Infineum Display

User Manual

Title Page

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1 Introduction

1.1 Scope

The scope of this document covers the Infineum Display Unit.

1.2 Purpose

The purpose of the document is to provide the relevant information to enable the user to operate and maintain the Display Board correctly.

1.3 System

The system comprises of a Graphics Display Board connected to an existing local Ethernet network via an RJ45 connection. The Display is 192 pixels high by 64 pixels wide and uses Ultra-bright red LED technology.

Data Displays' GRAFIT software is used to operate the Displays. The user can create both text and graphic messages and subsequently change the messages at will. The Display Board will show a combination of static and scrolling messages, normal or large fonts as well as various ON/OFF commands using the GRAFIT software package.

Warning
Only trained and authorised personnel should do tests and maintenance on this Display Board System.

2 Hardware

2.1 Unpacking

Carefully remove the items from their package and store the packaging safely. After unpacking, inspect the contents for any damage that may have occurred during shipment. In the event of damage, refer to the '*Technical Support'* section of this manual.

2.2 Hardware

The Display Board should be located in a position where there is unrestricted viewing of the front face of the Board.
An internal network card and an RJ45 socket installed in the Display enables the Display to connect to the Local Area Network (LAN). The Display becomes part of the network similar to the PCs and printers and must be given an IP address. For further details, please refer to the *'NetPrinter Port Setup'* section of this manual. Use a networked PC to control the Display.

Mount the Board securely and connect the cables as shown in the Figure below.

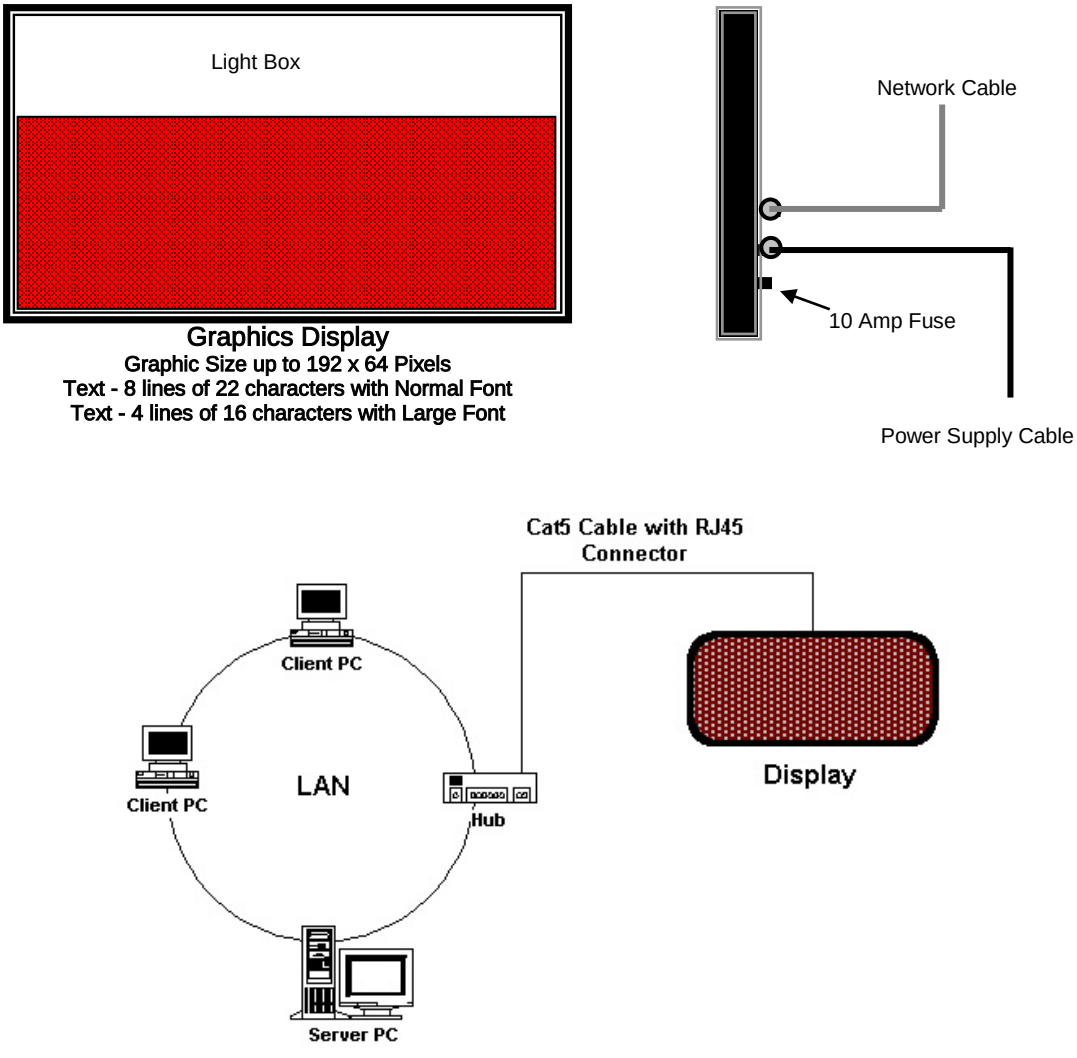


Figure 2.1 – System Configuration.

3 Software

The Display Boards are operated using the text and graphic based GRAFIT software package. The user can edit general text messages, time and date messages as well as draw and create their own single frame graphics or multi-frame sequences and animations.
This chapter contains information to enable the installation and configuration of the software.

3.1 System requirements

It is assumed that the reader is familiar with the use of an IBM PC or compatible computer and with the basic Microsoft Windows terminology. It is also recommended that the user is familiar with Microsoft Paintbrush to better edit graphic frames for the display.

The minimum hardware and software requirements to run the ***GRAFIT*** software are as follows:

Processor:	80486 or higher
Memory:	**16MB**
Display:	VGA (15 inch or larger recommended), 256 colors, 16-bit color
Software:	Microsoft Windows 3.1 (running in 386 enhanced mode) or later
Disk Space:	10MB minimum free space for ***GRAFIT*** plus space for database and event log storage. (Bitmaps, Gifs, Tiffs, etc.)
Comms	COMM Port 1, 9 Pin serial port must be available.
Other:	Mouse or other pointing device. Since the Display system is normally connected to COM1 is important to ensure that there is no conflict with the mouse or other pointing device.

3.2 Conventions used in this Manual

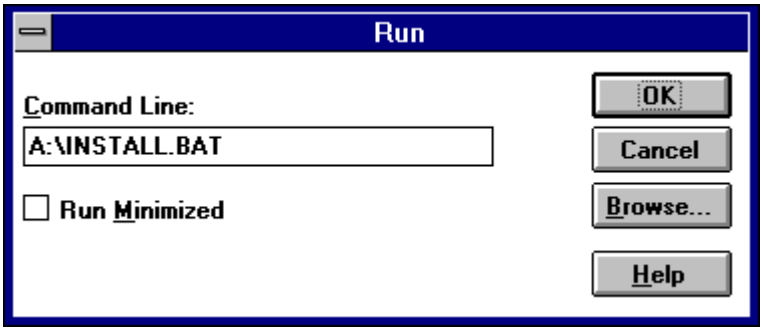
Menu Commands

This manual uses a shorthand method when referring to a series of menu commands e.g. 'Choose the About option from the Help menu' is shown as ***Help/About***.

3.3 Installation

3.3.1 Win 3.x

If installing ***GRAFIT*** to run under Microsoft Windows 3.x, proceed as follows:
In Program Manager select **File |Run**. Enter the file name A:\INSTALL.BAT and press enter or select the OK box.



