



## **Release Highlights for BluePrint-PCB Product Version 3.1**

### **New Functionality in V3.1**

The following functional enhancements are contained in BluePrint Version 3.1:

- ✓ Panel Array Enhancements
  - Panel Dimensioning
  - Merged Display of Mill Tab Drills and Route Segments
  - Mill Tab Detail Scaling
  - Add Mill Tab command on Drafting Toolbar
  - New Dimensioning Filter for Easier Selection and Dimensioning of Mill Tabs
  
- ✓ Dimensioning Enhancements and Japanese Industrial Standard (JIS) Support
  - New GD&T Cross Point Support for Radius Dimensions. To ASME Y14.5 specification, a cross is now automatically drawn at the center of a radius dimension.
  - New Coordinate Dimension Option to always display positive coordinates
  - New dimension terminator type support : “/-----/”
  - New Extension line length control
  - New Outside Dimension Text over the Extension Line support
  - New Superimposing Running dimension lines support
  - New Diameter dimension extension line capabilities
  - New Chamfer Dimension drawing element with width and angle
  - New Sheet Border Options to Hide Zone Letter and Zone Lines Independently
  - New Metric Reference Graduation Drawing Element
  - New Sheet Border Options to Skip Zone Number/Letter
  - New Dimensioning Symmetrical Tolerance Symbol with a single character
  - New Spacing Control between Dimension Text and Extension Lines
  - New Trailing zero suppression in Dimension text
  - New Inner line display for Outside Terminator Placement
  - New Independent Size Controls for Left and Right Dimension Terminators
  
- ✓ General Enhancements
  - New Maximum PAD Size system parameter for the Drill Table
  - Board Side View Envelope display representing component height
  
- ✓ Defect Fixes

**BluePrint-PCB V3.1 Build 617 (Rolling Release) Defect Fixes**

Product/Project	ID	Description
Panel Array	54738	Merge Route feature causes BluePrint to lockup on this panel drawing
Dimensioning	54771	Dimension lines inside details are not restored correctly after a file save and open
Automation API	54773	Automation enhancement to support slot drill attributes

**BluePrint-PCB V3.1 Build 615 Defect Fixes**

Product/Project	ID	Description
Automation API	54738	Fixed problem resorting sheets during Export PDF Automation API call
Automation API	54739	Main window minimizes when playing back a VB script
Import IPC2581	54740	On File Open, BluePrint should refresh IPC2581 CAD data when there has been an ECO
Dimensioning	54741	Dimension text offset incorrect after file save and file open of BPD file
Fabrication Drawing	54742	The same drill symbol can be incorrectly assigned by BluePrint to two different hole sizes after changing the tooltype in the fabrication manager

**BluePrint-PCB V3.1 Defect Fixes**

Product/Project	ID	Description
Assembly Drawing	53504	Customer would like to filter by Decal in Process steps
Assembly Drawing	54649	Would like the ability to import different user parts into 2 BluePrint Assembly Drawings
Board Side Veiw	54157	Board Side Canvas too large; cannot be managed
Board Side View	54134	Show breaks at segment edges in Board Side View
Dimensioning	54135	Dimension do not snap to Board Side view
Dimensioning	54170	Angular Dimension does not snap to segments for outer angles
Dimensioning	54265	Dimensioning support for merged web routes
Dimensioning	54266	Dimensioning support for exploded views of panel elements
Dimensioning	54478	Feature Control Frame - Hard to enter text in new line or frame.
Dimensioning	54496	Coordinate Origin Dimension precision ignores global settings
Dimensioning Options	54037	Tools Options Dimensioning dialogs do not show correct dimensions in all controls
Document Variables	54078	Document Variables in templates do not always execute with the latest document variable definition
ECO Import	54169	Tool Type not retained on ECO import
Fabrication Drawing	53523	Layer and Via Stackup Templates have default precisions set incorrectly
Fabrication Drawing	54331	Enhancement to allow user to define a table of available drill symbols to assign to drills
Import	54429	Customer wants the option to force all imported data strings (ODB++ and PADS ASCII and any ancillary files) to be upper case.
Import Gerber	54556	Support for Expedition gerber file extension .PHD
Noteblocks	53539	Unselecting show header in noteblock prevents first note from being edited

