

UcamX 2018.03 Release Notes

March 2018

UcamX

Version 2018.03



UcamX v2018.03 Release Notes

Commitment to regular updates



Version	Release date	Highlights
2014.12	Dec-14	Workspace GUI, Parallel processing
2015.04	Apr-15	Load balanced sessions, Gerber X2 Input support
2016.01	Jan-16	Background output, Parallelized image compare
2016.06	Jun-16	Maintenance update
2016.12	Dec-16	New insert Arc command, Improved Sieb&Meyer rout import
2017.04	Apr-17	Performance boost DRC copper-cut-ins, Improved "Select Painted" feature
2017.10	Oct-17	New startup routine, Extended Job Editor View, Optimized Rout Compensation
2018.03	Mar-18	Introducing the first YELO module --- Signal Layer Adjuster

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Overview



- **YELO** - What is it?
- **YELO** - Introducing Signal Layer Adjuster
- Sample script to help create holding webs in a contour
- Sample script to support the conversion of contour pads into COMplex pads
- Enhancements for Design Rules, Models, Hyperscript, Eagle Input and Silk Optimizer
- and more ...

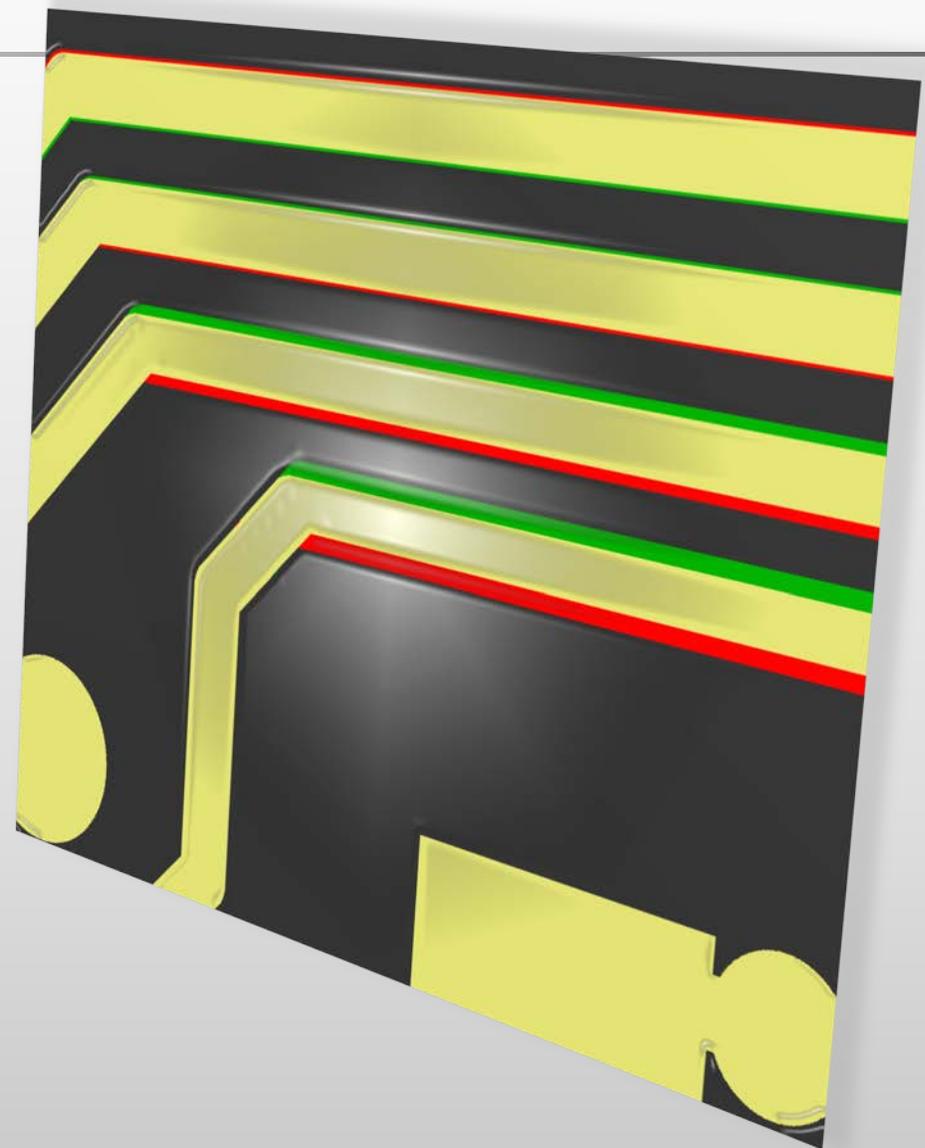
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YELO – What is it?

Imagine you could ...

- cut back your CAM cycle time by up to 30%
- achieve superior production yields
- deliver more reliable PCBs
- significantly improve board layouts within minutes

Well actually, with **YELO** now you can ...



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YELO – What is it?



