

OKI Semiconductor Companion Chip for Intel® Atom™ processor E6xx series ML7213/7223(V)

■ Product Overview

The ML7213 and ML7223(V) are Input/Output Hub LSIs (IOH) to be connected to Intel® Atom™ processor E6xx series via PCI Express of F6xx series

The IOHs not only integrate various IOs such as for USB, SATA, SD Card, Video Input, UART, I2S but also support high-speed bus to be connect to an external FPGA to complement missing features with a

The ML7213 has a built-in SDVO converter so that you could connect to a digital RGB panel directly and economically. Furthermore, high number of I2S and TDM helps your audio-rich designs.

The ML7223(V) supports Giga-bit Ether MAC and IPsec hardware accelerator, and the ML7223V is additionally equipped with echo and noise cancellers which are essential to communication terminals with hands-free operations.



Features

ML7213

- Connected to E6xx via a lane of PCI Express x1.
- Converts E6xx's SDVO signals to digital RGB
- Rich Audio Interfaces: 6 x I2S & 2 x TDM
- Supports video input for a camera connection

ML7223(V)

- Connected to E6xx via 2 lanes of PCI Express x1 with population of real-time network related functions on a lane to secure QoS.
- Supports Giga-bit Ether MAC and IPsec hardware accelerator.
- Converts E6xx's SDVO signals to digital RGB
- Supports video input for a camera connection
- V-version (ML7223V) offers echo and noise cancellers for handsfree talk.

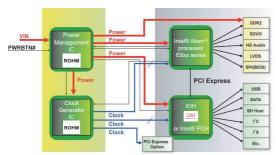
■ Functions

- Operating voltages: 3.3V, 2.5V, 1.2V
- Operating Temperature : -40 to +85°C
- Package: PBGA404
- Functions
 - PCI Express® 1.1 x1
 - USB 2.0 host
 - USB 2.0 host/device switchable (Only with ML7213)
 - SD host (SDIO)
 - Serial ATA II
 - · Gigabit Ethernet (MAC) (Only with ML7223[V])
 - Media LB® (Only with ML7213)
 - Security (3DES,AES,SHA1/265/MD5) (Only with ML7223[V])
 - Acoustic / Line Echo, Noise Canceller (Only with ML7223V)
- BT656/RAW input
- · SDVO input with digital RGB output (Only with ML7213)
- · UART, SPI, I2C, I2S, TDM (support McASP)
- · GPIO, DMA

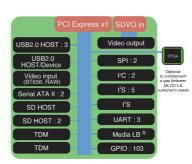
■ Application Examples

■ Block Diagrams

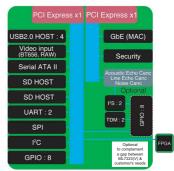
- In-Vehicle Infotainment Systems
- Car Navigations
- IP Mediaphones
- Digital Signage
- Factory Automation Equipments
- Industrial PCs
- Etc.



System Block Diagram



ML7213



ML7223(V)