When installation is complete, create a Program Group as described in your Microsoft Windows User Manual.

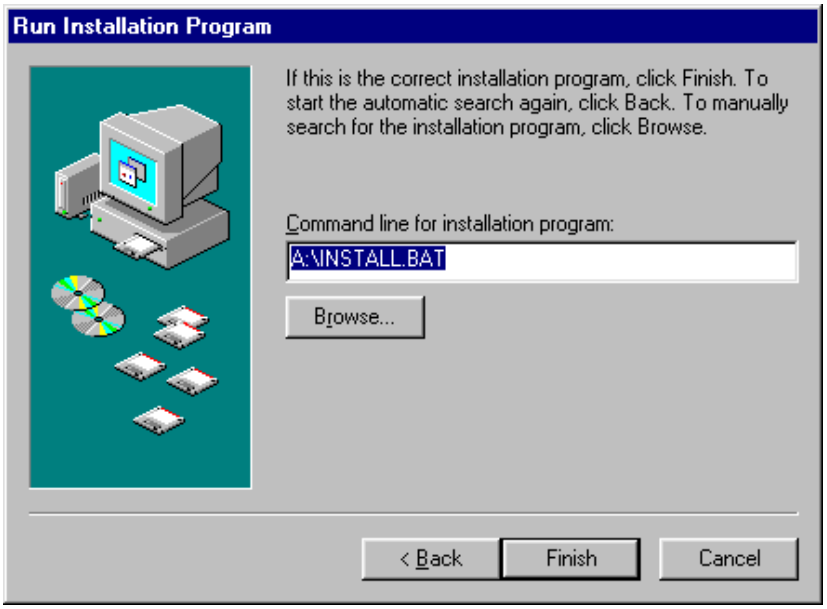
With the current installation program, an icon is not setup for the program in Windows 3.x. Select ***File|Run*** from the program manager then enter the filename:

C:\GRAFIT\GRAFIT

or add the GRAFIT.EXE application to the 'Applications' folder manually using the procedure outlined in your Microsoft Windows User Manual.

3.3.2 Win 95, (98,NT 4.0)

If installing to run under Windows 95(etc.), click the **Start** button, then select ***Settings|Control Panel***. Double-click the ***Add/Remove Programs*** icon and follow the instructions shown on the screen.



Add GRAFIT to the Start menu or your Desktop by creating a short-cut as described in your Windows 95 User Manual. Executable to run the software package is as follows:

GRAFIT Version 1.16c = C:\GRAFIT\GRAFIT.EXE

4 NetPrinter Port Set-up

4.1 Description

These are physical devices that are built into Display units to make it possible to attach a Display to a specific independent node on the Network. To use these devices you must first set-up an independent IP address for each NetPrinter so as they can be accessed from NetSDS.

Note: The Network Administrator must supply a static IP Address for the NetPrinter.

4.1.1 IP Address Set-up

Each NetPrinter has a unique identification product name 'PN…….'. This product name can be found on a label attached to the Display. Otherwise contact your nearest Data Display Customer Service Office.

To set the IP address, run the IPSET95.exe file located in C:\GRAFIT directory. A dialog box opens requesting the user to enter the NetPrinters product name 'PN…….'. and its assigned static IP Address. Click on the *'Set IP'* button to confirm IP Address set-up.

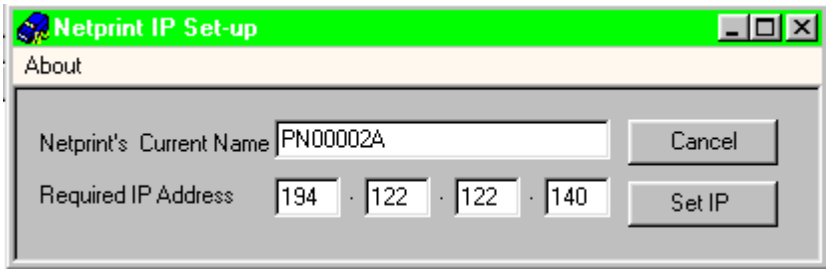


Figure 4-1 - NetPrint IP Setup Dialog Box.

4.1.2 GRAFIT.INI Set-up

The Display now has an IP address assigned to its NetPrinter. This IP address must be listed in the GRAFIT.ini file under the section titled [NetPrinter]. The GRAFIT.ini file is located in the C:\GRAFIT directory. Double-click on the file to open. Enter the following, *Net IP Address 1=* followed by the assigned IP address. The entry should look as follows:

```
[NetPrinter]
Net IP Adds 1 = 194.122.122.140
```

Close and save the file.

4.1.3 Assign IP Address to Display

To assign the IP Address to the Display:

1. On the toolbar, click on *'Options > Display'*
2. Click on the COMS button
3. Select 'NetPrint' from the *'Ports'* drop down list
4. Click on OK until you are back to the main screen

The Display has now been assigned an IP address.

5 GRAFIT 1.16c Software ©

5.1 Getting Started

To start GRAFIT in Windows 3.x double-click the GRAFIT icon in Program Manager. In Windows 95 select *'Start|Programs|Shortcut'* **to GRAFIT.EXE** to start GRAFIT.

5.2 Exiting from the Software

To exit the software, use the normal menu command. Click on ***'Frame/ Exit '*** and click on the *'Yes'* button of the dialog box.
Exiting from the software may also be achieved by pressing the ALT and F4 keys together, and clicking on the *'Yes'* button of the dialog box. Using Windows 3.x, choose the Close option from the window menu accessed by clicking on the box in the top left-hand corner of the screen.
Using Windows 95, click on the Close button in the top right-hand corner of the screen, and clicking on the *'Yes'* button of the dialog box.

5.3 Accessing Help

Help is available in the GRAFIT application and may be accessed in the following ways:

- By reading the status bar at the bottom of the screen when a menu option is highlighted.
- Select *Help|Help* **or** *Help|About.*
- Press F1 to view context sensitive help for the menu option selected.
- Most dialog boxes have HELP buttons.

5.4 Screen Layout and Symbols

This section gives details of the GRAFIT application or main window layout. The components of the main window are the Caption Bar, the Speed Bar, the Menu Bar, the Canvas (the main area of the window) and the Status Line at the bottom of the screen. When selected, many of the main menu items Display Dialog Boxes.

