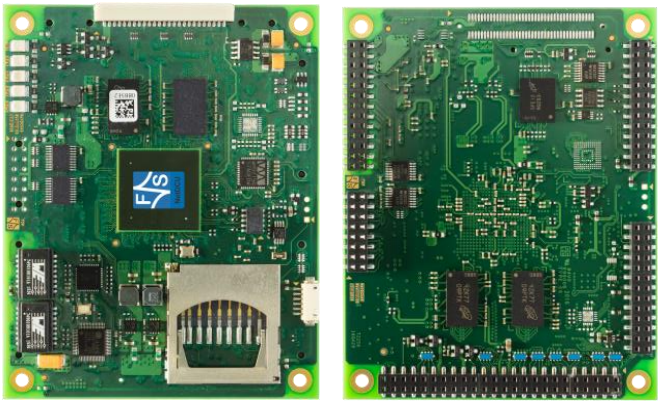
NetDCUA9

System on Module with NXP i.MX 6 processor

Characteristics

- NXP i.MX 6Solo/DualLite applications processor ARM® Cortex®-A9 – 1GHz
- up to 512MB SLC NAND Flash, 32GB eMMC, 4GB RAM
- TFT LCD-Controller up to WXGA/SVGA resolution (24bit LVDS, 24bit RGB)
- 1x Ethernet 10/100Mbit
- 1x USB 2.0 Device
- 1x USB 2.0 Host
- 2x CAN2.0, 1x I^2C, 1x SPI
- 3x Serial
- 1x SD Card
- Audio Line IN/ OUT/ MIC
- Touch Controller
- Windows Embedded Compact 7/2013
- Linux Buildroot/Yocto



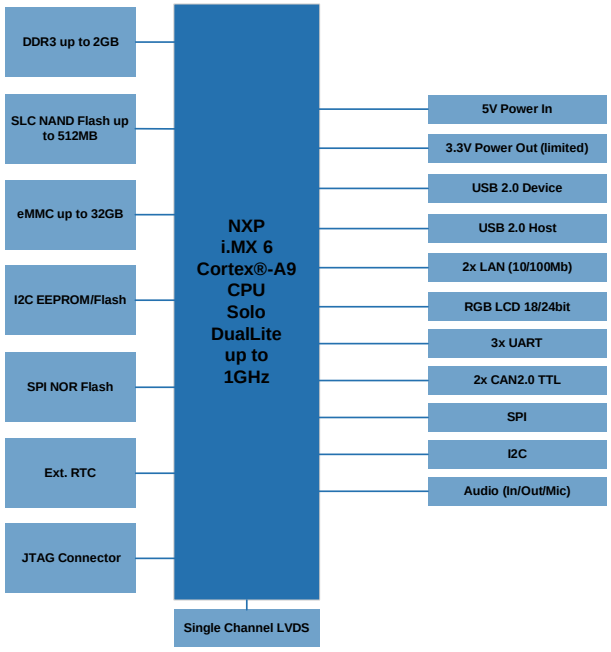
Description

Many applications in the industrial and medical field demand for a powerful module, which can control displays, can be connected with control elements (touch panel, keypad, incremental encoder,…) and can communicate via modern interfaces (Ethernet, USB, CAN,…).

NetDCUA9 is based on a NXP i.MX6 Solo/DualLite Cortex®-A9 CPU, making OpenGL, HD1080 Decoder and 2D/3D available. The CPU will be available up to minimum 2027. The module offers many interfaces, such as Ethernet, I^2C, SPI, LVDS, RGB and a resistive touch panel interface. The connection of a capacitive touch is possible via I^2C.

NetDCUA9 is pin compatible to many other NetDCU boards (with SMD socket strips also).

Block Diagram



On-Board Operating System

Windows Embedded Partner

The customized WEC 7/2013 (Bootloader, Kernel, interface drivers, Silverlight, Mediaplayer, IE) is a powerful real-time operating system and together with Compact Framework 3.5 it's the perfect base for software development.

The F&S Linux BSP (4,1.x., uboot, BSP, Buildroot, Yocto, QT, GStreamer) includes the customized kernel and all interface drivers including source.
A Cross Compiler Toolchain is available for creating own bootloaders, kernels or other software.

