



# SM768

## High Performance 4K Graphics Processor

SM768 is high performance graphics processor which provides dual display channels and supports multiple output interfaces, including HDMI, DisplayPort, DVI, VGA, LVDS and digital interfaces. SM768 has 128-bit graphics engine to accelerate graphics displays and provides color space conversion and scaling features. Display resolution supports up to 4K UHD (3840x2160@30p) or 2K/Full HD@60p. SM768 supports H.264/MJPEG hardware video decoding. There's also an option to embed 256MB DDR3 memory into a single 19x19mm package.

SM768 connects to host via USB 3.0 device interface or PCIe 2.0 interface and can support various applications, ex: USB display, Thin/Zero client, Signage and Embedded displays. SMI's Content Adaptive Technology(CAT) use adaptive algorithms to compress content and can send through USB or network for displays. SM768 also has an internal four ports USB 2.0 Host/Hub for connecting peripherals such as keyboard and mouse.

### APPLICATIONS

- USB Display Adapter/Monitor
- Universal Docking Station
- Thin/Zero Client
- Digital Signage/Video Wall
- Factory Automation/IPC
- Gaming Machine
- POS (Point-of-Sale) Terminal
- Small Form Factor, Low Power Embedded Graphics



## FEATURES

### System Interfaces

- USB 3.0 Device Interface - Connect to USB Host
- PCI-Express Gen2 x1/x2 lane device slave Interface
- USB 2.0 Hub with Four (4) Port for peripherals
- One ZV port to capture incoming video from cameras or other devices

### Memory Support

- Supports 256MB internal DDR3 memory or up to 1GB external DDR 2/3 memory
- Use embedded memory for power efficient and small form factor applications

### Display Features

- HW Video decoder supports: H.264 MVC/AVS+, H.263, MPEG-4, MPEG2, M-JPEG, RealVideo, VC-1, & Theora
- Support Dual independent channels up to 4K UHD - 3840x2160 @ 30p or 2K/Full HD@60p
- 128-bit high performance graphics engine. Hardware acceleration of Bitblt, Stretch Blt, Line Draw, Polygon Fill, full ROP3
- Four display layers supported per channel: Graphics, Hardware cursor, Video overlay and Alpha layers.
- Content Adaptive Technology (CAT) to accelerate USB/ Network display by display content compression.
- Embedded 1x HDMI v1.4 transmitter, output supports up to 4K UHD resolution.
- Dual 24-bit LVDS channels for direct LCD panel connections – Two separate, or single high-res panel
- Dual 24-bit digital video interface to connect with transmitters with various display output
- Dual 8-bit DACs with pixel rate up to 350 MHz
- Resolution support: VGA (640x480), SVGA, SXGA, WXGA, WXGA+, WSXGA+, Full HD (1920x1080), QWXGA, WQXGA (2560x1600) and 4k UHD (3840x2160)
- Modes: Extended Desktop Single & Dual View, Clone, Portrait/Landscape modes

### Software Support

- Windows operating systems: Windows 7, 8, 10 and Windows Server 32-bit or 64-bit, Windows Multipoint Server (WMS)
- Linux OS (Ubuntu, Red Hat, SUSE, etc)
- macOS X
- Android / ChromeOS
- Linux Useful Multi-Seat Server support including virtualization

## SPECIFICATION

<b>Graphics Engine</b>	128-bit 2D Engine w/ Video Decoder
<b>Host Interface</b>	USB 3.0 PCIe 2.0 x1 or x2
<b>Int. Memory</b>	256MB DDR3 (option)
<b>Ext. Memory</b>	Up to 1GB DDR2/3 (max)
<b>Resolution</b>	Up to 4K UHD (3840x2160)
<b>Operation</b>	Commercial (0°C to +70°C)
<b>Temperature</b>	Industrial (-40°C to +85°C)
<b>Package</b>	425-pin BGA MCM (19mm x 19mm)