Product/Project	ID	Description
Noteblocks	54001	Backspace on Noteblock line causes crash
Panel Array Tool	53922	Should be able to fully dimension a panel without having to be in edit mode
Panel Array Tool	54204	Panel: Web Route should have RMB Step and Repeat or Copy and Apply
Panel Array Tool	54212	Panel Side View support with score lines
Panel Array Tool	54291	Mill tabs and Score Lines not scaled correctly when panel scaled
Panel Array Tool	54329	Multi-perforated break mill tab type
Panel Array Tool	54469	Problem merging web routes and route segments with mill tab
Panel Array Tool	54490	Improve snapping of callout to panel and objects on panel
Panel Array Tool	54492	Snapped callout moves on panel miter arc as panel moved - see attached
Panel Array Tool	54534	Copy and paste of route and arc segments with mill tabs does not work correctly
Panel Array Tool	54540	Crash on Copy Panel
Parts List	54015	Parts List Table shifts location on re-execute
PCB View Format Option	54163	Customer requests option to hide or dash line the board outline segments that are covered by overhanging components. This is now an option in the Format PCB View dialog.
Tools	53101	Fill Tool - Move complex polygon with fill and fill disappears
Tools	54452	When in edit mode for PCB View or Panel, the coordinate tool bar ORIGIN should default to the PCB View or Panel origin
Tools	54648	Spell checker is not working on some French words
User Interface	54097	PCB View snapping: use PCB View origin
User Interface	54161	PCB View line widths sometimes incorrect on ECO revision imports
User Interface	54255	Test Points display is incorrect
User Interface	54293	Allow snapping to CAD Data Origin
User Interface	54487	Text size is set to 6.5 in the Formatting Toolbar, but the text in noteblock is displayed at size 7
User Interface	54488	Improvements to text controls in callouts
User Interface	54162	Display message when BluePrint can not write a file to a write-protected folder
User Interface	54117	Enhancement to allow user to select all components, or component pins or ref des of a selected partype
User Interface	54012	Improvements to text position when text with multiple spaces is wrapped in a text box

## New Functionality Details

### Panel Dimensioning Updates

The Panel Dimensioning updates improve dimensioning for Panel Drawings in BluePrint-PCB in two (2) ways. First, dimensioning for web routes has been improved to snap to all points along a merged web route pattern. The dimensioning is associative. As the web route pattern is updated by the user, pre-existing dimensions I snap to the closest web route pattern compared to the pre-existing web route dimension point. See Figure 1 for an example. Secondly, dimensioning in exploded views has been improved to include Panel Drawing elements. This will permit users to dimension all panel drawing elements in exploded views to scale. Users can snap to panel drawing elements in exploded views to measure distances precisely. See Figure 2 for an example.

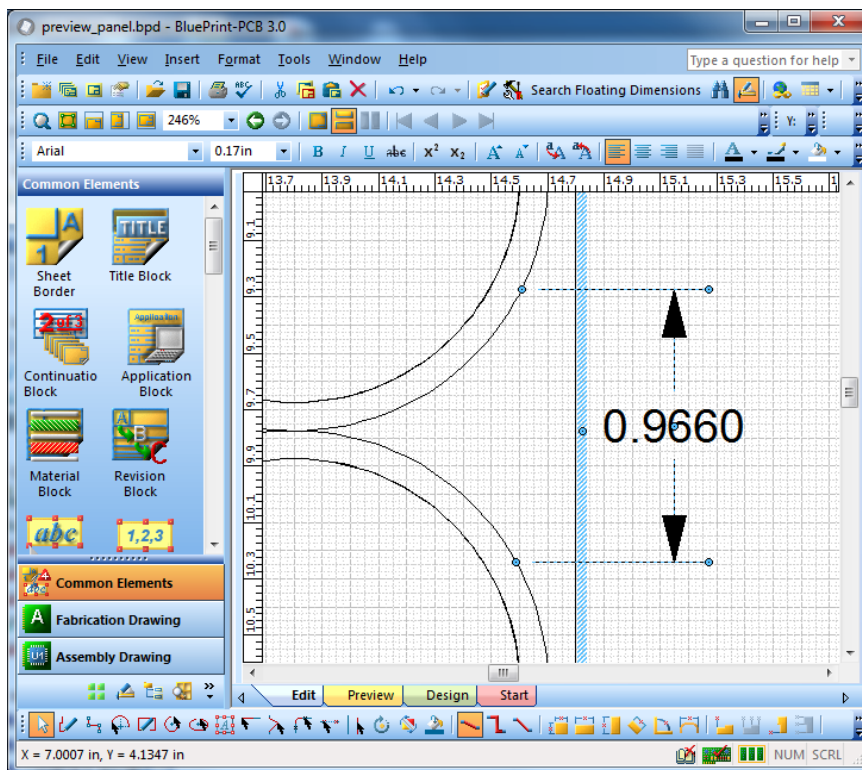


Figure 1. Dimensioning snapped to arcs along a merged web route.

