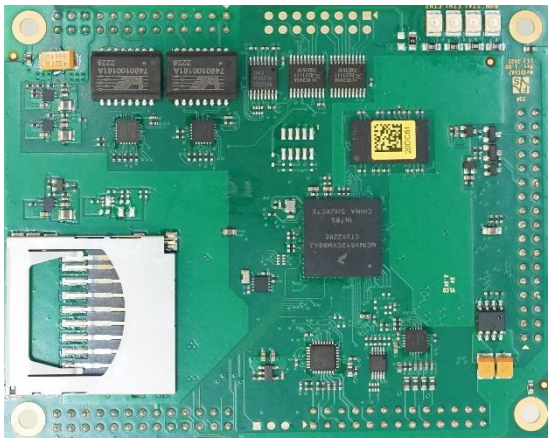
NetDCUA7

System on Module with NXP i.MX6ULL Processor

Characteristics

- NXP i.MX6ULL CPU Cortex®-A7 @ 900MHz

- Up to 512MB NAND Flash, 32GB eMMC, 1GB RAM
- TFT LCD Controller 18Bit RGB
- 2x Ethernet 10/100MBit
- 1x USB 2.0 Device
- 1x USB 2.0 Host
- 2x CAN 2.0, 1x I²C, 1x SPI
- 3x Serial (RS232)
- 1x SD Card Slot
- Audio Line IN/ OUT/ MIC, RTC
- 2x Analog In, ADR/DATA-BUS
- Touch Controller (4 wire)/ via I2C
- WEC7/ WEC 2013/ Linux
- +5V DC, -40° + 85°C



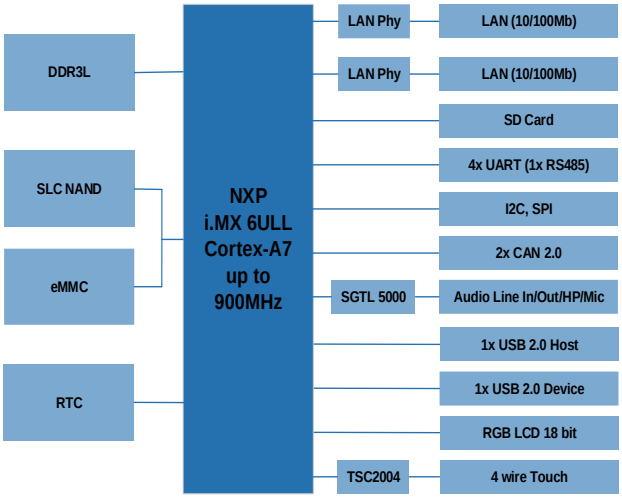
Description

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,…). The NetDCUA7 is based on a NXP i.MX6ULL CPU with Cortex®-A7 core. The board offers many interfaces like a RGB interface and a touch panel (4-wires) interface. It is possible to connect a capacitive touch panel via I²C.

NetDCUA7 is pin compatible to NetDCUA5.

This NetDCU will be **available up to 2031** minimum.

Block Diagram



On-Board Operating System

Windows Embedded Partner

The customized WEC7/ WEC 2013 (Bootloader, Kernel, interface drivers) offers a powerful real-time operating system. Together with Compact Frame-work 3.x it is the perfect base for software development.

The F&S Linux BSP (uboot, BSP, Buildroot, YOCTO, QT, GStreamer) contains a customized kernel and all interface drivers incl. source.

Toolchain is available to develop own bootloaders, kernels or further software.

Starterkit

The NetDCUA7-SKIT is available with WEC 2013 or Linux. The SKIT consists of a base board with standard connectors, a cable kit, access data to the download area (documentation and software) and a 7“ WVGA display with (4-wire) touch panel and connection cable. A forum with 3000+ registered customers offers example programs and is always online for support.

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

Add-Ons

TFT & Cap. Touch
7“ WVGA Display with LVDS interface and fitting connection cable (25pol connector), furthermore, the display has a capacitive touch panel

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.

Technical Data

Power Supply:	$+5V_{DC}$/ ±5%
Keyboard:	8 x12 matrix keyboard
Touch Panel:	4 wires (analogue resistive), capacitive Touch via I^2C
Interfaces:	2x Ethernet 10/ 100MBit 3x RS232 (1x with RTS/ CTS) 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) 2x Analog In, RTC 1x FS-BUS (ADR/ DATEN)
TFT-LCD Interface:	18Bit RGB
RAM:	1GB DDR3L
Program Memory:	512 MB NAND, 32GB eMMC
Processor:	NXP CPU Cortex®™A7-900MHz
Temperature Range:	0°C - +70°C (-40° + 85°C opt.)
Size:	100mm x 80mm x 11mm (l x b x d)
Weight:	ca. 50g

Standard Versions/ Order Notations

NDCUA7-V1I-W13
Cortex®-A7 - 800MHz
512MB RAM, 256MB NAND Flash, 2x Ethernet, 2x CAN, Audio, RTC, -40°C-+85°C, WEC 2013

NDCUA7-V1I-LIN
Cortex®-A7 - 800MHz
512MB RAM, 256MB NAND Flash, 2x Ethernet, 2x CAN, Audio, RTC, -40°C-+85°C, Linux

NDCUA7-V2I-W13
Cortex®-A7 - 800MHz
1GB RAM, 8GB eMMC Flash, 2x Ethernet, 2x CAN, Audio, RTC, -40°C-+85°C, WEC 2013

NDCUA7-V2I-LIN
Cortex®-A7 - 800MHz
1GB RAM, 8GB eMMC Flash, 2x Ethernet, 2x CAN, Audio, RTC, -40°C-+85°C, Linux

Standard Versions/ Order Notations

NDCUA7-SKIT-W13/ -LIN
Base Board, NDCUA7-V1I-W13/ -LIN
cable kit, access data to documentation and software,
7“ WVGA TFT with resistive touch panel and connection cable/ adapter

Minimum Order Quantity for Special Versions: 500 Pieces

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