



US 20050083307A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2005/0083307 A1**

Aufderheide et al.

(43) **Pub. Date: Apr. 21, 2005**

(54) **PATTERNED CONDUCTOR TOUCH SCREEN HAVING IMPROVED OPTICS**

Publication Classification

(51) **Int. Cl.⁷ G09G 5/00**

(52) **U.S. Cl. 345/173**

(76) **Inventors: Brian E. Aufderheide, Cedarburg, WI (US); Joseph C. Spang, Waukesha, WI (US); Jonathan P. Maag, New Berlin, WI (US)**

(57) **ABSTRACT**

The present invention provides a touch screen that includes a pattern of transparent conductors as touch sensing elements, and that has a layered construction configured to reduce the visibility of the transparent conductor pattern. The construction includes a coating covering a substrate, the transparent conductor pattern disposed on the coating, and a filler material covering and contacting the transparent conductor pattern and the areas of the coating not covered by the transparent conductor pattern, where the index of refraction of the filler material is less than the index of refraction of the substrate and less than the index of refraction of the transparent conductor pattern.

Correspondence Address:

**3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427 (US)**

(21) **Appl. No.: 10/686,141**

(22) **Filed: Oct. 15, 2003**

