]: 0
-
-// The error counters of the E1 interface, according to the RFC2495,
-// (similar to the Cisco "show controllers e1" command's output:
-// http://www.cisco.com/univercd/cc/td/doc/product/software/ios11/rbook/rinterfc.htm#xtocid25669126)
-
-Data in current interval (91 seconds elapsed):
- 9516 Line Code Violations, 65 Path Code Violations, 2 E-Bit Errors
- 0 Slip Secs, 2 Fr Loss Secs, 2 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 11 Unavail Secs
-Data in Interval 1 (15 minutes):
- 0 Line Code Violations, 0 Path Code Violations, 0 E-Bit Errors
- 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
-Data in last 4 intervals (1 hour):
- 0 Line Code Violations, 0 Path Code Violations, 0 E-Bit Errors
- 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
-Data in last 96 intervals (24 hours):
- 0 Line Code Violations, 0 Path Code Violations, 0 E-Bit Errors
- 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
- 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
-
-----
```

## [2.6 patch] remove comx driver docs

- - Some unique options, (may get into the driver later):
  - Treat them very carefully, these can cause much trouble!
  - 
  - modified CRC-4, for improved interworking of CRC-4 and non-CRC-4
  - devices: (see page 107 and g706 Annex B)
  - lbireg[ 0x1b ] |= 0x08
  - lbireg[ 0x1c ] |= 0xc0
  - 
  - - The NMF - 'No Multiframe alignment Found after 400 msec' alarm
  - comes into account.
  - 
  - FALC - the line driver chip.
  - local loop - I hear my transmission back.
  - remote loop - I echo the remote transmission back.
  - 
  - Something useful for finding errors:
  - 
  - - local loop for timeslot 1 in the FALC chip:
  - 
  - # echo >lbireg 0x1d 0x21
  - 
  - - Switching the loop off:
  - 
  - # echo >lbireg 0x1d 0x00
  -
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