

## ProbeMaster Release Notes

### Notes

ProbeMaster V11.0.x and up should be used with CAMMaster V11.12.x and up. This is because improvements in the IPC and .f04 output of the newer CAMMaster is not handled well in the older ProbeMaster.

If you need to fall back on older versions, use ProbeMaster V9.4.x with CAMMaster V10.6.x.

If you use the “Balanced through holes” or “Component side through holes only” options for generating test points, the .f04 input from CAMMaster must be generated with the “Padstack – Same midpoint” option checked. Otherwise the midpoint computation in CAMMaster will override the selected options in ProbeMaster.

## New Features

### 11.2.22

- **Better Handling on IPC Soldermask**

### 11.2.4

- **Check for Small Soldermask Opening**

When "Use IPC Soldermask" is checked, testpoints will not be inserted if the soldermask opening is smaller than 2 mils (any dimension).

### 11.2.1

- **Improved Soldermask Handling**

For soldermask openings that are offset from the pad.

### 11.0.86

- **New feature to navigate locations with missing testpoints**

"View/Go To/Missing Testpoints". Missing testpoints are pads and holes that were marked as endpoints in the imported netlist file, but do not have testpoints after the testpoint generation. Press Enter to navigate over such points (if any are found).

- Importing CAMMaster generated .f04 files generated with the option "Same midpoint" deselected has been improved. Previously some test points were not generated.

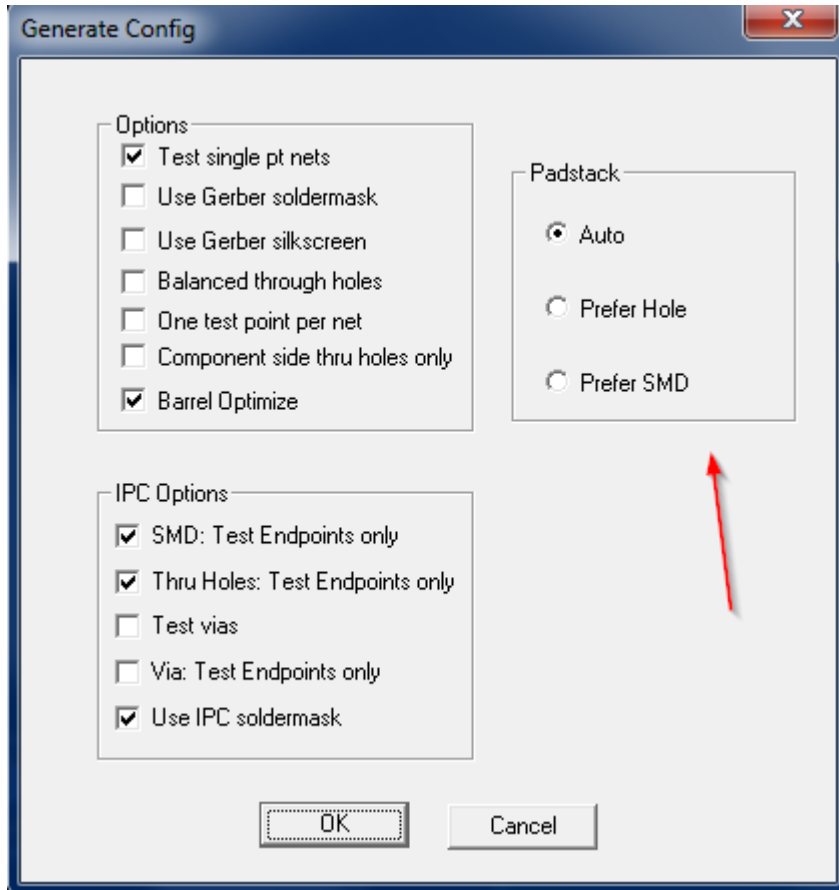
### 11.0.80

- Reprise based licensing replaces SafeNet licensing.
- Built with Visual Studio 2013.

### 11.0.73

- **New option for testpoint generation**

The configuration dialog for testpoint generation has been changed. A new option for "Padstack" has been added. This controls which element type will get the testpoint if the choice is not restricted by other options:



Using the “Auto” option will result in the generation being done as before.

We recommend to not use “Action/Remove Padstack” for controlling testpoint generation, but rather use this new option.