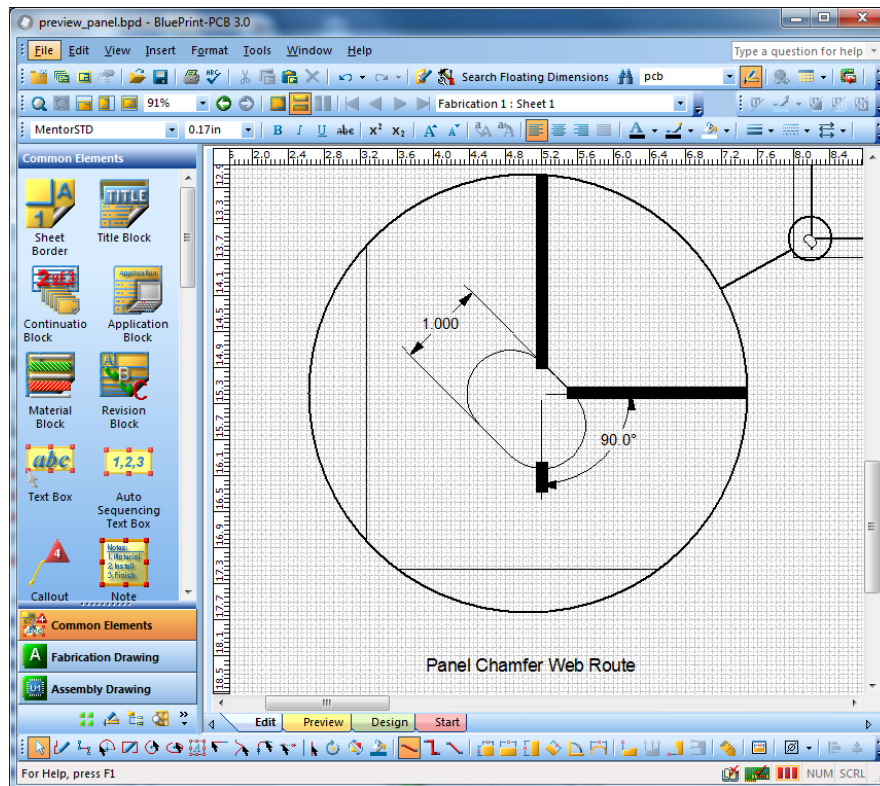


Figure 2. Exploded view dimensioning of Panel Drawing Elements.

### Merging Mill Tab drills with Route Segments

This enhancement merges mill tab drills with the surrounding web routes and route segments. The merge result is a small protrusion from the route segment where a mill tab drill is incident, but is not covered by the route segments. Mill tab drills that are completely covered by route segments are not displayed.

The merging of mill tab drills and route segments only occur when the command **Merge Web Routes** is executed.

A new checkbox "**Merge Mill Tab Drills with Route Segments**" for **Tools>Option>Drawing>Panel** is disabled by default. When enabled, the mill tab drills are merged with route segments according to the above description. When disabled, no merging will occur and all mill tab drills will be displayed.

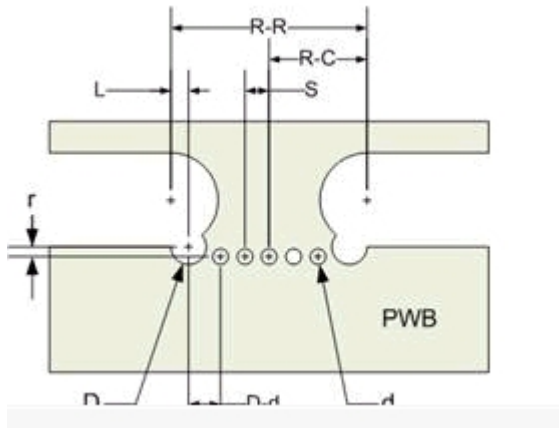


Figure 3. Mill tab detail for mill tab with merged drills and tabs

Note that in order to support the mill tab for Figure 3, Blueprint-PCB needs to have support for a new mill tab type, “Multi-perforated break”. In the “Multi-perforated break”, different perforation drills can be specified. The count, spacing, size and offset for each perforation drill can be specified. A maximum of 10 perforation types are supported. See Figure 4 for dialog updates.

