8.2 Other commands.

M :
In the SATELLITE ORBITAL COMPUTATION menu, manual modification of the orbital parameters of the satellites.

N Callsign :
In the NOMENCLATURE menu, this command allows to edit/mo nomenclature informations of a user.

S file :
In the gateway and in command mode, send an ascii file.

W file :
In the gateway, opens a capture file. The file is closed with another W command.

YU Filename :
In gateway mode and only from the console send a binary file to a remote system under the YAPP protocole.

YD Filename :
In gateway mode and only from the console receive a binary file from a remote system under the YAPP protocole.

9 FBBDOS COMMANDS :

The syntax of the various FBBDOS commands is very close to that of MsDos (R).

Several specific commands have been added: PUT and GET for ASCII file transfers. XPUT, YPUT and XGET, YGET for binary file transfers.

EDIT for ASCII files edition.

When entering FBBDOS, the prompt shows the virtual directory in which the user is located. There is no physical drive concept (A, C, etc...), the user is situated in a directory defined in the INIT.SRV file; this directory becomes the root of the available directory tree. Should the user be a SYSOP, and if he successfully validated his privileges using the SYS command, the root of FBBDOS will be the root of the current drive.

A file created by a user belongs to this user.

Only the owner of the file, or a SYSOP granted writing privileges (SYS command) are permitted to delete or modify this file.

CD directory :
Changes the active directory. This command allows you to move within the directory tree by changing the active directory. "CD.." changes back by one directory "upstream" towards the root.

COPY Origin Destination :
Copies a file into another file. If the destination file already exists, it must belong to the user.

DEL file :
Deletes a file. A file cannot be deleted if it does not belong to the user.

DIR [mask] :
Displays all the files contained in the directory or these corresponding to the mask if it is specified. If the mask matches a directory name, the content of this directory will be listed.

DOS Program Arguments :
Allows a remote SYSOP (after SYS command) to run a DOS program. This program can not expect keyboard input. A list of arguments can be specified. The output to the screen will be send to the remote SYSOP at the completion of the program. If the program expects inputs, after a time-out of 2'45, it will be aborted (if possible) and the normal operation will resume.

DU [mask] :
Gives the size of the tree, and local used disk.

EDIT file :
Edition of a text file, using the line editor. If the file already exists, it must belong to the user. The instructions to use the line editor can be found in the Appendix 1.

EXIT :
Exits FBBDOS and brings back to the BBS or server.

GET file :
 Displays the content of an ASCII file. Such a display is never scrolled by pages, and ends with a Ctrl-Z, thus allowing ASCII file transfers from the BBS to the user.

LIST mask :
 Displays all the files contained in the directory or these matching the mask specified. if the mask matches a directory name, the content of this directory will be listed. Each line displays the filename and a descriptive comment (cf YI command).

MD directory :
 Creates a new directory. The new directory is appended next to the current directory.

O :
 Display or setting of various options.

OL :
 Lists the available languages.

OL number :
 to select a language.

OP :
 validates or disables the scrolling of pages.

OP nbr of lines :
 Initialization of the page scrolling

PRIV :
 Access to a private directory (or return to Fbb-Dos directories). Each user can have access to a private directory provided it has been defined by the SYSOP (I.E. EU command). Several users can share a private directory.

PUT file :
 Accepts an ASCII file from a user. The file must end with a Ctrl-Z to be validated. If the file already exists, it should belong to the user.

RD directory :
 Deletes a directory. A directory cannot be deleted as long as it is not empty.

TYPE file :
 Displays the content of an ASCII file. Eventually, this list can be scrolled by pages.

VIEW mask :
 Displays the content of all the archive files contained in the directory and corresponding to the specified mask. This function uses the FV.COM shareware. Thanks to the authors of this last one.

XGET file [offset]:
 A binary file is sent by the BBS. The Xmodem protocol is used. This command works only on a PSTN modem port. If offset is specified, download will start from offset.

XPUT file :
 The BBS receives a binary file. The Xmodem protocol is used. This command works only on a PSTN modem port.

