FANSI-CONSOLE (tm)
The Integrated Console Utility (tm)
Last Minute User Manual News
Version 3.01B - November 27th, 1990

No Smoking Software (tm)

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written by professional programmers. The extremely friendly licensing
terms found within the FANSI-CONSOLE User Manual govern the usage and
copying of FANSI-CONSOLE 3.00. We offer this program with a no risk
60-day money back satisfaction warranty. This means if it does not do
what YOU want it to, you can return it for a refund. Of course, if
you do return it for a refund, you must also stop using it!

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Chapter 1

Introduction

This news file describes changes which the **FANSI-CONSOLE** User Manual
and Technical Manual do not yet document and features which they
document incorrectly or incompletely. You should use this file as a
supplement to these manuals, and refer to it first. However, this
news file makes numerous references, both explicit and implicit, to
the User Manual. So if you remain puzzled after reading a section
here, do read the corresponding sections in the User Manual as well!

For convenience in finding corresponding sections in the **FANSI-
CONSOLE** User Manual, except for **new** chapters and sections, the
chapter and section numbers and titles in this news file match those
in the User Manual which it supplements or amends. If the news file
uses terminology unfamiliar to you, you may find it defined in the
corresponding sections in the User Manual, or using the User Manual
index.

1.1 What new things can **FANSI-CONSOLE** do?

1.1.1 Non-IBM standard screen display modes

FANSI-CONSOLE now supports some non-IBM standard screen display modes
(FANSI-SCRNMODE) native to your display adapter. For more
information, see the chapter entitled "More Rows and Columns" later
in this news file.

1.1.2 More rows and columns

FANSI-CONSOLE now "import" some non-IBM standard non-native screen
display modes (FANSI-SCRNMODE) to some Super-EGAs and VGAs. This
provides higher resolutions such as 132 column and 60 row text modes
for Super-EGAs and VGAs, 800x600 graphics for VGAs, and 640x480x16
graphics modes for Super-EGAs.   For more information, see the
description of EGASUPER.DEV and the INITLOAD.DEV /S=1 option in the
chapter entitled "More Rows and Columns" later in this news file.

1.1.3 Allows use of drivers for other display adapters

Even if a program does not have a driver for a specific screen
display mode for your display adapter, it may have another driver for
a similar screen display mode for another display adapter that you
can now use instead! Since our INITMAP program uses <u>ALL</u> the common
mode numbers for a screen display mode, you can now get each screen
display mode using any of the common mode numbers. So you can use a
driver for a one adapter with a different adapter, <u>if</u> <u>FANSI-CONSOLE</u>
<u>supports</u> <u>a</u> <u>similar</u> <u>dimension</u> <u>screen</u> <u>display</u> <u>mode</u> <u>on</u> <u>that</u> <u>second</u>
<u>adapter</u>. For example you can use drivers for "VGA 640x480x16=mode 18"
on your Paradise Autoswitch 480 or any EGA with a similar screen
display mode; Or you can use drivers for "Paradise Autoswitch 480
640x480x16=mode 80", on a VGA or any EGA with a similar screen
display mode. Or you can use an 800x600x16 or 800x600x256 or
1024x768x16 driver for one VGA on a different VGA which has a similar
screen display mode.

Chapter 2

Starting Quickly

2.1 Did I get all the diskettes I am supposed to get?

The $75 list price User Manual (FMN/FMU part number) is no longer
"the Complete Package" as it was with version 2.00. It does not
include the new Technical Manual and the diskettes which go with it.
Diskettes numbered 3 of 3 for 5 inch diskettes, and 2 of 2 for 3 inch
diskettes, come only with the Technical Reference Manual. If you
ordered part numbers for just the User Manual (FMU/FMN part numbers),
or just Diskettes (FDU/FDN part numbers), or the Serializer Diskettes
(FSU/FSN part numbers), then you have just two diskettes numbered 1
of 3 and 2 of 3 for 5 inch diskettes, or 1 of 2 for 3 inch diskettes.
The Technical Reference Manual comes only in the $119.95 list price
Complete Package (FPN/FPU part number) or in the $59.95 Complete
Package from User Manual Conversion (Technical Manual, FPM part
number). See your brochure (enclosed) or update announcement for more
details on what each package/part number contains.

2.2 How do I get files from the diskette archives?

To reduce the number of diskettes required, we now package <u>FANSI-
CONSOLE</u> as several diskettes with self extracting PKZIP archive files
on them. To extract all the files in the archive, just run the
program found on the diskette and give a target directory for the
unarchived files. For example, to unarchive the files from GROUP#1 in
drive A: to your fixed disk directory C:\FC, and create the C:\FC
directory, if needed:

                        A:GROUP#1 C:\FC -D
For more help with the unarchiving program called PFSFX used in all
the diskette archives, just run the archive file with the /? option.
For example:

                        A:GROUP#1 /?

2.3 Which files contain which versions?

You have received a copy of <u>FANSI-CONSOLE</u> version 3.00 (FCONSOLE.*
files on diskette #1), along with version 3.01 (FCONBETA.* files on
diskette #1), the latest commercial version. Version 3.00 has some
but not all the features of Version 3.01. The 3.00 User Manual

installation information __does__ apply to the 3.01 version, with
additional information in this FCONSOLE.NEW file.

For a brief list of differences between versions 3.00 and 3.01, refer
to the FCONSOLE.HST file.

2.4   What has changed since __FANSI-CONSOLE__ 2.00?

If you have purchased the update to __FANSI-CONSOLE__ version 2.00, then
the following notes summarize which sections of the User Manual you
should now read as you install the new version.

2.4.1   No longer shareware

Unlike Version 2.00, __FANSI-CONSOLE__ Version 3.00 and Version 3.01 are
__NOT__ shareware, regardless of whether we designate them as commercial
or beta-test versions! Please do __NOT__ put copies of either version on
bulletin boards, networks, or otherwise distribute it to others who
have not paid for it. __FANSI-CONSOLE__ no longer has an on-diskette
abbreviated user manual in a file FCONSOLE.DQC.

2.4.2   FKEYBRD and KEYB*.KEY files added

We have added a new program called FKEYBRD which installs a new type
of file called a keyboard description file. For more information, see
the subsection entitled "Replace KEYB Programs With FKEYBRD in
AUTOEXEC.BAT File" in the User Manual chapter entitled "Starting
Quickly". This section of the User Manual is not clear on several
points. First,   regardless of which MS-DOS version or keyboard you
have, __even__ __standard__ __ones__ __from__ __IBM__, you need to use FKEYBRD to install
the appropriate keyboard description file, or your keys may not __all__
work correctly. Second, if you did not previously use a MS-DOS KEYB
program in your AUTOEXEC.BAT file, use the two letter keyboard
language abbreviation "US". Third, the manual does not describe the
keyboard styles well. Use "AT" for the old AT style keyboard with a
Sys Req key but no F11 or F12 keys. Use "EN" for the enhanced style
keyboard with the F11, F12 and Sys Req keys. Use "PC" for the PC or
XT style keyboard with no F11, F12, or Sys Req keys.

2.4.3   Installation options changed

We removed the installation options /A,   /J,   /K, /P, /V, and /Y. You
can still send the appropriate escape sequences to cause the same
effect. You can use FANSISET to create a file to TYPE or SEND
commands to place in your AUTOEXEC.BAT file. For more information
about FANSISET, see chapter entitled "Changing Options at Run-time"
in the User Manual.

We changed the way that the installation /X options work. We replaced
many old selections with the new FKEYBRD program. <u>Unlike</u> <u>previous</u>
<u>versions</u> <u>and</u> <u>other</u> <u>installation</u> <u>options,</u> <u>you</u> <u>may</u> <u>need</u> <u>to</u> <u>use</u> <u>more</u>
<u>than</u> <u>one</u> <u>/X</u> <u>option!</u> For more information about the /X option, see the
appropriate sections in the chapter entitled "Detailed Installation"
in the User Manual. For more information about FKEYBRD, see the
subsection   entitled   "Replace   KEYB   Programs   With FKEYBRD in
AUTOEXEC.BAT File" in the User Manual chapter entitled "Starting
Quickly".

We added a new installation option /A to allow Hercules Monochrome
Graphics Adapter clone testing. We added a new installation option /P
to allow the use of a light pen. For more information, see the
appropriate sections in the chapter entitled "Detailed Installation"
in the User Manual.

2.4.4 All Other Information In This File

For completeness, note that all the other sections in this news file
also describe changes from version 2.00.

2.5 <u>What</u> <u>other</u> <u>new</u> <u>files</u> <u>got</u> <u>included?</u>

Note that we "squeezed" some of these files to make them take up less
room on the distribution diskettes. If we squeezed them, then we
replaced the middle letter of the extension with a "Q". You must use
UNSQZ.COM to unsqueeze any files we squeezed.

If you have 5" distribution diskettes, we have placed the files into
root directory. If you have 3" distribution diskettes, we have
organized the files into two directories per diskette. The
directories have names like "DISK#1". These correspond to the
contents of two 5" distribution diskettes.

EGAINIT.EXE Program for "reading" the EGA/VGA registers to create a
             file with EGA/VGA init table entries.

EGASUPER.DEV
             Device driver for adding entries to ROM init table for
             Super-EGA.

INITLOAD.DEV
             Device driver for adding entries to EGA/VGA ROM init
             table.

INITMAP.EXE Program for describing EGA/VGA ROM init table to <u>FANSI-
             CONSOLE</u>.

SHOWMODE.EXE
          Program for describing EGA/VGA ROM init table in human
          readable form.

Chapter 3

Detailed Installation

3.1 What If FANSI-CONSOLE Fails to Start Correctly?

3.1.1 NOKEYS.DEV Device Driver

If you have an PC or XT clone which has a bad interrupt 15H handler
in its ROM BIOS, keys do the wrong things or hang when you type at
the first MS-DOS prompt after you install FANSI-CONSOLE. If you
experience this symptom, you need to install the NOKEYS driver before
FANSI-CONSOLE. The NOKEYS driver contains a replacement interrupt 15H
handler. If you do not experience this symptom, do not install the
NOKEYS driver!

To install the NOKEYS driver, add the following line somewhere before
the DEVICE=\FC\FCONSOLE.DEV installation line in the CONFIG.SYS file
in your system disk root directory:

DEVICE=\FC\NOKEYS.DEV

3.1.2 VGAFONT.DEV Device Driver

If you have an EGA which does not have its own font for 16 pixel high
character cells, you may need to install the VGAFONT driver somewhere
before FANSI-CONSOLE. The VGAFONT driver installs a font table for 16
pixel high character cells. Note, this does not cause FANSI-CONSOLE
to use the 16 pixel high font automatically at start up. Instead, it
allows you to use EGALGCHR or to turn FANSI-VGA on.

