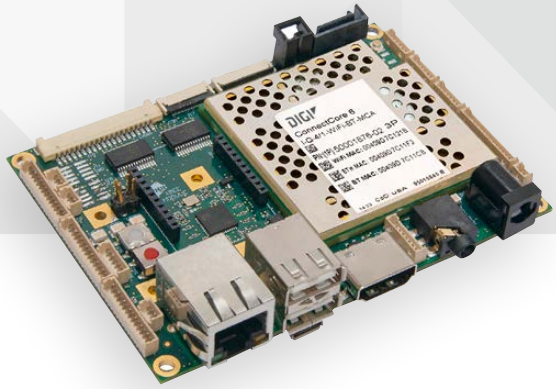
CONNECTED SINGLE BOARD COMPUTER FAMILY



CONNECTCORE® 6 SBC

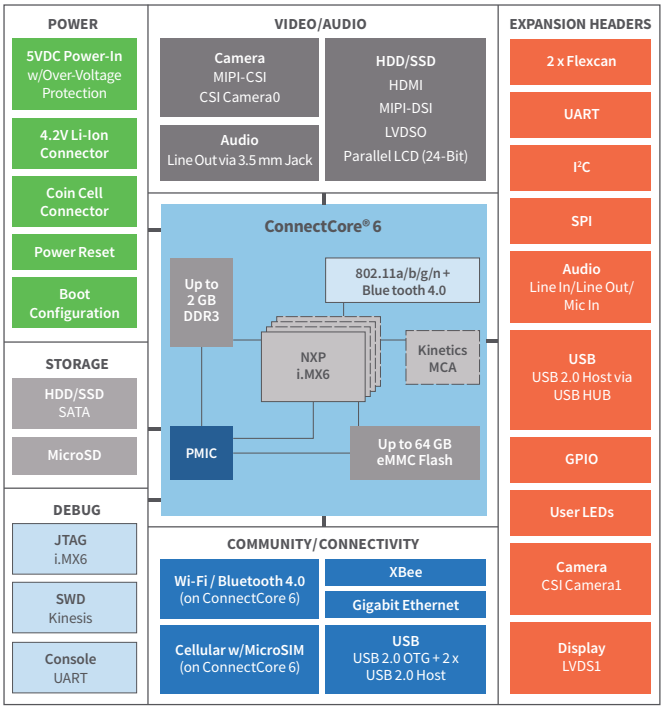
Reliable and compact NXP i.MX6 SBC family with integrated Ethernet, Wi-Fi, Bluetooth 4.0, XBee® and cellular connectivity options

The ConnectCore 6 SBC is an ultra-compact and versatile off-the-shelf single board computer (SBC) family. It offers significantly reduced time to market by virtually eliminating the traditional risk, effort and complexity of custom board designs without sacrificing flexibility or capabilities.

Built on the ConnectCore 6 module, it provides a common platform with scalable NXP i.MX6 performance, precertified Bluetooth 4.0 and Wi-Fi integration, XBee RF module and cellular connectivity options, Gigabit Ethernet support, multi display/camera and audio support, external storage, expansion connectors, and reliability in harsh environments.

Leading and innovative features such as the Kinetis Micro Controller Assist™ (MCA) enable the development of connected products with highly optimized power footprints. Optional Digi Device Cloud℠ integration provides secure remote management and device health capabilities for the Internet of Things.

BLOCK DIAGRAM



BENEFITS

- Compact off-the-shelf SBC family
- Scalable capabilities and i.MX6Quad/Dual/DualLite performance
- Gigabit Ethernet and pre-certified dual-band Wi-Fi + Bluetooth 4.0
- Ready for cellular connectivity and XBee RF
- Complete set of available peripherals and interfaces with customization options
- Designed for flexibility and reliability
- Windows Embedded Compact, Linux and Android software platform support
- Industrial operating temperature available