YGET file :

Transmission of a binary file by the BBS. Both YAPP and YAPC protocols are used.

YPUT file :
Reception of a binary file by the BBS. Both YAPP and YAPC protocols are used.

10 CONSOLE COMMANDS :

Most of these commands will open a window. The server operations is suspended while this windows stays open, but the user requests are queued and will not be lost. If no reply is given, the window will close down after a few seconds, and the default reply will not be taken into account. Do not forget to validate your replies with "Enter".

F1 General help related to commands attribution.

F2 Connection to the server in local mode with the callsign specified after "Console:"

F3 Manual disconnection of one channel.

F4 Manual forwarding request, or cancellation of current forwarding. If a number up to 8 is specified, the corresponding port will be scanned for forwarding. If the number 9 is specified, all ports will be scanned. If a callsign is specified, it will be scanned for forwarding. Preceeding the callsign with + will force reverse even if there is no waiting mail, preceeding the callsign with - will stop the forwarding and disconnect.

F5 Split screen. The upper part is for internal server traffic purpose, the lower part shows the traffic flow on the various channels. The up and down arrow keys are used to move the separation border between the two windows. Pressing F5 again toggles back to a single window display.

F6 Used to change the console callsign. Thus, you can simulate a call from a user.

F7 Direct commands to the TNC. This allows a dynamic modification of the parameters which will be affected as default to the channels of the related port. These parameters will not be taken into account for the channels already connected, and will be transferred to the channel upon disconnection. The commands are specific to the TNC in use: WA8DED with a TNC2, HostMode PK232 with a PK232, or the BPQ node.

F8 Server reboot. The cleaning and the housekeeping of the mail is not done. The reboot can take place at once (immediate disconnect of channels in use), or delayed (awaiting the normal disconnect of all the active channels).

F9 Traffic with the console callsing (Gateway mode).

F10 Switches to chat mode with the user who requested this mode (using the T command), or end of chatting (user is returned to normal BBS usage).

ALT-F1 Displays the volume of the forwarding queues sorted per BBS.

ALT-F2 Displays the list of the stations connected at the time this command is keyed in.

ALT-F3 Starts or stops the messages scanning after the modification of the FORWARD.SYS file. Before starting scanning, FORWARD.SYS and its include files, BBS.SYS and SWAPP.SYS are recompiled.

ALT-F4 List the last connections.

ALT-F5 Call the full screnn tiny-edit (cf para. 12).

ALT-F6 Miscellaneous options:

- Valid call : Enables the T command.

- Connection Bip : Beeps on every connection.

- Display calls : Displays the channel and the callsign.

- Gateway access : Gatewaying between ports is enabled.

- Justification : The texts typed in at the console are justified.

ALT-F7 Forward imports out of an external file (MBL compatible).

ALT-F8 Forward exports to an external file (MBL compatible).

ALT-F9 Jump to DOS (EXIT to return). WARNING: the BBS operation is suspended all this time long. The users will not be disconnected, and their commands will be queued.

F10 Complete server shutdown. The shutdown can be immediate (disconnection of the active channels), or delayed (awaiting the normal disconnect of all the active channels).

ALT-B Forces screenblank.

ALT-D Writes the current screen buffer to a file

ALT-R Redisplays the screen

ALT-X Server shutdown (idem ALT-F10)

ALT-N Allows reprogramming a telephone modem

ALT-S Swap to DOS screen

Arrow -> Display next channel.

Arrow <- Display previous channel.

Ctrl -> ou Ctrl <- Return to the display of all channels.

PG-UP Display the previous page if it exists

PG-DW Display next page.

HOME Display the first page.

END Display the last page.

11 TEXT VARIABLES :

11.1 Variables definition.

Most of the text files support usage of variables. These variables enable text or values to be placed, depending upon the context or the channels in use.

These variables are defined with the $ sign, followed by a letter. The meaning will be different if the letter is in capital or in lower case. A second set of variables is defined with the % sign, followed by a letter.