YELO – Yield-Enhancing Layout Optimizers

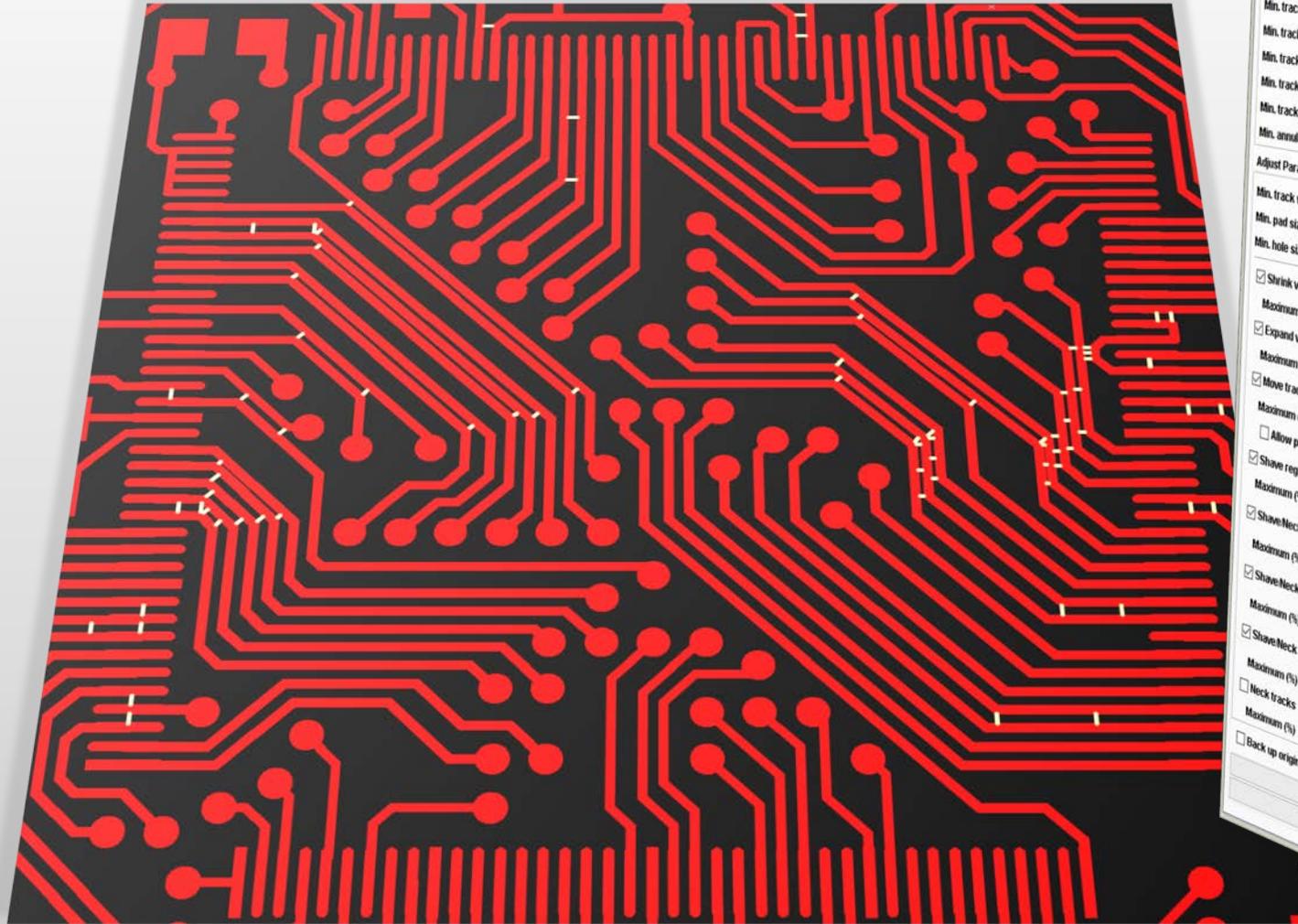
- Brand new suite of software modules for automated PCB layout optimization
- Unique “all-in-one” approach - highly automated, integrated and industrialized workflow with absolutely minimal human intervention
- Optimizing layouts for superior production yields
- With unparalleled throughput
- And uncompromised results

UcamX v2018.03 introduces the first of a series of yield-enhancing layout optimizer modules...

Signal Layer Adjuster

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YELO – Signal Layer Adjuster



Signal Layer Adjuster

Adjust Faults

Parameter Set: 200um

DRC Configuration: Minimum

Verify Parameters

Min. pad to pad clearance	0.2
Min. pad to track (excluding regions) clearance	0.2
Min. pad to region clearance	0.2
Min. track to track (excluding regions) clearance	0.2
Min. track to region clearance	0.2
Min. track to plated hole clearance	0.2
Min. track to non-plated hole clearance	0.23
Min. track to outline clearance	0.23
Min. annular ring	0.2

Adjust Parameters

Min. track width	
Min. pad size	0.1
Min. hole size	0.1

Shrink via tools
Maximum (%)

Expand via pads
Maximum (%) 25

Move tracks
Maximum distance 25

Allow partial track move

Shave regions
Maximum (%) 5

Shave Neck via pads
Maximum (%) 25

Shave Neck component pads
Maximum (%) 25
● Shave ○ Neck

Shave Neck SMD pads
Maximum (%) 25
● Shave ○ Neck

Neck tracks
Maximum (%) 25
● Shave ○ Neck

Back up original layers 25

Verify
Verify + Adjust



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YELO – Signal Layer Adjuster

- All-in-one, fully-automatic **YELO** module
- Brings signal layers in line with the specified design requirements fully automatically
- All verification and adjust parameters entered from a single central user interface
- Different settings and values storable in parameter sets for quick retrieval and easy re-use later on
- Checks and values loadable from existing DRC configuration files to tie in seamlessly with the existing CAM workflow

Signal Layer Adjuster

Adjust Faults

Parameter Set 200um

DRC Configuration Minimum

Verify Parameters

Min. pad to pad clearance	0.2
Min. pad to track (excluding regions) clearance	0.2
Min. pad to region clearance	0.2
Min. track to track (excluding regions) clearance	0.2
Min. track to region clearance	0.2
Min. track to plated hole clearance	0.23
Min. track to non-plated hole clearance	0.23
Min. track to outline clearance	0.2
Min. annular ring	0.2