RELATED PRODUCTS


ConnectCore® 6


Development Kits


XBee® Modules


Wireless Design Services


Digi Device Cloud℠

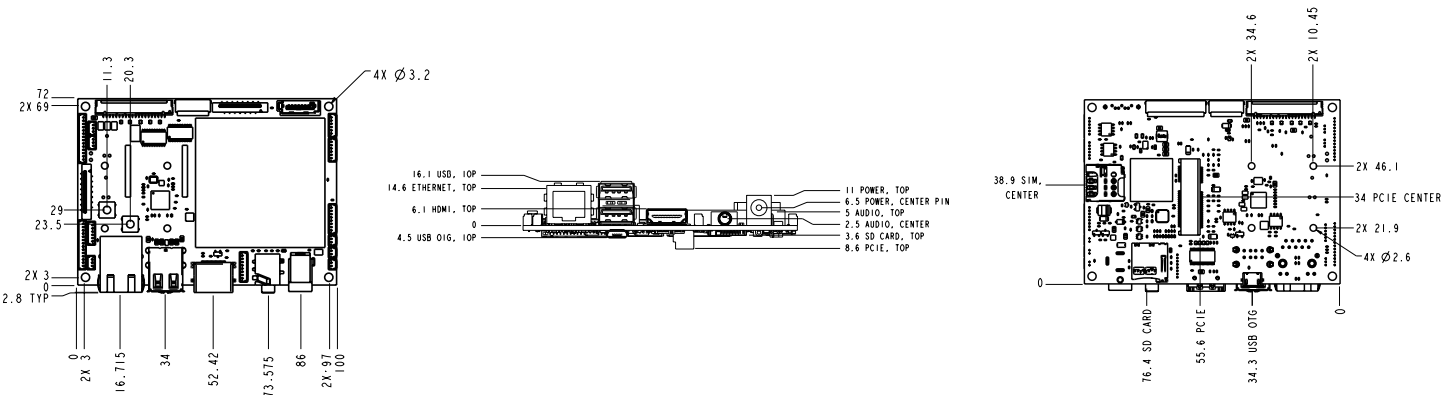
SPECIFICATIONS	ConnectCore® 6 SBC
APPLICATION PROCESSOR	On-board ConnectCore 6 multi-chip module with NXP i.MX6Quad/i.MX6Dual/i.MX6DualLite, Industrial (800 MHz) and extended commercial (1.2 GHz) options
MEMORY	4 GB eMMC, 512 MB/1GB DDR (64-bit)
GRAPHICS	Multi-stream-capable HD video engine with 1080p60 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)
DISPLAYS	1 x HDMI (Type A) 2 x LVDS with backlight control and I2C touch interface (HIROSE DF14A-20P-1.25H) 1 x Parallel LCD (24-bit) with backlight control and I2C touch interface (Omron XF2M-4015-1A) 1 x MIPI-DSI with backlight control and I2C touch interface (FCI SFW15S-2STE1LF, compatible with Raspberry Pi DSI)
CAMERA	1 x 8-Bit Parallel Camera Interface 1 (Omron XF2M-2015-1A) 1 x 8-Bit Parallel Camera Interface 0 (Molex 53047-1410) 1 x MIPI CSI-2 (FCI SFW15S-2STE1LF, compatible with Raspberry Pi CSI)
USB 2.0	2 x USB Host (Dual Type A) 1 x USB OTG (Micro AB); 1 x USB Host (Molex 53047-0610)
AUDIO	1 x Line-In (3.5 mm stereo jack, CUI SJ1-3515-SMT) 1 x Line-In, 1 x Line-Out, 1 x Mic-In (Molex 53047-0810) On-board NXP SGTL5000 audio codec
CONSOLE (RS232)	Molex 53047-0310
SATA 3.0	3M 5607-5102-SH
MICRO-SIM	Yes
PCI EXPRESS MINI CARD	Foxconn AS0B226-S68Q-7H Provides PCI Express x1, USB 2.0 Host, I2C, SIM, Reset, Wake-Up signals Supports mounting of half-size and full-size PCI Express Mini Cards
BOOT CONFIGURATION	eMMC / SD / SATA
XBEE SOCKET	Samtec MMS-110-01-L-SV
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 ±2 dBm) 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps (15 dBm typical ±2 dBm) 802.11n: 15, 30, 45, 60, 90, 120, 135, 150 Mbps (12 dBm typical ±2 dBm), HT40, MCS 0-7 Security: WEP, WPA-PSK/WPA2-Personal, WPA/WPA2 Enterprise, 802.11i, Access Point Mode, Wi-Fi Direct Industry Certifications: Wi-Fi Alliance Logo Certification Ready, CCXv4 ASD Ready
BLUETOOTH	Class 1.5, Bluetooth 2.1 + EDR, Bluetooth 3.0 + HS 802.11 AMP, Bluetooth Low Energy Profiles: GAP, SPP, HSP, HFP, FTP, PAN, OPP, HID, A2DP, AVRCP, HDP
ANTENNA CONNECTORS	1 x U.FL / 2 x U.FL
GIGABIT ETHERNET	RJ-45, with 2 LEDs for link/speed/activity
CAN BUS	2 x FlexCAN (Molex 53047-0610)
GPIO/I²C/SPI/UART	1 x GPIO (8 x i.MX GPIOs + 4 Kinetis GPIOs, Molex 53047-1410) 1 x I²C (Molex 53047-0310), 1 x SPI (Molex 53047-0610) 3 x UART (4-wire TX/RX/RTS/CTS, 1 shared with XBee socket, Molex 53047-1410)
DEBUG	1 x JTAG for i.MX6 (FCI 20021111-00010T4LF) 1 x SWD for Kinetis MCA (FCI 20021111-00010T4LF) Headers populated on development units only Production units without header for plug of nails (Tag-Connect TC2050-IDC-NL)
POWER BUTTON	Power on, power off, sleep, wake-up
RESET BUTTON	Yes
USER LEDS	1 x Red, 1 x Yellow, 1 x Green
COIN CELL CONNECTOR	Molex 53047-0210
SUPPLY VOLTAGE	5 VDC @ 500 mA (typical, depending on use-case)
POWER SUPPLY CONNECTOR	Main power supply via 2mm locking barrel connector
OPERATING TEMPERATURE	-20° C to +70° C / -40° C to +85° C
STORAGE TEMPERATURE	-50° C to +125° C
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)