They can also be followed by a figure and in this case, this is a parameter whose value is function of the context. These particular variables are used in texts, usually as computation results. Do not use them in other places than text files (*.TXT).

The $ sign will have to be written $$, if it is not to be considered as a variable. The % sign will have to be written %%.

11.2 List of the variables.

$0 - $9 : Temporary variables.
$A : @ BBS of the message header.
$a : Year of the current date.
$B : Inserts a Ctrl-G (Bell).
$b : Zip code of the user.
$C : Number of the next message.
$c : City where the BBS is located.
$D : Current date (Format : YYMMDD).
$d : Current date (Format : DD-Dec).
$E : Version number.
$F : Minute of the hour for forwarding.
$f : File appended to the message header.
$G : Destination of the message header.
$g : Number of gateway ports available.
$H : Current time (Format : HH:MM).
$h : Home BBS of the user.
$I : First name of the connected user.
$i : Date and time of the message header (Format MMDD/HHMM).
$J : Date of the message header (Format YYMMDD).
$j : Date of the message header (Format 29-Dec).
$K : Time of the message header (Format : HH:MM).
$k : List of the users involved in the conference.
$L : Number of the last used message.
$l : Filter value of LC command.
$M : Number of the message header.
$m : Frequency of the port in use.
$N : Number of active messages.
$n : Size of the message header.
$O : BBS callsign.
$o : SSID of the BBS.
$P : Origin of the message header.
$p : Number of lines of scroll page option, for the connected user
$Q : List of the 8 callsigns which have new messages.
$q : Base messages number of the user.
$R : BID of the message header.
$r : L or space character. L means that the message was locally created.
$S : Subject of the message header.
$s : Status of the message header.
$T : Time of message header (Format : HH:MM).
$t : Type of message header.
$U : Callsign of the connected user.
$u : Current drive in FBBDOS.
$V : SysOp first name.
$v : Complete route (with the hierarchical structure).
$W : Inserts a carriage return.
$w : Inserts an escape character.
$X : Date of the last connection (Format : 881229).
$x : Date of the last connection (Format : 29-Dec).
$Y : Time of the last connection (Format : 12:30).
$y : Year of message.
$Z : Last message read by the user (L command).
$z : Zip Code of the BBS.
$* : Number of active channels.
$= : User's current channel.
$! : User's current port.
$^ : Number of allowed ports.
$? : BBS QTH-Locator.
$% : List of the connected users.
$: : Connection duration (Format : 12mn 05s).
$. : Machine operation time (Format : 12mn 05s).

$$: Character $

Second set of variables :

(unformatted means that text is not padded with spaces) :

%A : @ BBS of the message header, unformatted.
%G : Destination of the message header, unformatted.
%i : Date and time of the message creation (Format MMDD/HHMM).
%J : Date of the message creation (format YYMMDD).
%j : Date of the message creation (format 29-Dec).
%K : Time of the message creation (format HH:MM).
%M : Numer of the message, unformatted.
%n : Size of the message header, unformatted.
%P : Origin of the message header, unformatted.
%y : Year of the message creation.
%% : Character %

12 FULL SCREEN TINY-EDIT :

The Tiny-Edit is started with the Alt-F5 command. Normal operation of the BBS is maintained, the editing takes place in the console window, above the monitoring area of the display.

Most of the text files can be edited with this editor despite of its simplicity. The most concerning drawback is the fact that the line length can not be longer than 79 characters. The language files (xxxx.TXT) therefore cannot be edited.

Tabs are not generated and are presentend on the display with a special character.

During the editing, the usual BBS command set are no longer available, they are replaced by the tyni-edit commands.

Upon activation of the editor, a dialog window ask for the filename to edit.

The default directory is the directory "SYSTEM" as defined in INIT.SRV.

Examples: FORWARD.SYS will edit SYSTEM\FORWARD.SYS
FWD\F6FBB will edit SYSTEM\FWD\F6FBB

It will be necessary to specify the full path for a file outside of the default directory root or located on another disk drive. If only the drive name is specified, the current directory on this drive is searched for the filename.