FANSI-CONSOLE requires that you install VGAFONT.DEV for some EGAs
with programming errors in their ROM BIOS. They hang or clobber
memory when FANSI-CONSOLE makes the BIOS call INT 10H, AX=1130, BH=06
or BH=07. Otherwise it may cause FANSI-CONSOLE to hang immediately on
installation without displaying a banner, or otherwise behave badly.

To find out if you need to install the VGAFONT.DEV program, run the
SNOW program. One test which the SNOW program runs indicates whether
you need to install the VGAFONT.DEV program. Sometimes you may need
VGAFONT.DEV even though SNOW only recommends it, since programming
errors in your ROM may or may not cause immediate failure when SNOW
tests for suspected problems.

To install VGAFONT.DEV, add the following line **before** the
DEVICE=\FC\FCONSOLE.DEV installation line in the CONFIG.SYS file in
your system disk root directory:

                        DEVICE=\FC\VGAFONT.DEV

3.2 How Much Memory Does FANSI-CONSOLE Require?

Version 3.00 also has an additional method for reducing main storage
requirements which the User Manual does **NOT** document. If you install
FANSI-CONSOLE after your expanded memory EMS device driver, and room
remains in EMS at the time FANSI-CONSOLE installs, then FANSI-CONSOLE
automatically detects this and uses EMS to store some overlays. These
overlays contain code which FANSI-CONSOLE only uses when a certain
type of screen display mode (FANSI-SCRNMODE) is active. Each type of
screen display mode has its own overlays.

The total amount of savings is small. It depends only on your display
adapter type. If you do not have an EGA or VGA it saves about 3 KB.
If you use the /X=2 option, it saves about an additional 1 KB. If you
have an EGA or VGA it saves about 5 KB. This always consumes one 16
KB EMS page.

Future analysis may allow us to use the same overlaying technique to
divide FANSI-CONSOLE into removable feature overlays. However, this
is a laborious operation and it makes creating patch fixes for
programming errors much harder. So we have not done it for this
version. Also such overlays would generally have to remain in main
memory. So if you wanted such an overlay feature, it would always
consume the memory required.

Chapter 4

Changing Options at Run-time

4.1 Have any of the options changed?

4.1.1 FANSI-DEVATTR always functional

We changed FANSI-DEVATTR to affect the Device Attributes response
regardless of the state of FANSI-VT100. This means FANSI-CONSOLE no
longer automatically answers as a VT102. So if you turn FANSI-VT100
on, we suggest setting FANSI-DEVATTR to 258 decimal (102 hex), which
makes FANSI-CONSOLE return ESC [? 01 ; 02 c in response to your
host's Device Attributes request. This allows your host to recognize
FANSI-CONSOLE as a VT102.

4.1.2 FANSI-LANGUAGE does not affect keyboard

With FANSI-CONSOLE installed, although Alt-Ctrl-F1 and Alt-Ctrl-F2
effect the value of FANSI-LANGUAGE and therefore values that the
keyboard BIOS calls return for the keyboard language number, they do
NOT affect the keyboard behavior as they do without FANSI-CONSOLE
installed. So, for the most part, this makes Alt-Ctrl-F1 and Alt-
Ctrl-F2 useless. If you want to change the keyboard description file
in use, you need to run FKEYBRD.

4.1.3 FANSI-VT100 affects FANSI-RCPATTR

The User Manual does not document that when you have FANSI-VT100 on,
FANSI-CONSOLE ignores the current setting of FANSI-RCPATTR, and
treats it as though you had it turned on.

4.2 Do We Have More New FANSI Mode Parameters?

FANSISET has three new options not described in the FANSI-CONSOLE
User Manual. This news file describes FANSI-HIGH, FANSI-OLDKEYS, and
FANSI-WIDE below.

FANSI-HIGH - FANSI HIGH screen display

Version 3.00 and later
P1 value is 52

When on (set), FANSI-CONSOLE overrides the normal screen display mode (FANSI-SCRNMODE) height characteristics and uses the highest pixel row density it can. Frequently this increases normal number of lines of characters from 25 to 30. If you have FANSI-DBLROWS also turned on, frequently this increases the number of lines of characters to as many as 60 lines. When off (reset), FANSI-CONSOLE does not override the normal screen display mode height characteristics used without FANSI-CONSOLE installed. FANSI-CONSOLE starts with FANSI-HIGH turned off, because it does things the same way that the standard IBM-PC console software does.

FANSI-HIGH only affects the operation of VGAs and super-EGAs. FANSI-HIGH does not affect MDPAs, CGAs, and non-super-EGAs. If you have a super-EGA, you should only use FANSI-HIGH if you also have a multisync type display monitor. Otherwise you risk damaging your display. Turning FANSI-HIGH on affects all settings of the screen display mode (FANSI-SCRNMODE) until you turn FANSI-HIGH off.

FANSI-CONSOLE cannot force another program to use all the lines in an enhanced mode. It can only make the lines ready for use. So, many programs only use the top part of the screen when you turn FANSI-HIGH on. You can configure some programs to use more lines than the normal 25. For more details, check the documentation for those programs which interest you.

Turning on FANSI-HIGH differs from turning on FANSI-DBLROWS, in that FANSI-HIGH changes the total number of pixel rows but usually not the height of a character cell. FANSI-DBLROWS changes the height of a character cell but not the does not change the total number of pixel rows. You must usually use both together to maximize the total number of character rows. The actual effect of FANSI-HIGH depends upon the screen display modes your display adapter supports and the arrangement of the FANSI-SDMI tables.

See also: FANSI-ALTPRINT, FANSI-CRTTABLE, FANSI-DBLROWS, FANSI-DBLSCAN, FANSI-SCRNMODE, FANSI-SDMI, FANSI-SDMT.

FANSI-OLDKEYS - FANSI OLD keyboard KEY codeS mode

Version 3.00 and later
P1 value is 54

When on (set), FANSI-CONSOLE queues old keycodes for even new style
key combinations. When off (reset), FANSI-CONSOLE queues new keycodes
for new style key combinations. FANSI-CONSOLE starts with FANSI-
OLDKEYS turned off, because it does things the same way that the
standard IBM-PC console software does.

Turning FANSI-OLDKEYS on allows you to use old keycodes which the
extra key combinations on the enhanced keyboards usually do not
return on new style keyboard BIOS calls, even in new style programs
which use the new calls required to see new keycodes without FANSI-
CONSOLE. For more details about keycodes, see the FANSI-CONSOLE
Technical Reference Manual.

You may need to turn FANSI-OLDKEYS on for some programs, especially
if you have an old style keyboard and a program which only knows
about old style keyboards. This frequently happens on a "dead key"
combination which the program uses for some type of hot key. These
are the key combinations for which WATZITDO returns nothing, but for
which WATZITNU does return something. These programs may detect that
FANSI-CONSOLE places some keycode in the typeahead buffer for
programs which make new style keyboard calls, which FANSI-CONSOLE
supports even on old style keyboards. However, the program makes an
old style call because you have old style keyboard. The program gets
upset when something gets queued because the old style keyboard
should treat the key as a dead key. FANSI-CONSOLE queues only old
style keycodes to make things appear consistent to these programs.

See also: FANSI-NEWKEYS, FANSI-ORIGKEY.

FANSI-WIDE - FANSI WIDE screen display

Version 3.00 and later
P1 value is 53

When on (set), FANSI-CONSOLE overrides the normal screen display mode
(FANSI-SCRNMODE) width characteristics and uses the widest pixel
column density it can. Frequently this increases normal number of
columns of characters from 80 to 132. When off (reset), FANSI-CONSOLE
does not override the normal screen display mode width
characteristics used without FANSI-CONSOLE installed. FANSI-CONSOLE
starts with FANSI-WIDE turned off, because it does things the same
way that the standard IBM-PC console software does.

FANSI-WIDE only affects the operation of VGAs and super-EGAs. FANSI-
WIDE does not affect MDPAs, CGAs, and non-super-EGAs. If you have
super-EGA, you should only use FANSI-WIDE if you also have a display
monitor type other than an unenhanced RGB, such as a monochrome
display, Enhanced RGB display, or multisync type display. Otherwise
you risk damaging your display. Turning on FANSI-WIDE affects all
settings of the screen display mode (FANSI-SCRNMODE) until you turn
FANSI-WIDE off.

This option has the same effect as the DEC-COL option to the DEC-RM
and DEC-SM control sequences.

FANSI-CONSOLE cannot force another program to use all the columns in
an enhanced mode. Nor can it force another program which writes to
the screen directly to space its lines correctly for other than the
normal number of columns. It can only make the columns ready for use.
So, many programs get their 80 column lines skewed incorrectly when
you turn FANSI-WIDE on. You can configure some programs to use more
columns than the normal 80. For more details, check the documentation
for those programs which interest you.

See also: COL, FANSI-ALTPRINT, FANSI-CRTTABLE, FANSI-SCRNMODE, FANSI-
SDMI, FANSI-SDMT.

Chapter 5

Scroll Recall

5.1 How do I use recall buffer highlighting?

5.1.1 FANSI-NEWKEYS Required For Ctrl-UpArrow/Ctrl-DownArrow

Turning FANSI-NEWKEYS on makes the Ctrl-UpArrow and Ctrl-DownArrow
keys work on non-enhanced keyboards for growing and shrinking the
highlighting in the recall viewing screen. Turning FANSI-NEWKEYS off
makes these keys dead keys for non-enhanced keyboards.

Chapter 6

Keyboard Arrangement

6.1 How do I get FANSI-CONSOLE to emulate a VT100?

The User Manual has the FANSI-VT100 Num-Lock toggle described
backwards. If you have the Num-Lock toggle turned off, the numeric
pad minus, period, and numeric keys generate the same character
values as the similarly labeled VT100 auxiliary pad numeric keys and
the numeric pad plus and asterisk keys generate the same character
values as the VT100 auxiliary pad Enter and Comma keys; and lastly,
if you have the Num-Lock toggle turned on, the numeric pad cursor
movement keys generate the same character values as the VT100 arrow
keys, and other numeric pad keys generate nothing. Holding the Left-
Shift or Right-Shift down momentarily toggles the current state of
the Num-Lock, just as they do when you have FANSI-VT100 turned off.

Note that the Num-Lock behavior in the VT100 emulation mode may seem
like the opposite of PC mode, since FANSI-CONSOLE generates numerics
when you have Num-Lock turned off in VT100 mode. Of course, you also
have to have KPNM turned on. We did this for the benefit of most PC
and AT users, who usually have the Num-Lock turned off. You do not
have to toggle Num-Lock every time you toggle FANSI-VT100 just to get
a VT100 keyboard that works as usual. For users used to keeping the
Num-Lock turned on, especially enhanced keyboard users, this may seem
like an inconvenience.

