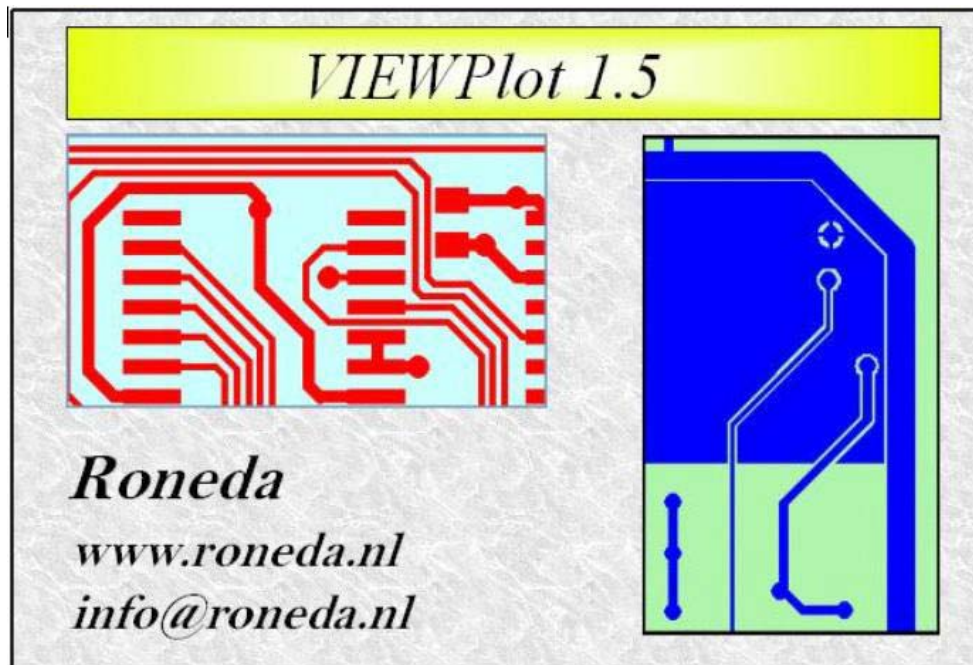


VIEWPlot Manual



The CAD Viewer Editor and Translator for Printed Circuit Design

VIEWPlot

Version 1.5

a product from Merco Electronics & Roneda

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Introduction

Viewplot is various file viewer/translator and editor for PCB related purpose. Several CAD formats can be loaded and translated as Gerber (D and 274X), Drill, HPGL and Auto-cad DXF.

Viewplot can read all 274X data including macros repeat functions etc.

Output formats are DXF, Gerber, HPGL and PDF format.

The PDF output format is real representation from the Gerber input data and is written in fully Ascii.

This results in a high-resolution file with a small file size. (Can be zipped to 70-90%)

Manipulating from the data, or adding addition information make simple adjustments in Gerber data.

Viewplot is a easy to use and inexpensive piece of software, The **Viewplot viewer** is **Completely Free** of charge. Viewplot can be used and shared by anyone needing to (re)view electronics design and or manufacturing data.

By combining all the input files needed for manufacturing or (re)view in one complete **Job file**, Viewplot easily transfers work from design to colleagues for review or to fabrication.

Comment: Viewplot Viewer, can **save** input data to the internal Job file format. (.Job) to share or review data (**Free**).

For saving & Translating input data formats a license key is required.

Viewplot main purpose is to **Translate Gerber directly to PDF**, this can be done in batch mode or within the GUI.


Translate mechanical board information (DXF) to Gerber or even to a Ample "do_file" which can be load in the Mentor Graphics Board-Station Librarian (Additional Userware provided).

Comment: Job file: Viewplot Internal file format.

See also the **Demonstration guide** and other information at www.roneda.nl



Ordering Information

 Viewplot can be down-loaded from the Roneda website, www.roneda.nl

The down-load version is a **Viewer only**, if you want to manipulate gerber data translate and save data, a valid license key is required.

For purchasing Viewplot contact **Roneda**.

We will provide you with the license file and USB key.

Comment: Viewplot Viewer, can **save** input data to the internal Job file format. (.Job) to share or review data (**Free**).

For saving & Translating input data formats a license key is required.

If you have any question and or feedback concerning the Viewplot software don't hesitate to

Contact us at viewplot@roneda.nl

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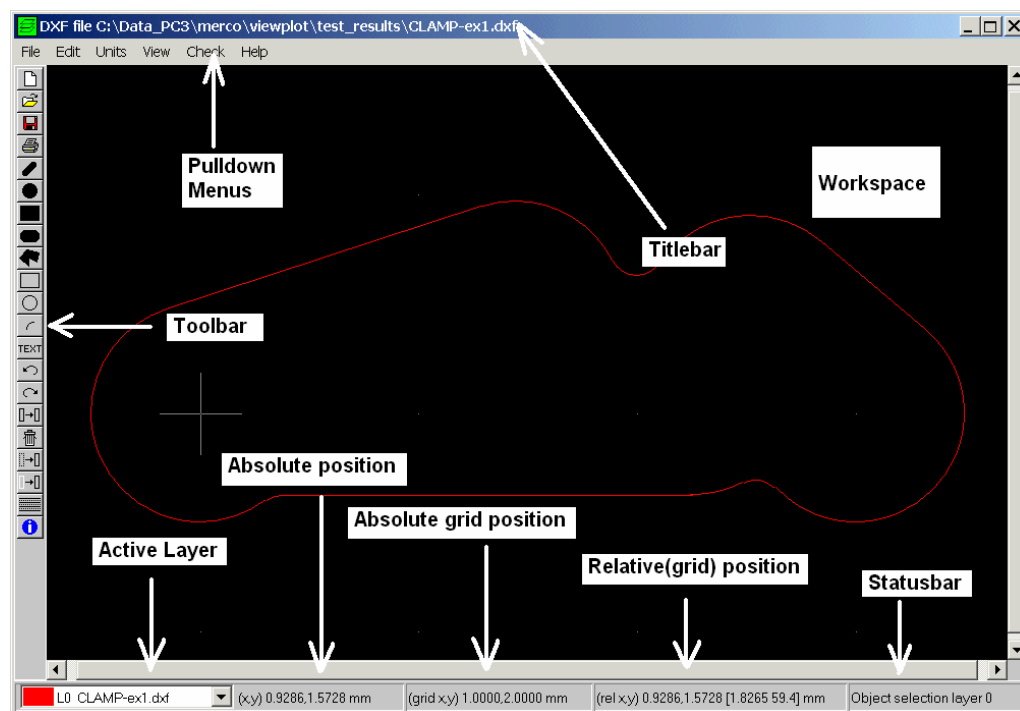
www.roneda.nl



Most common functions

Load File	F3 or File > Load File
Zoom In/Out	z , Z Pan by; Arrow keys
Switch Active layer	From List-box, Toggle layer by the Space-bar or select by I
Grid	Visibility on/off: g, Change grid size: Ctrl g
Report selected	I sign from the Tool-bar or press I
Measure	RMB > Measure distance between objects
Viewable objects	Ctrl a
Move objects	m or RMB > Move ,drag a object by: d
Copy objects	c or RMB > Copy
Repaint / Refresh	F5
Previous view	V
Delete objects	Del or RMB > Delete
Save	Ctrl S or File > Save ,Save as: Shift F2
Load Multiple Files	See: Viewplot & Total Commander

User Interface



Viewplot uses the standard Windows interface. Menus, toolbars, and other

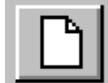

interface features follow Windows standards. Including context-sensitive menu's.