Example: C:INIT.SRV will edit C:\FBB\INIT.SRV (while the current directory is c:\FBB).

To edit a message, one should give the message number with a leading pound sign ('#').

Example : #42645 will edit the message number 42645.

In case the edited file is a compiled one (I.E. FORWARD.SYS) it will be compiled again after the termination of tiny-edit

Main Commands :

F1 : Help windows.

F2 : The edited file is appended to the incoming mail file of the BBS (MAIL.IN).

F8 : Save current file.

F9 : Save current file and exit.

F10 : Exit Tiny-Edit without saving ! Caution : acted upon ! no confirmation requested before closure of the current edit session.

Edit Commands :

Almost all commands are available from the numeric key-pad.

up-arrow : the cursor goes up one line

down-arrow : the cursor goes to next line

right-arrow : the cursor moves forward one character. At the end of the line it goes to the beginning of the next line.

left-arrow : the cursor moves backward one character position. At the beginning of the line it goes back to the end of the former line.

page-down : the cursor moves toward the end of the current page. If it is already at the end of page position, then the next page will be displayed.

page-up : the cursor goes back to the first line of the current page. If it is already at the first line, the former page will be displayed.

home : the cursor moves to the first character of the current line.

end : the cursor goes to the character position next after the last character of the line.

insert : toggle the insert editing mode. The cursor is an underscore while in insert mode. It is a cursor block in overstrike mode.

delete : erase the character at cursor position, the cursor is not moved.

back-space : the character preceding is deleted and the cursor moves backward one position.

Ctl right-arrow : the cursor moves to the first character of the next word.

Ctl left-arrow : the cursor moves to the first character of the previous word.

Ctl home : the first page of the file is displayed and the cursor goes to the first line.

Ctl end : the last page is displayed and the cursor goes to the last line of the file.

Ctl Y : the current line is deleted.

Ctl Q : the current line is deleted from the cursor position up to the end.

13 EMS and XMS :

With the PC, DOS is drastically limited to 1 Mo. This limitation has been overcomed, thanks to some tricks of different flavours. Several standards had seen the day light, the most welknown in use to day are LIM-EMS and XMS. Both EMS and XMS are trademarks.

13.1 EMS (Expanded memory) :

EMS stands for Expanded Memory Specification.

EMS works on all PC's and compatable, with a paging system for the memory (all the 386 family and some of the 286). Some add-on memory board on XT's or AT's support this feature, using software activated memory bank switches.

Several drivers for expanded memory exists. As for examples, QEMM386.SYS (Quaterdeck) and EMM386.SYS (Microsoft) for 386 based machines. These drivers are to adhere to the LIM-EMS (Lotus-Intel-Microsoft). The most versions are 3.2 and 4.0. Several extension were made within the 4.0, nevertheless the FBB software accomodates both.

The way it works is quite straightforward. The expanded memory is cut in 16K pages. A window of 4 pages (64K) is set in the standard addressing area of the PC and it allows the access to 4 pages of the extended memory. This window is usualy in the segment D000 or E000 outside of the 640 K.

The size of the expanded memory depends on the total memory installed in the PC. The parameters given to the driver will allow the user to set the amount of the available memory which will be used as expanded (paged) memory.

A command sent from the application software to the driver will specify the pages to be seen through the window and given access. It is then simple to write and read in the paged memory.

This explanation is simplified, the LIM-EMS standard has the provision for many other extended features

13.2 XMS (Extended memory) :

XMS means eXtended Memory Specification.

XMS works on most of the PC's and compatable 286 or 386 with extended memory above 1Mo.

One of the drivers based on this standard is the HIMEM.SYS from Microsoft and being part of some software package or operating systems. (I.E. Windows). Other drivers are available on the market which support the same standard.

This driver allows also the load and the activation of TSR modules in high memory (HMA).

One trick in the behaviour of the 286 and 386, is such that in real mode, (similar to 8086 8088) the addressing does not cover 1Mo only, it covers actualy 1Mo plus 64K. In real mode the addressed segments are of 65536, each segment can be defined on 16 bytes boundaries.