- Improved handling of blind vias  
Test point generation for blind vias has been improved.
- Improved avoidance of collisions  
Fewer colliding test points are generated.
- Probe Stagger  
For the “Auto Annular Displacement” mode, stagger is now done even if the margin in the probe table is 0. Previously only probes with non-zero margins were staggered with this method.

### **11.0.54:**

- Microcraft .emm output improvement  
The .emm file now contains the minimum spacing entered by the operator for adjacency computation. This is the “Minimum Net Separation” values entered either in CAMMaster while generating the netlist or in ProbeMaster when doing adjacency computation.  
This value will now appear in reports on the Microcraft tester.

## **11.0.51:**

- Improved test point generation

The test point generation has been improved when IPC soldermask mode is selected to handle soldermask openings that cover several pads. Note that these opening will not be displayed in the view but will be considered while generating test points.

## **11.0.41:**

- Zoom All with (0,0) Included

A new command has been added to supplement the "show all" command ("Home"). The new command, "View/Zoom/Show All (0,0)", includes the origin also (coordinates (0,0)). Shortcut is "Shift+Home".

- Align to Center of Holes and Pads

A new command has been added to align the cursor with the center of the closest hole or pad. It is "View/Go To/Closest Hole or Pad", the shortcut key "A". This is similar to the "A" shortcut in the CAM software.

## **11.0.31:**

- New Option for IPC Export

"Output same shape for two different cover pads": when a hole has covering pads of different sizes or shapes 3 IPC records are needed to represent them. Some testers do not handle this well, so the user now has the option to output just one IPC record for the group with the cover pad being the smallest of the two. An example is shown below.

Three records:

317NET1	-	D0350PA00X+056040Y+107125	S0
327NET1	-	A01X+056040Y+107125X0600Y0600	S0
099NET1	P	T01X+056040Y+107362	
327NET1	-	A02X+056040Y+107125X0600Y0000	S0
099NET1	P	T02X+056040Y+107362	

One record:

317NET1	-	D0350PA00X+056040Y+107125X0600Y0600	S0
099NET1	P	T01X+056040Y+107362	
099NET1	P	T02X+056040Y+107362	

- Option to Include IPC Soldermask Display

"View/Data Elements/Include IPC Soldermask". This is relevant only when the soldermask display is on. Depending on the setting of this new option the IPC soldermask is displayed as well (in addition to the Gerber soldermask). Since in the past only Gerber soldermask could be displayed, this option has been added for users who prefer seeing the Gerber soldermask only.

## **11.0.8:**

- Display of Soldermask

"View/Data Elements/Soldermask" now will display soldermask elements from the netlist files also. Previously it displayed only soldermask elements imported separately with "File/Import/Misc Gerber".

## **11.0.4:**

- Better handling of rectangular pads

This applies to drill holes covered by rectangular pads. Previously these pads were imported as round. This version of ProbeMaster should be used with CAMMaster 11.2 or higher.

## **New features 9.4.24:**

- IPC356A Export

IPC356A export included 390BOARD-ALIGN data for all testers. Now board align data will only be outputted for the EMMA, Probot, and ProboTech testers .

## **New features 9.4.9:**

- Scripting

Added a scripting toolbar, F11 runs a macro, Alt+F11 displays the macro editor, added the TestGenerateOnePointperNetOptions macro

- **Netlist Inspect**

Added a toggle layer visibility feature to display CPU, inner, CPL and all layers.

- Shielded Adjacency Display

Skips layers that have no adjacencies to display and also displays the layer that has an endpoint first, otherwise the CPU layer.

## **9.4:**

- Minimum exposed copper

Option set the minimum exposed copper size for testing. This option requires soldermask data from a F04 (contour-generated) netlist. It applies to SMD pads which do not have enough soldermask clearance. For drill holes, the annular ring (between drill and the effective covering pad ) must be at least 4 mils. The effective covering pad size is the smaller of the covering pad and the soldermask pad.

- Display adjacency and Shielded adjacency

Display from a F04 (contour-generated) netlist – use Ctrl-Shift N to display a netlist and its neighboring adjacencies, Ctrl-Shift A to cycle forward to another netlist, Ctrl-Shift Z to cycle backwards and Ctrl-Shift L to cycle thru each layer for that particular netlist. The main netlist is shown in magenta, its adjacencies in green (blue if the adjacency is not tested because the two nets are shielded) and shielding adjacencies are in yellow. For files that were extracted without shielding, the net under test will be magenta and the adjacent nets will be green.