- **Title-bar** – This contains the path to the active layer file.
- **Pull-down Menus** – Standard pull-down menu system.
- **Toolbar** – These offer quick access to the common Viewplot commands.
- **Active Layer** – Select active layer(Working layer) by a list-box.
- **Absolute position** – Coordinate readout for the cursor location, in mm.
- **Absolute grid position** – Absolute grid readout for the cursor location, in Inch,mils,mm or Hpgl.
- **Relative (grid) position** – relative grid readout for the cursor location, in Inch,mils,mm or Hpgl.
- **Status-bar** – Provides status, and other user information.
- **Workspace** – Area for displaying the design data. This area can be enlarged, reduced, or zoomed

The CAD Viewer Editor and Translator for Printed Circuit Design

Open File

Create new Viewplot file

	Press New button
 Mainmenu	Sub menu File ; item New

Select one of the file types from the list-box.

- Gerber file
- HPGL file
- Drill file
- DXF file

Create Gerber file

A new Gerber file using the global apertures will be created.

Create HPGL file

A new HPGL file using the default pen sizes will be created.




Create Drill file

A new drill file using the global drill tools will be created.

Create DXF file

A new DXF file will be created.

Load file

 Mainmenu	Sub menu File ; item Load files
 Keyboard	Press F3
	Press Open button

In the dialog box a number of files can be selected (12max). After pressing the **Open** button a new dialog box will be visible showing the files selected. For every selected file the program will try to identify the file (Gerber/HPGL/Drill/apertures/drill tools or DXF). If the file could be identified, the type will appear in the list-box. The files (Gerber, HPGL, Drill or DXF) will be loaded on the next available layer(s). The user can view the file in Ascii format by pressing the **View** button. If the option **Load data using predefined parameters** is enabled, Gerber/Drill files with no embedded apertures will be loaded by using the startup Gerber/Drill parameters. Disable this option to adjust load parameters. The startup Gerber/Drill parameters can be edited by **Edit** menu item **Edit startup info Gerber/Drill**.

Press the **OK** button for reading the selected files.

Load Gerber file

When the file is in the RS274X format, the selected file will be loaded directly. The apertures found in this file will be private for this layer.
When the Gerber file is in the "old" Gerber format (RS274D) the program needs the help of the user. In the next dialog-box the Gerber format parameters will be listed. The parameters listed are the startup parameters for Gerber.

See also: [Edit startup info](#) & [Load global apertures](#)

By pressing the **Hint by program** button, parameters found by the program will be filled in. After pressing the **OK** button the Gerber file will be loaded on the current layer. When an aperture for the current layer does not exist, the *global aperture* list will be used. After loading the Gerber file, a report will be displayed if apertures where missing.

It is possible to load the missing apertures for these layer after-wards, by loading the *global apertures*. By doing so, the program will ask the user if the layer(s) should be reloaded (resizing objects).

Note: Pad objects based on a not existing aperture will default to **Round 40 mils**
Trace objects based on a not existing aperture will default to **Round 10 mils**.

Load HPGL file

The file will be loaded in the HPGL format. The objects on the layer will be created with the current pens.

See also: [Edit penplot sizes](#)

Load Drill file

In the next dialog-box the drill format parameters will be listed. The parameters listed are the startup parameters for drill.

See also: [Edit startup info](#)

By pressing the **Hint by program** button, parameters found by the program will be filled in. After pressing the **OK** button the Drill file will be loaded on the current layer. When an drill tool for the current layer does not exist, the *global drill* list will be used. After loading the Drill file, a report will be displayed if Drill tools where missing.

It is possible to load the missing drill tools for these layer after-wards, by loading the *global Drill tools*. By doing so, the program will ask the user if the layer(s) should be reloaded (resizing objects).

Drills based on a drill tool, which does not exist, will default to **1.0 mm**.

See also: Load Tool file File & [Load global drill tools](#)

Load DXF file

In the next dialog-box the available DXF layers will be listed.

Select the layers that should be loaded by Viewplot.

After pressing the **OK** button the DXF file will be loaded starting from the current layer.

Load Bitmap file

The file will be loaded in the Windows Bitmap (bmp) format. Objects are translated to horizontal lines.

Windows Bitmap file is a compressed raster format.

Monochrome (Black & White) Bitmaps are supported only !

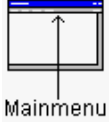
Load Tiff file

The file will be loaded in the Tiff format. Objects are translated to horizontal lines as with Bitmap files.

Monochrome (Black & White) Tiff files are supported only !

Tiff: Tagged Image File Format.

Load job file

	Sub menu File ; item Load job
---	--

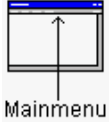
From the dialog-box a job file can be selected and loaded. A job file is a file, which contains all information of a project saved in an internal Viewplot format.

This information includes:

- All layers (Gerber/HPGL/DXF)
- All apertures Gerber files
- All Drill tools and Drill files
- Penplot diameters

Default extension: *.job

Load global apertures

	Sub menu File ; item Load global apertures
--	---

Select the Aperture filename from the dialog-box, a new dialog-box will pop-up. In this dialog-box the Gerber parameters are listed. The parameters listed are the startup parameters for Gerber

See also: [Edit startup info](#)

By pressing the **Hint by program** button parameters found by the program will be filled in. If necessary the user can change some of the parameters. The parameters that can be modified are:

- Skipping a number of lines from the beginning
- D-code Column
- Aperture object type (shape) column
- X size or diameter column
- Y size column
- Reverse X Y for rectangle or oblong pads
- Units (*Mils/mm/Inch*)

Columns should separate by one or more spaces or a comma.