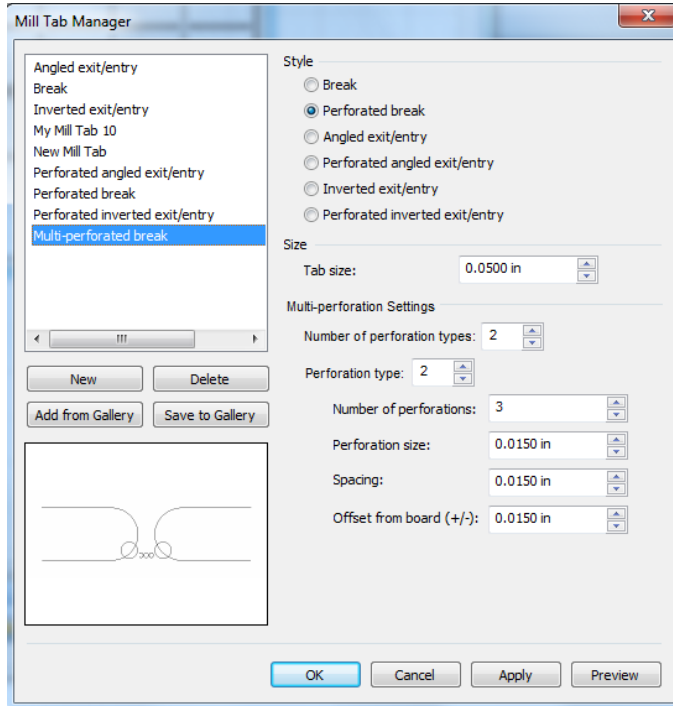


Figure 4. Multi-perforated break support in the Mill Tab Manager

## Mill Tab Detail Scaling Support

Mill tab Details have been updated to support scaling in a manner similar to Exploded View details. Scaling select handles have been added to Mill Tab details to support free hand scaling. A new tab for Size and Position in the Format Mill Tab Detail dialog supports settings and locking of the Mill Tab detail scale. Note that when a Mill Tab detail is scaled, the font size for text in the detail will not be adjusted. When you are in the Edit Detail mode for Mill Tab details, resize select handles are supported to allow resizing of the Mill Tab detail canvas. When you are in Edit Detail mode for Mill Tab details, dimensioning commands will snap to features and measure to scale. Finally, when auto-creating Mill Tab details and the board offset is zero (0), then the right side of the Mill Tab canvas will be collapsed to the mill tab geometry. See Figure 5 below.

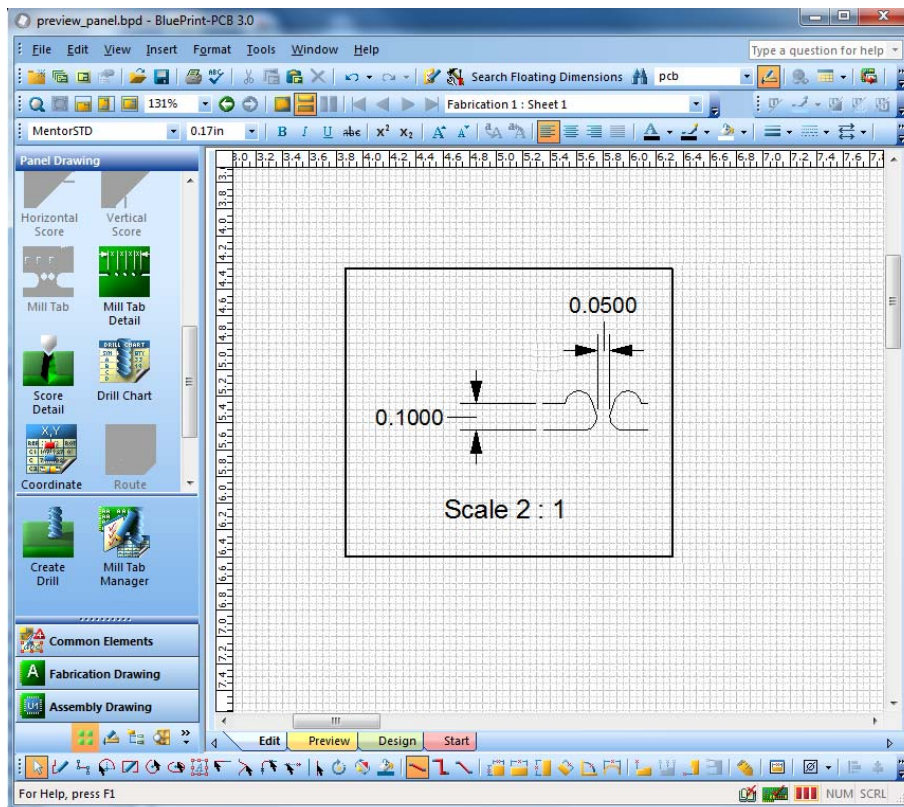


Figure 5. Collapsing Mill Tab Detail Canvas when Board Offset is Zero

## Verb Mode Add Mill Tab Command

A new verb mode command (Add Mill Tab) has been added to the drafting toolbar. The command allows users to simply click the left mouse button to add the default mill tab (the default mill tab is specified using the Mill Tab icon in the Panel Drawing command pallet). No dragging is required. The associated web route is interactively highlighted as the mouse is moved over a web route for mill tab placement.



BluePrint also highlights the alignment extensions from opposing mill tabs when the mouse is moved over a web route and the web route location is aligned with an opposing mill tab.