Chapter 7

Advanced Features

7.1 How do I fake keyboard input?

7.1.1 Using the KEYIN command

Suppose you want to run a program from a batch file, and completely
mechanize it so it does not ask you to type anything. Many programs
do not allow MS-DOS input redirection because they read using BIOS
calls instead of MS-DOS calls. So for these programs you cannot
create an input file and allow them to read it. Instead, you can use
the FANSI-CONSOLE KEYIN command. KEYIN calls FANSI-CONSOLE to place
keycodes into the type ahead buffer as though you had typed them.
KEYIN itself is not permanently memory resident.

KEYIN uses an extension (superset) of the meta language that the MS-
DOS PROMPT command uses for representing the type ahead keycodes. The
main disadvantage of KEYIN is having to learn the meta language.
However, it is not that difficult to learn.

The meta language uses certain special characters combined with other
characters that immediately follow them to make meta language
symbols. The meta language symbols represent control characters or
other special strings that would otherwise cause trouble if you used
them in the MS-DOS command. In particular, you must avoid using the
actual less than '<' and greater than '>' symbols. MS-DOS sees them
before KEYIN does, and then redirects the MS-DOS input or screen
writing of KEYIN! So, unless you want this, you should use the KEYIN
meta symbols for these characters instead. In addition, the meta
language represents some other special strings in a similar manner.
The important part to understand is that, instead of using the meta
language symbols as type ahead keycodes, KEYIN uses the strings that
they represent.

KEYIN does not end the string it creates with a carriage return or line feed. This is because KEYIN puts an exact sequence of characters into the type ahead buffer. This allows you to use two or more KEYIN commands to make up one long string. If you do need to put a carriage return or line feed on the end of a string KEYIN creates, you can use an explicit meta language symbol to do that.

KEYIN ignores leading and trailing spaces on the command line. It does this to prevent creating extra unwanted spaces. Other spaces, between the other parameters on the command line, are significant and KEYIN copies them into the type ahead buffer.

KEYIN treats the lower case "a" differently than the upper case "A". So the case of an alphabetic character is significant. CARET (the hat like character "^") combined with the following character, is always a meta symbol. A CARET and a following alphabetic character represent a control character. The dollar sign character ("$"), combined with the following character is always a meta symbol. The following is a list of meta symbols:

^@	The nul character, NUL, 000 hex.
^[	The escape character, ESC, 01B hex.
^\	The file separator character, FS, 01C hex.
^]	The group separator character, GS, 01D hex.
^^	The record separator character, RS, 01E hex.
^_	The unit separator character, US, 01F hex.
$$	The dollar sign character, 024 hex.
$%	The nul string. This string has no characters! It just gives compatibility with the PROMPT command syntax.
$\dd	The character with the hexadecimal value "dd".
$^	The CARET character, 05E hex.
$_	The CR LF sequence.
${	Start of meta comment. KEYIN ignores all following text up to the next "$}" and does not interpret it as meta commands or put them into the type ahead buffer.
$}	End of meta comment. KEYIN interprets all following text as meta commands and puts them into the type ahead buffer.
$b	The broken vertical bar character, "|", 07E hex. You would use this because MS-DOS treats an actual broken vertical bar character as meaning piping MS-DOS screen writing to another command as MS-DOS input. Be careful! Do not accidentally use the broken vertical bar!
$d	The date, "Tue 5-14-1986" form.
$e	The escape character, ESC, 01B hex.
$f	The next character is a function key extension. To find the extension for a function key, run WATZITDO or WATZITNU and press the function key. For example, "$f\$3d" represents the F3 function key keycode.

$g   The greater than character, ">", 03E hex. You would use
              this because MS-DOS treats an actual greater than
              character as meaning MS-DOS screen writing redirection.
              Be careful! If you use an actual greater than character
              in a KEYIN command, such as using "KEYIN $e[>4h" instead
              of "KEYIN $e[$g4h", MS-DOS sends the KEYIN MS-DOS screen
              writing to the file you named after your greater than
              symbol, such as "4H"! Do not accidentally use the
              greater than symbol!
$h   The backspace character, 008 hex.
$l   The less than character, "<", 03C hex. You would use
              this because MS-DOS treats an actual less than character
              as meaning input redirection. Be careful! Do not
              accidentally use the less than symbol!
$m   The minutes past the hour in "MM" form.
$n   The default drive letter.
$p   The path (directory) on the default drive. Except for
              the root, this has no trailing backward slash.
$q   The equal sign character, "=", 03D hex.
$s   The space character, 020 hex. You would use this if you
              really want leading or trailing spaces.
$t   The time in "00:00:00.00" 24 hour clock form.
$v   The MS-DOS version number in "2.00" form.
$x   The next character is a key extension for the following
              keycode. Otherwise KEYIN uses the commonly used
              extension for a keycode. However, sometimes two keys
              generate different extensions. For example, the light
              plus and dark plus keys. To find the extension for a
              key, run WATZITDO or WATZITNU and press the key. For
              example, "$x\$4e+" represents dark plus key keycode.
$D   The day of the month in two digit "DD" form.
$H   The hour in "HH" 24 hour clock form.
$M   The month in two digit "MM" form.
$P   The path (directory) with a trailing backward slash.
$S   The seconds past the minute in "SS" form.
$T   The time in "HHMM" 24 hour clock form.
$W   The weekday in "Sun" 3 character form.
$Y   The year's last two digits in "YY" form.

KEYIN puts any other meta symbol which starts with the dollar sign
into the type ahead buffer as its constituent characters. For
example, if you use "$ Z", you get both of the characters '$' and 'Z'
placed into the type ahead buffer.

Here are some examples of how you may use the KEYIN command to send
characters to the console:

keyin $^M   date
            Get MS-DOS to show the date without waiting for an enter
            key. Of course, you can   also   use   MS-DOS input
            redirection to do this, since the date command uses MS-
            DOS keyboard calls instead of BIOS keyboard calls.

keyin   ^P   dir
            keyin   ^P
            Toggle the MS-DOS console printer echo flag to do a
            directory listing on your printer. You   must   make sure
            that the program that reads the "^P" uses MS-DOS
            keyboard calls. Of course, you can also use MS-DOS
            screen writing redirection using "dir >prn" to do this
            more simply.

keyin $f\$3d
            Pretends you pressed the F3 function key, at the start
            of the next program in the batch file which reads from
            the type ahead buffer.

keyin   string^M
            Enters the line "string" and then a carriage return, at
            the start of the next program in the batch file which
            reads from the type ahead buffer.

keyin   line 1^Mline 2^M
            Enters "line 1" and "line 2" as two separate lines, at
            the start of the next program in the batch file which
            reads from the type ahead buffer.

Note that KEYIN cannot create type ahead for programs which flush the
type ahead buffer before reading, such as the MS-DOS **pause** command.
Although KEYIN does create the type ahead, it does get flushed just
as it would if you had typed it at exactly the same point in the
batch file as where you placed KEYIN.

Chapter 8

Compatibility and Limitations

8.1 Why don't my graphics programs work?

Many non-IBM branded EGAs and VGAs have their own non-IBM standard
screen display modes (FANSI-SCRNMODE). They usually provide some type
of higher resolution, either for graphics or text or possibly both.
We call these screen display modes which come automatically with a
display adapter "native" screen display modes. However, when you have
FANSI-CONSOLE installed, it only supports the IBM standard screen
display modes automatically. If you have program (usually a graphics
program) which does not display correctly when you have FANSI-CONSOLE
installed, it may use a native non-IBM standard screen display mode.
For example, non-IBM standard screen display modes include: 800x600
pixel graphics with 16 or 256 colors, 1024x768 pixel graphics with 16
or 256 colors, and 132x25/43/44/60 column text. Such programs almost
never use such screen display modes without you installing them to
use a special driver for your display adapter.

To determine if this is your problem, simply re-install the program
to use an IBM standard display adapter driver instead. If it works
with the IBM standard driver, then the problem definitely is that the
program driver uses a non-IBM standard screen display mode native to
your display adapter. For more information, see the chapter entitled
"More Rows and Columns" later in this news file, and the specific
entry for your display adapter in the compatibility list below.

8.2 Do we have new compatibility notes since printing the User
Manual?

The following compatibility information is an addendum for the list
in the FANSI-CONSOLE User Manual.

LTD   386 To The Max/Prof - Qualitas
                  Mapping some things to high memory may
                  cause software key repeats (FANSI-KEYRATE)
                  to miss break scan code. So keys may
                  repeat forever or shifts may "stick".
                  You may have to set FANSI-KEYRATE to 0.
                  Utilities cannot find FANSI-CONSOLE when
                  mapping FANSI-CONSOLE to high memory,
                  but here are some (less convenient) workarounds.
                  Run FKEYBRD,FLAYOUT on .DEV file instead of -S.
                  Use COPY CON FILE to replace DEJAVU, recall,

                    highlight everything, exit, & CTRL-Z. Use FANSISET
                    to create batch files instead of using -S.
                    If it hangs when installing FANSI-CONSOLE,
                    make sure you do NOT put FANSI-CONSOLE
                    into a segment between A000&BFFF.
COMP   4DOS -
COMP   Acer - 900
LTD   All ChargeCard - All
                    Cannot use their device driver loader
                    to put FANSI-CONSOLE into high memory.
                    Just hangs with blank screen.
COMP   American Research Corp (A.R.C.)
                    (use Ctrl-Alt-Grave before Ctrl-Alt-DarkKeys)
                    - AT (/W=1)
COMP   - PC Turbo
                    BIOS ROM programming error causes slow reboot.
COMP   AST - 286
COMP   ATI - EGA Wonder:
                    If you have problems with some screen display
                    modes, see subsection entitled "Using INX2INI
                    to replace an EGA/VGA init table".
HUH?   - EGA Wonder 800
                    If you have problems with some screen display
                    modes, see subsection entitled "Using INX2INI
                    to replace an EGA/VGA init table".
COMP   - VGA
                    Use ATIVGA.INX and INITLOAD.DEV.
COMP   - VIP
                    If you have problems with some screen display
                    modes, see subsection entitled "Using INX2INI
                    to replace an EGA/VGA init table".
COMP   AT&T - 6300 (/X=2/X=3 V1.09 implies /H=1/B=0/W=1)
                    Also try adding /B=1, blinks when scrolling,
                    but it is much faster.
                    No 50 lines, except AT&T compatible modes.
COMP   - 6300 PLUS (/X=2/X=3 V1.09
                    implies /H=1/B=0/W=1/D=0)
                    Also try adding /B=1, blinks when scrolling,
                    but it is much faster.
                    Turn FANSI-MEMORY32K on.
                    No 50 lines, except AT&T compatible modes.
COMP   - 6310 (/W=1/X=2, do not use /X=3!)
COMP   - 6386 WGS (no /X=2 or X=3!)
LTD   - DEB (only modes of normal AT&T display
                    adapter supported)
LTD   - VDC600
                    Use ATTVD600.INX and INITLOAD.DEV.
                    See also AT&T VDC750.
LTD   - VDC750
                    VDCMODE command does not work.
                    To switch adapter modes,
                    the hardware switches/jumpers need changing,
                    and the FANSI-CONSOLE /X=2 option used
                    only when the adapter is in the

