Manage this device with
Digi Remote Manager

DIGI CONNECTCORE 6N

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

Digi ConnectCore® 6N is an ultra-compact and highly integrated System-On-Module (SOM) 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 6N offers a truly future-proof platform solution with scalable performance and pre-certified wireless 802.11a/b/g/n/ac and Bluetooth® 5.0, including Bluetooth Low Energy, connectivity.
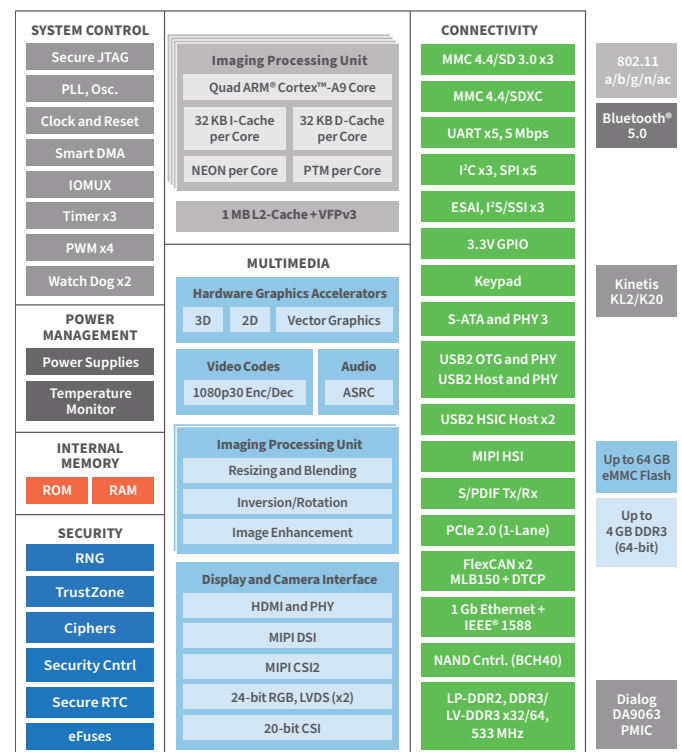
Its low-profile, surface-mount design maximizes integration flexibility and significantly reduces design risk in a highly cost-effective, reliable form factor with optimized heat dissipation capabilities even in the most demanding quad-core system configurations.

Digi ConnectCore 6N 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**®.

BLOCK DIAGRAM

SYSTEM CONTROL			CONNECTIVITY	
Secure JTAG	Imaging Processing Unit		MMC 4.4/SD 3.0 x3	802.11 a/b/g/n/ac
PLL, Osc.	Quad ARM® Cortex™-A9 Core		MMC 4.4/SDXC	
Clock and Reset	32 KB I-Cache per Core	32 KB D-Cache per Core	UART x5, 5 Mbps	Bluetooth® 5.0
Smart DMA	NEON per Core	PTM per Core	I²C x3, SPI x5	
IOMUX	1 MB L2-Cache + VFPv3		ESAI, I²S/SSI x3	
Timer x3			3.3V GPIO	
PWM x4	MULTIMEDIA		Keypad	Kinetis KL2/K20
Watch Dog x2	Hardware Graphics Accelerators		S-ATA and PHY 3	
POWER MANAGEMENT	3D	2D	Vector Graphics	USB2 OTG and PHY USB2 Host and PHY
Power Supplies	Video Codes	Audio	USB2 HSIC Host x2	
Temperature Monitor	1080p30 Enc/Dec	ASRC	MIPI HSI	Up to 64 GB eMMC Flash
INTERNAL MEMORY	Imaging Processing Unit		S/PDIF Tx/Rx	
ROM	RAM	Resizing and Blending	PCIe 2.0 (1-Lane)	Up to 4 GB DDR3 (64-bit)
SECURITY	Inversion/Rotation		FlexCAN x2 MLB150 + DTCP	
RNG	Image Enhancement		1 Gb Ethernet + IEEE® 1588	
TrustZone	Display and Camera Interface		NAND Cntrl. (BCH40)	
Ciphers	HDMI and PHY		LP-DDR2, DDR3/ LV-DDR3 x32/64, 533 MHz	Dialog DA9063 PMIC
Security Cntrl	MIPI DSI			
Secure RTC	MIPI CSI2			
eFuses	24-bit RGB, LVDS (x2)			
	20-bit CSI			

