UcamX v2021.04

Fixed issues

Your continued feedback is important and appreciated. This version resolves the following issues you have raised with our Customer Care department.

- Via openings on copper pads overlapped by bigger copper pads are handled in Via Handling correct now.
- Adjustment of via pad mask openings to the requested settings in case of complex pads is added to MAJ.
- Layers for which the names are identical except for the usage of upper- and lowercase characters were considered as different layer names, without the need for extending the layer name with an index number. Saving these jobs could fail in case unique layer names are required. These filenames are now automatically extended for making the layer name unique in the job.
- Fill Vector on selected regions was not always selecting all objects that are used to fill the regions. All filling objects of the selected regions are selected after running Fill Vector.
- ODB++ v7 output was not always applying the required rotation on a chamfered rectangle.
- Mask Adjuster, ring handling, was removing the tracks from the mask layers.
- Filtering for 1-connection pads enhanced.
- Applying the aperture pattern definitions during ODB++ output (odbxx*contourize_ape_pattern: 1) could change the order of the apertures, which can cause modified image when different polarity levels are involved. Sequence of the apertures is respected.
- Excellon files with coordinate(s) defined by 7 digits, instead of the expected maximum of 6 digits, are converted in properly now.
- Information about an invalid Gerber file when reading it in is optimized.
- Title bar icons can be set to a wider size with ucam.db key gui.frame.titlebar.wider set to 1.
- Highlights in DrillToolManager are maintained during zoom actions.
- New checkbox to connect frame gaps before expanding legend. Connecting only done on non-text.
- UNDO after running transformation that introduced open contours (transformation on partially selected regions) was corrupting the image. UNDO is now returning to the original situation.
- The creation of Teardrops was not always respecting the configured restriction on pads with a drill hole. By activating toggle "Only for pads with drill hole" the generation of teardrops is restricted to drilled pads.
- The flash point of COMplex apertures in the Netlist Reference layers is inside the pad, this is needed to avoid false violations during Net Compare.
- Rout Editor Generate arcs could create a full arc, with center in the origin, from a set of chained tracks representing a full circle but not with the origin as its center point. The generated arc(s) are respecting the original image.
- Loading the layers of a job was not always correctly displaying all layers, when running UcamX in multi process mode.
- The creation of arcs from a set of consecutive tracks, which are drawn under (almost) the same angle, can result in arcs with a big radius. When these arcs, with the big radius, are almost identical to a track between the endpoints, the generation of these arcs are prevented.
- Contour generator considers contourize.analytic.arc.expand.margin for BOX apertures.
- Gap of a rounded thermal has been reviewed according to the modified/corrected interpretation of the gap value by the ODB++ specifications.

- ODB++ Import is again considering the considering the configuration of odbxx.input.keep_hole_before_island, for influencing what should be done with the holes that are defined before the island(s) of a surface definition.
- A new option is added to the legend adjuster split draws: use rounded clipping or use reverse clipping. Reverse clipping will clip exact against mask + clearance, rounded clipping will clip and render draws.
- Legend adjuster 'expand frames' did not always respect frame shape. This is solved.
- Silk frames are handled correct in case of small corners.
- The calculation of the week number has been corrected for certain configurations.
- ODB++ Import of job containing long names for the symbol definition of the ODB++ could be causing UcamX crash. The ODB++ Import module is correctly handling these long symbol names.
- New resource key dxf*expand_blocks: 1 will expand all BLOcks and then produce the DXF output.
- New ucam.db key to change attribute values.
- Handling of overlapping pads invented.
- Native ODB++ importer cannot add a layer to an existing job.
- The value of the uPCB attribute is used to compose the names of the corresponding steps in the generated ODB++. The step names are now validated conform the supported characters according to the legal entity names of the ODB++ specifications. Previously the value of the uPCB attribute was used, even if that attribute value was containing unsupported characters.
- Remove Redundant Objects, in Cleanup section of Rout Manager, could also remove small objects that are required for closing the rout chain. All objects that are required for the chain remain.
- Pad Shave was also selecting the embedded objects of the shaved pads, even if these embedded objects remained unchanged. Pad Shave is only selecting the objects that needed being modified during shaving.
- Edit Cut after running Fill Vector on selected regions was removing the selected objects from the layer, but these were not always added to the Clipboard (needed for pasting the objects afterwards again). The selected objects are provided in the Clipboard after cutting them.
- New differentiation for rings on plated and non-plates slots.
- Secure Etch with Horns functionality prevents all kind of shorts even in case of same net.
- java.lang.exception based on small parallel lines is solved.
- Outline handling of cut-outs and inner rout implemented.
- Self-intersecting contours in a Gerber file were not always detected, which could result in the creation of layers containing ambiguous contour regions. Representation of these ambiguous contours could be unexpected. These self-intersecting contours are notified, with an error message, and resulting layer has valid contours depending on a logical interpretation of the original Gerber contours.
- Display of colors for faults is working correct again.
- Enhanced mesh pattern detection.
- Solution for eagle layout issue is embedded within new UcamX version.
- Copper Adjuster did not solve all faults when drill slots were present and the corresponding copper pads were expanded. Now all faults are handled again by CAJ.
- Some drill holes could be missing after ODB++ Import. Issue has been noticed after loading an ODB++ job in which the same aperture was used for both plated and unplated drill holes, some plated drill holes were missing. All drill holes of the ODB++ job are converted again.
- Optimized testpoint generation when Kelvin testpoints are part of large plane nets.
- ODB++ Import of a job containing self-intersecting polygon in a surface definition could give unexpected result. The conversion of these self-intersecting polygons has been improved.
- Cleanup of attribute names performed in Copper Adjuster, using CAJ instead of SAJ.
- Fixed Java NullPointerException when importing different ODB++ jobs and saving the resulting jobs.
- Memory allocation during Gerber output in background mode has been optimized, which is reflected in better performance for creating the output.
- Mask Adjuster ensures annular mask ring openings even in case of ambiguous situations.