Adjust Parameters

Min. track width	0.1
Min. pad size	0.1
Min. hole size	0.1

Shrink via tools
Maximum (%) 25

Expand via pads
Maximum (%) 25

Move tracks
Maximum distance 5
 Allow partial track move

Shave regions
Maximum (%) 25

Shave/Neck via pads Shave Neck
Maximum (%) 25

Shave/Neck component pads Shave Neck
Maximum (%) 25

Shave/Neck SMD pads Shave Neck
Maximum (%) 25

Neck tracks
Maximum (%) 25

Back up original layers

Verify

Verify + Adjust

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YELO – Signal Layer Adjuster

- Vast arsenal of layout adjustment functions to achieve requested clearances and annular rings
 - Shrink via tools
 - Expand via pads
 - Move tracks – single or multiple
 - Partially move tracks
 - Shave regions
 - Shave/Neck via pads
 - Shave/Neck component pads
 - Shave/Neck SMD pads
 - Neck tracks
- Constraints for each adjustment method to suit individual customer requirements

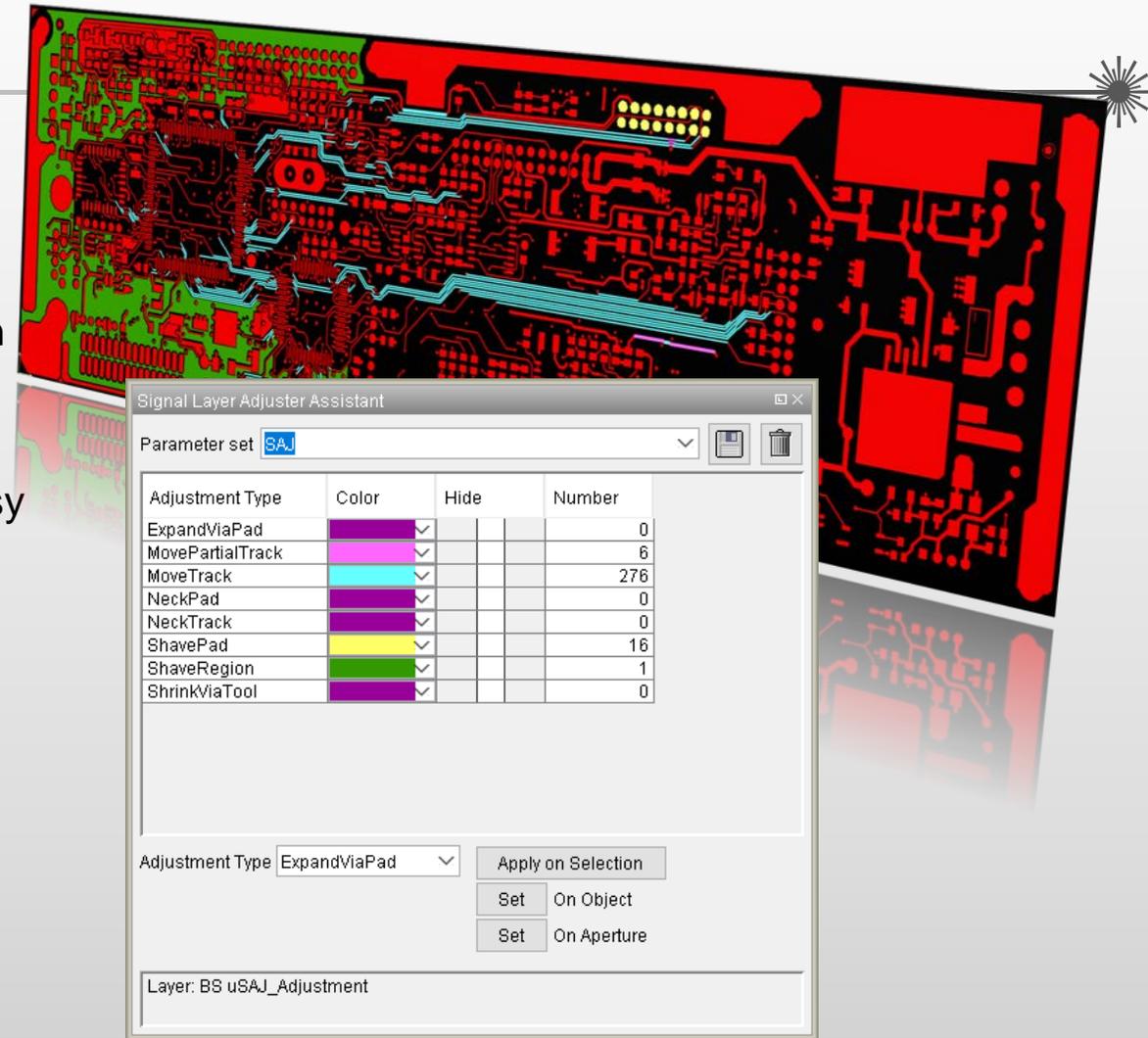
A screenshot of the YELO – Signal Layer Adjuster software interface. The interface is a vertical panel with various settings. At the top right, there is a starburst icon. The settings are as follows:

- Shrink via tools
 - Maximum (%) 25
- Expand via pads
 - Maximum (%) 25
- Move tracks
 - Maximum distance 5
 - Allow partial track move
- Shave regions
 - Maximum (%) 25
- Shave/Neck via pads
 - Maximum (%) 25
 - Shave Neck
- Shave/Neck component pads
 - Maximum (%) 25
 - Shave Neck
- Shave/Neck SMD pads
 - Maximum (%) 25
 - Shave Neck
- Neck tracks
 - Maximum (%) 25

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YELO – Signal Layer Adjuster

