

Ucamco



Secure Etch Compensation

(including Horns) 

Webinar June 18, 2020

How does the webinar work?

- All attendees are muted
- Ask questions with the 'Questions' button
- Answers at the end of the webinar
- A copy can be downloaded after the webinar

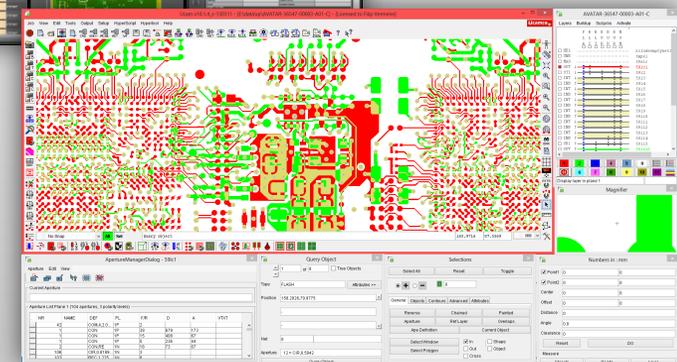
Who does the work?

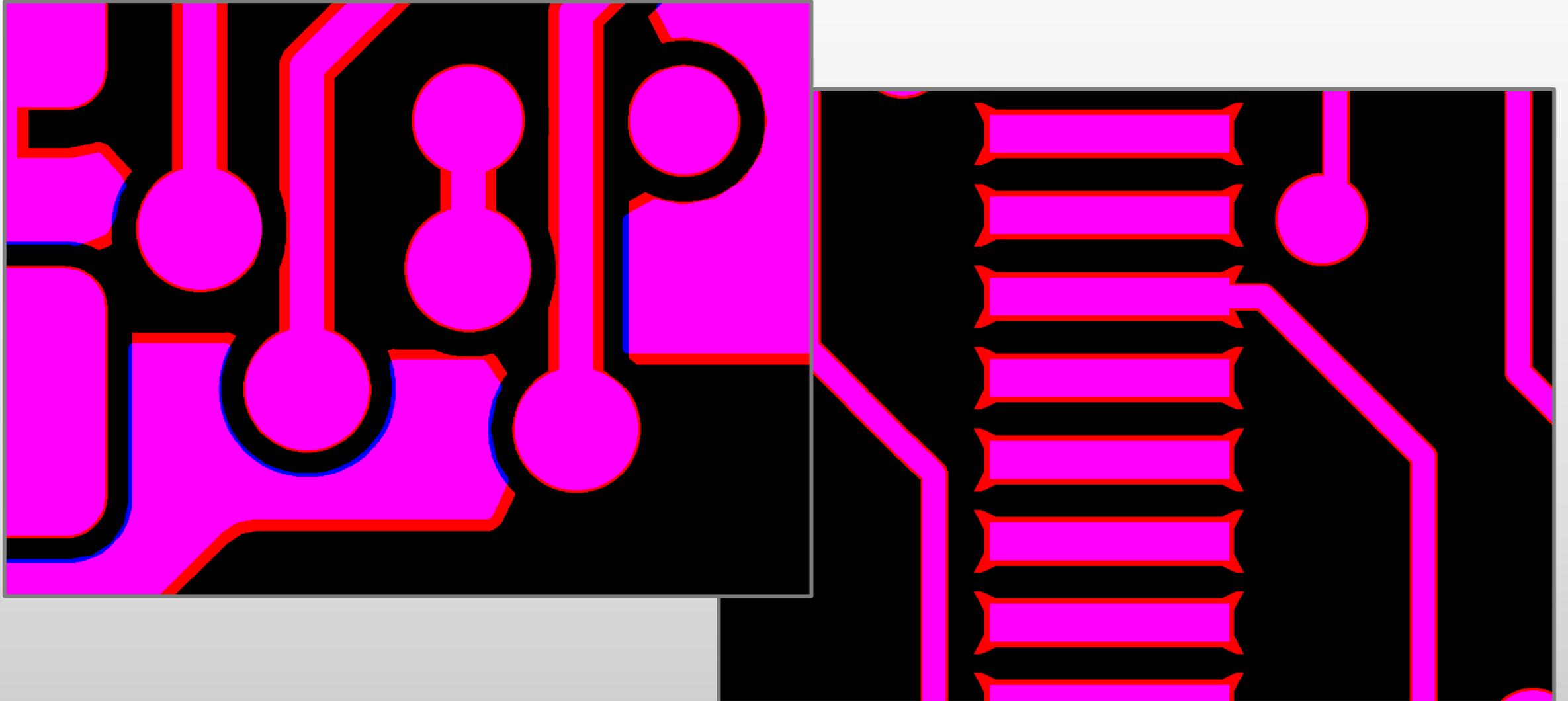
- Moderator: Karel Langhout
- Co-Moderator: Sylvia Liemer