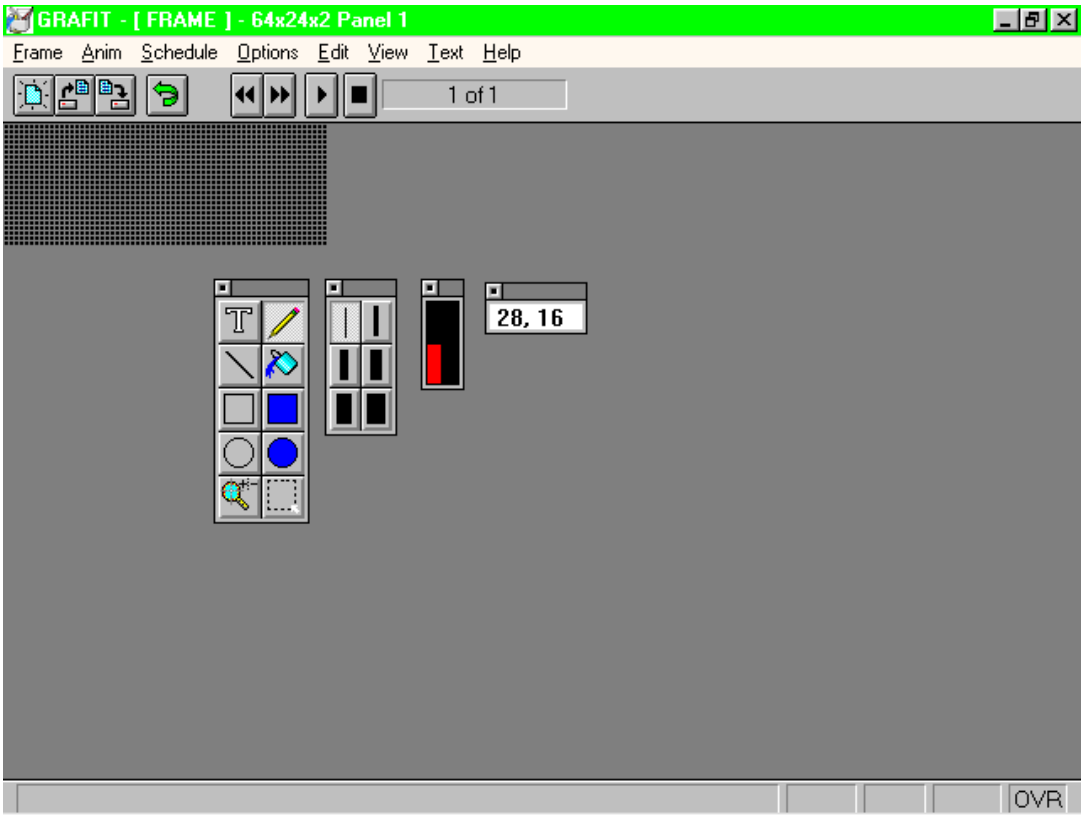


Figure 5.1 - The Main GRAFIT editing screen.

5.4.1 The Caption Bar

The Caption Bar contains the name of the software application GRAFIT followed by the current view title and the resolution.

5.4.2 The Speed Bar

The Speed Bar consists of five buttons that are used to directly access Frame Menu options.

Clears or Blanks current frame

Load frame from a file on disk

Saves frame to a file on disk

Undo latest changes to image

Previous/ Next Frame

Play animation

Stop animation

Page number of Animation

5.4.3 The Menu Bar

The Menu Bar is the primary means of accessing all the menu commands and should always be kept visible. If a menu command is followed by an ellipsis (…), choosing the command opens a dialog box. If the command is followed by an arrowhead (‣) the command leads to another menu selection. If the command has neither an ellipsis nor an arrowhead, then the action occurs as the command is chosen or. For further information on the use of windows, icons, mouse and menus refer to the Microsoft Windows User Manual.

5.4.4 The Canvas

The Map is the main central area of the ‘application’ window. Using the commands from the menus, the user is able to create text/ graphics frames on the Canvas.

5.4.5 The Status Line

The status line appears at the bottom of the main window. It shows useful information as well as brief explanations of menu items.

5.5 The Menu Bar

Frame

Clear

Delete

Insert

Load

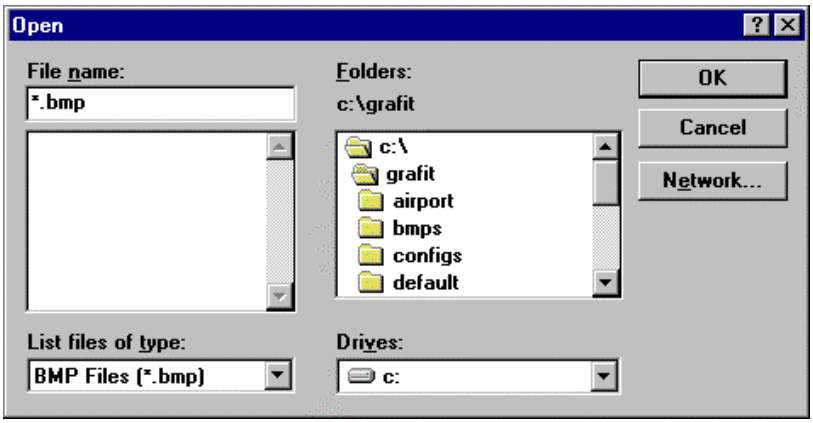
This menu provides options for dealing with single bitmaps only. Only the working frame is effected using options in this menu.

Blanks/clears the current frame.

This option allows you to delete any frame from the frame list/sequence provided that there are two or more frames in the sequence.

This option is like the 'Frame/Load' except that the frame loaded is inserted into the frame list after the current frame, provided that there is frame space left in which to store it. This allows you to insert a frame into a sequence.

Selecting 'Load' under the 'Frame' menu produces a dialog box from which the user may select a '.BMP' file or any of the file types listed.



FIELDS

File Name:
To select a file, click with the left mouse button on a '.BMP' file listed under 'File Name' in the dialog box or type in the name of the required '.BMP' file in the space given under 'File Name'.

List Files of Type:
Clicking on this option with the left mouse button pulls down a menu from which the user may choose what type of files he wishes to see in the 'File Name' selection menu.

Directories:
Under this heading is provided an option to select the subdirectories from which the user is able to view the files contained in the subdirectory under the field 'File Name'.

Drives:
When clicked on with the left mouse button this field produces a pull down menu from which the user may select their drives by clicking with the left mouse button on the required drive.

Load continued...

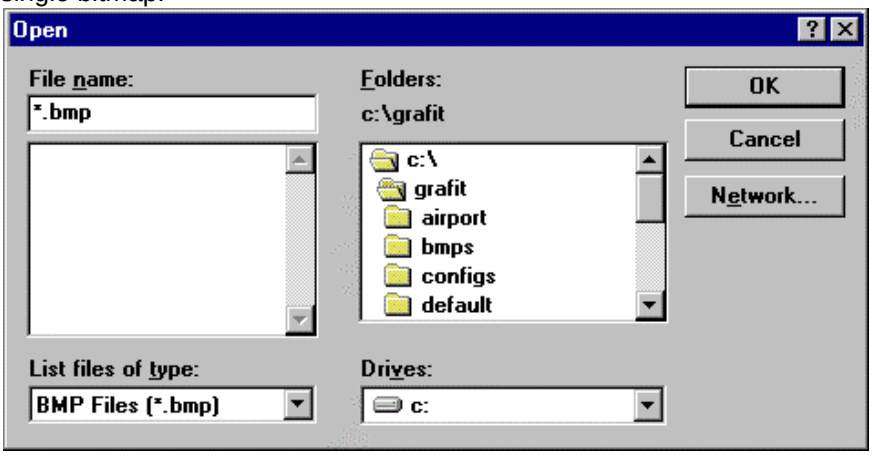
BUTTONS

OK
Accept configuration as entered and load file.

CANCEL
Exit dialog without loading file.

Save

This option 'Save' under 'Frame' provides the facility to save any changes to the bitmap or system, e.g. pause rate, of this application as a '.BMP' file. A '.BMP' file is a single bitmap.

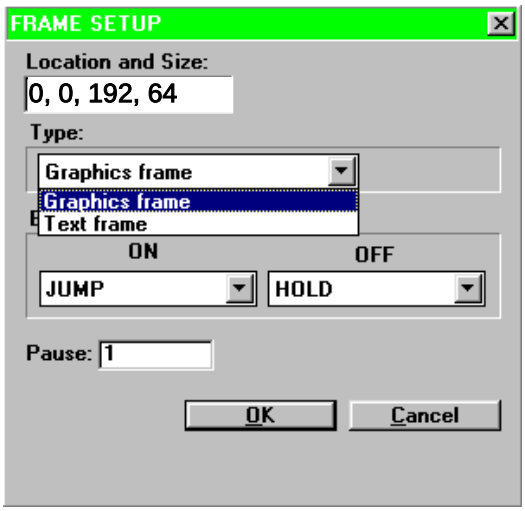


Send

Send the current frame to the Display hardware as a single frame sequence.