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                     AT&T 6300 emulation mode.
                     FANSI-UNDERSCORE does not work in EGA mode.
                     Use VDC750.BAT to allow 400 line EGA mode.
COMP      Award EGA BIOS -
                     Load EGAFONT.DEV before FANSI-CONSOLE.
                     Otherwise programming error in responses to
                     INT 10 w/AX=1130, BH=2 thru 5 font addresses
                     Causes "smudges" or "filled in boxes" character set.
COMP      Bentley - 286
COMP      CompuAdd - 286/10
INC       Concurrent DOS - Digital Research
COMP      Crosstalk - Microstuf
                     To use ANSI sequences,
                     select "IBM-PC" terminal type
                     but set screen font to "TERMINAL"
COMP      DataTech Enterprises Co - SEGA
                     Turn switch 5 (autoswitching) off.
COMP      Dell - 200
INC            - 220 Built in VGA
                     Loses sync immediately on start up.
                     Apparently ROM init tables are not standard.
COMP      Desqview - Quarterdeck Office Systems (faster)
                     Use /T=1 to use escape sequences.
                     Set "write direct to screen" to "Y".
                     Set "virtualizes text" to "N".
                     V2.00+ do not allow control sequences passed thru CON
                     anymore but try redirecting to FCON and using "!"
                     for answer to "writes screen directly".
                     Get 2.01+ of Desqview
                     Use /EE on Desqview command line with AST adapters.
                     One report of keyboard buffering problems w/LOADHI
                     of FANSI-CONSOLE in a Desqview window.
COMP      DR DOS - Digital Research
COMP      Elonex - 286S-10
COMP      Everex - 386/20
COMP           - EVGA
                     Must turn off EVGA switch 5 hercules
                     emulation or display is shifted off screen.
                     Reported that AFTER
                     EVGAMODE AOFF EOFF POFF VON 5
                     everything works OK.
                     Possibly you need only some of these options.
                     Does mode 19 work?
COMP           - Micro Enhancer Deluxe
                     (automatic /H=0/B=1, no /S)
COMP           - VGA
                     Use EVRXVGA.INX with INITLOAD.DEV.
COMP      Executive Filer/Writer - Paperback Software
                     Cannot do a Ctrl-?
                     Use KEYSTROKE MACRO without FANSI-CONSOLE
                     to make an alternative key combination for it.
COMP      EZ DOS - Digital Research
COMP      FastCard -
COMP      Flash - Software Masters (turn FANSI-QUICK off)
```

LTD   Genoa - EGA Super Hi Res
                  Use GNOASPEG.INX with INITLOAD.DEV.
LTD   - Super VGA (automatic /H=0/B=1)
                  Install INITLOAD.DEV /S=1, INITMAP.
                  for extra features!
                  Some ROM versions have bad
                  8 pixel row font ptrs.
                  Load EGAFONT.DEV before FANSI-CONSOLE.
                  Otherwise programming error in responses to
                  INT 10 w/AX=1130, BH=2 thru 5 font addresses
                  causes "smudges" or "filled in boxes" character set.
                  Some non-IBM standard modes not supported.
                  FANSI-WIDE does not work yet.
                  800x600x16 drivers do not work yet.
LTD   Headroom - Helix Software
                  Does not allow high loading device driver files
                  with more than driver (such as FANSI-CONSOLE).
COMP   HQ - Tek Micro Systems
                  (Turn FANSI-SUPERKEY off)
COMP   IBM - EGA
                  No 132 column or 50-60 row capability
COMP   - PS/2 Mod 30
                  Must use STACKS=0,0.
COMP   - PS/2 Mod 50/60/70/80
                  Install INITLOAD.DEV /S=1, INITMAP.
                  for extra features!
COMP   - VGA (automatic /H=0/B=1)
                  Install INITLOAD.DEV /S=1, INITMAP.
                  for extra features!
COMP   IBM-PC DOS 4.00 (faster)
                  CLS error fails to clear screen, use MODE CO80
                  instead or patch COMMAND.COM w/COMMAND.400.
COMP   Jameco - BD AT
HUH?   Jeopardy - Sharedata
                  (set FANSI-KEYRATE to zero).
                  Does not accept keyboard input unless
                  you turn on FANSI-ORIGKEY.
COMP   Kaypro - PC-30
INC   KEYB, KEYBFR, KEYBGR, KEYBIT, KEYBSP, KEYBUS,
                  KEYBUK - MS-DOS
                  Replaces FANSI-CONSOLE keyboard vectors
                  making extra functions unusable.
                  Cursor keys generate greek letters.
                  No reason exists to use these programs
                  when you have FANSI-CONSOLE installed!
                  Use FKEYBRD instead. See the section
                  entitled "Install Correct KEYB*.KEY
                  Driver" in the chapter entitled
                  "Starting Quickly".
COMP   Keyworks - Alpha Software
                  Be sure to use correct KEYB*.KEY file.
                  Turn FANSI-OLDKEYS or FANSI-NEWKEYS on
                  with non-enhanced keyboards.
HUH?   Logitech - Mouse

                    May cause problems w/scroll recall.
                    Change order of drivers?
                    If you have problems with mouse input,
                    use "/P=0" to disable light pen support.
                    A display adapter with no or malfunctioning
                    light pen port causes this.
                    Report your adapter to use as requiring
                    the /P=0.
COMP   Lotus Express - Lotus (turn FANSI-QUICK off)
COMP   Microsoft CodeView (see turn FANSI-QUICK off)
                    If it behaves as though you are using a mouse
                    and you have no mouse,
                    or if you have problems with mouse input,
                    use "/P=0" to disable light pen support.
                    A display adapter with no or malfunctioning
                    light pen port causes this.
                    Report your adapter to use as requiring
                    the /P=0.
                    Does not work correctly when used w/2 monitors.
COMP   Microsoft Excel (not faster, set FANSI-SCRNTIME=0)
COMP   Microsoft Mouses (meese?) (leave FANSI-CMP on)
                    Load FANSI-CONSOLE before mouse driver.
                    Mouse demo does not work.
                    If you have problems with mouse input,
                    use "/P=0" to disable light pen support.
                    A display adapter with no or malfunctioning
                    light pen port causes this.
                    Report your adapter to use as requiring
                    the /P=0.
COMP   Microsoft MS-DOS 4.01 -
                    CLS error fails to clear screen,
                    use MODE CO80 instead.
LTD   Microsoft Windows-386 (not faster,
                    set FANSI-SCRNTIME=0) When changing windows
                    virtual computer keyboard dies for some folks.
                    Some lose mouse control after a short time.
COMP   Microsoft Windows 3.0 (not faster,
                    set FANSI-SCRNTIME=0)
                    But make sure you check our compatibility
                    listing for your display adapter!
                    If we do not support the high resolution mode
                    for the special Windows driver for your adapter,
                    you may have to reinstall Windows and tell it
                    you have a standard IBM EGA or VGA instead of
                    your specific brand name clone.
COMP   Microsoft Word (not faster)
                    See MSWORD4.PCH and MSLEARN4.PCH!
                    FANSI-CONSOLE macros will not
                    always work properly.
                    Use Ctrl-Shift-Backslash to repaint screen.
                    Programming error in MS-WORD may require MODE
                    command first. For MS WORD 5.0, set its "Cursor
                    Speed" to zero to avoid runaway key repeats.
COMP   Mirror - SoftKlone

                    To use ANSI sequences,
                    select "IBM-PC" terminal type
                    but set screen font to "TERMINAL"
COMP   Mouse Systems - PC Mouse
                    Load FANSI-CONSOLE before mouse driver.
                    If you have problems with mouse input,
                    use "/P=0" to disable light pen support.
                    A display adapter with no or malfunctioning
                    light pen port causes this.
                    Report your adapter to use as requiring
                    the /P=0.
COMP   NEC - GB-1 (See Tseng Labs EVA 480)
INC   NewFont - Mark Horvatich
                    Incorrectly assumes only it can copy table
                    at 40:a8 (but you can try removing patch B4).
LTD   Northgate - Keyboard
                    Some keyboard versions do not generate correct
                    scan code sequence for cursor keys when they
                    repeat.
                    Does not generate final scan code on some
                    Ctrl-Alt-Something key combinations.
                    Use control sequences (see FANSISET) instead.
HUH?   OfficeWRiter - Office Solutions
                    Alt+key interpreted as key?
COMP   Orchid - Designer VGA
                    Use EGAINIT w/ 22,23,24,25,26,29,2A,2D,2E,30,37.
                    Use INITLOAD /Z=8.
LTD   Paradise - Autoswitch 480
                    Install VGAFONT.DEV and INITMAP for extra features!
                    Install EGASUPER.DEV if you have a multisync display.
                    Use /P=0, automatic /H=0/B=1.
                    Disable switch 5 - autoswitching off.
                    Using PEGA command causes INT 10 vector
                    changes which effectively uninstall part of
                    FANSI-CONSOLE and causes weird problems.
COMP   - VGA/VGA Plus/VGA Professional
                    Use EGAINIT PARAVGA.INX 54,55,56,57,58,59,5E,5F.
                    Use /X=0 for FANSI-CONSOLE version 3.00,
                    but use /X=4 for FANSI-CONSOLE versions 3.01+.
COMP   Peachtree Complete III -
                    Turn FANSI-QUICK off for backup.
COMP   Plantron - PT-16 AT/20
COMP   Prokey - RoseSoft (except LAYOUT program)
                    Use PKLOAD /T0 to allow keys to repeat,
                    scroll recall, and local mode.
                    Error in PROKEY causes the message "ProKey
                    Message: Sorry, you must install with PKLOAD/Y
                    for graphics mode". It does not understand the
                    no clear (0x80) bit in screen mode byte.
                    Use MODE CO80.
                    Be sure to use correct KEYB*.KEY file.
                    May have to turn FANSI-NEWKEYS on or off,
                    depending upon the type of keyboard you have.
COMP   Quadram - QuadEGA+ Graphics Adapter

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                   (automatic /H=0/B=1)
                   (See Video-7 VEGA for more comments)
COMP      QEMM - Quarterdeck Office Systems
                   Utilities cannot find FANSI-CONSOLE then, but here
                   are some (slightly less convenient) workarounds.
                   Run FKEYBRD,FLAYOUT on .DEV file instead of -S.
                   Use COPY CON FILE to replace DEJAVU, recall,
                   highlight everything, exit, & CTRL-Z. Use FANSISET
                   to create batch files instead of using -S.
                   If it hangs when installing FANSI-CONSOLE,
                   make sure you do NOT put FANSI-CONSOLE
                   into a segment between A000&BFFF.
                   Make sure you have at least QEMM V5.11 to
                   avoid Alt-Ctrl-Del hanging problem.
HUH?      QRAM - Quarterdeck Office Systems
                   Loaded first, makes all chars disappear.
COMP      RAMADAP - Heise Publishing
COMP      Sidekick Plus - Borland International (not faster)
                   Be sure to use correct KEYB*.KEY file.
                   Turn FANSI-OLDKEYS or FANSI-NEWKEYS on-
                   with non-enhanced keyboards.
                   This is automatic with correct *.KEY file.
                   (see SideKick for more information)
LTD       SpeedScr - Software Bottling Co
                   Assumes DOS CON calls translate into BIOS calls.
                   Get routine from Software Bottling Co or
                   write your own to call BIOS directly.
COMP      STB - Auto VGA
LTD            - MultiRes II
                   But w/AT&T mono monitors, all nominally
                   200 line screen display modes get doubled to
                   400 lines w/top half same as bottom.
                   Solution: Get standard EGA or mono monitor.
COMP           - VGA Extra
                   Use INITMAP -M55@36 -M101@36 -M103@36.
COMP      SuperKey - Borland (turn FANSI-SUPERKEY on)
                   Be sure to use correct KEYB*.KEY file.
                   Turn FANSI-OLDKEYS or FANSI-NEWKEYS on
                   with non-enhanced keyboards.
                   With Superkey 1.16A and enhanced keyboards,
                   use KEYB??AT.KEY instead of KEYB??EN.KEY,
                   since Superkey does not like or return the
                   new enhanced keyboard keycode values.
                   All FANSI-CONSOLE functions except
                   VT100 keys, BIOS level key macros,
                   and local mode work correctly.
                   All SuperKey functions work correctly.
COMP      Tandy - 1000 (/H=0/B=1/W=0)
                   Use KEYBTRS.KEY for non-enhanced keyboards.
COMP           - 1200 (/H=0/B=1/W=0)
                   Use KEYBTRS.KEY for non-enhanced keyboards.
COMP      Tecmar - EGA Master (automatic /H=0/B=1, no FANSI-VGA)
                   EGA BIOS returns wrong pointer for
                   both some fonts.
```