CONNECTCORE® 6 SBC SELECTION GUIDE

		i.MX6Quad	i.MX6Dual	i.MX6DualLite
		PERFORMANCE	UNIVERSAL	STANDARD
PERFORMANCE	Processor	NXP i.MX6Quad	NXP i.MX6Duap	NXP i.MX6DuapPite
	Clock Speed	1.2 GHz	800 MHz	800 MHz
	Microcontroller Assist™	✓	-	-
MEMORY	Flash	4 GB eMMC*	4 GB eMMC1	4 GB eMMC1
	RAM	1 GB DDR3	1GB DDR3	512 MB DDR3
NETWORKING	Gigabit Ethernet	✓	✓	✓
	802.11a/b/g/n	✓	✓	✓
	Bluetooth 4.0	✓	✓	✓
	XBee® Socket	✓	✓	✓
CELLULAR**	Micro SIM Card Slot	✓	✓	-
CONNECTIVITY	USB 2.0 Host	3	3	2
	USB 2.0 OTG	1	1	1
	PCIe Mini Card 2.1 (USB Host 2.0/x1 PCIe)	✓	✓	-
	Serial (Console/RS232/TTL)	1/2/1	1/2/1	1/2/1
	Console	✓	✓	✓
	I^2C	✓	✓	-
	SPI	✓	✓	-
	GPIO	✓	✓	✓
	Dual CAN	✓	✓	-
DISPLAY	HDMI	✓	✓	✓
	LVDS***	2	1	-
	MIPI DSI***	✓	✓	-
CAMERA	MIPI CSI	✓	✓	-
	8-Bit Parallel	2	1	-
AUDIO	Headphone Jack	✓	✓	-
	Line-In / Line-Out / Microphone Header	✓	✓	-
STORAGE	Micro SD	✓	✓	✓
	SATA 3.0	✓	-	-
OTHER	Power / Reset Buttons	✓	✓	✓
	Power / Reset Header	✓	✓	✓
	Coin Cell Battery Header	✓	✓	✓
	Power / User LEDs	✓	✓	✓
	Boot Configuration Switch	✓	✓	✓
	JTAG (via Tag-Connect)	✓	✓	✓
	SWD (via Tag-Connect)	✓	✓	✓
ENVIRONMENTAL	Operating Temperature	-20° C to 70° C	-40° C to 85° C	-40° C to 85° C
MECHANICAL	Dimensions	Pico-ITX form factor, 72 mm x 100 mm		
DIGI PN	Part Number	CC-SB-WMX-J97C-1	CC-SB-WMX-L87C-1	CC-SB-WMX-L76C-1

* pSLC mode option for industrial reliability.
** Via PCI Express Mini Card Connector.
*** With Touch (I2C) + Backlight Control.

MECHANICAL DRAWINGS



PART NUMBERS	DESCRIPTION
CC-SB-WMX-J97C-1	ConnectCore 6 SBC, i.MX6Quad, Ext Commercial, 1.2 GHz, -20° C to 70° C, 4 GB flash, 1 GB DDR3, Microcontroller Assist (MKL14Z32VFT4), 802.11a/b/g/n, Bluetooth 4.0, Gigabit Ethernet
CC-SB-WMX-L87C-1	ConnectCore 6 SBC, i.MX6Dual, Industrial, 800 MHz, -40° C to 85° C, 4 GB flash, 1 GB DDR3, 802.11a/b/g/n, Bluetooth 4.0, Ethernet
CC-SB-WMX-L76C-1	ConnectCore 6 SBC, i.MX6DualLite, Industrial, 800 MHz, -40° C to 85° C, 4 GB flash, 512 MB DDR3, 802.11a/b/g/n, Bluetooth 4.0, Gigabit Ethernet
KIT	
CC-WMX6-KIT	ConnectCore 6 Jumpstart Development Kit (SBC with ConnectCore 6 module. i.MX6Quad, 1.2 GHz, -20 to 70C, 4GB flash, 1GB DDR3, 802.11a/b/g/n, Bluetooth 4.0, Kinetis Microcontroller Assist, software support for Yocto Linux and Android, accessories)

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