Content

- Short Ucamco introduction
- Introduction to Secure Etch Compensation (SEC)
- Live demonstration
- Questions and answers

- ❁ **Ucamco serves the global PCB industry**
- ❁ **Laser Photoplotters/Ledia DI**
 - Best-in-class performance
 - Long-term reliability
 - Constant evolution
- ❁ **PCB manufacturing software**
 - Integr8tor, UcamX
 - Web-based: iamcam, Communic8tor
- ❁ **PCB bundled front-end software**
- ❁ **Gerber developments: X2, X3, Gerber Job**





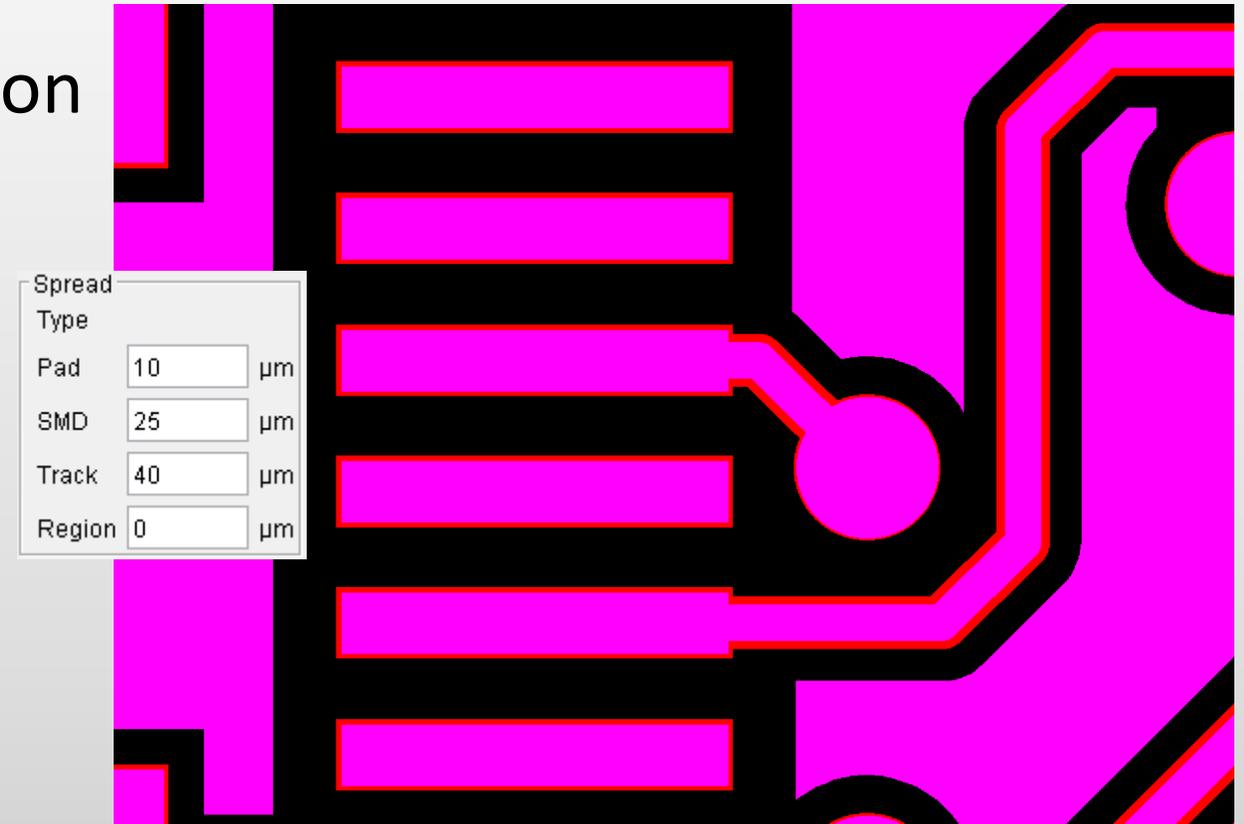
Why Secure Etch Compensation (SEC)?