Example : Segment 1000 Offset 4000 (1000:4000) is actualy the 14000 address.

Should we take the last segment FFFF (FFFF:0000), the address is FFFF0, and this corresponds to the MegaByte minus 16 bytes (each segment can be defined at each 16 bytes boundaries). In theory this last segment would normaly be limited to 16 bytes. In fact we go past these 16 bytes and thus gain access to the first 64Ko of the extended memory. This so called HMA (High Memory Area) is of 65520 bytes, from FFFF:0010 to FFFF:FFFF. Resident program can be loaded in this area, and executed.

Beyond the HMA zone, the only way to access the memory is by the virtual mode (extended addressing). This addressing is transparent for the driver HIMEM.SYS and allows depending on the type of processor in use (286 or 386) to access a large amount of memory.

This memory zone is called EMB (Extended Memory Blocks). It will be used to store and retrieve data. Access is given through HIMEM.SYS which works by copy, the processor being set in the driver in virtual mode (extended addressing). The copy process can be lengthy for large amount tranfers. The driver is stopped by high level interrupts such as the system clock and the prioritized I/O routines.

13.3 FBB and the additional memory :

The FBB knows about the usage of both memory types (EMS or XMS).

Messages lists are stored in this memory. Other data will be stored there latter-on. The increase in throughput for search is well noticed, response time for L>, L<, LS ... commands is ten to twenty times better, about 1 second for a 386.

XMS release shoud be greater than 2.0.

The type of handling is at first depending on the processor, XMS on standard 286, EMS or XMS on 386. The EMS can require an add-on memory board, the system is then rendered very efficient.

Some of the 286 machines incorporate the hardware chips to carry on with the bank switching on the mother board. Others support this feature at the expense of heavy! software spoiling sometimes more than 64K of memory.

The EMS on 386 machines calls only for a small driver like EMM386, QEMM386 (few Kbytes).

13.4 Choice of the add-on memory :

The choice of the type of the add-on memory is conditioned by the harware of the machine to be upgraded.

To summarize :

XT : nothing but mandatory add-on card.
AT 286 : always XMS sometimes EMS.
AT 386 : all modes possible, EMS is the more efficient.

14 ASYNC PORT DRIVERS AND TELEPHONE MODEM.

14.1 ESS.COM (BIN).

ESS is an async port driver optimized for FBB software. It can drive either TNC2/PK232/clones nor KAM.

This small device driver is loaded as resident at the beginning of the machine initialization (TSR).

One ESS handles one serial line and makes use of one IRQ.

The COM number, the address of the serial interface and the IRQ number are given as paremeters appended to the command line. The address should be given as a FOUR digit hex number.

Example : Install ESS for COM1 at hex 03F8 and using IRQ 4 :
ESS 1 03F8 4

If only the COM number is specified, the address and the IRQ will default to the standard DOS value. Thus ESS 1 would have had the same effect than the example.

Any address or IRQ number can be specified. Carefully check that the address and the IRQ number match the board you intend to use, special attention should be given to the IRQ number which should not already be used by another peripheral device in the machine. On a PC the IRQ's can not usually be shared.

Should there be more than one port to handle, several ESS can be cascaded. The IRQ should be different for each ESS, except for the case in which the interrupt sharing is supported by the serial card used.

Example :

```
ESS 1 03F8 4
ESS 2 02F8 3
```

This sequence will load ESS's for COM1 and COM2.

ESS accommodates also the muxing arrangement of serial ports.

14.2 FBBIOS.COM (BIN).

FBBIOS is a serial line driver dedicated to the usage of a PSTN modem. Binary as well as ASCII file tranfer are supported with the XMODEM protocole.

FBBIOS handles one serial line, one IRQ is required. The COM number, the address of the serial interface and the IRQ number are given as parameters appended to the command line, the address should be specified in FOUR hex digits.