When in a certain line the column string (X size, Y size) is non numerical, the string will be skipped and the string on the next column will be used.

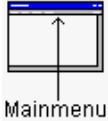
After pressing the **Read apertures** button the program will read the apertures for the current layer or the global layer.

The aperture object type supported are

- Type	Synonyms
- Rectangle	rectangle,rect,rec,rectangular
- Square	square,sq,sqr
- Round	circle,c,round,r,rd,rnd,line,l,rounded,donut
- Oblong	oblong,obround,o

Note: All synonyms are case insensitive.

Load global Drill tools

	Sub menu File ; item Load global drill tools
---	---

After selecting a filename in the next filename dialog-box, a new dialog-box will be shown. In this dialog-box the drill tool parameters will be listed. The parameters listed are the startup parameters drill.

See also: [Edit startup info](#)

If necessary the user can change some parameters. The parameters that can be modified are:




- Skip a number of lines from the start of the file
- Tool code Column
- Diameter Column
- Use a maximum of lines
- Units to: (Mils/mm/inch/0.01mm/0.1mm)

Columns should be separated by one or more spaces or a comma

After pressing the **Read drill tools** button the program will read the drill tools.

Save File

Save (as) Gerber file

 Mainmenu	Sub menu File ; item Save Save as -> Gerber files
 Keyboard	Press Ctrl s
	Press Save button

Select the layer to be saved. (*Set active layer from the list-box*)

In the dialog-box the apertures used are listed.

(*Viewplot will create new apertures if necessary*)

The parameters at the time the Gerber file was loaded will be used for the Gerber output parameters. Gerber output parameters can be modified if necessary.

As: *Gerber format, Number format and units.*


After pressing the **OK** button the objects on the current layer will be saved in the Gerber file format.

If necessary the apertures used in the design can also be edited, by using the function: [Save Gerber \(User apertures\)](#).

Default extension: *.gbr

See also: [Edit startup info](#)

Save (as) Gerber file (User apertures)

 Mainmenu	Sub menu File ; item Save Save as -> Gerber files (User apertures)
---	--

Select the layer to be saved. (*Set active layer from the list-box*)

In the dialog-box, a new dialog-box will be shown. The apertures used will be listed.

To modify the used apertures press the **Edit apertures** button.

Changes can be made for the aperture type, D code, X/Y parameter size, Add or delete aperture types, load apertures and unit settings.

The parameters at the time the Gerber file was loaded will be used for the Gerber output parameters. The Gerber output parameters can be modified if necessary.

As: *Gerber format, Number format and units.*


After pressing the **OK** button the program will check if using the current set of apertures can save all objects. Objects who are too small to fit by an aperture will be selected, and saving will be aborted.

Default extension: *.gbr

See also: [Edit apertures](#)

See also: [Edit startup info](#)

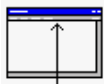


Save as (with offset)

 Mainmenu	Sub menu File ; item Save as (with offset)
---	---

The output file can be saved with a X/Y offset other options
Are the same as from the "Save as xx" functions.

See also: [Save as -> Gerber, HPGL etc](#)

Save (as) Drill file

 Mainmenu	Sub menu File ; item Save Save as -> Drill files
 Keyboard	Press Ctrl s
	Press Save button

Select the layer to be saved. (*Set active layer from the list-box*)

Viewplot will create new tools if necessary. The parameters at the time the Drill file was loaded will be used for the Drill output parameters.

The Drill output parameters can be modified if necessary.


As: *Drill type, Number format, and units and include tools in drill file.*

After pressing the **OK** button the Drill objects on the current layer will be saved.

Default extension: *.nc

See also: [Edit startup info](#)

Save as PDF file

 Mainmenu	Sub menu File ; item Save as -> PDF files
---	---

Select or type the output file name.

In the dialog-box "Export to PDF" select all the layers that should be exported to PDF format.


Following options are available;

- Paper size: From A4 to Letter (11 different sizes)
- Orientation: Auto (best fit), Portrait or landscape
- Scale: 1:1 or Fit to Page

Default extension: *.pdf

See also: [Translate gerber to PDF in batch mode](#)

Save (as) DXF file

 Mainmenu	Sub menu File ; item Save Save as -> DXF files
---	--

Select or type the output file name.

In the dialog-box "Export to DXF" select all the layers that should be exported to DXF format.


Following option is available;



- Objects filled: Fill object as lines, pads and circles
- All objects contoured: Objects described as contour
- Only rect/circle objects contoured: Default
- Mirror X: Mirror image around X axis

Default DXF output style is a line(track) with a width from 0

Default extension: *.dxf

Save (as) HPGL file

 Mainmenu	Sub menu File ; item Save Save as -> HPGL files
---	---

 Keyboard	Press Ctrl s
 Floppy disk	Press Save button

Select the layer to be saved. (*Set active layer from the list-box*)


In the next dialog-box, the penplot diameters, scale, offset, HPGL filename can be changed. The HPGL file can be saved using the methods **Direct** and **Optimized**. The **Direct** method means the saving order of the HPGL objects will be the same as at time of loading. The **Optimized** method means the program collect all concatenated HPGL objects, and save them like a daisy chain. For example a rectangle with four lines:

- The second coordinate of a line is equal to the first coordinate of the next line.

After pressing the **OK** button the program will check if using the current set of pens can save all HPGL objects. Objects who are to small to fit by a pen will be selected, and saving will be aborted.

Default extension: *.plt

Save (as) Bitmap file

 Mainmenu	Sub menu File ; item Save as -> Bitmap file
--	---

Select the layer to be saved. (*Set active layer from the list-box*)


Select or type the output file name.

Following options are available;

- Resolution: 300-4800 dpi
- User: User setting

Default extension: *.bmp


Save job file

 Mainmenu	Sub menu File ; item Save job
---	--

In the dialog-box a file can be selected or typed in. In this job file all information from current project will be written in an internal Viewplot format.

Default extension: *.job


Save apertures

 Mainmenu	Sub menu File ; item Save apertures current layer Save global apertures
---	--

Saves the aperture file from the active Gerber layer, (*Set active layer from the list-box*) Or Saves the aperture file from all available Gerber layers, for option (**Save global apertures**)

Default extension: *.apr

Save global drill tools

 Mainmenu	Sub menu File ; item Save global drill tools
---	---



Saves the drill tools from all available Drill files.

Following options are available:

-Units: Mils, mm or Inch

Default extension: *.tl




Print

	Press Print button
 Mainmenu	Sub menu File ; item Print

In the next dialog-box the layers can be selected. Also the scale factor can be modified. After pressing the **OK** button the selected layers will be printed.