- Full traceability of all layout changes via
 - Signal Layer Adjuster Assistant
 - ❖ uses the intelligence Signal Layer Adjuster placed on the DPF data to show changes in the layout
 - ❖ Before/After adjustment information is stored persistently in the same DPF file, which makes it easy to consult throughout the entire CAM process
 - ❖ highlights a single, multiple or all types of layout adjustment that were applied on a layer
 - ❖ uses a system of different colors to display different adjustment types
 - Automatic back-up of original layers
- Full security guaranteed thanks to an integrated netlist verification

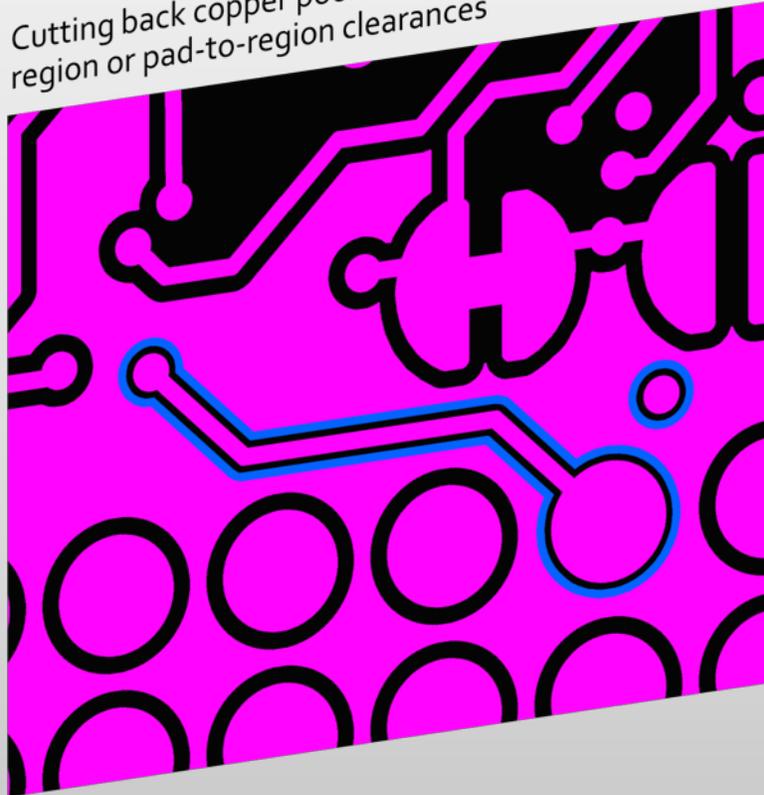


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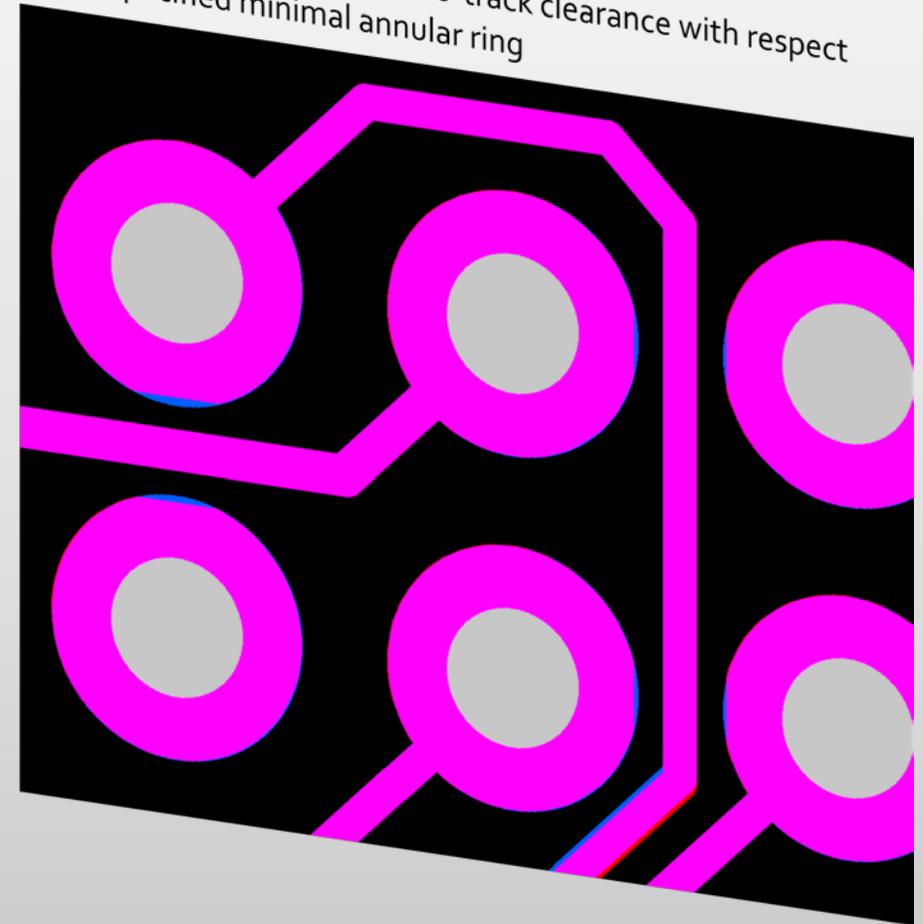
YELO – Signal Layer Adjuster

- Find out what Signal Layer Adjuster can do for you...
Ask for a free-of-charge trial license!