- With the configuration of "odbxx*layer_params: 1", in the applied Cad resource file, the sequence of the layer in the job can be preserved during ODB++ Output/Import.
- With the configuration of "odbxx*layer_params: 1", in the applied Cad resource file, the layer names can be preserved during ODB++ Output/Import. The ODB++ format specification has some restrictions for the legal layer names, with the configuration of odbxx*layer_params the original layer names (before validation) are stored and can be re-used when importing the ODB++ job again.
- With the configuration of "odbxx*layer_params: 1", in the applied Cad resource file, the layer subclasses can be preserved during ODB++ Output/Import. Due to the limited number of subclasses supported by the ODB++ format, some information could be lost while reloading the created ODB++ job.
- Corrected rout compensation calculates all champfers.
- Fix method new_compensate that was crashing.
- Testpoint creation optimized with changed settings of ucam.db keys: testpoint.lengthy_pads.prefer_split and testpoint.lengthy_pads.min_size.
- Test point generation could disturb netlist information of objects inside block apertures, a different net number could be allocated to connected objects. Test point generation keeping the expected net numbers on these objects.
- Analysis of Gerber files has been improved to prevent that some keywords in comment lines could analyze the files unexpectedly.
- ODB++ Import could create ambiguous contours for surface definitions with very short arcs. These arcs are now converted correctly.
- ODB++ input set attributes using tools files.
- Mask Adjuster corrects ring, clearance and overhang in one run.
- Some NPTH to Copper faults were not adjusted in AutoFix Copper Adjuster.
- A checkbox has been added to the CAJ GUI to automatically activate the outline layer.
- Gerber output, when cut-in inner contours are not allowed, of stepped data could output the blocks by using reverse regions for inner contours, which could cause modified image. In these situations Gerber output is no longer creating the reverse regions if these regions could cover previously specified objects.
- Compensate rout is respecting direction again.
- Rout compensation, on chains composed by short connected tracks and arcs, has been improved.
- Testpoint filtering is optimized.
- SEC creating horns respects set clearance values for horns.
- Snap keys are available in the toolbar having the same functionality as Rout Manager.
- Failing of testpoint generation is solved.
- Handling settings in ucam.db in SmartPlot Server and SmartPlot Standalone is fixed.
- Extended executables are available for FixGenius to stabilize DPF output.
- Optimized version of Tombstone and Solder Escape Prevention to "Ring for clearance of standard ring to connecting tracks".
- Mask Adjuster adjust mask openings in case there are more than 1 copper pad.
- Some mask openings got larger openings then needed. This is solved.
- Irregular frames are now also expanded.
- Shave is ensuring clearance values between complex pads.
- Pad shave with method clip is running stable.
- Improvement of recognition contourized pads using padmaker.
- Testpoint generation based on values defined in ucam.db.
- Gerber input of illegal aperture definitions, e.g. missing parameter for an Obround aperture, could be using a parameter of a previously specified aperture without any notification. These illegal defined apertures are now converted int UNDefined apertures (with the invalid aperture definition as aperture name for the UNDefined aperture).
- ODB++ output conserves aperture names.
- Mask Adjuster solving rings for components even in ambiguous situations.

- Verification for unique combination of subclass, attach and index number is done when a valid subclass has been allocated to the extra layer, layers for which no subclass is specified are no longer notified.
- ucam.db key job.change.reload.workspace: off is preventing the workspace to be reloaded.
- Improved support of ODB++ text features that are using a customized ODB++ font definition with character line width different from 12 mil.
- Handling of solder mask opening if copper is completely free of mask but the coordinates are not identical is respecting the specified value.
- Ring size adjustment optimized, Ring size is now adjusted based on size not only on form.
- Distorting the image, by using the Tab button to switch between the fields and buttons of the Distort menu and pressing Enter to run the function, was sometimes applying the distortion different times. Independent how to navigate through the Distort menu, running the function is only applied once.
- Connect Objects, in Cleanup section of Rout Manager, could replace short arcs (shorter than the configured tolerance) by a full arc. Cleanup is keeping these short arcs unchanged.
- Clearance outline to copper pad has been added to CAJ.
- The configuration of netcompare.inner_layers.mode allows also creating netlist references for inner layers, these additional references are considered afterwards when running Net Compare, allowing also finding the potential differences in the net information of the inner layer. Supported configurations of netcompare.inner_layers.mode:
    - 0 (default): only outer layers of the job are used to create netlist references and comparing the net information.
    - 1: the outer layers of ""Subjobs"", as defined in the Job Editor, are also considered additional to the references for the outer layers of the job.
    - 2: all inner layers of the job are considered while creating netlist reference layers and comparing the net information.
- New ucam.db key to switch off the inclusion of the drill area in case of overlaps: testpoint.overlapping_pads.include_drill_area: 0 (default 1). When set to 0, for the drilled pad only the remaining copper is considered for comparison.