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Connector Assignment

J1 Power				J3 LCD				J4 FS-Bus		J5 Keyboard I/O				J7 Touch/ Codec/ USB			
1	+RX1 Ethernet	21	VCC (+5V, In)	1	R0	21	B7	1	D0	1	GPIO8 (nIRQ)	21	IP3 (C4)	1	LINEOUT L	21	HDM1 USB0
2	-RX1 Ethernet	22	VCC (+5V, In)	2	R1	22	B6	2	D1	2	GPIO7 (R7)	22	IP2 (C5)	2	LINEOUT R	22	HDP1 USB0
3	RTS RS232	23	VBAT (+3V, In)	3	G0	23	GND	3	D2	3	GPIO6 (R6)	23	IP1 (C6)	3	AGND	23	HDM2 USB1
4	RxD RS232	24	RS485-	4	G1	24	VEEK	4	D3	4	GPIO5 (R5)	24	IP0 (C7)	4	LINEIN L	24	HDP2 USB1
5	CTS RS232	25	GND	5	B0	25	CLP	5	D4	5	GPIO4 (R4)	25	VCC (+5V, out)	5	LINEIN R	25	HPW1 USB0
6	TxD RS232	26	GND	6	B1	26	FRP	6	D5	6	GPIO3 (R3)	26	VDD (+3,3V, out)	6	AGND	26	HPW2 USB1
7	+TX1 Ethernet			7	GND	27	M	7	D6	7	GPIO2 (R2)			7	MICIN		
8	-TX1 Ethernet			8	R3	28	LIP	8	D7	8	GPIO1 (R1)			8	MICGND		
9	VCC (+5V, out)			9	R2	29	DEN	9	VDD (out)	9	GPIO0 (R0)			9	RxD3 RS232		
10	GND			10	G7	30	GND	10	RD	10	GPIO9 (C8)			10	TxD3 RS232		
11	CAN-TX1			11	G6	31	VLCD	11	nCS	11	GPIO10 (C9)			11	AD0		
12	CAN-RX1			12	G5	32	NC	12	ADE	12	RxD2 RS232			12	AD1		
13	CAN-TX2			13	G4	33	NC	13	nIRQ	13	GPIO11 (C10)			13	VCC (+5V, out)		
14	CAN-RX2			14	GND	34	GND	14	nRES (in)	14	TxD2 RS232			14	GND		
15	+RX2 Ethernet			15	B5	35	NC	15	PWM	15	GPIO12 (C11)			15	TOUCH-X+		
16	-RX2 Ethernet			16	B4	36	VCFL (Out)	16	GND	16	GND			16	TOUCH-Y+		
17	+TX2 Ethernet			17	B3	37	R4			17	IP7 (C0)			17	TOUCH-X-		
18	-TX2 Ethernet			18	B2	38	R5			18	IP6 (C1)			18	TOUCH-Y-		
19	VCFL (In)			19	G3	39	R6			19	IP5 (C2)			19	VDD (+3,3V, out)		
20	RS485+			20	G2	40	R7			20	IP4 (C3)			20	GND		

Accessories

Displaykit RGB
7“ WVGA Display with RGB interface and resistive Touchpanel, fitting connection cable, display adapter and touch cable

Safe Filesystem (F3S)
It offers transaction safety on file level and therefore guarantees the consistency of the data, even in case of a blackout or other interferences while writing.

UpDate Software
This program package allows a safe and easy update of the application program and the operating system via USB Stick or SD Card. Blackouts and other interferences during the update are considered.

Boot Screen
Shows the device's user a starting procedure while booting (BMP File).

Technical Data

Power Supply:	+5V_{DC}/ ±5%
Digital I/O:	max. 21 I-/ O-ports
Touch Panel:	4-wires, analogue resistive, capacitive Touch via I^2C
Interfaces:	1x Ethernet 10/ 100 MBit 3x Serial 1x USB 2.0 Host, 1x USB 2.0 Device 1x I^2C, 1x SPI 2x CAN2.0 1x SD-Card Slot 1x Audio (Line In/ Out/ Mic)
TFT-LCD Interface:	TFT up to SVGA (24 Bit RGB)
RAM:	up to 512MB RAM
Program Memory:	up to 256MB SLC NAND Flash
Processor:	NXP i.MX 6 Solo (DualLite option) Cortex®™A9-1GHz
Temperature Range:	-25°C - +85°C
Size:	100mm x 80mm x 11mm (l x b x d)
Weight:	about 50g

Standard Versions/ Order Notations

NetDCUA9-V1I-WEC7
512MB RAM, 256MB NAND Flash, 1x Ethernet, 2x CAN, i.MX 6 Solo Cortex®-A9 - 1GHz, -25°C - +85°C, RGB, WEC 7

NetDCUA9-V1I-W13
512MB RAM, 256MB NAND Flash, 1x Ethernet, 2x CAN, i.MX 6 Solo Cortex®-A9 - 1GHz, -25°C - +85°C, RGB, WEC 2013

NetDCUA9-V1I-LIN
512MB RAM, 256MB NAND Flash, 1x Ethernet, 2x CAN, RGB, i.MX6 Solo Cortex®-A9 - 1GHz, -25°C - +85°C, Linux

Minimum Order Quantity for Special Versions: 500 pieces (in one shipment)

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