Edit commands

Undo

	Press Select layers button
 Keyboard	Press u
Menu  Mouse	Undo


This function will undo almost all-previous actions.

Redo

	Press Select layers button
Menu  Mouse	Redo


This function will redo previous undo actions.

Clear all layers

 Mainmenu	Sub menu File ; item Clear all layers
---	--

Delete all files from Viewplot job, (*Objects and files*).

Edit apertures

 Mainmenu	Sub menu Edit ; item Edit apertures Sub menu Edit ; item Edit global apertures
---	---

In the next dialog-box the apertures can be edited.

Modify an aperture: Select the aperture to be modified.
 Change the D code, aperture type and size if necessary
 Press the **Change** button and the aperture will be changed


Add an aperture: Change the D code, aperture type and size if necessary
 Press the **Add aperture** button and the aperture will be added

Delete an aperture: Select the aperture to be deleted.
 Press the **Delete aperture** button and the aperture will be deleted

By pressing the **Delete all** button all apertures will be deleted. Pressing the **Units** button will switch between **mils/mm/inch** units. By pressing the **Load apertures** button a new set of apertures can be loaded.
 After pressing the **OK** button the **global apertures/apertures current layer** will be modified.


Note: Macro apertures cannot be modified.

Get nets

 Mainmenu	Sub menu Edit ; item Get nets
---	--

Calculates net name numbers (*Based on connectivity*) for active layer.

Edit clearance

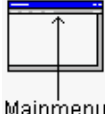
 Mainmenu	Sub menu Edit ; item Edit clearance
---	--

Clearance width setting can be set for checking mechanism.

Note: In the "viewable objects" the clearances width can be set visible

See also: [Viewable objects](#)

Edit global Drill tools

 Mainmenu	Sub menu Edit ; item Edit global drill tools
---	---

In the next dialog-box the drill tools can be edited.

Modify a drill tool: Select the drill tool to be modified.
 Change the tool code, diameter, plated/un-plated if necessary
 Press the **Change** button and the tool will be changed

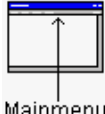
Add a drill tool : Change the tool code, diameter, plated/un-plated if necessary
 Press the **Add tool** button and the tool will be added

Delete a drill tool: Select the drill tool to be deleted.
 Press the **Delete tool** button and the tool will be deleted

By pressing the **Delete all** button all tools will be deleted. Pressing the **Units** button will switch between **mils/mm/inch** units.

After pressing the **OK** button the global drill tools will be modified.

Edit penplot diameter

 Mainmenu	Sub menu Edit ; item Edit penplot settings
---	---

In the next dialog-box the penplot diameters for HPGL can be edited.

Modify a pen: Select the pen to be modified.
 Change the diameter
 Press the **Change** button and the pen will be changed


Delete a pen: Select the pen to be deleted.
 Change the diameter to zero
 Press the **Change** button and the pen will be removed

Modify resolution: The HPGL resolution (0.025mm) can be modified by editing this resolution field.

Pressing the **Units** button will switch between **mils/mm/inch** units.

After pressing the **OK** button the penplot diameters will be modified.




Change Gerber layer into Drill layer

 Mainmenu	Sub menu Edit ; item Change gerber layer into drill layer
---	--

Gerber layers can be changed to Drill layers, if they only contain round objects. Drill information can be merged with the Gerber data to make the Drill holes visible within the pads.

See also: [Viewable objects](#)

Select line width


 Mainmenu	Sub menu Edit ; item Select line width
 Menu	Select line width
 Keyboard	Press Ctrl I

The default line width for drawing actions can be selected.
(Also used for filling circles, rectangles, oblong pads and polygons)

Pick a value from the list, or type one at end of the list (User value).

Note:
 Values in Mils or mm.

Edit gerber/drill startup info

 Mainmenu	Sub menu Edit ; item Edit gerber/drill startup info
---	--

When your Gerber/Drill files/apertures/drill tools, always using the same parameter format.

The values can be put in this dialog-box and those parameters will be the default values when loading one of the above file types.

In the dialog-box the startup info for Gerber and Drill parameters can be edited.
As: Number format, Aperture and Drill tool parameters.

Following options are available:

-**Load current gerber values:** Load parameters from last Gerber files

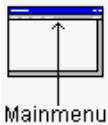
-**Load current drill values:** Load parameters from last Drill files

Note:

The parameters will be saved into the **viewplot.ini** file.

See also: [Initialization file viewplot.ini](#)

Replace selection

 Mainmenu	Sub menu Edit ; item Replace selection
---	---

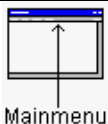
To select an object, place the mouse cursor above the object, and press and hold the **left mouse button**. A rectangle will mark the selection window.

There are two selection modes available.

Default selection mode is the **Replacement mode**.

Replacement selection mode means, every time a new selection rectangle is drawn the previous objects selected will be deselected. When pressing down the **shift** key together with the **LMB** it is possible to use more than one selection at a time.


Append selection

 Mainmenu	Sub menu Edit ; item Append selection
---	--

To select an object, place the mouse cursor above the object, and press and hold the **left mouse button**. A rectangle will mark the selection window.

Adding selection mode, In this mode every object which is selected stays selected, until the deselect all function is executed. To deselect an object press the **LMB** and place the selection rectangle around this object again.

Remove errors

 Mainmenu	Sub menu Edit ; item Remove errors
---	---



For removing the error indication (*default color: yellow*) from all objects after a "Check clearance".

See also: [Check Design rules \(current layer\)](#)

See also: [Viewable objects](#)

See also: [Edit clearance](#)

Zero relative cursor

 Mainmenu	Sub menu Edit ; item Zero relative cursor
 Keyboard	Press Ctrl z

The relative cursor will be set to zero; a white cross will mark the zero point.


See:

(rel x,y) On the right site from the Status bar

 Keyboard	Press Ctrl x
---	---------------------

The relative cursor will be snapped to the nearest object.

See also: [Measure distance between objects](#)

 Mainmenu	Sub menu View ; item Relative position on grid
---	---

The relative position will be set to the grid or not.

Select and De-selection commands

To select an object, place the mouse cursor above the object, and press and hold the left mouse button. A rectangle will mark the selection window.




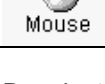
There are two selection modes available. The first and default selection mode is the **Replacement mode**, the second selection mode is the **Adding selection mode**.

The **Replacement selection mode** means, every time a new selection rectangle is drawn the previous objects selected will be deselected. When pressing down the left shift key together with the left mouse button it is possible to use more than one selection at a time.

