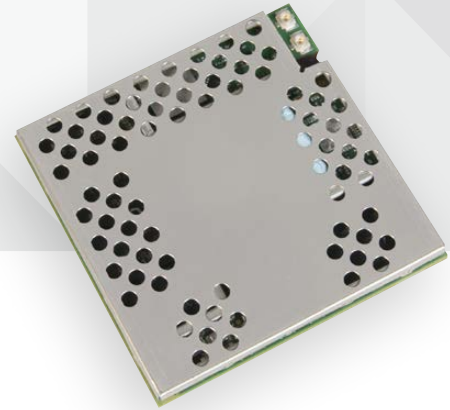




SCALABLE HIGH-  
PERFORMANCE  
SYSTEM-ON-MODULE



# CONNECTCORE® 6

NXP i.MX6 based surface-mount module solution with scalable, single-/multi-core performance and integrated wireless

The ConnectCore 6 is an ultra-compact and highly integrated system-on-module solution based on the NXP i.MX6 Cortex-A9 processor family.

With processor speeds up to 1.2 GHz and fully pin-compatible single-/dual-/quad-core variants, the ConnectCore 6 offers a truly future-proof platform solution with scalable performance and pre-certified wireless 802.11a/b/g/n and Bluetooth 4.0, including Bluetooth Low Energy, connectivity.

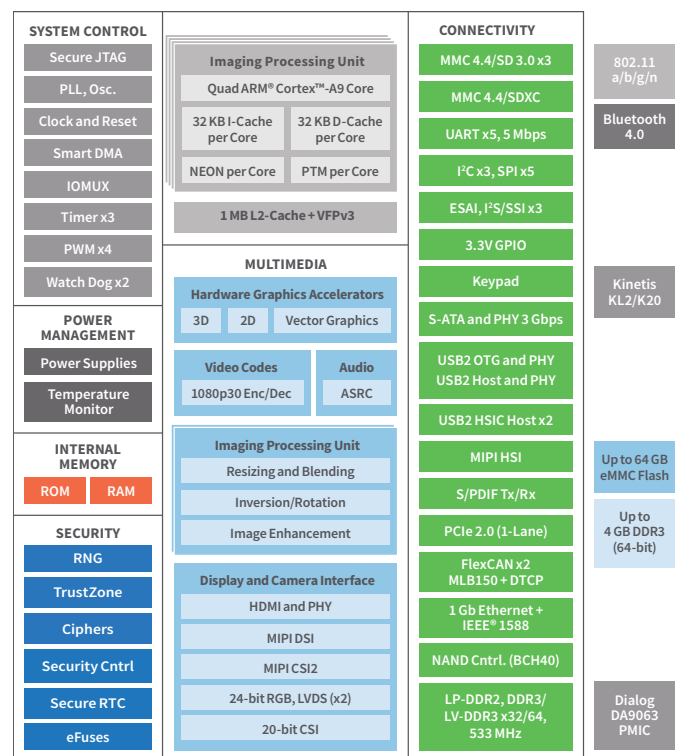
Its low-profile, surface-mount design maximizes integration flexibility and significantly reduces design risk in a highly cost-effective, reliable form factor with optimized heat dissipation capabilities even in the most demanding quad-core system configurations.

The ConnectCore 6 comes with a complete Board Support Package (BSP) for both Linux and Android platforms supporting secure remote management and web services through Digi Remote Manager®.

## BENEFITS

- Scalable Cortex-A9 multi-core performance
- Independent Cortex-M0+/Cortex-M4 Microcontroller Assist™ subsystem
- Cost-effective, reliable, low-profile surface-mount module form factor
- Pre-certified 802.11a/b/g/n and Bluetooth 4.0
- Smart Power Management Architecture with PMIC
- Android, Yocto Project Linux and Windows Embedded Compact software platform support
- Reliable design with IEC 60068 and HALT verification
- Designed for long-term availability