Cutting back copper pours to ensure proper track-to-region or pad-to-region clearances



Shaving pads to achieve pad-to-track clearance with respect of the specified minimal annular ring

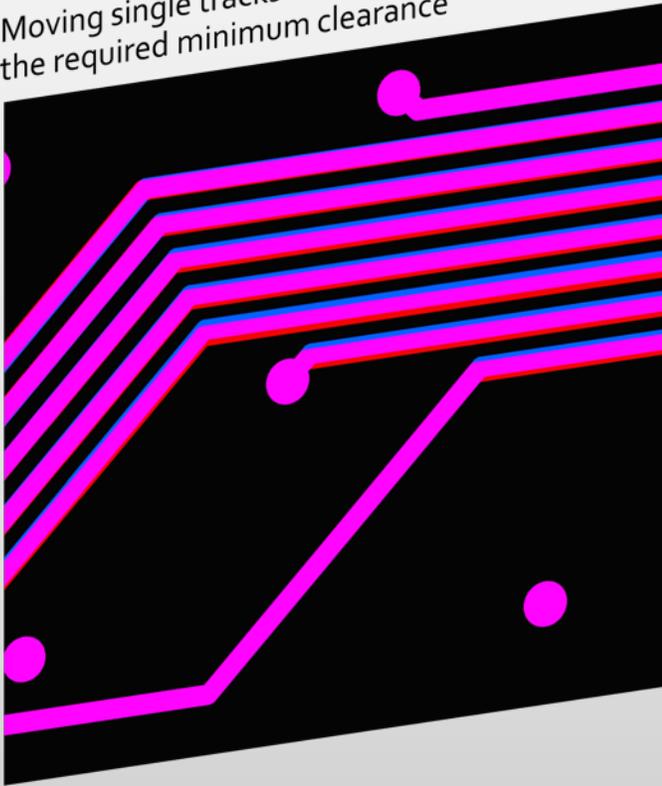


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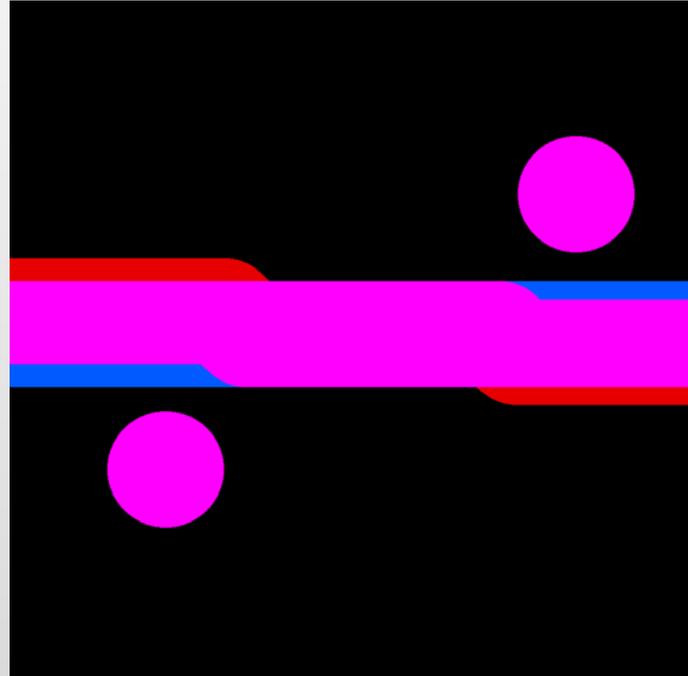
YELO – Signal Layer Adjuster



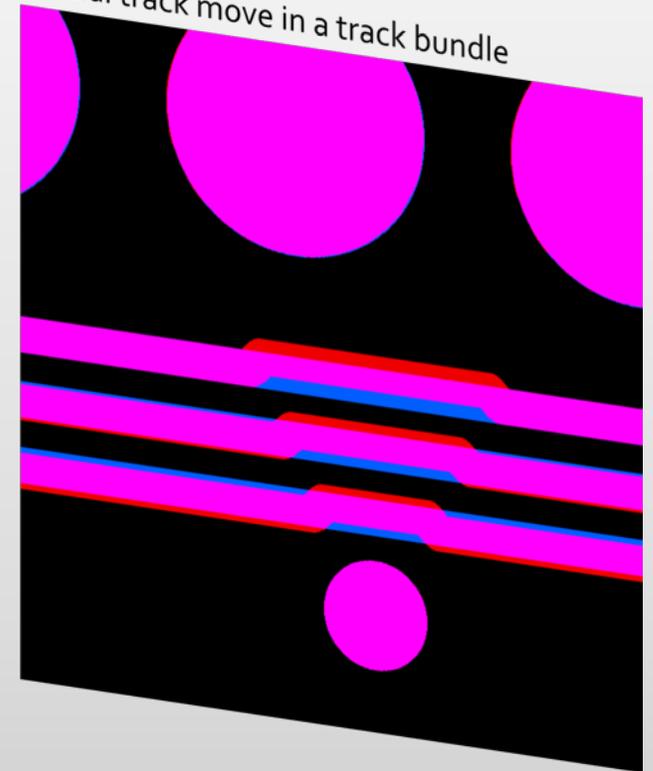
Moving single tracks or complete track bundles to get the required minimum clearance