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                   Load EGAFONT.DEV before FANSI-CONSOLE.
                   Otherwise programming error in responses to
                   INT 10 w/AX=1130, BH=2 thru 5 font addresses
                   causes "smudges" or "filled in boxes" character set.
HUH?               - VGA
                   Boots in "narrower, CGA-like" 8 pixel high font.
HUH?      Televideo - TS2 Hercules adapter seems non-quite compatible.
LTD       Toshiba - All models:
                   Must hold FN down, press other keys, and
                   release FN last! Otherwise hardware break
                   scan codes do not match make scan codes!
COMP               - T1000/T1100/T1200
LTD                - T3100 (use KEYBTOSH.KEY)
                   (No support for extra non-IBM modes)
LTD                - T3200 (use KEYBTOSH.KEY)
                   SW1 - Auto switching
                   SW4 - Double Dot
                   SW7-10 Std EGA Switches
                   Must set for internal CGA compatibility.
                   In internal EGA compatibility mode,
                   Shows char cell about 50 pixels high!
LTD                - T5100 (use KEYBTOSH.KEY)
                   Install TOSH5100.BAT to use ROM tables.
                   Must set for internal CGA compatibility.
                   In internal EGA compatibility mode,
                   Shows char cell about 50 pixels high!
                   XCHAD hangs w/exception error.
                   No support for extra non-IBM modes.
COMP               - T5200 (use KEYBTOSH.KEY)
                   Programming error in ROM BIOS returns
                   incorrect 16 pixel high alternate font ptr
                   returns 14 pixels high instead.
                   Install VGAFONT.DEV to fix.
LTD       Tseng Labs - EVA 480 -
                   Install EGASUPER.DEV, VGAFONT.DEV,
                   and INITMAP for extra features!
                   132 column modes lose bits in font!
COMP      Turbo C - Borland
                   Display of CAPS lock in editor causes typeahead
                   buffer flush! So FANSI-UNLOCK causes Turbo C to
                   "ignore" some typed chars when unlocking happens.
                   (turn FANSI-QUICK off for Ver>=2.0)
COMP      Ultravision -
COMP      Video-7 - VEGA (automatic /H=0/B=1)
                   Some ROM versions require VGAFONT.DEV.
                   No 132 column or 50-60 row capability
                   But DIAG hangs with FANSI-CONSOLE.
                   Do not use "VEGA CGA:ON" or "VEGA MONO:ON"
                   in AUTOEXEC!  They lock in current character
                   cell size and number of pixel rows on screen.
                   This effectively prevents correctly done
                   font size changes.  Use "VEGA CGA:ON" or
                   "VEGA MONO:ON" only immediately
                   before programs requiring it and use
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                    "VEGA CGA:OFF" or "VEGA MONO:OFF"
                    immediately afterwards.
COMP                - VEGA Deluxe (automatic /H=0/B=1)
                    Install EGASUPER.DEV, VGAFONT.DEV,
                    and INITMAP for extra features!
                    See Video-7 VEGA for more comments.
COMP                - VEGA VGA (automatic /H=0/B=1)
                    Install VEGAVGA.BAT to use ROM tables.
                    Must turn auto emulation switch 5 off.
                    Otherwise some programs turn off scrn.
                    INITLOAD.DEV /S=1 does not appear to work.
                    FANSI-WIDE does not appear to work.
                    Install INITLOAD.DEV /S=1, INITMAP for extra features!
                    FANSI-WIDE does not work yet.
                    BIOS ROM Mode 7 palette registers incorrect!
COMP     Wheel of Fortune - Sharedata
HUH?     Wipeout - Sharedata
                    (turn FANSI-QUICK and FANSI-DBLROWS off).
                    Pressing enter gives red screen of ASCII 175.
HUH?     WPMenu - Windows On Words Software
                    Runs out of room.
LTD      XyWrite III (not II!)- XyQuest (/C=0)
                    Be sure to use correct KEYB*.KEY file.
                    Turn FANSI-OLDKEYS or FANSI-NEWKEYS on
                    with non-enhanced keyboards.
                    Cannot affect key repeat without XYKBD.
                    Cannot use scroll recall with XYKBD ON.
                    Turn FANSI-QUICK off, not faster.
COMP     Zenith - Z180 series (/X=1) (use KEYBUSEN.KEY)
LTD              - Z449 EGA
                    Not entirely EGA compatible.
                    200 line graphics modes not interlaced
                    and may appear twice on screen.
                    With more tech info,
                    patches might be possible.
                    Some report that this will work ok,
                    if you have Z449 switches set
                    "for EGA only compatibility".
                    As near as we can determine, this has
                    something to do with the last two
                    switches on the adapter.
                    Load EGAFONT.DEV before FANSI-CONSOLE.
                    Otherwise programming error in responses to
                    INT 10 w/AX=1130, BH=2 thru 5 font addresses
                    may cause "smudges" or "filled in boxes"
                    character set.
```

Chapter 9

More Rows and Columns

9.1 Why don't my graphics programs work?

FANSI-CONSOLE completely replaces the ROM BIOS for your display adapter. This means that the only screen display modes you can use when you have FANSI-CONSOLE installed are the screen display modes which FANSI-CONSOLE supports. FANSI-CONSOLE automatically supports all the IBM standard MDPA, CGA, EGA, and VGA screen display modes.

Many non-IBM branded EGAs and VGAs have their own non-IBM standard screen display modes. They usually provide some type of higher resolution, either for graphics or text or possibly both. We call these screen display modes which come automatically with a display adapter "native" screen display modes. However, when you have FANSI-CONSOLE installed, it only supports the IBM standard screen display modes automatically. If you have program (usually a graphics program) which does not display correctly when you have FANSI-CONSOLE installed, it may use a native non-IBM standard screen display mode. For example, non-IBM standard screen display modes include: 800x600 pixel graphics with 16 or 256 colors, 1024x768 pixel graphics with 16 or 256 colors, and 132x25/43/44/60 column text. Such programs almost never use such screen display modes without you installing them to use a special driver for your display adapter.

To determine if this is your problem, simply re-install the program to use an IBM standard display adapter driver instead. If it works with the IBM standard driver, then the problem definitely is that the program driver uses a non-IBM standard screen display mode native to your display adapter.

FANSI-CONSOLE can now support many non-IBM standard screen display modes. However, it does NOT happen automatically. You need several prerequisites:

1..   Each mode must only need the values in the IBM standard EGA/VGA
       controller registers changed to set it up. If your adapter
       requires changing any <u>extra</u> registers NOT on the standard EGA
       or VGA, then you cannot get this mode working correctly when
       you have <u>FANSI-CONSOLE</u> installed. This shows up as a display
       distorted somehow when you attempt to use this screen display
       mode. For now, having this problem means having to uninstall
       <u>FANSI-CONSOLE</u> to use this screen display mode, or changing
       which screen display mode your program uses. If many display
       adapters use the same non-standard registers, future version of
       <u>FANSI-CONSOLE</u> will handle this problem with the use of /X
       option values.

2..   The modes must have at least IBM standard memory mapping
       techniques, except for the dimensions. This means, for example,
       that it must use no more than the standard 256 KB of screen
       display memory. So you cannot get full support for 800x600
       256 color modes, when you have <u>FANSI-CONSOLE</u> installed,
       because they require 480 KB=800x600x8 bits. You can get full
       support for 800x600 with only 16 colors, though, since they
       only require 240KB=800x600x4 bits. Nor can you get full support
       for 1024x768 16 color modes, because they require 384
       KB=1024x768x4 bits. However, if the screen display mode only
       has this drawback, then although <u>FANSI-CONSOLE</u> cannot provide
       full support, it can set up the screen display mode, except for
       clearing the display, for drivers which write to the screen
       directly. Sometimes when this happens, when you ask for this
       type of screen display mode, the first few lines of the screen
       get blanked out and written correctly, but the following lines
       get overwritten on top of the first few. If all the display
       adapters use the same addressing schemes, future version of
       <u>FANSI-CONSOLE</u> will handle this problem with the use of /X
       option values.

3.. Each mode needs an entry in your <u>EGA/VGA</u> <u>ROM</u> <u>screen</u> <u>display</u>
    <u>mode</u> <u>initialization</u> <u>table</u> which indicates the exact values for
    the IBM standard EGA/VGA controller registers for the mode.
    This is a table for which IBM currently defines the meaning of
    the first 29 entries (0 through 28), but not later ones. If
    your adapter ROM does not extend the IBM standard ROM init
    table to show the values required for these modes, you can
    install a device driver which extends the table. This news file