### **Dimensioning Mill Tabs**

The dimensioning of Mill Tabs has been improved so that dimensioning can be done with the entire panel in the graphics view port, without requiring the user to zoom in or out. A dimension filter has been added to Tool Options. The option dialog is also accessible from the context menu (RMB) when a panel is selected. The dimension filter has two global modes for Default and Select dimension filters. The **Default** mode enables dimensioning to snap to all objects as BluePrint does today. The **Select** mode enables a list of object types for toggling selection. The list of object types can be reordered to prioritize which object type is selected first for overlapping object configurations. The list of object types in the Dimension Filter include: Panel Outline, Panel Pins, Panel Fiducials, Panel Pinning holes, Panel Setting images, Board outlines, and Board Drills.

### **New GD&T Cross Point Support for Radius Dimensions**

To ASME Y14.5 specification, a cross is now automatically drawn at the center of a radius dimension. This is an option, which is on by default, and can be found on the dialog under Tools > Options > Drawing > Dimensions > Radius Dimensions > Cross Point. The cross point visibility and size can be controlled. There is also an option to display extension lines from the cross point. Visibility, length and gap of each extension line can be set.

### **New Coordinate Dimension Option to always display positive coordinates**

You can now force BluePrint to display positive coordinate dimensions regardless of whether or not the dimension is above or below, to the right or to the left, of a coordinate origin dimension. The new option checkbox, “Positive Dimension Values Only”, can be found under Tools > Options > Drawing > Dimensions > Coordinate Dimensions > Text.

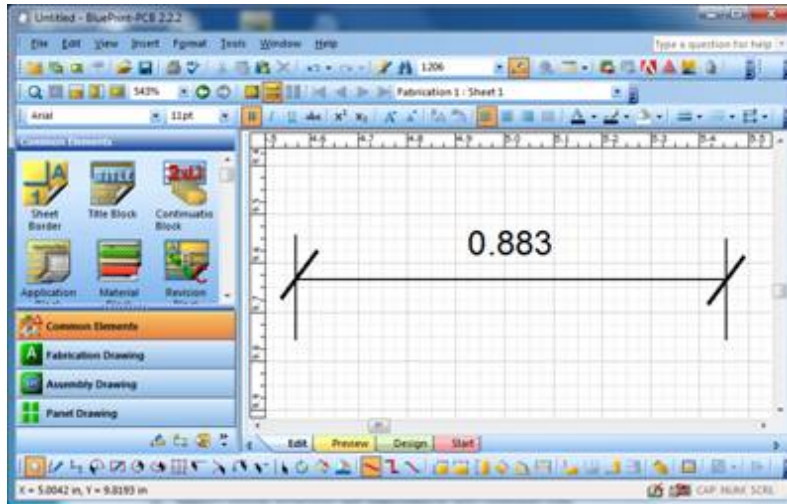
### **New Maximum PAD Size system parameter for the Drill Table**

BluePrint automatically calculates the maximum pad size for each drill. The maximum pad size is the largest positive pad size associated with the drill. You can now customize the drill chart template to display the MaxPadSize parameter for each drill in the design.

**Dimensioning Enhancements and Japanese Industrial Standard (JIS) Support**

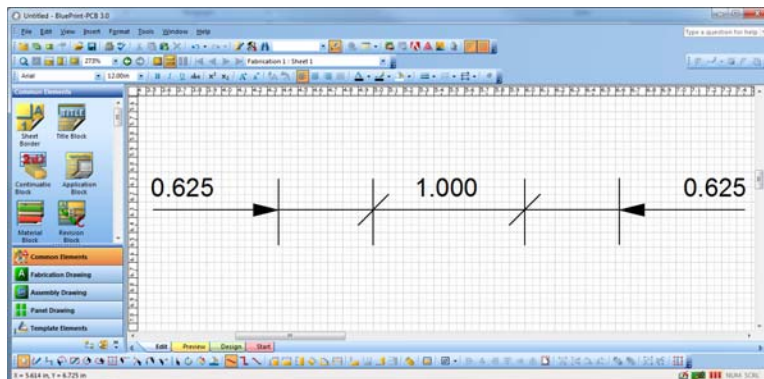
**New dimension terminator type support : “/-----/”**

BluePrint now supports a forward slash “/” as a terminator option for Horizontal and Vertical dimensions. This new terminator can be found in the Format Horizontal (or Vertical) Dimension dialog and also in the Tools Options tabs for Horizontal and Vertical dimensions. The right and left terminators can be set independently.



