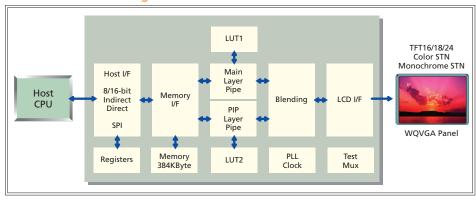
## **■ LCD Controller with Built-in VRAM**

A single-chip LCD controller with built-in display memory allowing for low power consumption, low noise, and space-saving ability. This product is most suitable for the display control of mobile terminals and operation panels.

| Product                      | CPU Interface Support  | LCD Interface Support |                              |                                  |                       | Calan Daniela  | Internal           | Supply Voltage |                | Additional                                  |                            |
|------------------------------|--|-----------------------|------------------------------|----------------------------------|-----------------------|--|--------------------|----------------|----------------|---|----------------------------|
|                              |  | Monochrome<br>STN     | Color<br>STN                 | TFT                              | Typical<br>Resolution | Color Depth<br>(Max.)                                  | Memory<br>Capacity | Core           | 10             | Features                                    | Package                    |
| S1D13700F02A                 | 8-bit I/F,<br>Direct addressing<br>Indirect addressing               | 4-bit                 | n/a                          | n/a                              | QVGA                  | 16 grayscale   | 32KB,<br>SRAM      | 3.0V to 3.6V   | 3.0V to 5.5V   | 3 overlay screens                           | TQFP13-64                  |
| S1D13705F00A                 | 8-bit I/F (with external logic)<br>16-bit I/F,<br>Direct addressing  | 4-bit / 8-bit         | 4-bit /<br>8-bit             | 9-bit /<br>12-bit                | QVGA                  | MSTN:16 grayscale<br>CSTN:256 colors<br>TFT:256 colors | 80KB,<br>SRAM      | 2.7V to 3.6V   | 2.7V to 5.5V   | SwivelView                                  | QFP14-80                   |
| S1D13706F00A                 | 8-bit I/F(with external logic),<br>16-bit I/F,<br>Direct addressing  | 4-bit / 8-bit         |                              | 9-bit /<br>12-bit /<br>18-bit    | QVGA                  | MSTN:64 grayscale<br>CSTN:64K colors<br>TFT:64K colors | 80KB,<br>SRAM      | 1.8V to 3.6V   | 1.8V to 3.6V   | SwivelView,<br>PinP                         | TQFP15-100                 |
| S1D13709F00A                 | 8-bit I/F,<br>Direct addressing<br>Indirect addressing               | 4-bit                 | n/a                          | 4-bit<br>mono/<br>6-bit<br>color | QVGA                  | MSTN:16 grayscale<br>TFT:64 colors                     | 32KB,<br>SRAM      | 3.0V to 5.5V   | 3.0V to 5.5V   | 3 overlay screens                           | TQFP14-80                  |
| S1D13742F01A                 | 8-bit / 16-bit I/F<br>Indirect addressing                            | n/a                   | n/a                          | 18-bit                           | VGA                   | 256K colors  | 768KB,<br>SRAM     | 1.4V to 1.6V   | 1.65V to 3.60V | SwivelView                                  | QFP20-144                  |
| S1D13743F00A                 | 8-bit / 16-bit I/F<br>Indirect addressing                            | n/a                   | n/a                          | 18-bit /<br>24-bit               | WQVGA                 | 16M colors   | 464KB,<br>SRAM     | 1.4V to 1.6V   | 1.65V to 3.60V | SwivelView                                  | QFP20-144                  |
| S1D13748F00A<br>S1D13748B00B | 16-bit I/F,<br>Indirect addressing                                   | n/a                   | n/a                          | 18-bit /<br>24-bit               | WVGA                  | 64K colors   | 1024KB,<br>SRAM    | 1.35V to 1.65V | 1.62V to 3.60V | PinP  | QFP20-144<br>PFBGA10U-121  |
| S1D13781F00A                 | 8-bit / 16-bit I/F,<br>Direct addressing<br>Indirect addressing, SPI | 4-bit / 8-bit         | 8-bit /<br>16-bit            | 16-bit /<br>18-bit /<br>24-bit   | WQVGA                 | MSTN:64 grayscale<br>CSTN:64K colors<br>TFT:16M colors | 384KB,<br>SRAM     | 1.35V to 1.65V | 1.62V to 3.60V | PinP,<br>a-Blend,<br>2D BitBLT              | QFP15-100                  |
| S1D13A04F00A<br>B00B         | 8-bit I/F (with external logic)<br>16-bit I/F,<br>Direct addressing  | 4-bit / 8-bit         | 4-bit /<br>8-bit /<br>16-bit |                                  | QVGA                  | MSTN:64 grayscale<br>CSTN:64K colors<br>TFT:64K colors | 160KB,<br>SRAM     | 1.8V to 2.75V  | 3.0V to 3.6V   | 2D BitBLT,<br>SwivelView,<br>USB client 1.1 | TQFP15-128<br>PFBGA10U-121 |
| \$1D13A05B00B                | 8-bit I/F (with external logic)<br>16-bit I/F,<br>Direct addressing  | 4-bit / 8-bit         |                              | 9-bit /<br>12-bit /<br>18-bit    | QVGA                  | MSTN:64 grayscale<br>CSTN:64K colors<br>TFT:64K colors | 256KB,<br>SRAM     | 1.8V to 2.75V  | 3.0V to 3.6V   | 2D BitBLT,<br>SwivelView,<br>USB client 1.1 | PFBGA10U-121               |

## ■ S1D13781 Block Diagram



## ■ S1D13781 Evaluation Board (S5U13781P00C100)