Setup

Selecting this option provides a dialog box so that the user may select a frame type, an effect for the current bitmap frame being worked on and a pause rate i.e. how long the bitmap frame drawing will be left on the screen during animation.



FIELDS

Type:
Click on the arrow to show the frame type options available, Graphic frame or Text frame. When creating or editing the animation, a sequence of Graphic or Text frames may be inserted in the animation.

Setup continued ...

Effect:
Clicking with the left mouse button on this field pulls down a menu from which the user can select an effect for the bitmap frame being worked on. The ON effect is how the frame is drawn onto the Display page and the OFF effect is how the frame is drawn off the Display page.

Pause:
As yet the pause length of time is variable and depends on the size of the Display. To define a pause rate click the left mouse button in the space to the right of 'pause' and type in your required value. (For the 192 x 64 Display a pause of 20 is equal to 1.0 second)

BUTTONS

OK
Accept configuration as entered.

CANCEL
Exit dialog without altering bitmap effect or pause file.

Fixup Colors

This option converts images to match the palette of the Display being used. The result will depend on how much color information is lost in the process. This option is limited to a 4 color Display.

Exit

This option is used to exit GRAFIT and a dialog box appears to give the user the choice to stop the exit procedure.

BUTTONS

YES	**NO**
Exit GRAFIT.	Do not exit GRAFIT.

AAnim

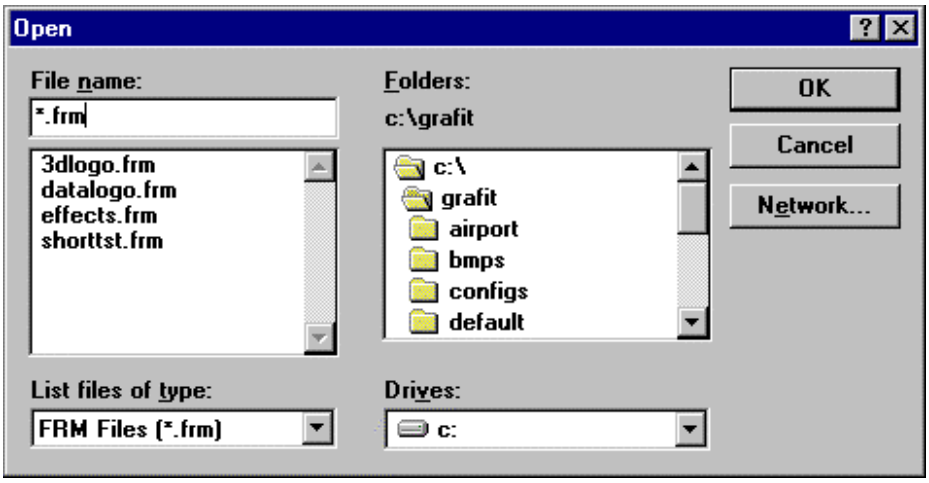
This menu provides options for dealing with animations or sequences of frames. All working frames are effected using options in this menu. An 'Animation' is a group of saved frames (*.frm).

Clear

Blanks/clears the all frames.

Load

Selecting 'Load' under the 'Anim' menu produces a dialog box from which the user may select a ".FRM" file only. A ".FRM" file is a sequence of frames.



FIELDS

File Name:
To select a file, click with the left mouse button on a '.FRM' file listed under 'File Name' in the dialog box or type in the name of the required '.FRM' file in the space given under 'File Name'.

List Files of Type:
Clicking on this option with the left mouse button pulls down a menu from which the user may choose what type of files he wishes to see in the 'File Name' selection menu.

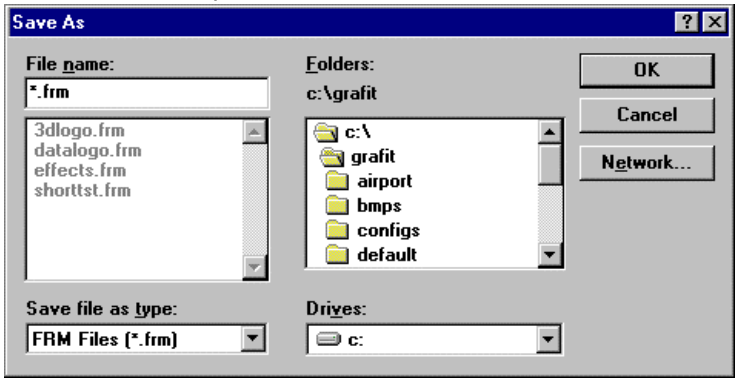
Directories:
Under this heading is provided an option to select the subdirectories from which the user will be able to view the files contained in the subdirectory under the field 'File Name'.

Drives:
When clicked on with the left mouse button this field produces a pull down menu from which the user may select their drives by clicking with the left mouse button on the required drive.

BUTTONS

OK
Accept configuration as entered and load file.

CANCEL
Exit dialog without loading file.

Join	This option works like load except the loaded animation/frame sequence is joined at the current frame.
Save	This option 'Save' under 'Anim' provides the facility to save any changes to the of sequence of bitmaps or the system e.g. pause rate, of this application as a '.FRM' file. A '.FRM' file is a sequence of frames. 
Send	Send animation sequence to attached Display hardware.
Setup	Selecting this option provides a dialog box, which enables the user to define Display specific animation parameters. FIELDS Frames: The number of pages or picture frames in the animation. Pause: The 'pause' allows the user to set the same delay between all frames in the animation sequence. To define a pause click the left mouse button in the space to the right of 'Pause' and type in your required value. (A pause of 20 = 1.0 second on the 64x28x2 Display) BUTTONS OK Accept configuration as entered. CANCEL Exit dialog without altering bitmap effect or pause file.
Frame -	Clicking with the left mouse button on 'Frame- ' replaces the current bitmap frame with the previous bitmap frame for viewing. This option is also available as the fifth button on the speed bar.

Anim Continued ...

Frame +

Clicking with the left mouse button on 'Frame + ' replaces the current bitmap frame with the following bitmap frame for viewing. This option is also available as the sixth button on the speed bar.

Play

Clicking with the left mouse button on 'Play' will show each frame, of the '.FRM' file, in sequence one after the other at a rate depending on the delay until the user chooses to stop. This option is also available as the seventh button on the speed bar.

Stop

Clicking with the left mouse button on 'Stop' will stop the animation. This option is also available as the eight button on the speed bar.

Schedule

This menu provides options for dealing with schedules of animation sequences.

Load

Load a schedule setup from a .SCH file on disk into memory.

Save

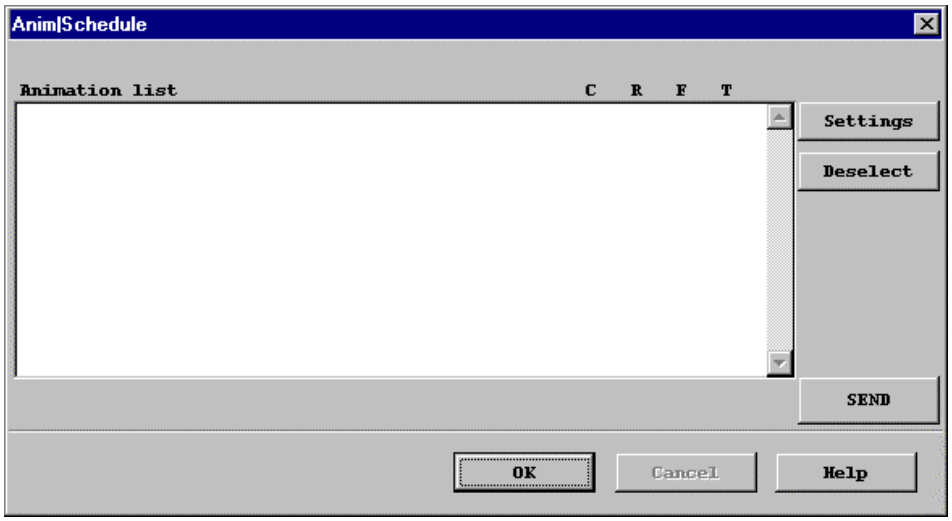
Save a schedule setup to a .SCH file on disk.