Partial track move



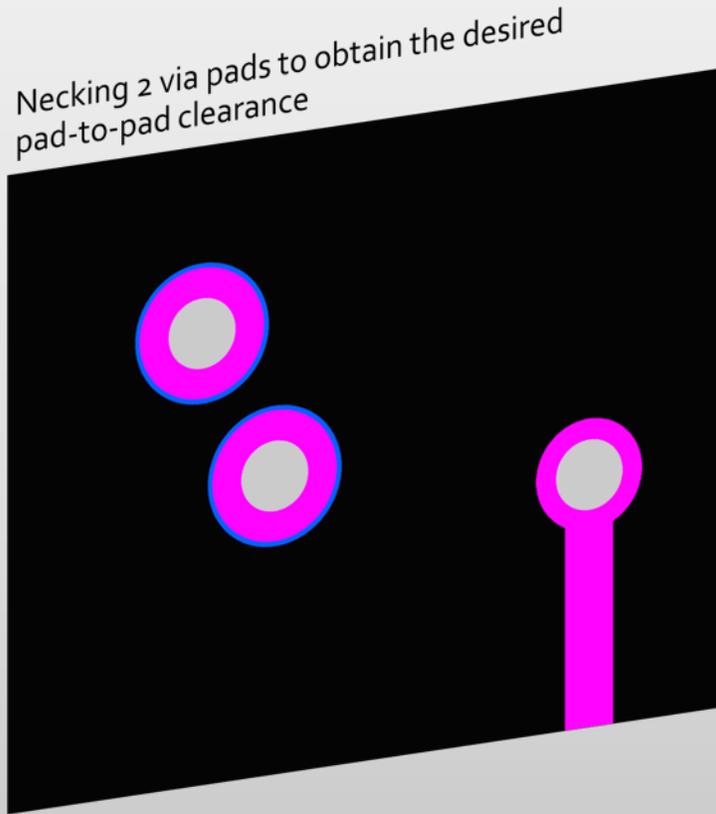
Partial track move in a track bundle



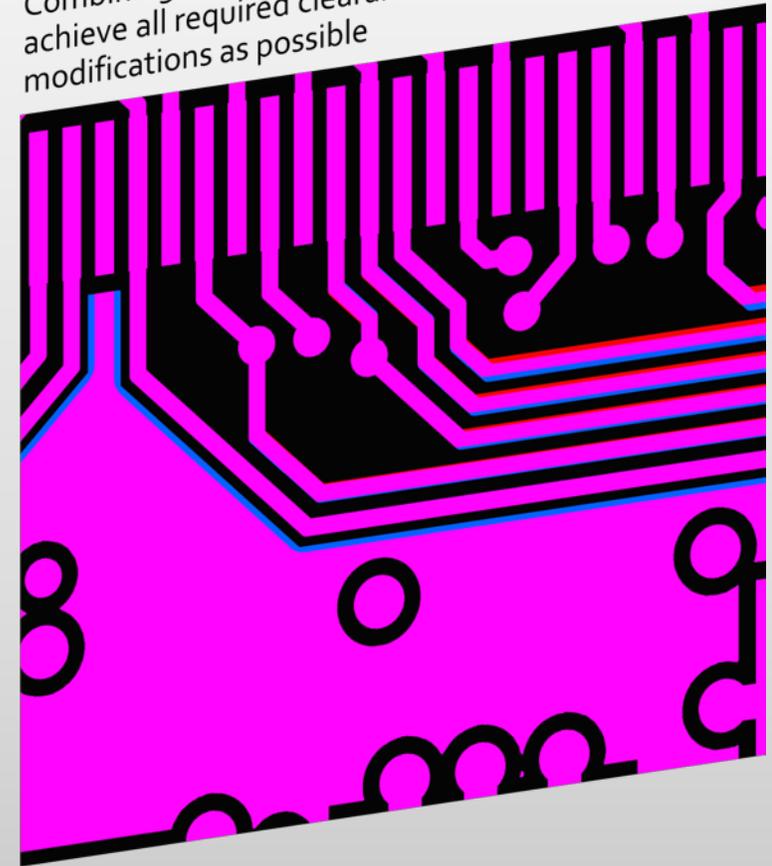
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YELO – Signal Layer Adjuster

- Signal Layer Adjuster is a licensed feature - Please contact your regular Ucamco sales channel for more information and a competitive price offer.



Combining different adjustment functions to achieve all required clearances with as few modifications as possible



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Scripts and Enhancements



VHS script insertOpenings.vhs:

This script creates a 0.2mm opening every 10mm on every draw and arc of a layer.

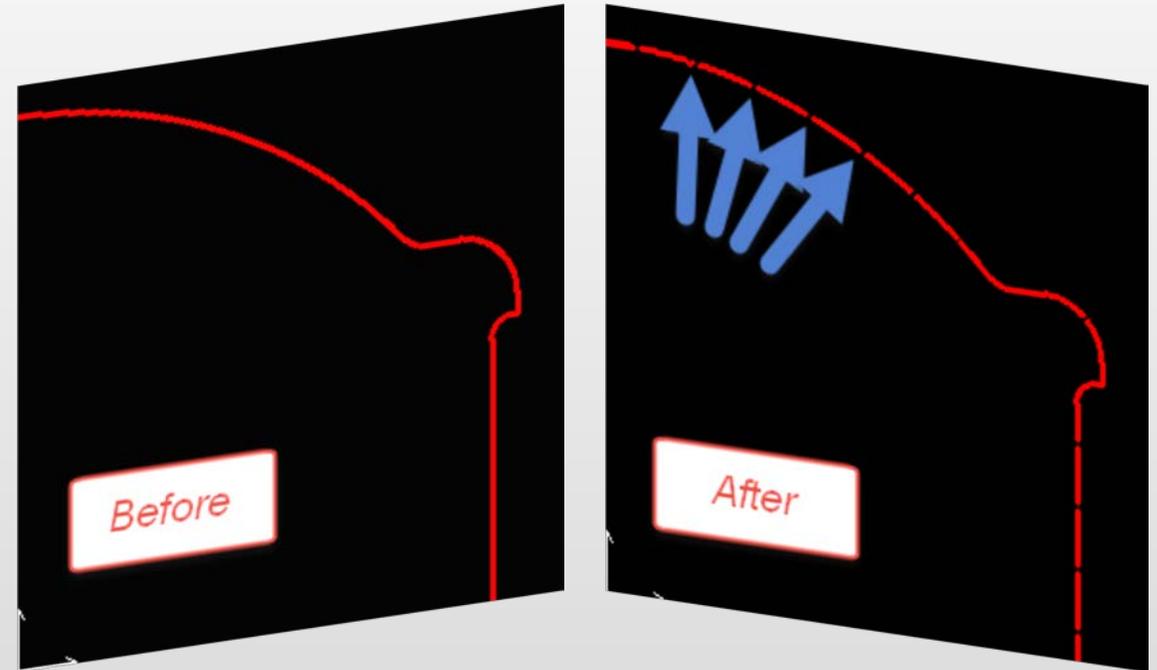
The size and the space between the holding webs can be changed to your requirements.

