

# Electronic-Displays TroubleShooting

**Top 10 list of the last 25 Years  
of the most common B2B problems  
with electronic displays**



# Which problems are most common?

Our customers hit list from the last 25 years – by number of cases

1. **electrical problems** (equipotential / potential equalization, GND-concept, cables, connectors, oscillation tendencies, EMI etc.)
2. **tech. design-problems** (wrong parts, combination of inappropriate components, wrong processes and parameters etc.)
3. **mechanical problems** (expansion coefficients, tightness, shock, vibration, tension etc.)
4. **electronic problems** (control, timing, levels, interference, layout, processes etc.)
5. **optical bonding-problems** (bubbles, blisters, delamination, contamination, streaks, inclusions, yellowing, materials, processes etc.)

# Which problems are most common?

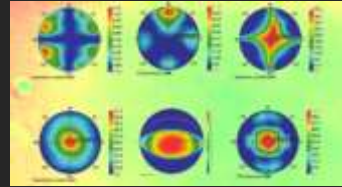
Our customers hit list from the last 25 years – by number of cases

6. **thermal problems** (hot-spots, cold-spots, packing-density, heat dissipation, degradation etc.)
7. **Touch-problems** (degraded seals, hermetically sealed seals, ITO-degradation, disintegration of coatings, ghost-touching, driver, maltreated surfaces etc.)
8. **chemical problems** (moisture, corrosion, yellowing, solvents, cleaners etc.)
9. **optical problems** (polarizer & retarder-orientation, light-sources, light guides, reflectors, optical films etc.)
10. **Bio-contamination** (mold, fungus, vermin, germs etc.)

# What in detail are we doing?



Power efficient light source technologies for extreme temperatures i.e. -100°C to +300°C and more



Analyzing, simulating, calculating, verifying...



IP and solutions for advanced heat management in display related systems



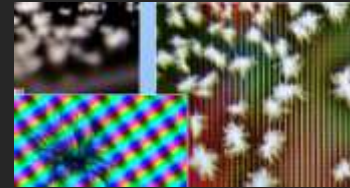
Cleanroom assembly for samples and small qty, we have about 2000m<sup>2</sup> of cleanrooms



Optical measurement of displays and light sources  
We use Eldim equipment.



Qualifying, sorting and screening of special or dedicated display related products



Analyzing and decontamination of Bio contaminations like fungus, bugs and other



We realize very special measurement systems



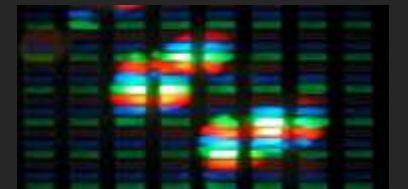
Failure analysis, bug fixing and trouble shooting.



R&D for new hybrid, 3D and holo-displays



R&D for optical bonding of various shapes, materials, processes and analyzing their quality



We create new kinds of variable pixel structures for 2D and 3D