- Polygon display

Displays polygon data from a F04 (contour-generated) netlist. Polygons are displayed as outlines. The commands to turn on/off polygons are the same for traces.

- Scripting

ProbeMaster now supports scripting. Please refer to the “PentaLogix Probe Methods and Properties: document for further details.

- New items reported in Stats (F6) menu
  - **Adjacency Threshold**  
Displays the C\$J adjacency threshold record from the F04 netlist in the F6 Statistics Display Dialog Box.
  - **Reporting the number of adjacent nets**  
the number of adjacent nets and shielding nets are listed in the statistics menu. The estimated savings from shielded adjacency will also be reported as a percentage
- File->Export->IPC356  
Previously the file extension would always default to “.356” The user can now enter any file extension that they want. If the user does not enter an extension, “.356” will be inserted.

## **New features 9.2:**

- Blankouts  
CAMMaster contour netlist extraction now supports a new feature called blankouts. FixMaster will display the blankouts. For more information about Blankouts, please go to the CAMMaster release notes.
- IPC EMMA- Emm output  
the soldermask now reflects where the test point is placed; S1 if the test point is on the solder side, S2 if the test point is on the component side. This is the same as the IPC output.
- Export EPC
  - line output sizes now have the right unit.
  - Option to output zero width added.
  - EPC has a net number limit of 32676. If a higher net number is encountered, the user will be prompted to renumber the nets.
- Excellon  
drill test is now saved in the job file.
- Step/Repeat Coded Format4 IPC Style  
now displays 20 rows instead of 10.
- Net Replace  
will now also replace the phase net information.

## **New features 9.0:**

- “Help/Check For Updates”  
Checks the PentaLogix website and reports if there are newer versions of the software available for downloading.
- “Help/Release Notes”  
To read the release notes for the current version.
- Inspect netlist soldermask display  
displays only the current layer soldermask

## New features 8.4

- **Export Verify Proprietary**  
Export Verify Only job (File/Export/Verify Job File) This option allows you to save a job file to be used exclusively by Verify. It can not be read back into FixMaster, ProbeMaster, or AutoFixture. This is useful when engineers need to send out files for Verify while ensuring the fixture setups, etc. remain proprietary.
- **Adjacency histogram Table:**  
(View/ Data Elements/ Adjacency Histogram) Shows the number of nets of a particular gap value, and the number of nets less than or equal to the particular gap value. The histogram table also displays the number of nets within a gap value as a percentage of the total nets. This table allows the user to decide which adjacency threshold to use for that particular board based on a particular threshold value and the number of nets within that threshold.
- **Insert/ Delete Pads During Netlist Inspect**  
Users can now insert pads (shift+ctl+P) and delete pads while inspecting a netlist.
- **Integri Format**  
ProbeMaster supports exporting Integri Format (File/ Export/ Integri).
- **Test to Hole or SMD**  
Added Remove Padstack Options to the Setup/ Configuration/ Operations Configuration dialog. This gives the operator the option of testing to the hole or the SMD:
  - **Remove SMD:**  
Removes SMD's from padstacks and keeps the thru holes.
  - **Remove Thru Hole:**  
Removes the thru holes and keeps the SMD's
- **Wheel Mouse Support:**  
Added support for navigation with a wheel mouse and support for the middle button of three-button mice:
  - **Rolling the wheel:**  
zooms in and out. Rolling forward zooms in and backwards zooms out. Each click zooms the same amount as a PgUp or PgDn would do. This mode is only active if the scrollbars are off. When the scrollbars are on, rolling the wheel will normally scroll up and down.
  - **Clicking the wheel:**  
(or middle-button of a three-button mouse) will pan the image so that the spot where the click happened will end up in the center of the screen. This is similar (though not identical) to using the End key. One can pan *repeatedly* in one direction by making sure that the arrow and crosshair cursors are not joined, then moving the arrow cursor close to one of the window edges and clicking the wheel repeatedly.
  - **Scroll:**  
If the wheel is set to scroll (in the Control Panel) and the CAM scrollbars are visible, then moving the wheel will scroll vertically rather than zoom. This action was present in older versions of the software as well. Note that if the scrollbars are not visible ("View/Scroll Bars") then the setting in the Control Panel does not matter.
  - **Middle Button:**  
If the wheel (or middle button) click is set to some other action (other than "Middle Button" or default),

the panning described above will not work. Instead, pressing the wheel will activate whatever action it has been programmed to generate in the Control Panel.