The other selection mode is the **adding selection mode**. In this mode every object which is selected stays selected, until the deselect all function is executed. To deselect an object press the left mouse and place the selection rectangle around this object again.

To change the selection mode use the **Replace selections** or **Append selections** in the **Edit** section of the menu.

Deselect all

	Deselect all button
 Keyboard	Press F2
 Menu  Mouse	Deselect all


Deselect all objects from **current** layer only.

Deselect all layers

 Menu  Mouse	Deselect all layers
---	----------------------------


Deselect all objects from **all** layers.

Select all

Menu  Mouse	Select all
--	------------


Select all objects on the **current** layer only.

Select all layers

Menu  Mouse	Select all layers
--	-------------------

Select all objects from **all** layers.

Select or De-select by Object

Menu  Mouse	(De)Select only objects with type
--	--

Object selection:

Objects can be selected or deselected within a selection.

Make the first selection by Select all, Select all layers or area.

After this a (De)Select by object can be executed by: RMB

(De)Select only object with **type**.

Depending on the layer **type**, objects can be selected or deselected.

Layer **type** :

- Gerber : Object with an aperture
- HPGL : Lines with a pen
- Drill : Drills with a tool

Tip:




If the selected objects are not within the active window,

Report the selected object by "I".

Copy one of the coordinates to the "Goto x/y location" function.





The selected objects will now popup in the middle from the window.

Info on selected objects

	Info selected objects button
 Keyboard	Press I
Menu  Mouse	Info

Displays information from **selected** objects as: Object Type, Layer Tool, size and Thickness.



Select active layer

 Keyboard	Press Ctrl 0 .. 9
 Keyboard	Press I
 Keyboard	Space bar to toggle through all available layers
 Select layer	Select the layer from the list-box

The layer must be active for editing and or selection operations.

Units

Change units





 Keyboard	Press Ctrl u
 Mainmenu	Sub menu units menu item Mm Mils Inch HPGL

Changing units is available for all draw or move functions.

See also: [Initialization file viewplot.ini](#)

View commands





Zoom in

 Keyboard	Press z
 Mainmenu	Sub menu View menu item Zoom in
 Menu	Within a move, copy or drag action RMB: Zoom in
 Mouse	

Zoom in can be used static and within draw and move functions.

See also: [Window based zooming](#)

Zoom out

 Keyboard	Press Z
 Mainmenu	Sub menu View menu item Zoom out
 Menu	Within a move, copy or drag action RMB: Zoom out
 Mouse	

Zoom out can be used static and within draw and move functions.

See also: [Window based zooming](#)



Window based Zooming

To zoom in on a window selection, place the mouse cursor to the left top place of the window. Hold down the **Ctrl** key, than press and hold down the **LMB**. Move the mouse cursor in the right bottom direction of your window. After releasing the **Ctrl** key and the **LMB** zooming in will take place.

To zoom out, use the previous function, but now move the mouse cursor in the left top direction. The non-changing rectangle visible is the border of your design. The changing rectangle is the zoom-out window. After releasing the **Ctrl** key and the **LMB**, zooming out will take place.

Window based zooming can be used static and within draw and move functions.

Pan window

 Keyboard	Press arrow keys $\leftarrow, \rightarrow, \uparrow, \downarrow$
 Keyboard	Press x
Window	Use the scroll-bars

When pressing the **x** key, the window will pan in the direction from mouse cursor.

Pan window can be used static and auto pan within draw and move functions.

Window based panning




Navigate to a different part of your design (*navigation view*).

Hold down the **Ctrl** key, than press and hold down the **RMB**.

The fixed ghost rectangle is the border of the design. The moving rectangle is the "viewable area". After releasing the **Ctrl** key and the **RMB** panning will take place.

Window based panning can be used static and within draw and move functions.



View whole design

 Mainmenu	Sub menu View ; item View whole design
 Keyboard	Press F8
Menu  Mouse	RMB: View whole design

The window view will be scaled so that the whole design will fit to the screen.

View whole design can be used static and within draw and move functions.



Repaint

 Keyboard	Press F5
Menu  Mouse	RMB: Repaint

The whole window will be refreshed.

Repaint can be used static and within draw and move functions.



Previous view

 Keyboard	Press v
Menu  Mouse	Previous view

Return to a previous view.

Previous view can be used static and within draw and move functions.

Change grid




 Keyboard	Press Ctrl g
 Mainmenu	Sub menu; View item Change grid

Grid settings can be modified in the dialog-box or by changing the **viewplot.ini** settings.

Change grid can be used static and within draw and move functions.

See also: Initialization file viewplot.ini

Viewable objects

	Select layers button
 Keyboard	Press Ctrl a
 Mainmenu	Sub menu View ; item Viewable objects

Change the visibility from the layers and or objects by selecting or deselecting the layers in the list-box.

Following Viewable objects are available;

- Drills: Drill layer visibility on/off
- Pads: Pads on/off
- Traces/Lines: Traces on/off
- Errors: Errors On/off
- Polygons: On/off or Only polygon contours visible
- Clearances: Set clearance "ghost image contour" on/off


Special items;

- Filled objects: Display filled object Filled or Hollow.
- Follow number and direction: Set file order Nr and direction visible.
- Colors merged/Solid: Merge layer colors or use solid colors only.

Layers can be used static and within draw and move functions.

See also: [Change grid](#)


Change colors

 Mainmenu	Sub menu View Colors ; item Change colors
---	--

The color settings can be modified in the dialog-box.
Color settings will be saved in the **viewplot.ini**.

See also: [Initialization file viewplot.ini](#)



Load default colors

 Mainmenu	Sub menu View colors ; item Load default colors
---	--

The default color settings will be loaded.

See also: [Initialization file viewplot.ini](#)


Grid on/off

 Mainmenu	Sub menu View ; item Grid on/off
 Keyboard	Press g

View or hide grid display

Grid **on/off** can be used static and within draw and move functions.

Goto x,y location

 Mainmenu	Sub menu Edit ; item Goto x,y location
---	---

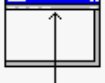
Moves the cursor and zoom in to the x, y location entered.

Note:

Coordinates can be copy and paste from window to window by: Cntrl C and Cntrl V.

Check

Design rules (Current layer)

 Mainmenu	Sub menu Check item; Design rules
---	--

Design rule check for current layer only.

In the dialog-box the clearance can be entered.


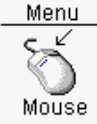
The objects with an error will be painted in the error color (*default yellow*).

See also: [View design rule errors](#)

See also: [Remove errors](#)

Add object

Add Line object

	Press Add trace button
 Menu Mouse	RMB: Add objects -> line

A line object will be added interactively.