## BLOCK DIAGRAM



## KEY APPLICATIONS



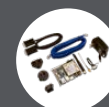
ConnectCore® 6 SBC



ConnectCore® i.MX53/  
Wi-i.MX53



ConnectCard® for i.MX28



ConnectCore® 6 LCD Kit



Digi XBee® ZigBee

## SPECIFICATIONS

## ConnectCore® 6

### FEATURES

#### APPLICATION PROCESSOR

NXP i.MX6Solo/DualLite/Dual/Quad with up to four Cortex-A9 cores; Industrial (800/850 MHz), Commercial (1/1.2 GHz) i.MX6 variants; 32 KB I-Cache/32 KB D-Cache, up to 1 MB L2-Cache

#### MEMORY

Up to 64 GB eMMC flash, up to 2 GB DDR3 (64-bit)

#### PMIC

Dialog DA9063

#### GRAPHICS

Multi-stream-capable HD video engine with 1080p60 decode, 1080p30 encode and 3D video playback in HD in high-performance families; Superior 3D graphics performance with up to 4 shaders at 200 Mt/s w/OpenCL support; Separate 2D and/or Vertex acceleration engines for UI support; Stereoscopic image sensor support for 3D imaging

#### SECURITY

RNG, TrustZone, Ciphers, Security Cntrl, Secure RTC, Secure JTAG, eFuses (OTP)

#### PERIPHERALS/INTERFACES

MMC 4.4/SD 3.0 x3MMC 4.4/SDXC,  
UART x5 (5 Mbps), MIPI HSI, S/PDIF Tx/Rx, I2C x3, SPI x5,  
ESAI, I2S/SSI x3, FlexCAN x2, MLB150 + DTC, S-ATA and PHY (3 Gbps),  
USB2 OTG and PHY, USB 2.0 Host and PHY, USB 2.0 HSIC Host x2,  
PWM, 3.3V GPIO, Keypad, PCIe 2.0 (x1 lane),  
HDMI and PHY, MIPI DSI, MIPI CSI2, 20-bit CSI, 24-bit RGB, LVDS (x2),  
RTC, External address/data bus, Watchdog, Timers, JTAG

#### EXTERNAL BUS

26-bit address / up to 32-bit data (multiplexed and non-multiplexed modes)

#### ETHERNET

1 Gbit Ethernet + IEEE 1588 (MII10, MII100, RMII, RGMII)

#### WI-FI

802.11a/b/g/n: 2.412 - 2.484 GHz, 4.900 - 5.850 GHz  
802.11b: 1, 2, 5.5, 11 Mbps (17 dBm typical  $\pm 2$  dBm)  
802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps (15 dBm typical  $\pm 2$  dBm)  
802.11n: 15, 30, 45, 60, 90, 120, 135, 150 Mbps (12 dBm typical  $\pm 2$  dBm)  
HT40, MCS 0-7  
Security: WEP, WPA-PSK/WPA2-Personal, WPA/WPA2 Enterprise, 802.11i, Access Point Mode (up to 10 clients), Wi-Fi Direct  
Industry certifications: Wi-Fi Alliance Logo Certification Ready, CCXv4 ASD Ready"

#### BLUETOOTH

Profiles: GAP, SPP, FTP, PAN, OPP, HID, A2DP, AVRCP, HDP

#### ON-MODULE MICROCONTROLLER ASSIST

Kinetis L: MKL14Z32VFT4, MKL14Z64VFT4, MKL15Z128VFT4, MKL15Z32VFT4, MKL15Z64VFT4, MKL24Z32VFT4, MKL24Z64VFT4, MKL25Z128VFT4, MKL25Z32VFT4, MKL25Z64VFT4, MKL26Z128VFT4, MKL26Z64VFT4, MKL26Z32VFT4  
Kinetis K: K10P48M50SF0, K20P48M50SF0  
Internal interconnect to i.MX6 via SPI, Kinetis interfaces available on module pads

#### OPERATING TEMPERATURE

Industrial: -40° C to +85° C / Commercial: 0° C to +70° C (depending on use-case and enclosure/system design)

#### STORAGE TEMPERATURE

-50° C to +125° C (-58° F to +257° F)

#### RELATIVE HUMIDITY

Relative Humidity 5% to 90% (non-condensing)

#### ALTITUDE

Altitude 12,000 feet (3,658 meters)