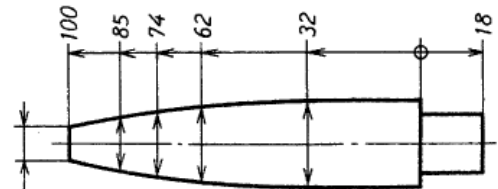
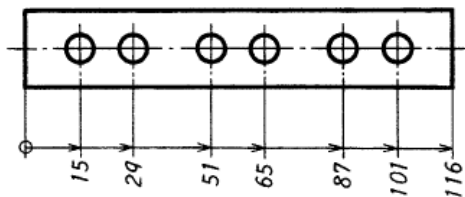
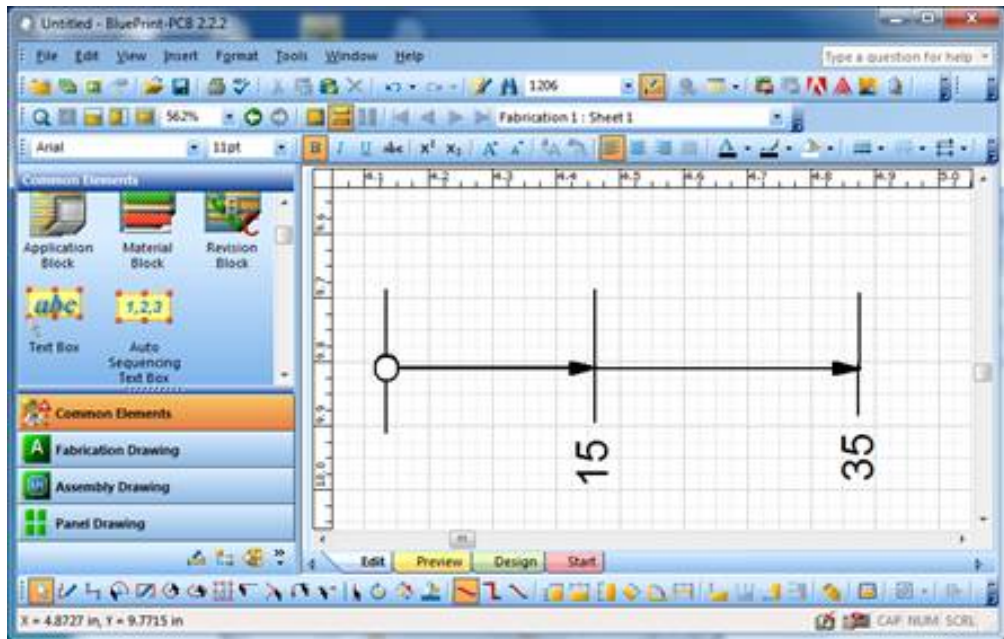
**Extension line length control and dimension reuse support**

Horizontal and Vertical dimensions have a new dimension Position setting, “Over Dimension Line”. The “Over Dimension Line” position option places the dimension text over the dimensioned length, where the extension line is completely under the dimension text. The selection point for the extension line is at the end of the extension line. The Tools Options tabs for Horizontal and Vertical dimensions have been updated with this new placement option.



### Superimposing Running dimension lines

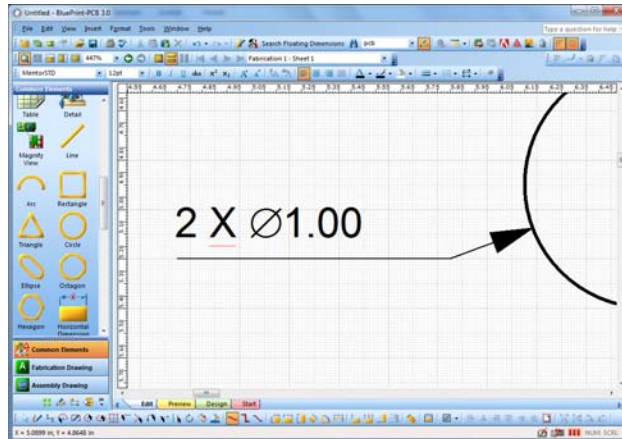
Superimposing running dimension lines are use in Japanese Industrial Standard documentation and are similar to Coordinate dimensions. Blueprint supports new commands for Horizontal Running Origin, Horizontal Running Dimension, Vertical Running Origin, and Vertical Running Dimension. As with coordinate dimensions, there is an Activate RMB command to activate Horizontal Running or Vertical Running Origins. Running Dimensions are aligned automatically.



Running Dimension text is right reading and at 0 or 90 degrees. The group of Running Dimensions can be dragged closer or further from the dimensioned objects, but individual running dimensions cannot be individually dragged away from the group. A new Tool Options tab has been added for Running Dimensions. There is a new checkbox in the new Running Dimension tab in Tools Options:  Enable Running Dimensions Icons. This checkbox is disabled by default. If enabled, the Running Dimensions commands will become visible in the Common Element command pallet and the Drafting toolbar.