- An etchant affects the copper image in very complicated ways
- The shape of copper features subtly influences the etching



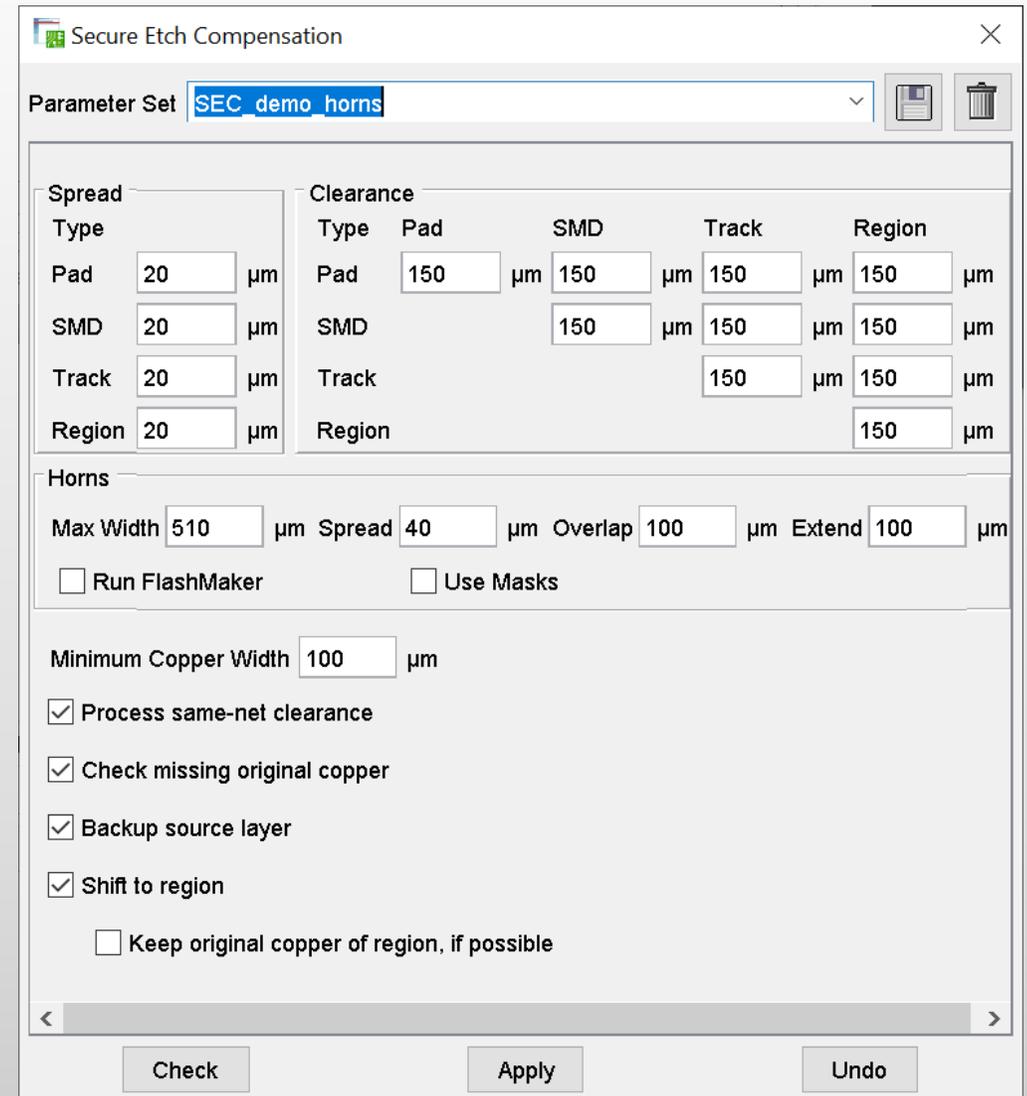
Why Secure Etch Compensation (SEC)?