Send

Send the current schedule setup to the Display.

Setup

Popup the Schedule setup dialog that provides an interface with which you can create and edit an animation schedule.



Schedule Continued ...

Setup Continued ...

FIELDS

Animation list:
This is a complete list of the animation sequence or .FRM files in the schedule. On each line in the list you have the path and filename of the animation followed by four parameters as follows:

C = Which cycles the animation is to appear in, all cycles or every second or third cycle or whatever.
R = How many times will the animation be repeated in a cycle.
F = How many frames in the animation sequence.
T = Is the animation sequence timed or not.

To add a file to the list you right click on the position in the list where you wish to insert or append the file and a file selection dialog will popup from which you can search for and select the file.

BUTTONS

SETTINGS
This button pops up the Animation Settings dialog for the selected file in the list. You select a file in the 'Animation list' by left clicking on it. This dialog allows you to set the following parameters:

Cycle: Which cycles the animation is to appear in, all cycles or every second or third cycle or whatever.
Repeat: How many times will the animation be repeated consecutively in a cycle.
Time: A time in standard 24hr format (e.g. 12 O' Clock midnight is '00:00').
Date: A date entered in the following format 'DD/MM'.

If a field is left blank it is ignored or considered as a "don't care" or valid always.

DESELECT
This button allows you to delete a selected file from the 'Animation list'.

SEND
This button tells the software to send the animations to the Display and close the dialog.

OK
Accept the schedule and close the dialog.

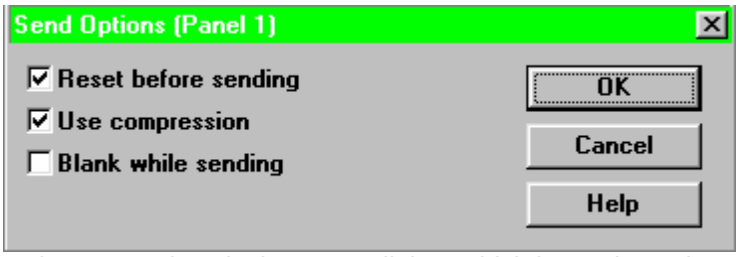
CANCEL
Ignore any changes to the schedule and close the dial

Options

This menu provides Display specific options.

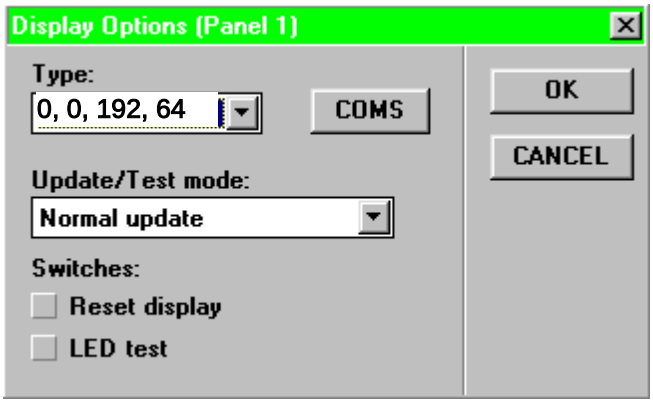
Send

This menu option is used to confirm the transmission settings. The *'Reset before sending'* and the *'Use compression'* settings **must always** be checked.



Display

This menu option opens the Display setup dialog, which is used to select what type of Display you are connected to and the communications parameters associated with this connection.



FIELDS
Type:
This is a drop down list of available Display types. Each Display type is listed using its standard name, its' dimensions or a combination of the two. The dimensions are of the form W x H x C (where W = LED columns, H = LED rows, C = colors including LED off).

Update/Test mode:
This is a drop down list of the modes available on the chosen type of Display. The modes available are as follows:

Normal update
Default mode whereby the Display just runs as usual.

Device test page
This mode forces the Display to show device information such as the firmware version, communications settings, RAM free etc. This is useful if you want to check Displays' settings without opening it up or powering it down.

Character set page
This mode tells the Display to step through its' character set/fonts page by page.

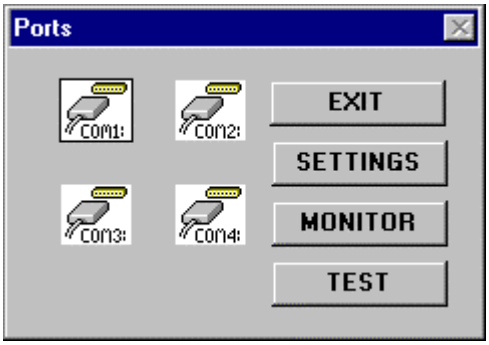
LED test page
This mode tells the Display to switch to its LED test page(s), designed to help locate defective LEDs.

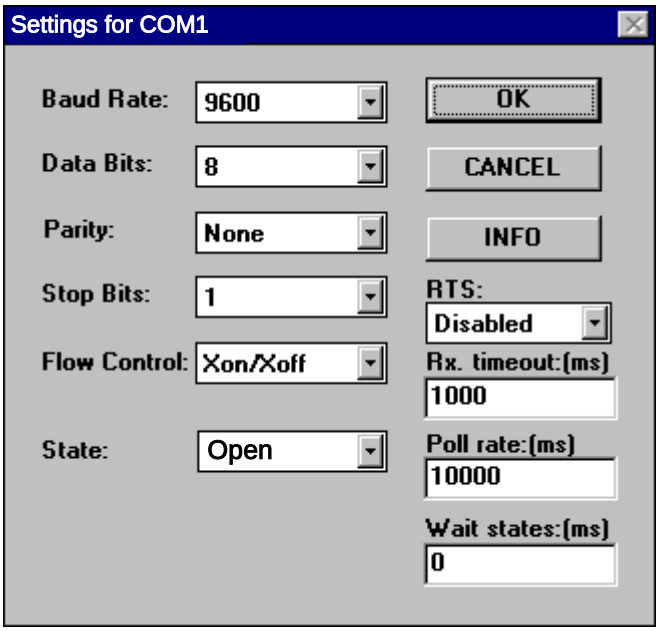
Demo page
This mode sends a demonstration sequence to the Display.

Options|Display Continued ...	Switches: This is a list of software switch settings as follows: Reset Display Set update/test mode back to normal and clear down all the memory in the Display. Some Displays will then show the time on the bottom line until the next time information is sent to them. LED Test When selected, the Display runs an OFF/ON test pattern to test the LEDS.
	BUTTONS COMS This button pops up a communications setup dialog. With this you can setup the Displays EPROM address as well as its SYMBOL, IDENTITY or MODEM options. OK Accept changes and close dialog. CANCEL Do not accept and selection changes made and close dialog.
Display List	This dialog allows you to add extra Graphics Display Panels. When you add a Panel then you must also choose the Options||Display|COMs button and set its' address. To switch to/select a Panel, select the Options|Display List menu option and click on the Panel in question.
Set Time/Date...	This menu option sends the current PC time/ date to the Display(s) at the next initial Frame/ Anim. This is useful if wanting to schedule frames as well as displaying Time and/or Date.
Set Dimmed Time...	This menu option gives the user the option to set a specific time period for the display to go to half its brightness level. When selected, a window displaying Start/ Stop for dimming to occur. It must be typed in 24 hr. format. An example is NOON equals 12:00, where as Midnight equals 00:00. Note: To update the TIME and DIM TIMED, a valid START and STOP time must be entered in the DIM TIME menu option dialog box.
System	This menu provides options for changing system settings such as communications parameters, modem setup, Display settings etc.