    later describes the program INITLOAD.DEV to add a file of init
    table entries to the end of your ROM init table. This news file
    later describes the program EGAINIT.COM which "reads" the EGA
    or VGA register values to make up the file of init table
    entries. which your ROM BIOS uses for its native screen display
    modes. You can also create your own init table entries to
    create and "import" your own screen display modes. However, we
    do <u>NOT</u> provide information on how to do this. See the "IBM
    Personal System/2 and Personal Computer BIOS Interface
    Technical Reference" and the "IBM Personal System/2 Model 50
    and 60 Technical Reference", for example, for the format of
    this table and the meanings of the values. We do provide device
    drivers EGASUPER.DEV and INITLOAD.DEV /S=1 described later,
    which import non-IBM standard, non-native screen display modes.

4.. Each mode needs a FANSI-SDMI control sequence sent to <u>FANSI-</u>
    <u>CONSOLE</u> to match this init table entry to a triple of mode
    number, height, and width. More than one triple may point to
    the same init table entry. This news file later describes the
    FANSI-SDMI control sequences and how to send them. However, in
    nearly all cases you should use the INITMAP program in your
    AUTOEXEC.BAT file, which this news file also describes later,
    to generate them automatically.

5.. Each mode needs a FANSI-SDMT control sequence sent to <u>FANSI-</u>
    <u>CONSOLE</u> to map a BIOS mode number to the triple. This really
    indicates what basic mode this is and whether (or how much)
    FANSI-HIGH or FANSI-WIDE are ALWAYS true for this mode. More
    than one BIOS mode number may map to the same triple. This news
    file later describes the FANSI-SDMT control sequences and how
    to send them. However, in nearly all cases you should use the
    INITMAP program in your AUTOEXEC.BAT file, which this news file
    also describes later, to generate them automatically.

If you have a super-EGA or super-VGA which has higher than standard
screen dimension capabilities, such as 132 columns (may require
multisync type monitor for correct synchronization) or 480 pixel rows
(requires VGA compatible or multisync type monitor), then the
compatibility list may briefly show some specific details of how to
configure <u>FANSI-CONSOLE</u> to support the native modes for your display
adapter. This may also make such run-time modes as FANSI-HIGH, FANSI-
VGA, and FANSI-WIDE meaningful. You will have to use one or more of
the programs described in the following sections of this chapter.

9.1.1 Using INITMAP to add screen display modes

You must always use <u>at</u> <u>least</u> the INITMAP program to have <u>FANSI-</u>
<u>CONSOLE</u> support any non-IBM standard screen display modes.
Frequently, INITMAP is the <u>only</u> program you need to run to support
your display adapter's native non-IBM standard screen display modes.
The INITMAP program reads an EGA/VGA init table and makes a map for
<u>FANSI-CONSOLE</u> to use to support all the   screen display modes
described in the table. The only other input it needs is a list of
screen display mode numbers for each init table entry. INITMAP has
its own internal table of the screen display mode numbers which many
display adapter manufacturers commonly use. So in nearly all cases,
you only need to tell it where to find the init table.

In the simplest and most common case, you can add the following line
to your AUTOEXEC.BAT file to tell it to read the operating system
EGA/VGA init table:

                          INITMAP -S

INITMAP then displays its banner and writes "invisible" control
sequences to the console device to send <u>FANSI-CONSOLE</u> the screen
display mode map. It sends the map to <u>FANSI-CONSOLE</u> using the FANSI-
SDMI and FANSI-SDMT control sequences described later. After INITMAP
executes, <u>FANSI-CONSOLE</u> knows how to handle any non-IBM standard
screen display mode numbers. It does not matter where you place this
line in the AUTOEXEC.BAT file, except that you should run it sometime
before you run any programs requiring non-IBM standard screen display
modes. You can even run it later instead, just before running a
program which needs the non-IBM standard screen display modes. You
may want to do it in a batch file which runs the other program
afterwards. It also does not hurt to run INITMAP more than once.

If you use INITMAP before running a program which needs the non-IBM
standard screen display modes, and the program still does not display
right, you probably also need to use EGAINIT.COM and INITLOAD.DEV.
This news file describes them in the following sections.

Another possibility is that INITMAP's internal tables do not have the
screen display mode number for your non-IBM standard screen display
mode. To do this, you can add a <u>-M</u> option to the INITMAP command to
tell INITMAP to map a specific screen display mode number for a
specific EGA/VGA init table entry. For example, the following
command:

                       INITMAP -S -M124@36

tells INITMAP to use screen display mode number 124 (decimal) for
EGA/VGA init table entry number 36 (decimal). You can usually get the
screen display mode number from reading the user manual which comes
with your display adapter. To determine the EGA/VGA init table entry
number, match the information from the display adapter user manual
which comes with your display adapter with the init table entries the
SHOWMODE program shows. If you have more than one screen display mode
which you need to map, you can add more than one <u>-M</u> option to the
INITMAP command.

The INITMAP takes a short time to run. However, you can speed up the
process. Simply run INITMAP once during installing, but redirect the
report to a file. For example, use the following command during
installation:

                   INITMAP -S > BRDXVGA.TXT

This saves the INITMAP banner and control sequence report into the
file BRDXVGA.TXT. Then instead of running INITMAP in your
AUTOEXEC.BAT file, use the following command:

                       TYPE BRDXVGA.TXT

One small problem with this approach is that you must rerun INITMAP
to create a new BRDXVGA.TXT file whenever you change your display
adapter.

Although you generally would have not need to, you can add the <u>-C</u>
option to the INITMAP command to get INITMAP to generate its report
in SEND command form. For example, the following command:

                 INITMAP -S -C > BRDXVGA.BAT

makes a batch file BRDXVGA.BAT with SEND commands which do the same
thing as the INITMAP program itself. The advantage to doing this is
that you can edit the commands to change or add some. To do this,
you must know how to use the FANSI-SDMI and FANSI-SDMT control
sequences described later. Be sure and use a different name than
INITMAP.BAT for your batch file, since INITMAP will mean INITMAP.EXE
and not INITMAP.BAT.

INITMAP has more options which interest you. To find out more about
them, or if you forget how to use some INITMAP options, just run
INITMAP without any options:

                           INITMAP

Here INITMAP generates a brief description of its options.

9.1.2 Using SHOWMODE to view screen display mode summary

You may use the SHOWMODE program to display summary information about
the EGA/VGA screen display mode initialization table which your
display adapter provides in ROM. You may need to refer to the
SHOWMODE report to select parameters to INITMAP.EXE. Simply use the
following command without any of the <u>FANSI-CONSOLE</u> device drivers
installed which change the table (INITLOAD.DEV, and EGASUPER.DEV):

                            SHOWMODE -S

You also may use the same SHOWMODE command after you have installed
the appropriate <u>FANSI-CONSOLE</u> initialization table driver, such as
INITLOAD.DEV or EGASUPER.DEV. It then displays summary information
about the new screen display mode initialization table which the
initialization   table   driver   provides.   Note   that   installing
EGASUPER.DEV disallows the use of the extra screen display modes that
your adapter ROM provides, and allows the extra ones that the driver
provides instead. So you would not install one of these <u>FANSI-CONSOLE</u>
initialization table drivers if you want information about your
specific adapter.

<u>Note: init table entry</u> <u>numbers</u> <u>and</u> <u>screen</u> <u>display</u> <u>mode</u> <u>numbers</u> <u>are</u>
<u>not</u> <u>the</u> <u>same!</u> To match up a screen display mode number with an init
table entry, you must match up the descriptive information in your
display adapter user manual with the descriptive information the
SHOWMODE program shows for the table entry. This is just a hazard of
IBM's design of this table.

You may use the information that SHOWMODE provides for each table
entry to select the parameters to use for INITMAP or the FANSI-SDMI
and FANSI-SDMT control sequences described in the following
subsections.

You can use the name of a file with EGA/VGA init table entries as the
input file to SHOWMODE to get it to give a summary of the entries in
it. For example,

                 SHOWMODE BRDXVGA.INI > BRDXVGA.DOC

reads the EGA/VGA init table entries from BRDXVGA.INI and writes a
summary to BRDXVGA.DOC.

If you have problems with you display adapter, then you may need to
send us a copy of your EGA/VGA ROM BIOS screen display mode init
table. Using this table, we may be able to determine how to
appropriately configure <u>FANSI-CONSOLE</u> for the extra modes on your
adapter. To send us a copy of the EGA/VGA ROM BIOS mode
initialization table, do the following. You should type the
underlined characters. The other characters are prompts. Type upper
case characters as is. Use appropriate report from previous commands
to replace lower case characters.