The mouse cursor will snap to an object close the mouse cursor; by pressing the

Shift key the mouse cursor will not snap to the nearest object.

When the **spacebar** is pressed, a dialog-box will popup, and the line parameters can be edited manually.

When the first character typed is a **@** the coordinates will be relative to the

Relative (grid) position. The coordinates typed in will be used with the current units.




Note:

Max 16 points (15 lines) can be entered. In addition, one point can be edited for the starting point of the line.

The line is drawn with the width from "drawing line width".

See also: [Select line width](#)

Add Circle object

	Press Add circle pad button
	Press Add circle button
 Menu Mouse	RMB: Add objects -> Filled Object -> Circle RMB: Add objects -> Circle -> Select circle type

A circle object will be added interactively. Or when the **spacebar** is pressed, a dialog-box will popup, and the circle parameters can be edited manually.

The first parameter is the diameter.

Optional second and third parameter is the circle center.

When the first character typed is a **@** the coordinates will be relative to the



Relative (grid) position. The coordinates typed in will be used with the current units.

Note:

The solid circle pad is a flash object, the open circle is a circle with a width from "drawing line width".

See also: [Select line width](#)

Add Arc object

	Press Add arc button
<div>Menu  Mouse</div>	RMB: Add objects -> arc RMB: Add objects -> Circle -> Select a arc type

An arc object will be added interactively.

Where the first point is the Center from the circle, second the radius, third and fourth point the cutout area from the circle.

When the **spacebar** is pressed, a dialog-box will popup, and the arc parameters can be edited manually.

The first parameter is the diameter. The optional second and third parameter are the arc center.

Optional fourth and fifth parameter is the first radial ending point. The optional sixth and seventh parameter is the second radial ending point.




When the first character typed is a **@** the coordinates will be relative to the **Relative (grid) position**. The coordinates typed in will be used with the current units.

Note:

The arc will be drawn with the width from "drawing line width".

See also: [Select line width](#)

Add Rectangle object

	Press Add rectangle pad button
	Press Add rectangle button
<div>Menu  Mouse</div>	RMB: Add objects -> Filled Object -> Rectangle RMB: Add objects -> Rectangle

A rectangle object will be added interactively. Or when the **spacebar** is pressed, a dialog-box will popup, and the rectangle parameters can be edited manually.


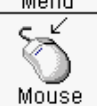
The first two parameters are the width, and height.
Optional third and four parameter is the rectangle center.
When the first character typed is a **@** the coordinates will be relative to the **Relative (grid) position**. The coordinates typed in will be used within the current units.

Note:

The solid rectangle pad is a flash object, the open rectangle is drawn with a trace width from “drawing line width”.

See also: [Select line width](#)

Add Oblong object

	Press Add oblong pad button
 Menu Mouse	Add objects -> Filled Object -> Oblong




An oblong object will be added interactively. Or when the **spacebar** is pressed, a dialog-box will popup, and the oblong parameters can be edited manually.
The first two parameters are the width, and height.
Optional third and four parameter is the oblong center.
When the first character typed is a **@** the coordinates will be relative to the **Relative (grid) position**. The coordinates typed in will be used with the current units.

Note:

The oblong object is a flash object.

See also: [Select line width](#)

Add Text object



	Press Add text button
 Keyboard	Press t
Menu  Mouse	Add objects -> Text

Enter the text in the dialog-box. In addition the text height and thickness can be edited as well the units can be switch between mm and mils.

When the **space-bar** is pressed, a dialog-box will popup, and the text placement point can be edited manually. When the first character typed is a **@** the coordinates will be relative to the **Relative (grid) position**.

The coordinates typed in will be used with the current units.

Add Polygon object

	Press Add polygon button
Menu  Mouse	RMB: Add objects -> Polygon RMB: Add objects -> Fillet object -> Polygon

Draw the poly-line interactively. Use the **RMB** menu to change the drawing direction, goto the **previous** point (Backwards (**b**)) and **finish** the poly-line by (**f**).

When the spacebar is pressed, a dialog-box will popup, and the poly-line parameters can be edited manually.

As many as 64 points can be edited. The coordinates typed in will be used with the current units.

The area enclosed by the poly-line will be filled up with lines.

Notes:

Poly-line with crossings cannot be filled.


The normal polygon will be drawn with a width from "drawing line width".

Filled polygons are polygon objects and completely filled.

Polygons objects can be drawn in all directions or 45/90o angle.

See also: [Select line width](#) , [Add filled rectangle](#) & [Add filled circle](#)

Add Drill object

<div>Menu</div>  <div>Mouse</div>	Add objects -> drill plated Add objects -> drill un-plated
--	---

Plated or none plated Drill holes can be add.

Select the Drill tool from the dialog-box, or add a new tool.

The drill hole can be placed interactively,

Or when the **spacebar** is pressed, a dialog-box will popup, and the drill hole parameters can be edited manually.

The first parameter is the diameter. The optional second and third parameter is the drill hole center.




When the first character typed is a **@** the coordinates will be relative to the **Relative (grid) position**. The coordinates typed in will be used with the current units.

Note:

A drill layer must be present in the design before additional holes can be added.

Change object

Move object

	Press Move button
 Keyboard	Press m
Menu  Mouse	RMB: Move

Move **selected** objects. By pressing and keep down the **shift** key and moving the mouse cursor, the select point will change.



When the **spacebar** is pressed, a dialog-box will popup, and the endpoint parameters can be edited manually.

The endpoint coordinates will be the center of the selected objects.

When the first character typed is a **@** the coordinates will be relative against the **Relative (grid) position**.

The coordinates typed in will be used with the current units.

Drag object

 Keyboard	Press d
Menu  Mouse	RMB: Drag

Drag **selected** objects. By pressing and keep down the **shift** key and moving the mouse cursor, the select point will change.




When the **spacebar** is pressed, a dialog-box will popup, and the endpoint parameters can be edited manually.

The endpoint coordinates will be the center of the selected objects.

When the first character typed is a **@** the coordinates will be relative to the **Relative (grid) position**.

The coordinates typed in will be used with the current units.

Copy object

	Press Copy button
 Keyboard	Press c
Menu  Mouse	RMB: Copy

Copy **selected** objects. By pressing and keep down the **shift** key and moving the mouse cursor, the select point will change.


When the **spacebar** is pressed, a dialog-box will popup, and the endpoint parameters can be edited manually.

The endpoint coordinates will be the center of the selected objects.

When the first character typed is a **@** the coordinates will be relative to the **Relative (grid) position**.

The coordinates typed in will be used with the current units.