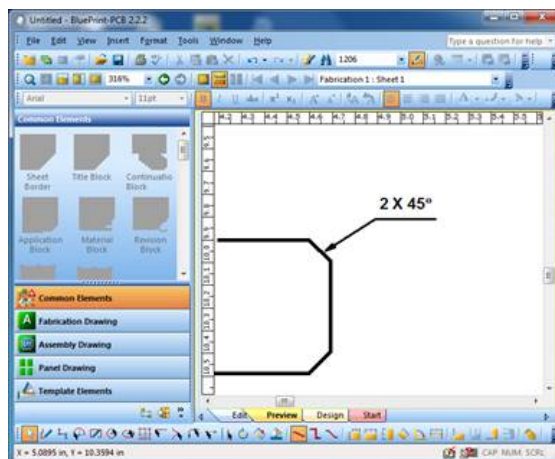
## New Diameter Dimension Settings

BluePrint Diameter Dimensions now support the text position option, “Over Dimension Line”, which places the dimension text over the dimension line. When this setting is used, the dimension line will underline the dimension text. There is also a new Placement option, “Single Outside”, which can be used to display the Diameter Dimension with a single arrow instead of the two arrows default.



## New Chamfer Dimension drawing element with width and angle

BluePrint now supports a chamfer dimension drawing element which displays the chamfer width and angle when placed. The drawing element is found in the Common Tools palette and can dimension a chamfered panel, board or any drawn shape. A new dialog for chamfer dimension settings can be found under Tools > Options > Drawing > Dimensions > Chamfer Dimensions.

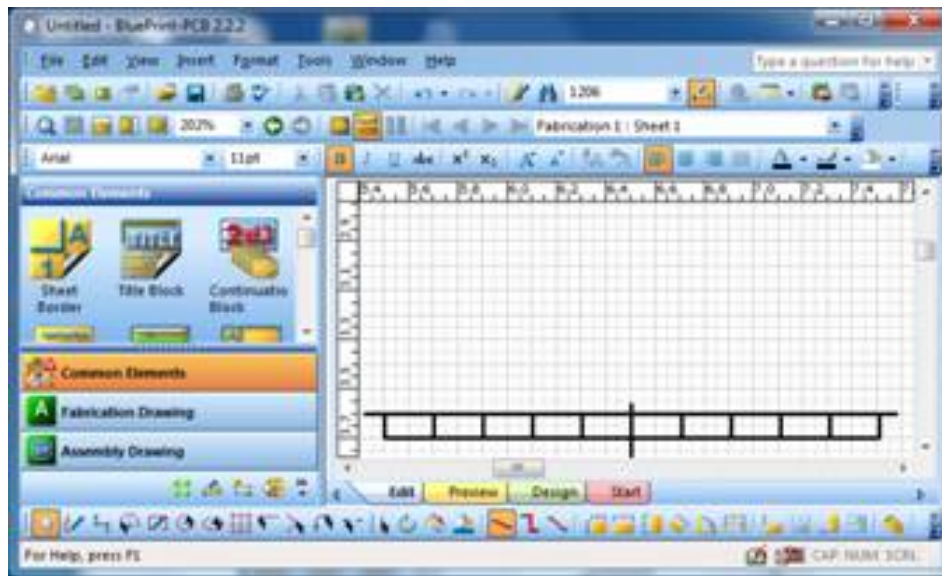


### **New Formatting to Hide Zone Letter and Zone Lines Independently**

BluePrint's Format Sheet Border dialog now allows you to hide zone letters and zone lines independently.

### **New Metric Reference Graduation Elements**

BluePrint now supports a Metric Reference Graduation for sheet borders. This new Drawing Element can be found in the Common Elements palette near BluePrint's Sheet Nomenclature. There is also a new folder in the Element Gallery for the Metric Reference Graduation drawing element and any user created Metric Reference Graduation drawing elements that you want to define and save for reuse. Metric Reference Graduation placement will always snap to the outside position at the center of the lower sheet border margin. Similar to a Title Block, there can only be one Metric Reference Graduation per sheet.