```
C>DEBUG
-D40:A8 L4
0040:00A8 ww xx yy zz              {Need to use report on next cmd}
-Dzzyy:xxww L4
zzyy:xxww ss tt uu vv              {Need to use report on next cmd}
-Mvvuu:ttss L2000 100
-NBRDXVGA.INI
-RCX
:2000
-W
Writing 2000 bytes
-Q
```

This creates BRDXVGA.INI. If you do a SHOWMODE BRDXVGA.INI, it should
show at least 23 entries (0 through 22) for an EGA and 29 entries (0
through 28) for a VGA. It should show the same report as SHOWMODE -S
does when you do not have EGASUPER or INITLOAD.DEV installed. Then
send us the BRDXVGA.INI file on a diskette or on our BBS. If you
leave this file on our BBS for our help, please also change the name
of the file to something which brings to mind the name of your
adapter, but use the extension ".INI".

9.1.3 Using EGAINIT to create an EGA/VGA init table file

Sometimes the EGA/VGA ROM init table does not include descriptions
for some of your display adapter's native screen display modes, or
the init table may contain incorrect information. In these cases, you
can use the EGAINIT program to "read" the EGA or VGA register values
which your ROM BIOS uses for its native screen display modes to make
up a file of init table entries.

EGAINIT requires an report file name for the table entry data and a
list of <u>HEXADECIMAL</u> screen display mode numbers for which entries
were missing from the ROM init table. For example,

        EGAINIT BRDXVGA.INX 42,46,47,54,55,56,57,58,59,5E

calls the current BIOS to set up each screen display mode in turn and
then read all the VGA registers to find out the values the table
entries should have. Then it writes out these entries into the file
BRDXVGA.INX. It does this without changing the screen display memory,
so it displays a succession of garbagy looking screens as it works.
EGAINIT may take a minute or so to run. It works much faster on VGAs
than EGAs.

<u>If you want to get the values which the original BIOS uses, then you
must NOT have FANSI-CONSOLE installed when you run EGAINIT!</u>

Refer to your VGA manual for a list of its own non-IBM standard mode
numbers. Do not forget to convert them from decimal to <u>HEXADECIMAL</u>,
if needed!

˜˜ We use the file extension "*.INX" for init tables extensions. We
use the file extension "*.INI" for entire init tables.

If you change monitor types, you may need to redo this command and
anything which uses the report file. If you change monitor types or
display adapters, you definitely to redo this command and anything
which uses the report file.

If find you need to use EGAINIT, but our compatibility list does not
mention it, send us the file and the exact EGAINIT command you used
to get it, so we can add it to the list.

Once you have run EGAINIT to create the missing init table entries,
you need to add them to the operating system init table. For this you
use INITLOAD.DEV, probably with no installation options. For more
information, see the subsection entitled "Using INITLOAD to extend
your EGA/VGA init table" later in this chapter in the news file. You
must also use the INITMAP program with the "-S" option, to make a map
for <u>FANSI-CONSOLE</u> to use to support all the screen display modes
described in the table. For more information about INITMAP, see the
subsection entitled "Using INITMAP to add screen display modes".
earlier in this chapter in the news file.

After you have used EGAINIT to create the BRDXVGA.INX file, you can
use SHOWMODE to display a summary of its contents, using the
following command:

SHOWMODE BRDXVGA.INX

9.1.4 Using INX2INI to replace an EGA/VGA init table

If your screen display flickers or is out of sync immediately on
starting FANSI-CONSOLE, or does not work correctly for at least some
IBM standard video modes, the EGA/VGA initialization table may
contain incorrect information. To correct this you need to replace
the standard part of the EGA/VGA initialization table. To do this,
first run EGAINIT to read all the EGA/VGA registers for the standard
screen display modes:

        EGAINIT BRDXVGA.INX 0,1,2,3,4,5,6,7,D,E,F,10,11,12,13

You must NOT have FANSI-CONSOLE installed when you run EGAINIT! Then
you must fix order of the file entries using the appropriate DEBUG
script. If you have an EGA:

                COPY BRDXEGA.INX BRDXEGA.INI
                DEBUG BRDXEGA.INI <INX2INI.EGA

If you have a VGA:

                COPY BRDXVGA.INX BRDXVGA.INI
                DEBUG BRDXVGA.INI <INX2INI.VGA

Once you have created BRDXVGA.INI to create corrected init table
entries, you need to replace the operating system init table with
them. For this you must use the INITLOAD.DEV program, with the "/L=0"
and "/D=1" installation options.   For   more   information about
INITLOAD.DEV, see the next section in this news file. You do not need
to use the INITMAP program to make a map for FANSI-CONSOLE to use to
support all the screen display modes described in the table, since
this table is in the IBM standard order.

However, if you have additional non-IBM standard screen display modes
to support, you need to follow the section about using EGAINIT to
support non-IBM standard modes. You must combine the *.INI file
created in this section (first) with the *.INX in the other section
(second) using a command like the following.

            COPY /B BRDXEGA1.INI+BRDXEGA2.INX BRDXEGA2.INI

Once you have created BRDXEGA2.INI, you need to replace the operating
system init table with them. For this you must use the INITLOAD.DEV
program, with the "/L=0" and "/D=1" installation options. For more
information about INITLOAD.DEV, see the next section in this news
file. You then must also use the INITMAP program with the "-S"
option, to make a map for FANSI-CONSOLE to use to support all the
screen display modes described in the table. For more information
about INITMAP, see the subsection entitled "Using INITMAP to add
screen display modes" earlier in this chapter in the news file.

9.1.5 Using INITLOAD to extend your EGA/VGA init table

Once you have run EGAINIT or used some other method to create a file
of the init table entries, you need to add them to the operating
system init table. For this you use INITLOAD.DEV.

Suppose you used the EGAINIT example to create the BRDXVGA.INX file
with init table entries. You must first combine your BRDXVGA.INX file
with INITLOAD.DEV:

            COPY /B INITLOAD.DEV+BRDXVGA.INX BRDXVGA.DEV

Do not forget the /B option or you may not copy all the files. Then
you must add a line to your CONFIG.SYS file:

            DEVICE=[Bslash]FC[Bslash]BRDXVGA.DEV <options>

You can usually install it either before or after FANSI-CONSOLE,
since FANSI-CONSOLE does not use the data until you change to a non-
IBM standard screen display mode. However, we generally recommend
installing it before FANSI-CONSOLE In most cases, you will not need
to use ANY options.

Adding the /F=xx option will start with first original entry #xx to
copy from the operating system init table (omitting earlier entries).
INITLOAD.DEV defaults to /F=0. Generally, you would only use this
option if your original table had two or more sets of init table
entries for two or more different types of situations, and you wanted
FANSI-CONSOLE to use the second or later set instead of the first.

Adding the /L=xx option will end copying the original init table
BEFORE last original entry #xx (omitting entry #xx and later
entries). INITLOAD.DEV defaults to /L=0FF (/L=255), meaning copy
until an obvious nonsense entry. For example, you could use /L=0 to
not copy any of the original init table. Here the BRDXVGA.INX file
would replace the original init table. Usually we use the file
extension "*.INI" for entire init tables. With the /L=0 option, you
would also generally use the /D=1 option. Generally, you would only
use this option if you wanted to omit part of the original init
table. For example, sometimes you may want to save the space these
entries use.

Adding the /O=0xxxx option will use hexadecimal offset "xxxx" in your
ROM to get the original operating system init table. The offset
defaults to the address in the table at address 0040:00A8. Generally,
you would only use this option if your ROM has two or more non-
contiguous init tables for two or more different types of situations,
and you wanted FANSI-CONSOLE to use the second or later table instead
of the first.

Adding the <u>/R=xx</u> option will remove original entry #xx from the copy.
No default /R exists, since INITLOAD does not usually need to remove
entries. You can use multiple /R options, if needed. Generally, you
would use this if you do not need the extra entry, or if it caused
INITMAP to use the wrong entry for a screen display mode.

Adding the <u>/D=1</u> option will allow (not remove) duplicate entries.
This option defaults to /D=0, and INITLOAD.DEV removes duplicate
table entries which appear in the input file. Generally, you would
only use this option if you also use /L=0, when you try to completely
replace an init table.

If you use the INITLOAD.DEV program, you must also use the INITMAP
program with the "-S" option, to make a map for <u>FANSI-CONSOLE</u> to use
to support all the screen display modes described in the table. For
more information about INITMAP, see the subsection entitled "Using
INITMAP to add screen display modes". earlier in this chapter in the
news file.

9.1.6 Using EGASUPER and INITLOAD.DEV /S=1

EGASUPER.DEV and INITLOAD.DEV /S=1 "import" new non-native screen
display modes. This also makes such run-time modes as FANSI-HIGH,
FANSI-VGA, and FANSI-WIDE meaningful Many adapters provide these
features in similar ways. Some adapters do not have any of these
features. So if you have a super-EGA then you might try using
EGASUPER.DEV to extend the IBM standard part of the init table with
some higher resolution modes. Do <u>NOT</u> use EGASUPER.DEV with a VGA! If
you have a VGA, then you might try using INITLOAD.DEV with the /S=1
option to extend the IBM standard part of the init table with some
higher resolution modes. Do <u>NOT</u> use the INITLOAD.DEV /S=1 option with
a EGA! Also, you might try our bulletin board system (BBS) to see if
we have additional files.

For example, to install EGASUPER.DEV, add the following line <u>before</u>
the DEVICE=\FC\FCONSOLE.DEV installation line in the CONFIG.SYS file
in your system disk root directory:

                    DEVICE=\FC\EGASUPER.DEV

To install INITLOAD.DEV with the /S=1 option, add the following line
<u>before</u> the DEVICE=\FC\FCONSOLE.DEV installation line in the
CONFIG.SYS file in your system disk root directory:

                    DEVICE=\FC\INITLOAD.DEV /S=1

Or just add the "/S=1" option to the INITLOAD installation line if
you already have a DEVICE= line in the CONFIG.SYS file for it.

Beware! Some adapters have the word "VGA" in their brand name, but
are not totally VGA compatible. Other folks may refer to these
adapters as "VGA BIOS compatible", instead of "VGA register
compatible". They are only super-EGAs in our terminology!

If you use the EGASUPER.DEV or INITLOAD.DEV programs, you must also
use the INITMAP program with the "-S" option, to make a map for
<u>FANSI-CONSOLE</u> to use to support all the screen display modes
described in the table. For more information about INITMAP, see the
subsection entitled "Using INITMAP to add screen display modes".
earlier in this news file chapter.

If you install EGASUPER.DEV and you attempt to turn on FANSI-VGA
emulation with FANSISET, and the screen goes blank, and the computer
otherwise still functions, 200LINES and 350LINES run OK, but 400LINES
and 480LINES blank the screen, then running 350LINES will get you out
of any problems with a blanked screen. Then you probably have a non-
super or just ordinary EGA. Unless your adapter can select an
"external" clock with a higher than normal frequency, your EGA is NOT
a super-EGA. However, you can build your own external clock for under
$20. See the Sept 16th 1986 issue of PC Magazine. This is essentially
the difference between the VEGA and the VEGA DELUXE. SNOW may still
indicate that you needed VGAFONT.DEV. Usually you use VGAFONT.DEV to

create a 16 pixel high font, which YOU and your non-super-EGA can
still use, but with less rows of characters on the screen.

Note that installing the EGASUPER driver disallows the use of the
extra screen display modes that your adapter ROM provides, and allows
the extra ones the driver gives instead. So you would not install one
of these FANSI-CONSOLE initialization table drivers if you want to
create a batch file for your specific adapter.

When you use the INITLOAD.DEV device driver, INITMAP makes the
following screen display mode numbers usable (see the appropriate
sections in the User Manual and Technical Manual listed in the index
under "FANSI-SCRNMODE"):

8	Monochrome Text 1056x350@132x25
10	Monochrome Text 1056x352@132x44
11	16 Color EGA Graphics 800x600@100x75
24	Monochrome Text 1056x352@132x25
25	Monochrome Text 720x350@80x43
26	Monochrome Text 1056x352@132x44
30	Color Text 640x352@80x44
34	Color Text 1056x352@132x44