Ports

This dialog provides facilities for setting up, testing and monitoring the system communications ports. For this software package, the settings of COM1 must be set as shown below and be available on the Host PC.





Options|System|Ports Continued …

BUTTONS

EXIT
Exit this dialog.

SETTINGS
This button pops up a port settings dialog from which you can select the baud rate, data bits, parity, stop bits, flow control, state (open / closed), RTS status (high/low) and the Rx. timeout and poll rate in milliseconds.

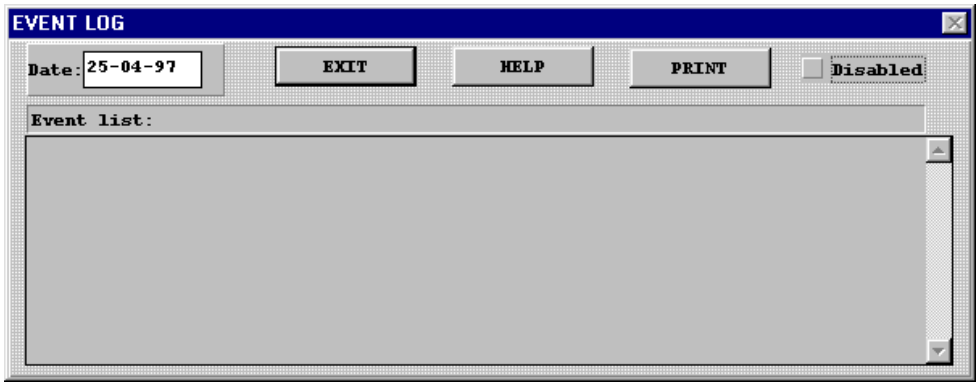
MONITOR
Popup a monitor dialog for the selected port. This is a floating dialog, which provides a means of viewing bytes at the port in HEX, ASCII or a combination of both. This dialog is only intended for use during initial system tests or for demonstration purposes. It should not be used for prolonged periods as it slows up the system and at the moment may sometimes have strange side effects e.g. if you print while this dialog is open sections of program memory can become corrupt (these problems are under investigation).

TEST
Popup a string input dialog, which you can use to send out a particular sequence of bytes to the selected port. (You can send binary values as follows: ^A=1, ^B=2 etc)

FIELDS

Rx. timeout:
This is the length of time the software will wait for device responses after polling /sending on this port. If this value is greater than 2000ms for the GRAFIT application then the software will popup an information dialog for each frame sent when sending one or more frames to a Display.

Poll rate:
This is the minimum time between each poll loop on this port. A poll loop is when the software polls all devices on the system. There are several types of poll and the type will depend on the state of the particular device. The devices are polled one by one and then the software waits for any devices that are expected to respond to send back the appropriate response. The length of time it waits is defined above. The time between the polling of each device is a minimum of 55ms but this can be increased in multiples of 55ms by setting the number of wait states between polls. This is necessary in situations where a device is using Tx. enable to gain control of the transmission line in an RS485 network.

Options|System|Ports Continued …	Wait states: The number of wait states between each consecutive poll during a poll loop. ICONS Each of the icons represents a COMn: port. To select a port you just click on its' icon. A port is selected if its' icon has a black rectangular border and you can only select one port at a time.
Modem	This option is not available for this application.
Save	This option provides the facility to save any changes to the configuration or system of this application.
Event Log	This option provides a dialog box to show the event log day by day. By entering a particular date, the first 1000 events occurring on that day will be listed. To close the dialog box, click on EXIT. Click on PRINT to print the listed events or HELP for further information. 

Setup ...

This option is provided for system developers only. It is used for configuring system specific settings. As would be expected it is password protected to prevent unqualified users from tampering with crucial system settings.
The options listed here vary from system to system.

Edit

This menu provides the option for altering complete bitmaps or sections of bitmaps selected with the grab-tool

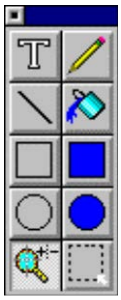
Undo	This option allows the user erase his last action on the bitmap. If 'Undo' is clicked a second time, the result is that what was undone will be unerased.
Cut	Cut the frame or selected section to the Clipboard.
Copy	Copy the selected frame or selection of it to the Clipboard.
Paste	Put copied frame/selection onto current frame and allow the user to position it.
Clear All	Not available for this application.
Delete	Not available for this application.

View

Tools

This menu provides the tools for altering bitmap contents.

Clicking on this option produces a tool bar on the screen. The tool bar has a caption and ten tool icons on it and a close gadget.



The caption or horizontal bar on top of the tool bar is used to position the bar anywhere on the screen by pressing down on the left mouse button and move the mouse to the required position of the tool bar before releasing the left mouse button.

The button immediately adjacent and to the left of the caption is the close gadget and it will close the tool bar and remove it from the screen when clicked on with the left mouse button.

The ten icon buttons beneath the tool bar caption function as follows:

Note: Upon clicking each button on the tool bar the mouse arrow will take the form of the icon on the button clicked.

TEXT

The text button allows the user to type in text onto their drawing. To alter the size of the font choose the fonts option in the main menu, see 'FONTS' or 'Text|Fonts...'

To type text on the drawing frame left click on the frame in the region onto which you want the text to appear. A text cursor will then appear in the foreground color . Next type the first character of the text if the character does not appear where you want it to then delete it (with the backspace key) and reposition the cursor. By referring to the Co-ordinates box you will soon be able to position the text cursor exactly where you want it whenever you are entering text. When you are happy with the text and its position you must fix it onto the frame image by left clicking anywhere on the frame.

If you want more control when placing text on a frame proceed as follow: with the text cursor selected right click on the frame to popup the text setup dialog. Enter your text in the box provided and then click on OK. Now the text mouse pointer has the text you entered attached to it as a floating object. As you move the mouse pointer over the frame the text will follow without affecting the image underneath. Once you are happy with the text position then you can left click at that position to drop the text onto the frame. At this point you can still edit/reposition the text by right clicking on the frame to popup the text setup dialog again. When you drop text on the frame by left clicking you must left click again to fix the text otherwise the text is still selected and will be lost if you switch to another operation.

View continued ...

Tools continued ...

PEN

By clicking on the pencil icon button this allows the user to draw freehand. The user must press down on the mouse button to draw with the mouse. On release of the mouse button the mouse arrow will cease to act as a pencil. To continue the line or add another one press down on the mouse button again and draw as before.

LINE

The line icon when clicked on enables the user to draw a straight line from the point where the user chooses to click the mouse button to where the user releases the mouse button.

FILL

The spilling bucket of paint icon is used in conduction with the 'Palette'. With this tool chosen you can fill a bounded area on the frame with the chosen color in the palette simply by clicking within the area on the frame.

RECTANGLE

This square tool allows the user to draw 'outlines' of squares or rectangles. Click down on the mouse button on the frame when the mouse is at the required start position and then drag the mouse, which has the effect of extending the diagonal of the square until it is of the required size. Releasing the mouse button fixes the shape into position. The operation must be completed once started.