BENEFITS

– Scalable Cortex-A9 multi-core performance

– Cost-effective, reliable, low-profile surface-mount module form factor

– Pre-certified 802.11a/b/g/n/ac and Bluetooth 5.0

– 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

RELATED PRODUCTS

ConnectCore®
6 SBC

ConnectCore®
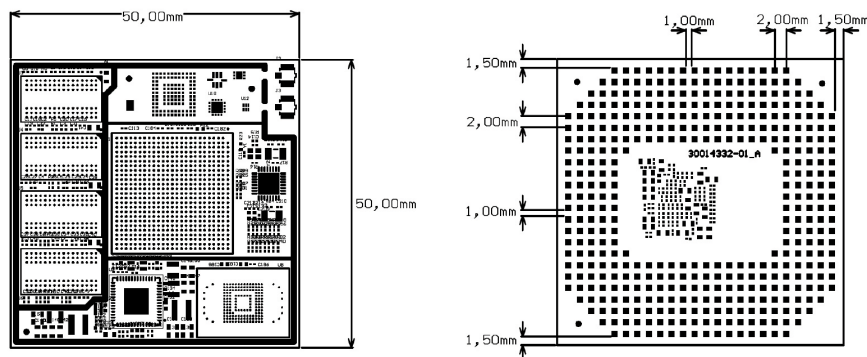8M Nano/Mini

ConnectCard®
for i.MX28

ConnectCore® 6
LCD Kit

Digi XBee®
ZigBee

FEATURES	
APPLICATION PROCESSOR	NXP® i.MX6 Solo/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 with 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 + DTCP, S-ATA and PHY (3 Gbps), USB2 OTG and PHY, USB 2.0 Host and PHY, USB 2.0 HSIC Host x2, PWM, 3.3 V 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/ac
BLUETOOTH	Bluetooth 5.0
OPERATING TEMPERATURE	Industrial: -40 °C to 85 °C (-40 °F to 185 °F) / Ext. Commercial: -20 °C to 70 °C (-4 °F to 158 °F); depending on use case and enclosure/system design
STORAGE TEMPERATURE	-50 °C to 125 °C (-58 °F to 257 °F)
RELATIVE HUMIDITY	5% to 90% (non-condensing)
RADIO APPROVALS	US, Canada, EU, Japan, Australia/New Zealand, Brazil
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 (IEC 62368-1)
DESIGN VERIFICATION	Temperature: IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-78; Vibration/shock: IEC 60068-2-6, IEC 60068-2-27, HALT
MECHANICAL DIMENSIONS	LGA-400, 2 mm pitch, fully shielded (heat-spreading)
PRODUCT WARRANTY	3-year

PART NUMBERS	DESCRIPTION
KITS	
CC-WMX6N-KIT	ConnectCore 6N SBC Development Kit: ConnectCore 6N Development Kit with SBC baseboard, UART console cable, power supply and accessories (Linux, Android)
CONNECTCORE 6N - ETHERNET ONLY MODULES	
CC-MX-L76C-Z1	ConnectCore 6N SOM, i.MX6DualLite, Industrial, 800 MHz, -40 to 85 °C, 4 GB eMMC flash, 512 MB DDR3, Ethernet
CC-MX-L77C-Z1	ConnectCore 6N SOM, i.MX6DualLite, Industrial, 800 MHz, -40 to 85 °C, 4 GB eMMC flash, 1 GB DDR3, Ethernet
CONNECTCORE 6N - WIRELESS MODULES	
CC-WMX-L76C-N	ConnectCore 6N SOM, i.MX6DualLite, Industrial, 800 MHz, -40 to 85 °C, 4 GB eMMC flash, 512 MB DDR3, 802.11a/b/g/n/ac, Bluetooth 5.0, Ethernet
CC-WMX-L87C-N	ConnectCore 6N SOM, i.MX6Dual, Industrial, 800 MHz, -40 to 85 °C, 4 GB eMMC flash, 1 GB DDR3, 802.11a/b/g/n/ac, Bluetooth 5.0, Ethernet
CC-WMX-L97D-N	ConnectCore 6N SOM, i.MX6Quad, Industrial, 800 MHz, -40 to 85 °C, 8 GB eMMC flash, 1 GB DDR3, 802.11a/b/g/n/ac, Bluetooth 5.0, Ethernet
CC-WMX-J97C-N	ConnectCore 6N SOM, i.MX6Quad, Ext. Commercial, 1.2 GHz, -20 to 70 °C, 4 GB eMMC flash, 1 GB DDR3, 802.11a/b/g/n/ac, Bluetooth 5.0, Ethernet
CC-WMX-J98C-N	ConnectCore 6N SOM, i.MX6Quad, Ext. Commercial, 1.2 GHz, -20 to 70 °C, 4 GB eMMC flash, 2 GB DDR3, 802.11a/b/g/n/ac, Bluetooth 5.0, Ethernet
CONNECTCORE 6N - SBC	
CC-SB-WMX-J97C-N	ConnectCore 6N SBC, i.MX6Quad, Ext. Commercial, 1.2 GHz, -20 to 70 °C, 4 GB eMMC flash, 1 GB DDR3, 802.11a/b/g/n/ac, Bluetooth 5.0, Ethernet
CC-SB-WMX-L87C-N	ConnectCore 6N SBC, i.MX6Dual, Industrial, 800 MHz, -40 to 85 °C, 4 GB eMMC flash, 1 GB DDR3, 802.11a/b/g/n/ac, Bluetooth 5.0, Ethernet

FOR MORE INFORMATION
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