A very useful tool e.g. for cutting foils or thin laminates.

Find the script here (doubleclick) :



insertOpenings



Use the script directly with Visual Hyperscript Editor, place it in the Visual Hyperscript Menu or place it as an icon on your toolbars.

For help or further information please contact us at support@ucamco.com

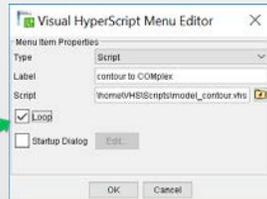
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Scripts and Enhancements

VHS script model_contour.vhs:

This script supports the user in converting contour pads into COMplex pads.

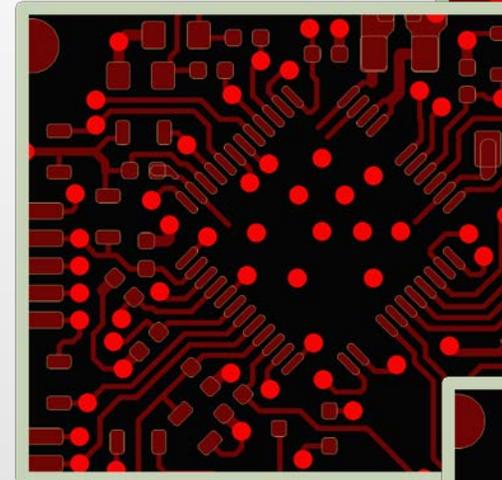
- Place this script with "Loop" activated in the Visual Hyperscript Menu.



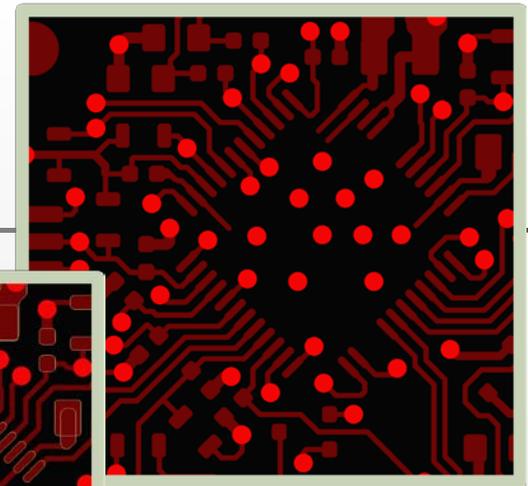
- Activate the layer you want to work on
- Activate the Highlight Pads button  to  to highlight the pads in light red(1)
- Start the script from the Visual Hyperscript Menu

It will select all contours and ask to define the pads (2)

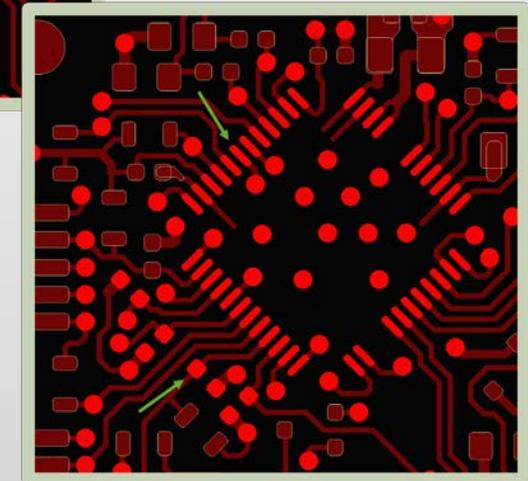
- Click on the pads and every pad with the same definition will be remodeled to COMplex pads and immediately show up in light red. Layout after 2 clicks (3)



(1)



(2)



(3)

Find the script here:



For help or further information please contact us at support@ucamco.com

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Enhancements

- **Design Rules:**
Performance improvement for Same net spacing calculation
- **Hyperscript:**
The new HyperScript command `deleteTrueObjects()`; allows the removal of True Object definitions from all (active) layers.
- **Models:**
Models is now handling Vector Text objects, while creating a COMplex aperture from selected objects (when also Vector Text objects are selected)