*Notes about setting up the mouse:*

Mouse button actions and properties can be set up in the Windows Control Panel. The wheel is often set up to cause a scrolling action and pressing the wheel (or middle button) is sometimes set up to simulate a left button double-click. These are user preference that can be changed if desired. This is how these settings interfere with the new features introduced above.

One must make sure that the mouse is set up as desired in the Windows Control Panel. In certain cases (depending on the type of mouse) the action of the buttons can be programmed per application, so one could have a particular setting for the PentaLogix software and a different one for other applications.

- **Statistics Improvement**  
View/Statistics (F6) show "**Stats**" now shows test statistics for both sides of the board.
- **Blind Vias in IPC 356A**  
Importing IPC-356A Netlist files: a **blind via** ( 307 record) is read in as a through hole pad with the access code set to the relevant side. The pad size from the subsequent 027 record is read in as a covering pad for the blind via.
- **Pad Insert on Both Sides of Board**  
If the new pad is a through hole, the covering pad will be placed on both sides of the board, in the correct position.
- **Deleting Traces**  
Added options for **deleting traces** in the Setup/ Configuration dialog box. Options added:
  - All
  - Both endpoints in frame
  - Either endpoint in frame
- **Manually Inserted Test Points Now use Soldermask**  
When manually Inserting Test Points – the software will now use the Setup/ Testpoint/ Generate "use Gerber/ IPC soldermask" option to determine whether to allow a test point to be inserted on a pad.
- **Test Point Stagger Changed**  
When staggering SMD, will only stagger if the probe margin specified is bigger than one half the width/height on the SMD. Previously, it was possible to probe too close to one edge while maintaining the margin on the other side.
- **Probot Nets Renumbering**  
Probot nets with test points are now renumbered first. This ensures that all the Probot output nets will be consecutive.

## **New features 8.2**

- **MicroCraft 'M' Code**  
EMM format output uses 'M' to denote a pad with no test point instead of whether the pad is a midpoint.



- MicroCraft Soldermask Field  
Soldermask field output in the EMM format now reflects that of IPC-356A

## **New features 8.1**

- Find Negative Net Numbers  
A routine has been added to check for negative net numbers. If found the nets are remapped as positive. This is necessary when IPC files are read in as numeric but are intended to be read as alphanumeric, a negative net can result. Negative nets will cause the program to crash since all nets are assumed to be positive.
- IPC-356A Unique Nets  
Added "Output N/C as unique nets" feature to the IPC-356A output menu.
- Probot Version '0'  
Added version 0 output for Probot testers. Nets will be outputted in descending order in the adj file.
- Individual User Preferences Now Supported  
The product configuration files (\*.cfg) are now stored in a different directory to facilitate **per user configurations**. They used to be stored in "Windows directory" (normally C:\Windows). Now, if the environment variable "HOMEPATH" is defined, that directory will be used instead. This variable is automatically set in certain versions of Windows, such as XP, but can be set by the user otherwise. If you want to preserve your your old settings, please move the .cfg file to the HOMEPATH directory. To determine the setting of HOMEPATH or to set it to a different directory, use "set" from the command prompt.
- MicroCraft 'M' Code  
EMM format - uses 'M' to denote a pad with no test point, not to indicate a midpoint pad.

## **New features 8.0.X**

- Same Zoom & Window After Inspect Netlist  
Maintains same zoom and window area after "Inspect Netlist" is performed.
- Barrel Optimize Enhancement  
If it is not possible to put a test point on the side of a through hole without an incoming trace, one will be put on the side with an incoming trace if possible. This check used to apply for soldermask only; it now applies for other cases as well.
- Net Replace  
You can now import a new netlist into an existing job..
- Negative Coordinates  
A warning will appear when mirrored and rotated pads go into negative regions.
- Warning When Overwriting Read Only Files  
Warning message will appear when trying to overwrite a read-only job file.

- Display at Width  
Traces can now be displayed at width.
- Startup Directory  
The start directory can now be defined.
- IPC Soldermask Option  
Added a soldermask flag option - to use either the IPC one or that from Gerber.
- Output Netlist N/C  
Added an Output netlist "0" as "N/C" option to Export IPC output.
- Remove Padstacks When Importing  
Added Remove padstack option to Import Netlist File options page.
- EMMA Phase Net  
Microcraft IPC365a output - phasenet now output on 81 column.
- IPC356a Net Output  
Net IDs start with NETxxx instead of LNETxxx.
- ATF Non Plated Holes  
Apertures of nonplated holes ( with DCODE marked IGNORE in the Dcode Table) are not output in the ATF aperture list.
- Probot 'SDE' output  
"SDE" now outputs independent of which side of the board test points are on.