- Secure Etch Compensation applies different compensation factors to different copper shapes



Features

- Different spreads on different feature types
- Different clearances between different feature pairs
- Full spread where possible and local correction to maintain clearance
- Fully automatic!



Secure Etch Compensation

Parameter Set: SEC_demo_horns

Spread		Clearance					
Type		Type	Pad	SMD	Track	Region	
Pad	20 μm	Pad	150 μm				
SMD	20 μm	SMD		150 μm	150 μm	150 μm	150 μm
Track	20 μm	Track			150 μm	150 μm	150 μm
Region	20 μm	Region				150 μm	150 μm

Horns

Max Width 510 μm Spread 40 μm Overlap 100 μm Extend 100 μm

Run FlashMaker Use Masks

Minimum Copper Width 100 μm

Process same-net clearance

Check missing original copper

Backup source layer

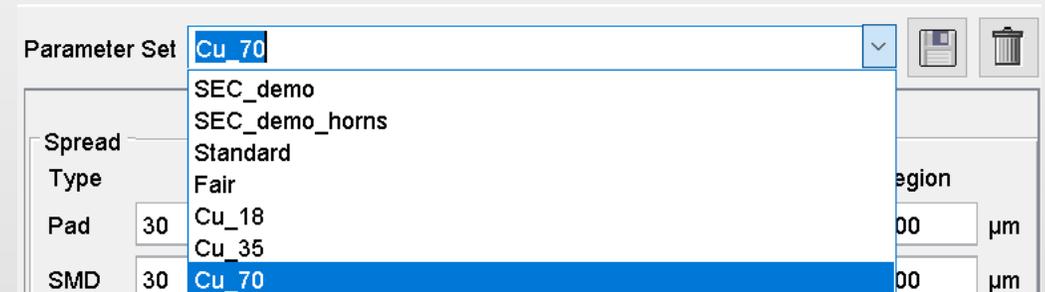
Shift to region

Keep original copper of region, if possible

Check Apply Undo

Features

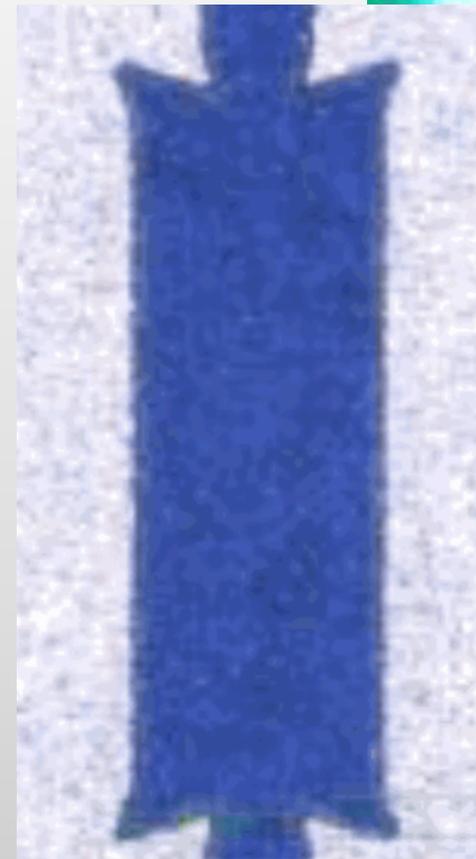
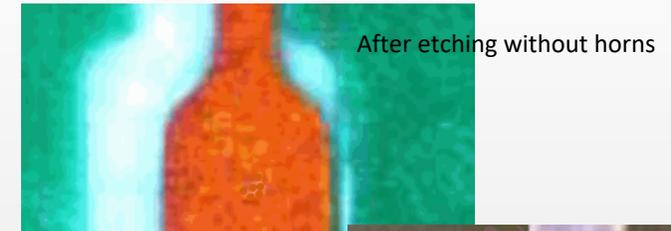
- Store and retrieve Parameter Sets for fast and easy handling
- Original data is saved as backup and for on-screen reference
- SEC is suitable for all PCB types