Example : Install FBBIOS for COM1 at hex 03F8 and using IRQ 4 :
FBBIOS 1 03F8 4

If only the COM number is specified, the address and the IRQ will default to the standard DOS value. Thus FBBIOS 1 would have had the same effect than the example.

Any address or IRQ number can be specified. Carefully check that the address and the IRQ number match the board you intend to use, special attention should be given to the IRQ number which should not already be used by another peripheral device.

On a PC the IRQ's can not usually be shared.

If the modem in use is at the HAYES standard, FBBIOS can modify the line speed according to the one of the incoming call connection. In this case the parameter 'A' should be appended to the command line to activate this feature. This is not true with some buffered modems using a junction with a settled speed.

Example : FBBIOS 1 03F8 4 A

Upon receipt of the string CONNECT 1200 or CONNECT 2400, the driver will adjust its speed to the incoming call.

From version 1.30, FBBIOS.COM can run up to 56 KBauds. Be sure that your computer is fast enought !

14.3 TELEPHONE MODEM :

The FBB software allows the connection of a telephone modem on a serial port.

The modem must be declared in PORT.SYS. It is necessary to use the FBBIOS.COM program. This driver performs BBS to Modem interfacing.

It is therefore necessary to load FBBIOS prior to BBS start up. A line FBBIOS will be added ahead of APPEL.BAT file. See below an example of the APPEL.BAT file.

Of course, the FBBIOS used will have to match the serial port on which the modem is to be connected (address and IRQ).

FBBIOS will modify the RS232 speed according to the CONNECT info received from the modem :

CONNECT 1200 set the driver to 1200 Baud.
CONNECT 2400 set the driver to 2400 Baud.

The driver is reset to the default speed rate (specified in PORT.SYS) at disconnect.

At connect, the text ; "xxxx BBS. Phone Access" is sent by default. This can be modified by creating a file MODEM.ENT in the SYSTEM directory.

You can specify in the PORT.SYS file that you accept connections, even if the user is not registered. In this case, the connection will be "read-only", the user has only a read only-access, he cannot download files or write messages, except to the sysop.

When a non-registred user is connected, he will be signified that he only has a "read only access", and will be prompted to go on. If he answers "Y", he will go to the BBS menu, else he will be asked again for a callsign.

Type of modem.

Various experiments have been carried out with several different kinds of V22 (external, or internal cards) modems. If possible, modems at 1200 or better 2400 bps should be used; the modem speed is to be declared in PORT.SYS. Some modems can work either 1200 or 2400 bps, with an internal speed conversion between the modem and the computer. For example, the modem can transmit and receive on the telephone line at 2400 bps and talk to the PC at 1200 bps.

If the modem uses the HAYES protocole, the INITTNCx.SYS file must hold the correct HAYES init lines.

Protocol:

The configuration used is 1 start bit, 8 data bits, 0 parity, 1 stop bit, that is to say 10 bits words during the transmission.

The Minitel standard is not supported (7 bits, even parity).

The software being parametered by default in 8 bits, it was not possible to modify this protocol, as the binary file transfers are carried out on 8 bits.

The transfer of binary files is made with the Xmodem protocol. The frame size should be specified at 128 bytes.

NB.: FBBIOS handles XON/XOFF protocol during the transmissions.

Wiring for external modems.

The modem must be able to tell the BBS that a call has been detected with the remote modem carrier detection. This is the reason why all the RS232 signals are used by the BBS. The RS232 cable has to be wired up pin to pin with no inversion: pins 2, 3, 4, 5, 6, 7, 8, 20, and 22 of the DB25 connector.

Usage.

BBS users are not authorized to connect the BBS through a modem as per the default settings.

The SysOp must declare the modem users. To do it, perform a user edition (EU call) and put M (for Modem) then W pass_word. A password made of the three last letters of the callsign can be attributed for the first connect. Then the user will be able to change it through the NP command. The authorized callsigns can be listed by the DM command.

When a modem call occurs, once the modulations have been detected, the modem advises the BBS that a connection is effective on the telephone line. Then the BBS asks for the caller's call sign and password.