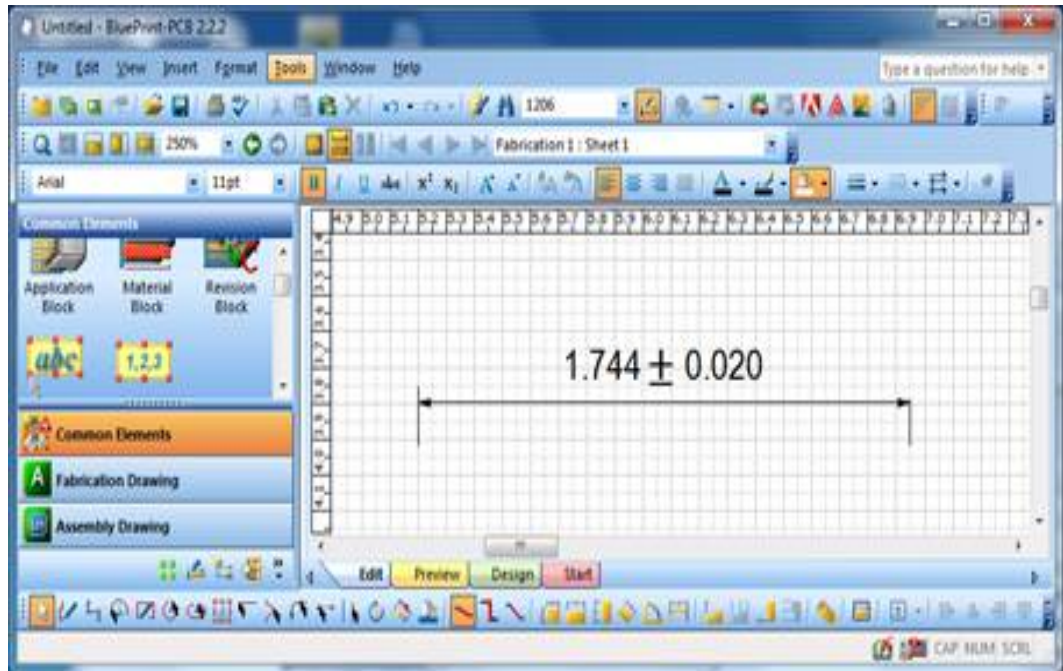
### **New Sheet Border Option : “Skip Zone Number/Letters”**

BluePrint has a new Format Sheet option to Skip Zone numbers or letters. For instance, you can start your zone numbering with the number 2 by skipping the number 1. Or you could display zones A, C, E by skipping zones B and D. There is a new edit control on the Zones tab of the Format Border dialog. Here you can enter the numbers or letters that you would like to skip separated by commas.

### **Dimensioning Symmetrical Tolerance with a Single Char for Plus-minus ( $\pm$ )**

BluePrint supports a new tolerance format for symmetrical tolerance where the “+/-” characters are replaced by a single character, “ $\pm$ ”. The name of the new Symmetrical

tolerance is “Symmetrical ±” and can be set on the Text tab of a Format Dimension dialog under Tolerance Format. You can also set this new symmetrical tolerance as your default using the Tools > Options > Dimensions dialogs.



### **New Spacing Control between Dimension Text and Extension Lines.**

BluePrint has a new spacing control to set the distance between the dimension text and the extension line. This new control, named “Spacing between dimension line and text” can be found on the Lines tab of the Format Dimension dialog. This setting is intended to be used when the text position “Above Dimension Line” or “Over Dimension Line” is used. The spacing control is not applied when the Dimension text has an embedded position.

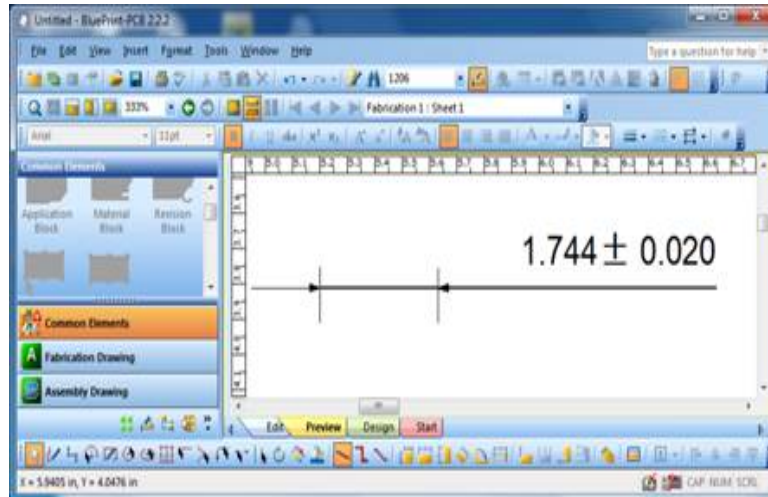
### **Trailing zero suppression in Dimension text.**

BluePrint now allows you to suppress both leading and trailing zeros in Dimension text. The checkbox options can be found on the Text tab of the Format Dimension dialog and under Tools > Options > Dimensioning > Text.

### **Inner line display for Outside Terminator Placement.**

For Horizontal and Vertical Dimensions, there is a new option to display a span line for the dimension when outer placement of the dimension is specified. Under the

Lines tab for the Format Dimension dialog, there is a new checkbox, “Display Inner line for Outside terminator placement.” The checkbox is disabled by default.



### **Independent Size Specification for Left and Right Dimension Terminator**

BluePrint now allows you to control the size of each dimension terminator independently. The former single size control has been by two edit controls for Left and Right terminator size control. These can be found on the Terminator tab of the Format Dimension dialog.

### **Board Side View Envelope display representing component height**

You now have the option to display a Board Side View with a rectangular envelope. The envelope represents the extents in width and height of all component extents and component heights on the PCB design. The envelope is based on the visible components (top and/or bottom) in the associated PCB view. This option can be found on the format dialog for the Board Side View under the Display tab.