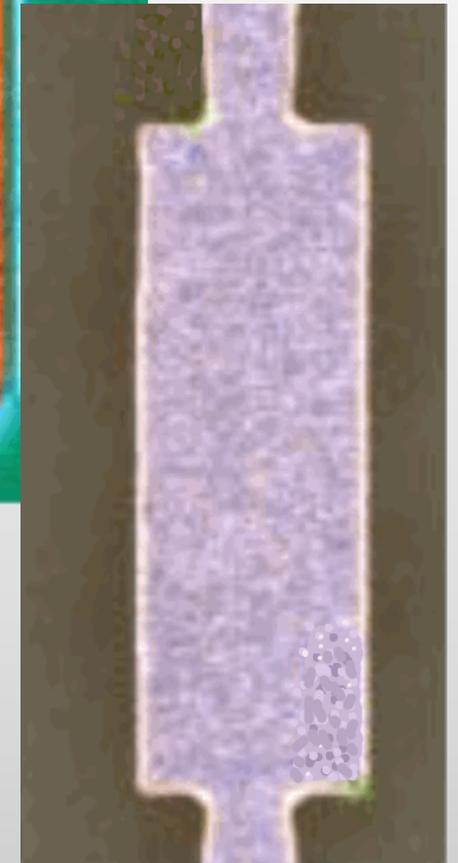
☀ Why add Horns?

- Etchant rounds the corners of all copper objects. This is fatal for very small SMD pads

SEC adds horns to protect critical corners



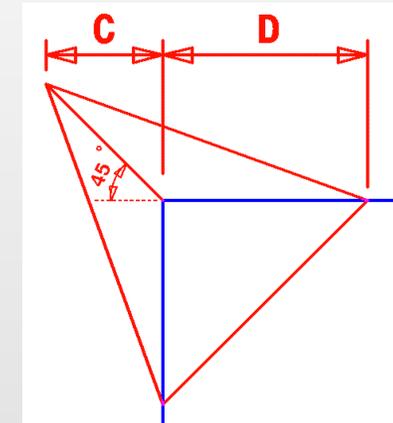
Before etching with horns



After etching with horns

☀ Features

- Add horns to critical SMD corners, with the right shape to protect them in your process
- Local shaving to guarantee clearance
- Easy-to-use interface and simple setup
- Fully automatic