35	Color Text 1056x350@132x25
36	Color Text 1056x400@132x28
37	16 Color EGA Graphics 640x480@80x30
38	Color Text 640x480@80x60
39	Monochrome Text 1056x350@132x25
41	16 Color EGA Graphics 800x600@100x37
42	Color Text 800x600@100x40
48	Color Text 640x350@80x43
51	Color Text 1056x352@132x44
55	Monochrome Text 1056x352@132x44
62	16 Color EGA Graphics 800x600@100x75
64	Monochrome Text 720x350@80x25

65   Monochrome Text 720x350@80x25

66   16 Color EGA Graphics 640x400@80x25

69   Monochrome Text 720x352@80x44

70   Monochrome Text 1188x350@132x25

71   16 Color EGA Graphics 800x600@100x37

73   Monochrome Text 1188x352@132x44

80   16 Color EGA Graphics 640x480@80x30

81   Color Text 640x480@80x30

82   16 Color EGA Graphics 640x400@80x25

83   Color Text 720x400@80x25

84   Color Text 1056x344@132x43

85   Color Text 1056x350@132x25

86   Monochrome Text 1056x344@132x43

87   Monochrome Text 1056x350@132x25

88   16 Color EGA Graphics 800x600@100x75

96   Color Text 1056x350@132x25

99   Color Text 1056x352@132x44

103   16 Color EGA Graphics 800x600@100x75

108   Color Text 320x350@40x25

109   Color Text 640x350@80x25

110   Color Text 640x480@80x60

111   16 Color EGA Graphics 640x480@80x60

Depending on the capabilities of your adapter and the requirements of
your application programs, other screen display modes may also work.

9.2 Using FANSI-SDMI and FANSI-SDMT

You may use the information that SHOWMODE provides for each table
entry to select the parameters to use for the FANSI-SDMI and FANSI-
SDMT control sequences described in the following subsections. For
simple usage, you need only one FANSI-SDMI control sequence and only
one FANSI-SDMT control sequence.

Use the "Init Table Entry" number shown for each table entry as the
"P4 initialization table entry" in a FANSI-SDMI control sequence. Use
the description of the table entry to find the matching "screen
display mode number" in documentation about your display adapter. Use
the matching "screen display mode number" as P4 in a FANSI-SDMT
control sequence with the same "screen display mode type triple" as
the FANSI-SDMI control sequence.

The question of which values to use for the "screen display mode type
triple" is harder to answer, but less important. To some degree, you
may just pick one! However, some constraints do exist.

P1 indicates the basic screen display mode type of the initialization
table entry. The maximum value for P1 is 31 decimal (01F hex). You
should also use P1 values of 7, 15, 23, or 31 decimal for modes for
monochrome displays only, and other P1 values for "color" (even
"black and white") modes only. Pick a P1 value greater than 19 or
find a FANSI-SCRNMODE which the manual describes similarly with
possibly less rows or columns.

If you find a FANSI-SCRNMODE which the manual describes similarly
with less columns, use a P2 value of 1. Then this screen display mode
becomes the FANSI-WIDE on version of the FANSI-SCRNMODE which the
manual describes similarly with less columns.

If you find a FANSI-SCRNMODE which the manual describes similarly
with less rows, use a P3 value greater than 0 (usually 3). With a P3
value of 3, this screen display mode becomes the FANSI-HIGH on
version of the FANSI-SCRNMODE which the manual describes similarly
with less rows. We suggest you use the value of P3 which corresponds
with the actual number of scan lines used, but FANSI-CONSOLE does not
require it.

For more complex usage, you may have more than one FANSI-SDMI control
sequence or more than one (or even no) FANSI-SDMT control sequence
for each "Init Table Entry" number the SHOWMODE program shows. All
the FANSI-SDMI control sequences for that initialization table entry
must have the same P4 value, but the "screen display mode type
triple" may vary. Having more than one FANSI-SDMI control sequence
allows FANSI-CONSOLE to use this initialization table entry for the
FANSI-WIDE on or the FANSI-HIGH on version of more than one FANSI-
SCRNMODE. Having more than one FANSI-SDMT control sequence allows
FANSI-CONSOLE to use this initialization table entry for more than
one FANSI-SCRNMODE value. Having no FANSI-SDMT control sequence means

there exists no FANSI-SCRNMODE unique to this initialization table
entry, and FANSI-CONSOLE only uses this initialization table entry
for the FANSI-WIDE on or the FANSI-HIGH on version of some FANSI-
SCRNMODEs.

FANSI-SDMI - FANSI Screen Display Mode Initialization

ESC [> P1 ; P2 ; P3 ; P4 SP r
P1 defaults to 0
P2 defaults to 0
P3 defaults to 0
P4 defaults to 0
Version 3.00 and later

Assigns an EGA/VGA initialization table entry number to a "screen display mode type triple". This allows you to describe to FANSI-CONSOLE how to do a new, non-IBM-standard, screen display mode number for your adapter. It also allows you to describe to FANSI-CONSOLE how your initialization table for your adapter differs from the IBM-standards.

P1, P2, P3 represent the type triple. P1 indicates the basic screen display mode type of the initialization table entry. The maximum value for P1 is 31 decimal (01F hex). P2 indicates whether to consider the screen display mode of the initialization table entry "wide"; It should generally be 0 if the screen display mode of the initialization table entry has 80 character columns or less, and 1 if it has more than 80 character columns (usually 132). P3 indicates the number of pixel rows in the screen display mode of the initialization table entry; It should generally be 0 if the screen display mode has 200 pixel rows, 1 if 350 pixel rows, 2 if 400 pixel rows, 3 if 480 pixel rows or more.

P4 indicates the EGA/VGA initialization table entry number. The first address in the table to which the address 0040:00A8 points in turn points to an initialization table. The BIOS and FANSI-CONSOLE use this initialization table to setup the EGA/VGA for each different screen display mode. Each entry in the table is 40 hex bytes long. The actual number of initialization table entries determines the maximum usable P4 value. The semi-standard device drivers EGASUPER.DEV and INITLOAD.DEV extend the existing initialization tables found in your EGA/VGA ROM. The compatibility list in the FANSI-CONSOLE User Manual or FCONSOLE.NQW may indicate that the diskette has a special device driver which installs a new initialization table for your brand of display adapter.

FANSI-CONSOLE uses the initialization table entry numbered P4, whenever you later ask for a screen display mode which maps to this type triple using the current combination of FANSI-HIGH, FANSI-WIDE, and text mode pixel rows. Using several FANSI-SDMI control sequences, you may map more than one type triple to the same initialization table entry. This gives you several functionally identical screen display mode type triples. You also need to map at least one new screen display mode number to each type triple using a FANSI-SDMT (Screen Display Mode Type) control sequence, if you want to use a non-IBM-standard screen display mode number (see FANSI-SCRNMODE) for the initialization table entry.

If you use P2=1, then FANSI-CONSOLE considers this initialization
table entry a wide version of the P1 standard screen display mode.
This means that when you have FANSI-WIDE turned on, FANSI-CONSOLE may
use the P4 initialization table entry instead whenever you use a
screen display mode for which the FANSI-SDMT control sequence maps to
a triple with P2=0. If you use P2=0, then FANSI-CONSOLE considers
this initialization table entry a non-wide version of the P1 standard
screen display mode. This means that when you have FANSI-WIDE turned
off, FANSI-CONSOLE may use the P4 initialization table entry whenever
you use a screen display mode for which the FANSI-SDMT control
sequence maps to this triple.

If you use P3=3, then FANSI-CONSOLE considers this initialization
table entry a high version of the P1 standard screen display mode.
This means that when you have FANSI-HIGH turned on, FANSI-CONSOLE may
use the P4 initialization table entry instead whenever you use a
screen display mode for which the FANSI-SDMT control sequence maps to
a triple with P3<3. If you use P3<3, then FANSI-CONSOLE considers
this initialization table entry a non-high version of the P1 standard
screen display mode. This means that when you have FANSI-HIGH turned
off, FANSI-CONSOLE may use the P4 initialization table entry whenever
you use a screen display mode for which the FANSI-SDMT control
sequence maps to a triple with P3<3.

You may find commented examples of this control sequence in the
report from INITMAP with the -C option. Except for technically
capable users, we only recommend using this sequence under our
direction. You may use the SHOWMODE program to display summary
information about the screen display mode initialization table which
your display adapter provides in ROM. Using the manual for your
adapter and the report from SHOWMODE, you should determine how the
non-IBM-standard screen display modes (see FANSI-SCRNMODE) map onto
initialization table entries. Then you must make at least one FANSI-
SDMT control sequence to map each non-IBM-standard screen display
mode to a "screen display mode type triple", and at least one FANSI-
SDMI control sequence to map each "screen display mode type triple"
to an initialization table entry.

See also: FANSI-HIGH, FANSI-SCRNMODE, FANSI-SDMI, FANSI-WIDE.

FANSI-SDMT – FANSI Screen Display Mode Type

ESC   [>   P1   ;   P2   ;   P3   ;   P4   SP   s
P1 defaults to 0
P2 defaults to 0
P3 defaults to 0
P4 defaults to 0
Version 3.00 and later

Assigns a "screen display mode type triple" to a "screen display
mode". This allows you to describe to FANSI-CONSOLE how to do a new,
non-IBM-standard, screen display mode number for your adapter.

P1, P2, P3 represent the type triple. P1 indicates the basic screen
display mode type; Choose a mode number for a standard screen display
mode (see FANSI-SCRNMODE) which most closely resembles the new screen
display mode. The maximum value for P1 is 31 decimal (01F hex). P2
indicates whether to consider this screen display mode "wide"; It
should generally be 0 if the screen display mode has 80 character
columns or less, and 1 if it has more than 80 character columns. P3
indicates the number of pixel rows in this screen display mode; It
should generally be 0 if the screen display mode has 200 pixel rows,
1 if 350 pixel rows, 2 if 400 pixel rows, 3 if 480 pixel rows or
more.

P4 indicates the screen display mode number which you could later use
as a FANSI-SCRNMODE value, or in AL when calling INT 010H with AH=00.
When you ask for the P4 screen display mode number, FANSI-CONSOLE
uses this FANSI-SDMT control sequence "screen display mode type
triple" to find an EGA/VGA initialization table entry number.

When you have FANSI-WIDE turned on, FANSI-CONSOLE changes the P2
triple value to 1 before using the triple to find the right EGA/VGA
initialization table entry number. When you have FANSI-WIDE turned
off, FANSI-CONSOLE uses the P2 triple value directly from the FANSI-
SDMT control sequence.

When you have FANSI-HIGH turned on, FANSI-CONSOLE changes the P3
triple value to 3 before using the triple to find the right EGA/VGA
initialization table entry number. When you have FANSI-HIGH turned
off, FANSI-CONSOLE maps the screen display mode you request to a type
triple with P3<=3, depending whether the screen display mode is a
text mode and the current BIOS setting for the number of text mode
pixel rows. For text modes with triples having P3<=2, the current
BIOS setting for the number of text mode pixel rows overrides the P3
part of the triple used in the FANSI-SDMT control sequence. For non-
text (graphics) modes, the FANSI-CONSOLE just uses the P3 value used
in the FANSI-SDMT control sequence.

You also need to map each type triple to an initialization table
entry using a FANSI-SDMI (Screen Display Mode Initialization) control
sequence. Using several FANSI-SDMT control sequences, you may map
more than one P4 value to the same type triple. This gives you
several functionally identical screen display modes.

You may find commented examples of this control sequence in the report from INITMAP with the -C option. Except for technically capable users, we only recommend using this sequence under our direction. You may use the SHOWMODE program to display summary information about the screen display mode initialization table which your display adapter provides in ROM. Using the manual for your adapter and the report from SHOWMODE, you should determine how the non-IBM-standard screen display modes (see FANSI-SCRNMODE) map onto initialization table entries. Then you must make at least one FANSI-SDMT control sequence to map each non-IBM-standard screen display mode to a "screen display mode type triple", and at least one FANSI-SDMI control sequence to map each "screen display mode type triple" to an initialization table entry.

See also: FANSI-HIGH, FANSI-SCRNMODE, FANSI-SDMI, FANSI-WIDE.

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