FILLED RECTANGLE

Same as except that the inside of the square is filled with the background color (see palette).

ELLIPSE

Same as except that the square is a circle.

FILLED ELLIPSE

Same as except that the square is a circle and the inside of the circle is colored.

View continued ...

Tools continued ...

Note:
- There is no erase facility with this package. A suggested method of erasing would be to use tool with the same color as the background of the frame and draw over the error.

- For drawing tools, if you click with the left mouse button the foreground color is used to draw and if you click with the right mouse button the background color is used to draw.

ZOOM

The magnifying glass icon tool gives one the ability to zoom in or out on a frame simply by clicking on the frame with the left or right mouse button. You left click on the frame to zoom in and you right click on the frame to zoom out.

GRAB/SIZE

This tool changes the cursor to an arrow pointing to the north west. With this tool you can select a rectangular section of a frame and copy it to another section of the frame or you can change the size and position of the drawing area on the frame (which is the whole frame by default).

To grab and copy a section of a frame over another section of a frame, select this tool then mark a rectangle on the frame as if you were drawing a rectangle with the left mouse button . Then drag this rectangle over the area to which you wish to copy it by clicking on the rectangle with the left mouse button and moving the mouse arrow as you keep the left mouse button down.

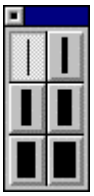
To change the size and position of the drawing area on the frame with the Grab/Size tool selected, right click on the frame to switch to size mode. The frame will automatically reset itself to the full size and the grid color will change to CYAN to remind you that you are in SIZE mode. You can right click again to switch back to GRAB mode. While in SIZE mode you can resize and position the drawing area of the frame by first of all marking the rectangle as if you were about to grab a section of the frame (see previous paragraph) and then dragging this section to the position you want (see previous paragraph). As soon as you drop the section after dragging it the grid will resize itself and its' color will change back to GRAY. If you do not want to reposition the grabbed section then you can drop it where it is by left clicking on its' top left corner.

The SIZE operation is very useful if you want to use a frame to change only a small area of the Display in a sequence of frames.

View continued ...

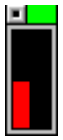
Lines

Clicking on this option produces a lines bar on the screen. The lines bar allows you to choose the thickness of line for a line drawing operation.



Palette

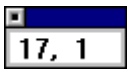
Clicking on this option produces a palette bar on the screen. This bar has one button icon for each color available and two rectangles one inside the other to represent the selected background and foreground colors. The outer rectangle represents the selected background (or right mouse button) color and the inner rectangle represents the selected foreground (or left mouse button) color.



Clicking on a color within the color box with the left mouse button will have the effect of changing the foreground color and clicking on a color with the right mouse button will change the background color. Drawing operations will always be performed with the selected color.

Co-ordinates

Clicking on this option creates a co-ordinates indicator box which indicates the position of the mouse on the screen in pixels in the format (X, Y). This box can be moved or closed as for the Tool bar above.



Text

Regular

Not available for this application.

Bold

Not available for this application.

Italic

Not available for this application.

Underline

Not available for this application.

Outline

Not available for this application.

Shadow

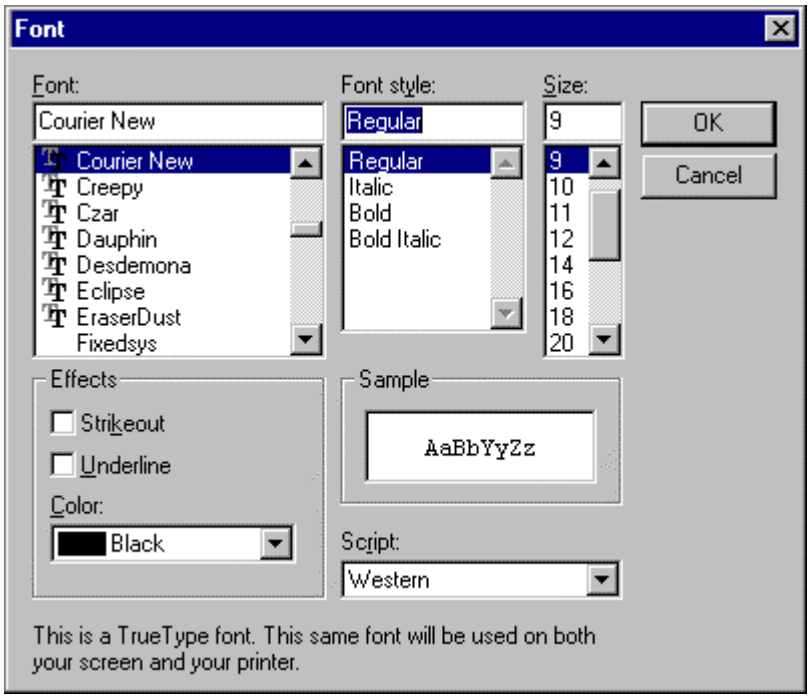
Not available for this application.

Text continued ...

Fonts

Available under this option are options to change font, font style and font size and effects.

Upon clicking on this option, the options box will appear and offer the above effects. When selection is completed click on 'OK' to leave options box and change to selected fonts, effects, sizes or types.



FIELDS

Font:
To change font, click on the desired font type beneath the option 'Font' in the box. A sample of the font will appear in the bottom right hand corner of the options box. The scroll up keys, adjacent to the font choice, will give more font options for selection.

Font Style:
To change the font style, click on the desired font type beneath the option 'font style' in the box. A sample of the font style will appear in the bottom right hand corner of the options box.

Font Size:
To change font size click on the desired font type beneath the option 'font style' in the box. A sample of the font size will appear in the bottom right hand corner of the options box. The scroll up keys, adjacent to the font size choice, will give more font size options for selection.

Text continued ...

Fonts continued ...

Effects:
An 'underline' and a 'cross out' effect enable the user to write underlined text or write text to appear as if it had a line drawn through the center of it. The effect is selected by clicking on the box along side the required effect to leave a mark in it. An example of how the text will appear in the sample box. To undo the effect click on the box again to clear the mark which selected it.

Colors:
The color option for text is not available through the fonts option box. The color can only be altered using the color bar.

BUTTONS

OK Accept configuration as entered.

CANCEL Exit dialog without accepting configuration.

Help

This menu contains two options:

About
Pops up a standard application information dialog.

Contents
Pops up the help contents.

Contents

6 Examples

6.1 How to Setup a Frame.

1. With the Options|System|Ports|COMn|Settings menu setup the Displays' COM port. 1.
2. Plug the serial cable (supplied with the Display) into the port on the PC and into the Display, then power up the Display.
3. The Display shows its communications setting on power up Address, Global Address, Baud rate etc.
4. Choose the 'Type' of Display from the Options|Display|Type menu and click on COMS to set the Displays 'Port' and 'Address', check the 'Reset Display' check box and then click on OK.
5. The Display should flicker and start showing the time centered on the bottom line.
6. Popup the Tools and Palette dialogs with the View menu.
7. Choose the Pen tool from the Tools dialog and the Ink color RED on the Palette dialog.
8. Scribble something on the Frame then choose the Frame|Send menu option.
9. What you just scribbled should appear on the Display. If not, refer to the *'Trouble Shooting'* section of this manual.