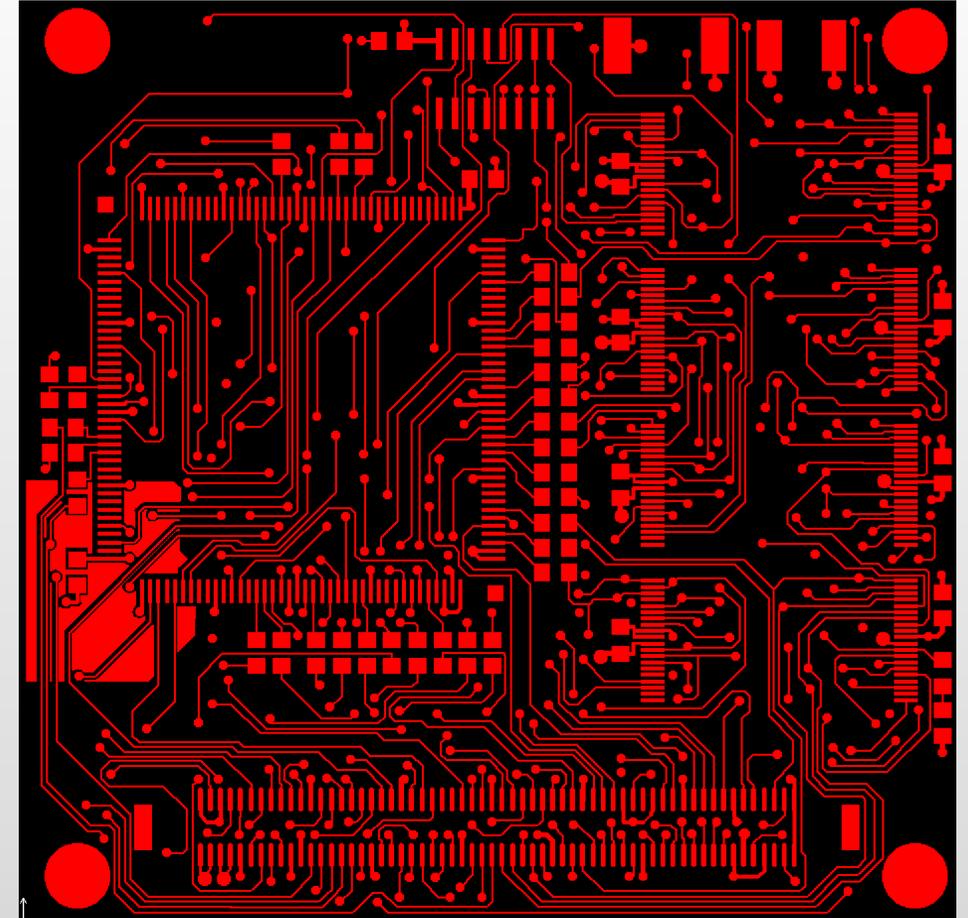
Horns

Max Width μm Spread μm Overlap μm Extend μm

Run FlashMaker Use Masks

Why not manually?