The user is granted three tries before being disconnected. If everything is all right, the user can access the same commands like connected on a radio channel, he will have to disconnect using the B command.

The log file is maintained for the connections through the modem channel. Keep in mind to add a line in the LOGFBB.CNF file for the modem calls to be processed in the stats analysis by LOGSTAT.

Example of APPEL.BAT with FBBIOS for a modem connected to COM3/IRQ4 :

```
echo off
break off
timer/s
echo Appel du serveur ^C pour interrompre
sleep 3
fbbios 3 03E8 4
serv %1
if errorlevel 2 goto direct
if errorlevel 1 goto suite
goto fin
:suite
etc........
```

Example of PORT.SYS file with 3 serial port used:
COM1 for a TNC, COM2 for a TNC, COM3 for the modem.
FBBIOS will have been previously configured for COM3 (3E8, IRQ 4).

```
# Programmation and channel setup file
#
# number of Coms : COM1, COM2, Etc...
# number of TNCs : number of frequencies used.
```

```
#
#Ports TNCs
3      3
#
# Com : COM number(1,2 .. 8)
# Interface: 0 : Mode Direct
# 1 : Mode Combios
# 2 : Mode BPQ (BPQ in AA4RE mode)
# 3 : Mode Modem
# Address : in hexadecimal. Ignored if Combios/BPQ/Modem.
# Speed : Baud rate of port. Ignored if BPQ.
#
# There must be as many lines as declared ports
#
#Com Interface Address (Hex) Speed
1    0         3F8           9600
2    0         2F8           9600
3    3         3E8           1200
#
# TNC : TNC number, in increasing order.
# Nbvoies : Number of channels dedicated to one TNC, depends on
# the firmware used, the DED or the TF4 allowing a max of 4
# channels management, 18 with the TF18.
# Com : Number of the Com to which the TNC is connected.
# Canal : Number of channel if a MUX is used, or 1.
# Paclen : Default TNC paclen value.
# Maxframe: Default TNC maxframe value.
# M/P-Fwd : start of forward: minute of the hour, and forward
# period for corresponding frequency.
# Mode : Access - One lettre out of:
# B : Mode BBS.
# G : Mode invite.
# U : Mode Normal
# Emulation - One lettre out of:
# D : Mode DED.
# P : PK232.
# Options - Optionally, one or more letters out of:
# M : Modem access.
# Y : Yapp authorised on this frequency.
# W : Gateway authorised to this frequency.
# Frequence: Text giving the TNC frequency (9 characters max).
#
# There must be as many lines as TNC's declared.
#
#TNC NbCh Com MultCh Pacl MxBloc Fwd M/P-Fwd Mode Freq
1    5    1   1      230  2      1   10/60   UDW  144.675
2    4    2   1      250  3      2   12/30   UDYW 430.675
3    1    3   1      128  2      0   00/60   UM   MODEM
```

Example of INITTNCx.SYS file for HAYES modem :

```
#
ATZ
ATS0=1
```

Example of FORWARD.SYS file to forward via modem. A protoco correction (like MNP) must be used to avoid any modifications of texts. The HAYES command ATDT diales the line, and when the connection is established, the callsign (preceded with a "." to avoid echoing) is sent twice and then the password. The callsign is sent twice in case of a problem the first time. ^M is the <return> variable.

```
A LA1B
```

```
  #
  P C                                 <-- Modem port.
  #
  C C F6FBB ATDT19~~~12345678^M       <-- Connects F6FBB using HAYES.
  V .F6FBB^M~~~.F6FBB^M~~~PASSWORD^M <--sends callsigns and password.
  #
  B LA1B
  F LA6CU
  #
------
```

In the PORT.SYS file, the number of forward channels for the TNC (modem) must be 1.

```
#TNC NbCh Com MultCh Pacl MxBloc Fwd M/P-Fwd Mode Freq
1    5    1   1      230  2      1   10/60   UDW  144.675
2    4    2   1      250  3      2   12/30   UDYW 430.675
3    1    3   1      128  2      1   00/60   UM   MODEM
```