6.2 How to create a simple animation and using effects.

1. Try the steps in 6.1 first to ensure your Display is receiving information without any problems.
2. Animations consist of more than 1 frame. To setup the number of frames choose the Anim|Setup menu option and enter the number of frames you require. Try 3 with a 'Pause' of 10.
3. Now you can create the frames by hand using the Tools and the Palette or load each one from an existing frame file (.BMP, .GIF etc. are supported choose the Frame|Load menu option).
4. For starters just choose the RED Pen and scribble '1' on Frame 1 then click on the Anim|Frame+ menu option or the equivalent speed bar button.
5. Scribble '2' on Frame 2 and repeat the process for Frame 3.
6. Next click on the Anim|Send menu option and wait for the animation to be sent.
7. The Display should now be cycling through the sequence '1, 2, 3' at a rate of 2 frames a second or so.
8. You can now experiment with effects to make your animation more interesting.
9. To change the default JUMP, HOLD effect combination of each frame choose the Frame|Setup option for each frame and change the ON/OFF effect to whatever you like.
10. Example animations are also provided which you can experiment with using the Anim|Load menu option.

6.3 Adding text to a Graphics frame

1. Text can be typed onto a graphics frame in two modes, but first you must choose the tool from the Tool bar.

2. Mode 1: The first mode is got by clicking the the start position of your text on the current frame using the Left Mouse Button, when you do this a cursor will appear in the current Font. To change the font choose the Text|Fonts… menu option and setup the font attributes you want choosing from any of the windows fonts available on your system. Now you can enter text at will in the current Ink color.

3. Mode 2: This mode is got by right clicking anywhere on the current graphics frame to popup the Text Setup Dialog which is a standard text editor with which you can create your text or paste it from the Clipboard in the current Font. Once you have entered your text just click on the OK button and now your text is attached to the mouse pointer as a floating object which you can position exactly over your current graphics image (see help of TEXT tool).

6.4 Notes on importing Clipart

Although GRAFIT has all the basic features required to create your own graphics images it usually makes more sense to import your graphics from a public domain Clipart library or some other free source of images. MS Paintbrush, which is installed in most PCs is also an ideal graphics editor for GRAFIT.

7 Trouble Shooting

If, after installation and careful completion of the example sessions, communication with a Display is still not possible check the following:

7.1 Software

i) Ensure that the Display type setup matches the actual hardware Display exactly in terms of Type, EPROM address and communications port (COMn:) to which it is connected. Also be sure the parameters used are correct.
ii) Check the settings for COMn and ensure that its' state is 'Open' and the correct baud rate has been selected.
iii) Ensure there are no IRQ or other conflicts between the communications ports on your computer system. See your Microsoft-Windows user manual if unsure. This problem is only likely to occur if there is extra hardware on your system such as internal modems or extra/new communications cards. Such problems usually do not appear in DOS since it is not multi-tasking.
iv) If a serial mouse has ever been used on the computer or the computer is a lap-top with a tracker ball then there is a possibility that there are software drivers loaded which may be conflicting with COMn:.
v) If you are unsure if a communications port is working or not then check it by running Windows HyperTerminal (see Accessories), select that port then short pins 2 & 3 on the port. Next type something on the keyboard if it does not appear on the Terminal window then there is something wrong with the port either at a setup or hardware level. (This is called a LOOP BACK test!).

7.2 Hardware

i) Ensure the Display unit is powered on. The Display normally shows a message on power up and if it is blank there is a good chance the power is off.
ii) Ensure that all data/communication cables are correct and secure.
iii) If checking these items does not locate the problem, there may be a problem with your Windows setup, computers communications port, or some other computer malfunction.
iv) If not, notify your local Data Display Technical Support.

8 Effects

8.1 ON/OFF Effects

Each frame you send to a Display can have an on/off command/effect which you setup by clicking on the Frame|Setup menu. The complete set of commands available is as follows:

Jump

Immediately places the frame onto the Display as is.
Use: On and Off Command

Vertical/Up

Scroll up vertically the next frame onto the Display.
Use: On and Off Command

Open

This creates a curtain effect by opening the frame from the center of the Display out to the edges like an opening curtain, it has the opposite effect to CLOSE below.
Use: On and Off Command

Sparkle

This command has the effect of showing a frame gradually LED by LED until the entire message is visible. The message appears to fade onto the Display.
Use: On and Off Command

Wipe Left or **Wipe Down**

This command is like a one-sided curtain. It wipes the next frame onto the Display in the direction relating to the WIPE effect selected i.e. Left or Down.
Use: On and Off Command

Close

This command is the opposite to OPEN in that is closes the frame onto the Display screen from the edges to the center like a closing curtain.
Use: On and Off Command

Down

This command is the opposite of VERTICAL in that it causes the next frame to be scrolled down vertically onto the Display.
Use: On and Off Command

Hold

This command only works if it is used as an off effect. It causes the frame to be kept on the Display until the next frame is drawn over it or it is scrolled off by any of the scroll effects.
Use: Off Command ONLY

Background

This command when used as an off effect causes a frame to stay in the background permanently. This means that when subsequent frames are drawn off the Display the background will start to appear instead of the Display going blank.
Use: Off Command ONLY

Run

With this command a frame is scrolled horizontally onto the Display screen from right to left. It is used in the setup of various text frames.
Use: Off Command ONLY

8.2 Character Fonts

When you select a text message to send to a Display you can also select the appearance of that message on the Display screen by choosing a font from the 'Fonts:' list in the 'Display Setup' dialog box (refer to **System⇒Setup⇒Displays** section). The complete set of fonts available to date is as follows:

Normal

This is the default character font available on a Display. With this font , maximum character limitation is 22 x 8 lines of text.

Large

This font has a character limitation of 16 x 4 lines of text.

9 Maintenance

Warning: Disconnect the power supply before you remove any Display panels. Make sure work area is clean and clear of tools and miscellaneous items of equipment after maintenance.

9.1 Maintenance Instructions

9.1.1 Cleaning the Display

Routine cleaning of the Display Board is at the discretion of the operator and subject to local conditions. Use damp non-abrasive materials such as a sponge, or lint-free cloth to clean the Display. Remove difficult stains or marks with a suitable solvent. **DO NOT USE** sharp or metal objects.

9.1.2 Preventative Maintenance

Inspect the Display for defects before each operation. Do a visual check for the following:

- Damaged or dirty Lens
- Defective LEDs
- Loose Cables

9.2 Technical Support

For technical support and spare parts, contact your nearest Data Display Customer Service Department.

Data Display USA
5004 Veterans Memorial Hwy.
Holbrook, N.Y. 11741

Tel#: (631)218-2130 x 23
Fax #: (631)218-2140
E-mail: techsupport@ddusa.com

Make sure to quote the Data Display Reference No. in the Product Specifications section of this Manual and the Serial No of the Display.

10 Specifications

CHARACTERISTIC	VALUE
Display Features	
Model	GB-192x64-UBR
Data Display Reference No.	DDJ03185001
Display Type	Graphic/Text Board
No. of Lines per Board	8 Normal, 4 Large
No. of Characters per Line	22 Normal, 16 Large
Character Size	Variable
Display Panel Type	DB128UBR
LED Diameter	5mm
LED Color	Ultra-Bright Red
Communication	
EPROM	GB192X64
Protocol	MATIF
Baud Rate	9600
Addressing	Dip Switch
Data Format	8 bit, 1 stop bit, no parity, Xon/Xoff
Character Set	Extended ASCII set
Software	
Text /Graphics	GRAFIT © Ver 1.16c
Electrical	
Main Power Supply	110 Volts
Frequency	60 Hz
Housing	
Dimensions (HxLxD)	818mm x 1544mm x 112mm
Housing Material	Aluminium
Housing Color	Black
Netprinter	
Model	PLNP1
Version	4.30
Product Number	PN0022E9

Table 1 - Product Specifications.