

3D Display

Stereo Viewing on the Sharp 3D Monitor

Components:

- Sharp LL-151-3D 15" flat-panel stereo monitor with a resolution of 1024 x 768 (~ US\$1500)
- Dual-processor Apple G5 PowerMac or your current TNT computer and display board



Configuration:

The Sharp stereo monitor allows you to view high-quality stereo scenes generated in TNTmips without special glasses or other additional equipment. The display can be switched easily between normal 2D and stereo 3D modes. You might also use it in a dual-monitor setup with a larger, higher-resolution monitor for routine 2D viewing.

The correct distance for viewing the stereo effect on the Sharp stereo monitor depends on the amount of stereo separation set for the TNT 3D group. You set this separation using the Stereo Depth Scale and Stereo Base Distance settings on the TNT 3D Viewpoint Controls window. For proper stereo effect, the Stereo Base Distance should be slightly less than the distance to the nearest object in the 3D view, and the Stereo Depth Scale should be between 5 and 15. (Higher Stereo Depth Scale values produce large stereo separations and large parallax angles that exceed the design limits of the monitor and destroy the stereo effect.)

Pros:

- solid, stable, crisp stereo fusion
- no cumbersome wired glasses to wear
- easily switched from normal 2D to 3D stereo viewing
- low eye strain; eye fatigue is about the same as using photo prints (many other stereo viewing devices can cause eye strain and fatigue)

Cons:

- higher cost than conventional monitor (~ US\$1500)
- column-interleaved stereo image halves the horizontal screen resolution and reduces brightness
- narrow viewing angle and distance for stereo



High-resolution orthoimages and digital elevation models are now becoming widely available. High-quality stereo views can be rendered from this geodata in TNTmips, TNTedit, and TNTview to augment 2D and 3D perspective viewing. Stereo viewing is effective in helping identify and map ground conditions and features where direct work in the field is too expensive, time-consuming, or hazardous. Stereo can also be used effectively to explore the 3D spatial relationships between land surfaces and multiple subsurface manifolds. Stereo views can be opened in the Spatial Data Editor in TNTmips and TNTedit to assist in editing geodata in the companion 2D view.