[0043] The final layer of the display tile shown in **FIG. 1**, is a transparent cover plate **120** which may be formed from float glass or other transparent material.

[0044] If the tile shown in **FIG. 1** is formed as separate electronics and display sections, then the display section may be formed, by depositing the optional layer **121** on the back surface of the transparent cover **120**. Next, the transparent column electrodes **122** are deposited, then the OLED materials **118** are formed on the column electrodes **122** and the row electrodes **114** are formed to make contact with the OLED materials.

[0045] The electronics section is formed by forming vias in the circuit board **110** and conductive traces (not shown) on the back side of the circuit board **110** to connect the electronics module (not shown) to the vias. The exemplary separate electronics and display sections shown in **FIG. 1** may be joined by bump-bonding the row and column vias along their edges or by inserting conductive elements, for example wires, into the row and column vias on one of the sections such that the conductive elements protrude from the vias. The conductive elements would then mate with the corresponding vias on the other section when the sections are joined. As described below, contrast of a display device such as that shown in **FIG. 1** may be enhanced by forming the circuit board **110** from a dark material, painting the front (top) surface of the circuit board **110** a dark color or by using a dark-colored adhesive to join the electronics section to the display section, if the display device is formed in two sections. Except for the row electrodes **116** and the OLED materials, all of the layers above the circuit board layer are transparent. The dark-colored backing thus forms a black matrix into which the pixel materials are placed. To achieve a more effective black-matrix effect, the row electrodes may be formed from a transparent conductor such as ITO or from a metal such as calcium, magnesium or aluminum, in which the areas of the metal electrodes that would be visible to a viewer are coated with a dark colored (e.g. black) material when the display section is made. In this alternative structure, the only non-transparent material is the emissive OLED material.

[0046] **FIG. 2** is an exploded perspective diagram which shows an alternative exemplary display structure. The display structure shown in **FIG. 2** is formed in two parts: a display section **102** and an electronics section **104**.

[0047] The display section **102** includes a transparent front plate **120** which may be made, for example, from float glass. Transparent column electrodes **122** are formed on the front plate **120** from transparent conductor, such as ITO. These bands may be formed by depositing and then etching an ITO layer or by selectively depositing individual bands of ITO. The red, green and blue OLED materials or other display materials **124** and **126** are deposited on top of the column electrodes to define the active area of the pixels. The OLED materials typically include a hole transport polymer layer (not shown), which is deposited on top of the column electrodes **122** and a light emitting polymer layer (not shown) which is deposited on top of the hole transport polymer layer (not shown). As described below with reference to **FIGS. 5 and 6**, it is desirable for the display materials **124** and **126** to occupy only a portion (e.g. less than 50 percent and desirably about 25 percent) of the pixel area. An electron emitting layer (not separately shown) which may be formed, for example, from calcium, is deposited on top of the OLED materials **124** and **126**. The row electrodes **128** are formed on top of the display materials **124** and **126**. An optional insulating layer **130** is formed on top of the row electrodes. The exemplary insulating layer **130** may be formed from any of a number of insulating materials. To protect the display materials, the insulating layer **130** is desirably formed using low-temperature processes. Exemplary materials include Polyimide or other low-temperature inorganic materials. As set forth below, it may be advantageous for the insulating material **130** to be transparent or at least translucent. The insulating layer **130** may be applied using thick film or thin film deposition techniques. The insulating layer **130** includes a plurality of openings **131** aligned with the row electrodes **128** and column electrodes **122**.

[0048] On top of the insulating layer are deposited a plurality of optional connecting plates **132**. The plates **132** may be formed using, for example, vapor deposited aluminum or a metallic ink or paste, such as silver combined with a solvent, which is deposited using thick film processes. As described below with reference to **FIGS. 9 through 11**, the connecting plates **132** are coupled to the column electrodes **122** and row electrodes **128** by vias which extend through the openings in the insulating materials. Each of the exemplary connecting plates makes electrical contact with only one row electrode or one column electrode. To ensure that a good connection is made, however, each connecting plate **132** may connect to its corresponding row or column electrode at several locations.

[0049] The insulating layer **130** and connecting plates **132** are optional. If these layers are not used, conductive bumps (not shown) may be formed which connect directly to the row electrodes **128** and the column electrodes **122**. As described below, these conductive bumps may be positioned to mate with corresponding conductive bumps on the display section or with the row and column electrodes directly. To ensure that a good electrical contact is made, several conductive bumps may be formed to make electrical contact with each row electrode **128** and each column electrode **122**.

[0050] The electronics section **104** includes image processing and display driving circuitry (not shown in **FIG. 2**) a circuit board **110**, which may be, for example, a thin sheet of alumina (Al_2O_3), deposited electrical conductors **140**, optional connecting pads **142** and vias **144** which electrically connect the conductors **140** to the connecting pads **142** through the circuit board **110**. The conductors **142**, vias **144** and connecting pads **142** may all be formed using thick film deposition processes to apply a metallic ink or paste. The connecting pads **142** may also be formed from vapor-deposited aluminum. There is a one-to-one relationship between the connecting pads **142** of the electronics section and the connecting plates **132** of the display section. In the exemplary embodiment of the invention, the connecting pads **142** and the connecting plates **132** are electrically connected by applying an anisotropically conductive adhesive between the display section and the electronics section.

[0051] It is contemplated, however, that other methods may be used to electrically connect the connecting pads to their respective connecting plates. For example, the connecting plates **132** and connecting pads **142** may be made from a deformable material and patterned to include a