#### RADIO APPROVALS

US, Canada, EU, Japan, Australia/New Zealand

#### EMISSIONS / IMMUNITY / SAFETY

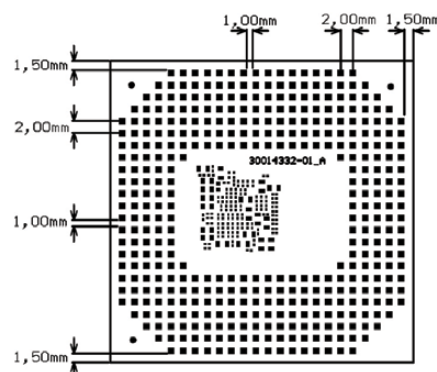
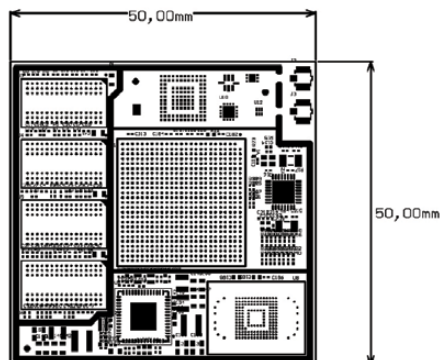
FCC Part 15 Class B, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, ICES-003 Class B, VCCI Class II, AS 3548, FCC Part 15 Subpart C Section 15.247, IC (Industry Canada), RSS-210 Issue 5 Section 6.2.2(o), EN 300 328, EN 301 489-17, EN 55024, EN 301 489-3, Safety UL/UR (or equivalent)

#### DESIGN VERIFICATION

Temperature: IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-78  
Vibration/Shock: IEC 60068-2-6, IEC 60068-2-64, IEC 60068-2-27, HALT

#### MECHANICAL DIMENSIONS

LGA-400, 2 mm pitch, fully shielded (heat-spreading)



| PART NUMBERS                          | DESCRIPTION                                                                                                                                                                 |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KITS                                  |                                                                                                                                                                             |
| CC-WMX6-KIT                           | ConnectCore 6 SBC Development Kit: ConnectCore 6 Development Kit with SBC baseboard, UART console cable, power supply and accessories (Linux, Android)                      |
| CC-ACC-LCDW-10                        | LCD Application Kit, including 10" WXGA (1280x800) LCD panel with PCAP touch                                                                                                |
| CONNECTCORE 6 - ETHERNET ONLY MODULES |                                                                                                                                                                             |
| CC-MX-L76C-Z1                         | ConnectCore 6 module, i.MX6DualLite, Industrial, 800 MHz, -40 to 85°C, 4 GB flash, 512 MB DDR3, Ethernet                                                                    |
| CC-MX-L86C-Z1                         | ConnectCore 6 module, i.MX6Dual, Industrial, 800 MHz, -40 to 85°C, 4 GB flash, 512 MB DDR3, Ethernet                                                                        |
| CC-MX-L96C-Z1                         | ConnectCore 6 module, i.MX6Quad, Industrial, 800 MHz, -40 to 85°C, 4 GB flash, 512 MB DDR3, Ethernet                                                                        |
| CONNECTCORE 6 - WIRELESS MODULES      |                                                                                                                                                                             |
| CC-WMX-L87C-TE                        | ConnectCore 6 module, i.MX6Dual, Industrial, 800 MHz, -40 to 85°C, 4 GB flash, 1 GB DDR3, 802.11a/b/g/n, Bluetooth 4.0, Ethernet                                            |
| CC-WMX-L96C-TE                        | ConnectCore 6 module, i.MX6Quad, Industrial, 800 MHz, -40 to 85°C, 4 GB flash, 512 MB DDR3, 802.11a/b/g/n, Bluetooth 4.0, Ethernet                                          |
| CC-WMX-J97C-TN                        | ConnectCore 6 module, i.MX6Quad, Ext Commercial, 1.2 GHz, -20 to 70°C, 4 GB flash, 1 GB DDR3, Microcontroller Assist (MKL14Z32VFT4), 802.11a/b/g/n, Bluetooth 4.0, Ethernet |

FOR MORE INFORMATION  
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