Copy to other layer

Menu  Mouse	RMB: Copy to other layer
--	---------------------------------

Selected objects can be copied from one layer to another.

Select the destination layer from the list-box.


Rotate object

Menu  Mouse	RMB: Rotate Rotate 90 Rotate 180 Rotate 270
--	--

Rotate **selected** objects 90,180,270 degrees counter clockwise.


Or choose **RMB: Rotate** for any angle.

Mirror object

<div>Menu</div>  <div>Mouse</div>	RMB: Mirror X Mirror X over zero Mirror Y Mirror Y over zero
--	---

Mirror **selected** objects in X or Y direction or mirror over zero coordinate from design.

Oversize object

<div>Menu</div>  <div>Mouse</div>	RMB: Oversize
--	----------------------

Selected objects can be oversized by a value entered by the user.
Optional, units can be switched from mm to mils.

Following objects are supported for oversize:

- Lines & Pads
- Circles & Arcs
- Oblong
- Drill Holes

Scale object




<div>Menu</div>  <div>Mouse</div>	RMB: Scale
--	-------------------

Selected objects can be scaled by a value entered by the user.

Following objects are supported for scaling:

- Lines & Pads
- Circles & Arcs
- Oblong
- Polygons
- Drill Holes



Delete object

	Press Delete button
 Keyboard	Press Del
Menu  Mouse	RMB: Delete

Delete **selected** objects.

Edit object(s)

Edit single object


 Keyboard	Press e
 Mouse	RMB: Edit object

By the edit function the parameters from a single selected object can be modified.

Following objects are supported for edit:


- Lines & Pads
- Circles & Arcs
- Oblong
- Polygons
- Drill Holes

Change lines

 Mouse	RMB: Change objects ->Change width lines
--	--


Multiple **selected** lines can be changed to a new value.
Type the new line width in the dialog-box that will popup.

Change diameter circle pads

 Mouse	RMB: Change objects -> diameter circle pads
--	---


Multiple selected Circles/Drills objects can be changed to a new value.
Type the new diameter in the dialog-box that will popup.

Change angles arc

<div>Menu</div>  <div>Mouse</div>	RMB: Change objects -> angles arc
--	---


The start, end angle of **selected** arcs can be changed into new angles (degrees CCW) Type the new angle in the dialog-box that will popup.

Change rectangle pads

<div>Menu</div>  <div>Mouse</div>	RMB: Change objects -> Change width/height rectangle pads
--	---


Multiple **selected** rectangle pads can be changed to a new value.
Type the new width/height in the dialog-box that will popup.

Change oblong pads

<div>Menu</div>  <div>Mouse</div>	RMB: Change objects -> Change width/height oblong pads
--	--

Multiple **selected** oblong pads can be changed to a new value.
Type the new width/height in the dialog-box that will popup.


Change drill diameter

<div>Menu</div>  <div>Mouse</div>	RMB: Change objects ->Change diameter drills
--	--

Multiple **selected** Drill holes can be changed to a new value.
Type the new Drill diameter in the dialog-box that will popup.

Note: The Drill layer should be the active layer.

Change pen

<div>Menu</div>  <div>Mouse</div>	RMB: Change pen
--	------------------------


If the active layer is a HPGL layer, the pen from the **selected** lines can be changed to a new pen.

Select one of pens from the dialog-box or change the pen diameter.

See also: [Edit penplot settings](#)

Measure

Measure distance between objects

<div>Menu</div>  <div>Mouse</div>	RMB: measure distance between objects
--	---

The distance between two objects can be measured.

Select two objects and execute the function from above by the **RMB**.
A message window will popup and report the Center-Center distance
and the minimum distance between the selected objects.

Measure to relative position

<div>Menu</div>  <div>Mouse</div>	RMB: Measure to relative position
--	---


The distance can be measured from a relative position.
The relative cursor will be set to zero; a white cross will mark the zero point.

See:
(rel x,y) On the right site from the Status bar

See also: [Edit zero relative cursor](#)

Viewplot command line functions

Translate gerber to PDF in batch mode

 Command Prompt	From command line: Viewplot.exe /z pdfexport.txt
--	---

Viewplot can also translate 274X Gerber input directly to PDF format from command line.

This to integrate Viewplot within your current design flow.

A configuration file “pdfexport.txt” is used to guide Viewplot through the translation.

A example configuration file “pdfexport.txt” is included within the distributed compressed data.


Input files (Up to 32), Output PDF file name and formats must be defined. Optional information as Name, Organization, Title and Subject can be defined and will be stored in the PDF output file as well.

Results from the translation are written to the “ResultsFile” (Log file).

Note: Document properties within the PDF file can be displayed by {Ctrl D}.


See also: [Config file pdfexport.txt](#)

Start Viewplot from destination path

 Command Prompt	From command line: Viewplot.exe /d <Start_up path>
--	---

Start Viewplot directly from the path where the Gerber data is located.

Start Viewplot with selected files

 Command Prompt	From command line: Viewplot.exe <File1 File2 File3 etc> From command line: Viewplot.exe /x <Gerber_File_list>
--	--

Start Viewplot with selected **Gerber (274X)** files.

A combination from option **/d** and **selected files** is also possible.

File names written to a text file can also be loaded at startup from Viewplot.
With the option `/x <File_name>` (Max 32 files)

File format:

C:\Viewplot\file1.gbx

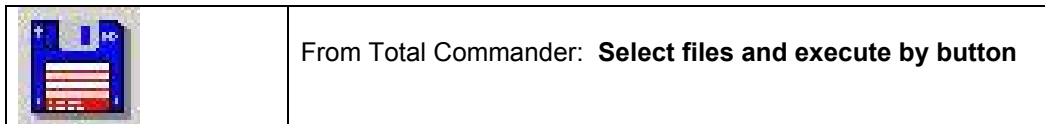
C:\Viewplot\file2.gbx

C:\Viewplot\file3.gbx

...

See also: [Start Viewplot within Total commander.](#)

Start Viewplot within Total Commander



To optimize the use ability and speeding up opening Gerber/DXF... files,
Viewplot can be integrated within Total Commander.
Select the files you want to investigate and launch Viewplot by the Icon.
Viewplot will be launched and load the selected files directly. (Max 32 files)

Follow the steps from below and enjoy...(See Figure 1)

- Create a new menu item, a **Start-menu** or **Toolbar button**
- Specify the command: `<Path to Viewplot>\Viewplot.exe`
- Parameters: `/X %L`

Now select files and run the created menu or toolbar- command.