## Bugs Fixed

### **11.2.30**

- View > Goto > Missing Testpoints  
Was not working correctly.

### **11.2.24**

- ATG Tester Export  
"K" fields in the header generated numbers that were too large.
- Test Point Generation  
There were missing test points in certain cases when "Barrel Optimize" or "Balanced through holes" options were picked.

### **11.2.19**

- Missing Testpoints Report  
When testpoints were generated with the "balanced" method, missing testpoints ("View/Go To /Missing Testpoints/All") were reported on the side where the testpoint was placed on the opposite side.

### **11.2.18**

- Covering Pads  
Certain through hole covering pads were imported as SMD pads.

### **11.2.17**

- Balanced Through Holes  
The generation of balanced test points on through holes did not work.

### **11.2.9**

- Duplicate Test Points  
Duplicate test points were generated.

### **11.2.8**

- Covered Pads  
Handling of covered pads was incorrect.

## **11.2.7**

- Netlist file import
  - The code that transferred covering pads to holes sometimes deleted the holes as well.
  - Files with blind vias where imported incorrectly.

## **11.0.86**

- Test point generation
  - Missing testpoints on certain pads marked as endpoints in the netlist.

## **11.0.83**

- ATG/ AFT Flying Probe Export
  - Export could occasionally miss testpoint and at other times generate too many.
- Duplicate pads
  - When IPC files contained duplicate (identical) pads on the same layer, both were deleted.

## **11.0.56**

- Three Point Stagger
  - In "Setup/Testpoint/Stagger" the "Three Point" method did not work as expected.
- Single Point Nets
  - The "Test single pt nets" option in "Setup/Testpoint/Generate" did not work.
- Align to pad / hole
  - "View/Go To/Closest Hole or Pad" (A) did not always align to the expected element.
- Export AFT
  - Exporting AFT type files caused a crash.

## **11.0.44**

- "Action/Remove Padstack"
  - deleted rectangular pads that were not in a padstack.
- IPC soldermask was sometimes imported incorrectly.
- ProbeMaster could go into an infinite loop while staggering test points.

## **11.0.24**

- "File/Export/IPC356A"
  - Occasionally generated incorrect output.

### **9.4.9:**

- Most original hotkeys now work.
- The RemovePadStack macro now works.
- EMMA .emm output  
Phase data in the correct column

### **9.4:**

- Using Step and Repeat  
may cause some IPC information in data to be lost.
- Accumulated Netlist  
The user was not able to highlight one or more nets simultaneously.
- Drag and drop  
A job file could cause step and repeat coded data to not be displayed properly.
- MM units mode  
When the program is in MM mode. Board outlines in an IPC file was not read in with the right units.

### **9.0.50:**

- IPC-D-356 files would incorrectly display blind vias as thru- hole vias.

### **9.0:**

- D codes sizes may not be read in properly for F04 with BOL outlines.
- Traces may not be swapped properly in a netswap.
- Problems may be encountered when outputting Probot Version 0.

### **8.4**

- Importing IPC-356A netlist files  
Fixed a bug when reading in IPC traces.
- Remove Padstack  
Sometimes would mark a blind via as not to be probed.
- Save  
Job files didn't always save properly.

## **8.1**

- Error Elements  
Elements that are in error are now highlighted properly.

## **8.0.X**

- “Help/PentaLogix Home Page” did not work.
- Floating License Manager  
Now correctly administers number of seats allowed.

## Release History

Version	Release Date
11.2.22	Jul 11, 2019
11.2.1	May 21, 2017
11.0.80	Mar 16, 2016
11.0.73	Oct 4, 2013
11.0.51	Aug 19, 2011
11.0.24	Jan 1, 2011
11.0.10	Sep 20, 2010
11.0.4	09/19/2010
9.4.24	10/30/2007
9.4.9	06/05/2006
9.4	03/03/2006
9.2	04/05/2005
9.0.50	09/09/2004
9.0	08/05/2004
8.4	10/27/2003
8.2	01/16/2003
8.1	0/23/2002
8.0.X	08/26/2002

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