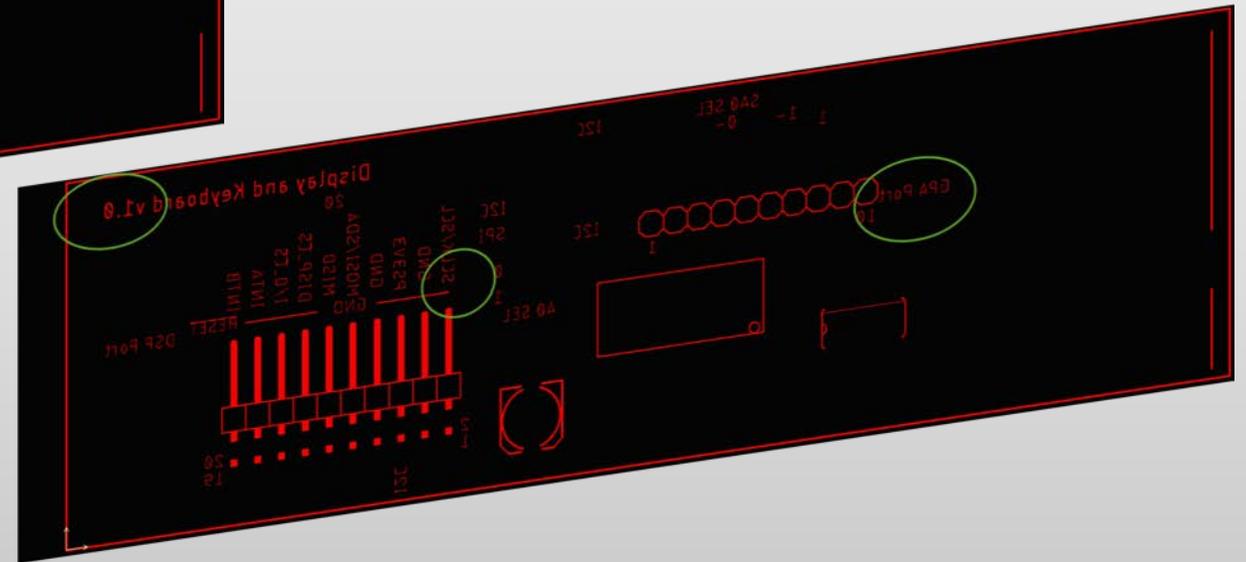
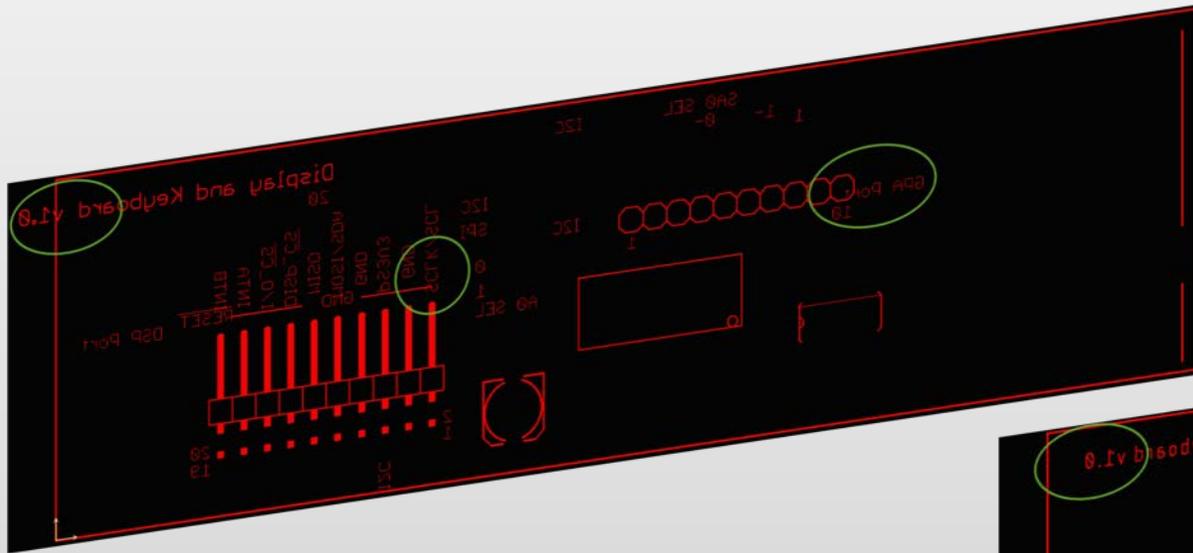
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Enhancements



- **Eagle Input:**

Eagle Input now supports proportional font, while importing .brd files.

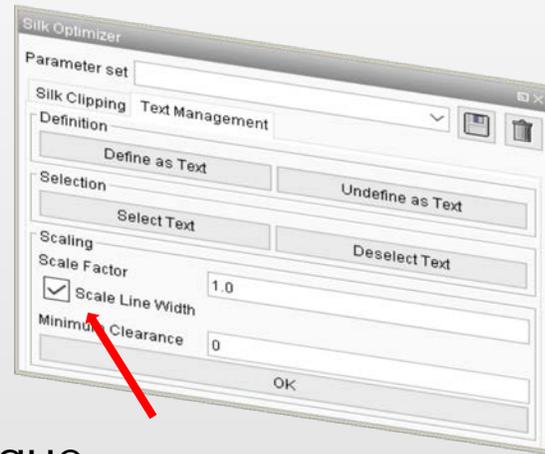


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Enhancements

- **Silk Optimizer:**

The new option "Scale Line Width", in the section "Scaling" of the Text Management tab in the Silk Optimizer dialogue, allows to define what should happen to aperture definition(s) while scaling the text: Activating the newly introduced toggle will recalculate the aperture size in accordance with the scale factor entered. When deactivated, the aperture size remains unchanged.



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and more ...



UcamX v2018.03 also offers a host of code fixes for issues reported by our user community.

If you are still on an older version of UcamX or still on Ucam, please have a look at the release notes and bug fixes of recent versions.

- [UcamX v2014-12](#)
- [UcamX v2015.04](#)
- [UcamX v2016.01](#)
- [UcamX v2016.06](#)
- [UcamX v2016.12](#)
- [UcamX v2017.04](#)
- [UcamX v2017.10](#)

All Release Notes and code fixes are listed on the [Downloads](#) page of the Ucamco website.

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