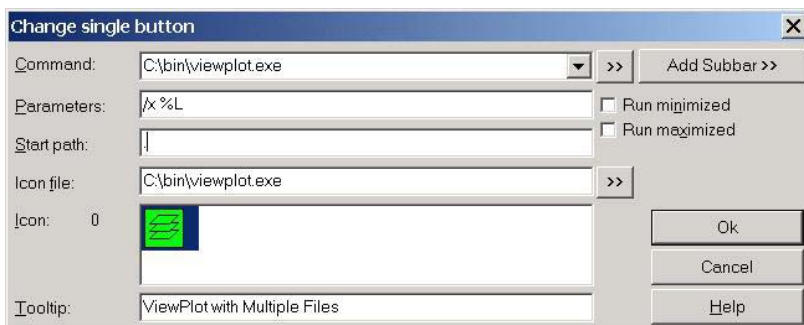


Figure 1: Add Button bar

What is Total Commander?

Total Commander (former Wincmd) is a file manager for Windows (TM) similar to the Windows Explorer. But Total Commander uses a different approach: it has two fixed windows side by side like a well-known file manager for DOS.

Share ware: www.ghisler.com

Config file pdfexport.txt

The config file **pdfexport.txt** is used to save “gerber to PDF” translation parameters. The “sample” file is stored in the same directory as the Viewplot executable. Remove the ; in front of the options to activate them.

[Gerber to PDF Translation Settings]

Command	Value
PDFPaperOrientation	Portrait Landscape Auto
PDFPaperSize	A1 A2 A3 A4 A5 B4 B5 B4_JIS B5_JIS Legal Letter
LeftOffset	Value in mm (Page Offset)
RightOffset	...
TopOffset	... (Default offset = 10mm Left/Bottom)
BottomOffset	... (For Offset 0mm use value 0.1)
PDFPaperFitToPage	0 (Scale 1) 1 (Fit to page)
OutputFile	"<PDF filename>" (PDF output file)
ResultsFile	"<Output results filename>" (Log_File)
Names of the 274X Gerber input files	
File1	"<First gerber filename>" (Input Gerber file)
File2	"<Second gerber filename>"
...	
File32	"<32 gerber filename>"
Properties stored in the PDF file	
Name	"<Name of the person>"
Organisation	"<name of the organisation>"
Title	"<Title of the export PDF file>"
Subject	"<Subject of the export PDF file>"

Initialization file viewplot.ini

The initialization file **viewplot.ini** is used to save some designs parameters. The file is stored in the same directory as the Viewplot executable.

[Settings]

WindowWidth	The width of the windows
WindowHeight	The height of the windows
WindowStartX	Origin X of the windows (0,0 = left top)
WindowStartY	Origin Y of the windows
Units	(0 = mils,1 = mm,2 = inch,3 = HPGL)
GridSize	The grid-size (10nm units)
DrawGrid	0 = FALSE,1 = TRUE
DrawPads	0 = FALSE,1 = TRUE
DrawTraces	0 = FALSE,1 = TRUE
DrawMilling	0 = FALSE,1 = TRUE
DrawDrills	0 = FALSE,1 = TRUE
SelectionMode	0 = replacement, 1= appending
MouseCursorOnGrid	0 = FALSE,1 = TRUE
PDFPaperOrientation	1 = Portrait 2 = Landscape 3 = Auto
PDFPaperSize	1 = A1 2 = A2 3 = A3 4 = A4 5 = A5 10 = B4 11 = B5 20 = B4 JIS 21 = B5 JIS 30 = Legal 31 = Letter
PDFPaperFitToPage	0,1
Layer0	Draw layer 0 (0 = FALSE,1 = TRUE)
Layer1	Draw layer 1 (0 = FALSE,1 = TRUE)
Layer2	Draw layer 2 (0 = FALSE,1 = TRUE)
...	...
Layer31	Draw layer 31 (0 = FALSE,1 = TRUE)
PenPlotSize1	Penplot size 1 (10nm units)
...	...
PenPlotSize15	Penplot size 15 (10nm units)
PenPlotResolution	The resolution of HPGL files (10 nm units) Default to 2500 (0.025 mm)
Grid0	Grid-size definition 0 (10nm units)
Grid1	Grid-size definition 1 (10nm units)
...	...

Grid29	Grid-size definition 29 (10nm units)
TraceWidth0	Trace width definition 0 (10nm units)
TraceWidth1	Trace width definition 1 (10nm units)
...	...
TraceWidth29	Trace width definition 29 (10nm units)
ViewLayerColor0	24 bit RGB color (Stored as 32 bit)
...	...
ViewLayerColor31	24 bit RGB color (Stored as 32 bit)
ErrorColor	24 bit RGB color (Stored as 32 bit)
DrillColor	24 bit RGB color (Stored as 32 bit)
DrillUnplatedColor	24 bit RGB color (Stored as 32 bit)
MillingColor	24 bit RGB color (Stored as 32 bit)
ButtonInfoColor	24 bit RGB color (Stored as 32 bit)
GridColor	24 bit RGB color (Stored as 32 bit)
BackgroundColor	24 bit RGB color (Stored as 32 bit)
StartGerberDigits1	2,3,4 (When used for gerber type objects)
StartGerberDigits2	2,3,4,5 (When used for gerber type objects)
StartGerberUnits	0 = mils, 1 = mm, 2 = inch, 3=0.01 mm
StartGerberZeroMode	0=Leading zero suppression 1=Trailing zero suppression
StartGerberNumberFormat	0=integer, 1=floating point
StartApertureListUnits	0 = mils, 1 = mm, 2 = inch
StartApertureListSkipLines	Nr lines of the aperture file that should be skipped
StartApertureListDCodeColumn	Column nr D-Code
StartApertureListObjectTypeColumn	Column nr aperture object type
StartApertureListXColumn	Column nr X size or diameter aperture
StartApertureListYColumn	Column nr Y size aperture
StartDrillDigits1	2,3,4 (When used for gerber type drills)
StartDrillDigits2	3,4,5 (When used for gerber type drills)
StartDrillUnits	0 = mils, 1 = mm, 2 = inch, 3=0.01 mm
StartDrillZeroMode	0=Leading zero suppression 1=Trailing zero suppression
StartDrillNumberFormat	0=integer, 1=floating point
StartDrillToolListUnits	0 = mils, 1 = mm, 2 = inch
StartDrillToolListSkipLines	Nr lines of the drill tool file that should be skipped
StartDrillToolListMaxLineNr	Max nr lines of the drill tool file that should be used
StartDrillToolListToolColumn	Column nr drill tool
StartDrillToolListDiameterColumn	Column nr diameter drill tool