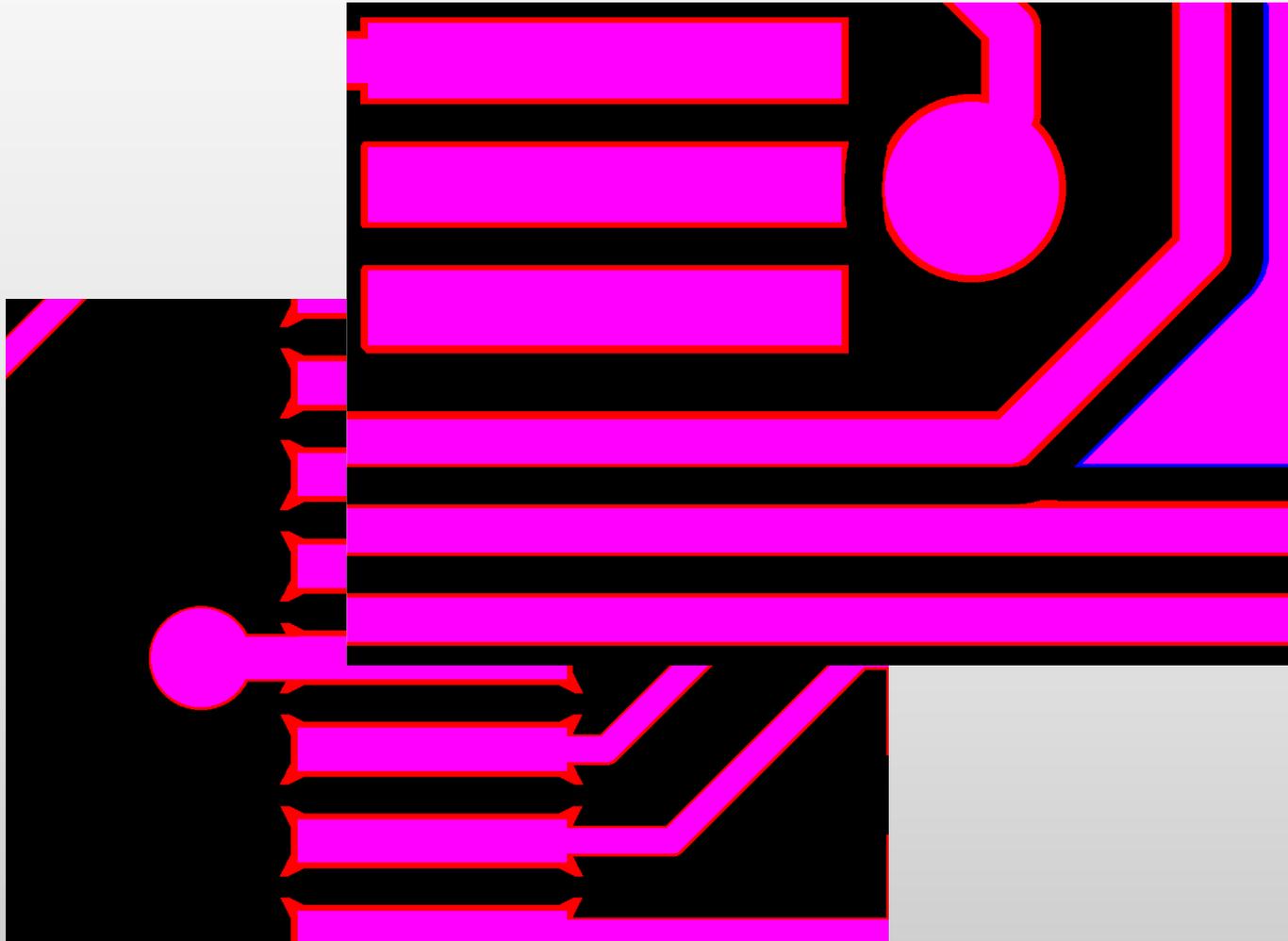
- To manually modify the layer on the right, you need to:
 - select all SMD and thicken
 - select all other pads and thicken
 - select all tracks and thicken
 - select regions and thicken
 - run clearance DRC
 - repair all clearance violations



This takes approx. 35 minutes -> for 1 layer (depending on the error count)

Imagine doing this in about 1 minute -> for a whole job ...

☀ Live demo



Secure Etch Compensation

Parameter Set: SEC_demo_horns

Spread			Clearance				
Type	Value	Unit	Type	Pad	SMD	Track	Region
Pad	20	µm	Pad	150	150	150	150
SMD	20	µm	SMD		150	150	150
Track	20	µm	Track			150	150
Region	20	µm	Region				150

Horns

Max Width: 510 µm Spread: 40 µm Overlap: 100 µm Extend: 100 µm

Run FlashMaker Use Masks

Minimum Copper Width: 100 µm

Process same-net clearance

Check missing original copper

Backup source layer

Shift to region

Keep original copper of region, if possible

Check Apply Undo

Benefits

- Pass end-customer inspection procedure with dedicated copper spread values for SMDs and pads
- Meet the exact width requirements for special tracks like impedance or coils
- Simplify etching by trimming copper regions to make space for compensating nearby tracks and pads

Benefits

- Simple to exclude texts, logos or impedance traces from compensation
- Slash setup-time using parameter sets based on e.g. copper thickness or customer specifications
- Perfect retracting of modifications made by SEC saving them within the job data.
Easily return to the original data.

Benefits

- Higher yield due to special treatment of critical objects
- Fabricate denser geometries
- Improving your etching results, saving money while increasing quality

Thank you!

Interested? Request a trial version at sales@ucamco.com

Unanswered questions will be answered by email after the webinar

We are looking forward to your feedback.

We will inform you about new webinars

Thank you for attending this webinar.

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