Device Description

NXHX 50-RE

netX 50 Software Development Board

Language: English

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1 Block Diagram

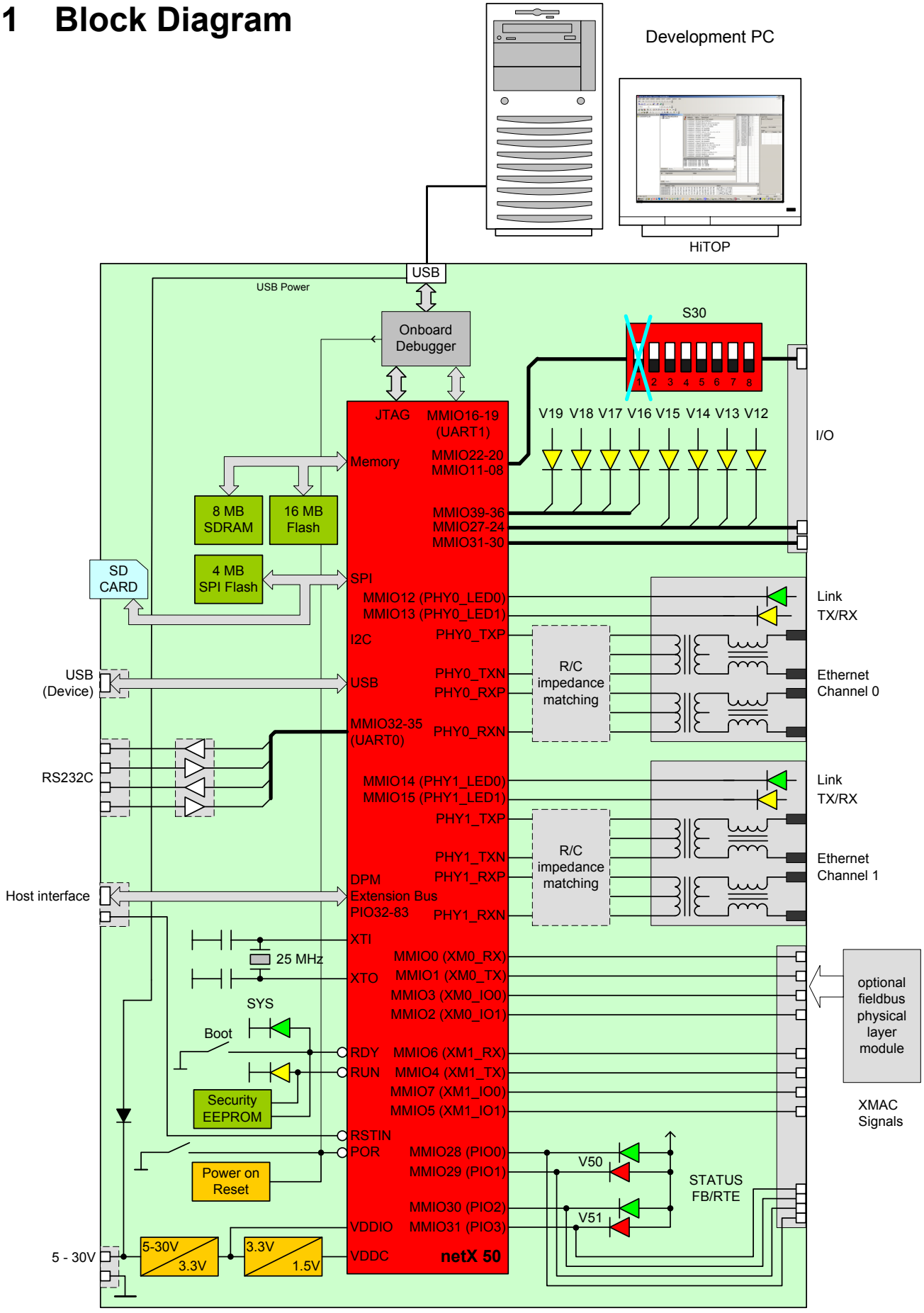


Figure 1: Block diagram NXHX 50-RE, Rev.2

2 Overview

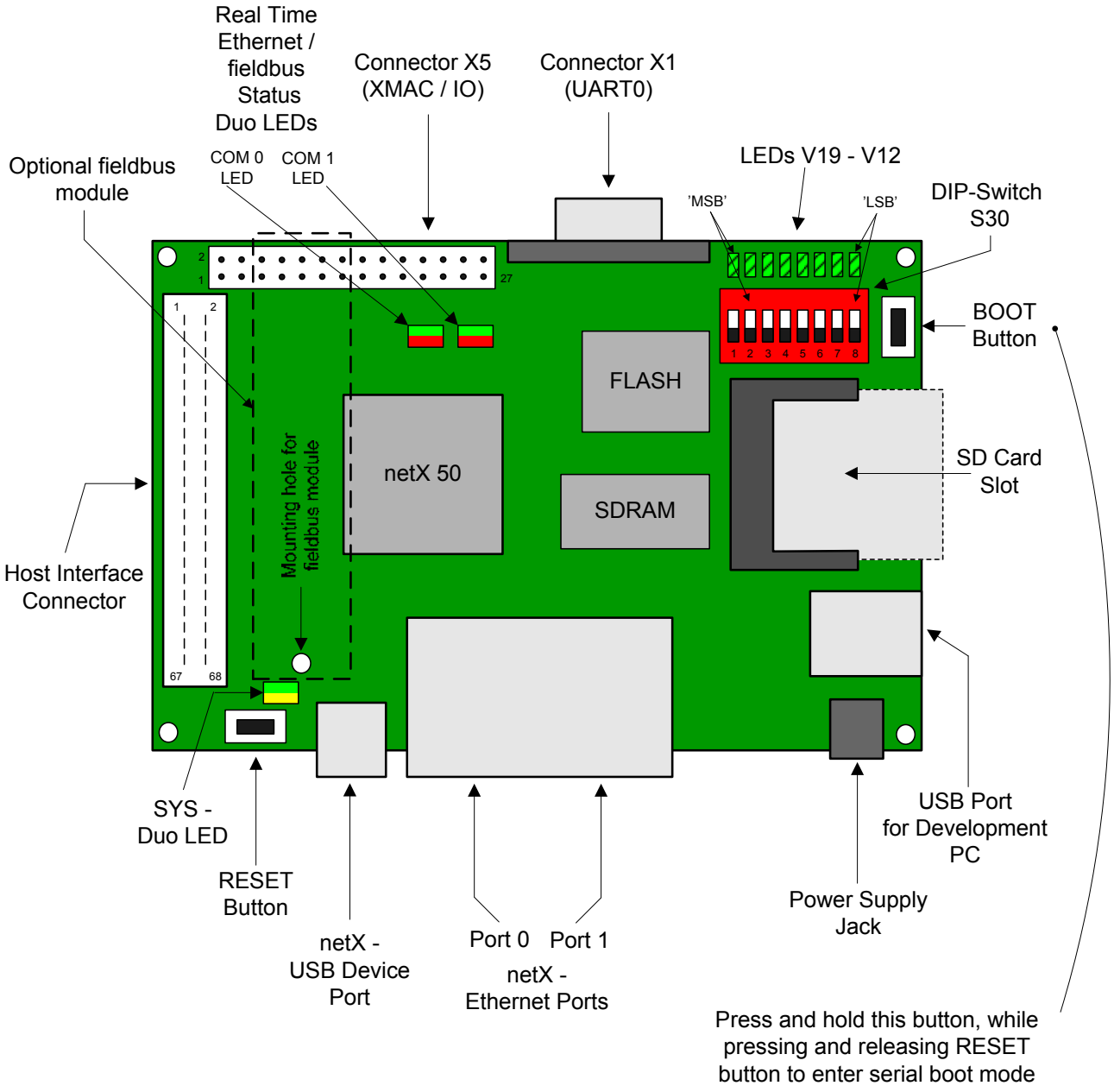
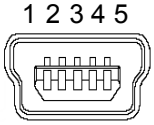


Figure 2: Overview NXHX 50-RE, Rev.2

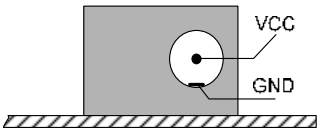
The NXHX50-RE can either be powered by an external power supply (5-30 V DC), like the included NXAC-Power or through the USB port, connected to the development PC. USB powered operation is however only possible, when the netX Ethernet ports are not used! **When running Ethernet applications, the NXHX50-RE must be powered by the external power supply in order to provide stable operation of the board!**

3 Connectors



netX-USB
device port

Pin	Description
1	Vusb
2	D-
3	D+
4	Not connected
5	GND



External power
supply jack

Host interface connector, X3:

Pin	DPM	Ext. Bus	Prog. I/O	Pin	DPM	Ext. Bus	Prog. I/O
1	+3.3V	+3.3V	+3.3V	35	DPM_A14	EXT_A14	PIO54
2	GND	GND	GND	36	DPM_A13	EXT_A13	PIO48
3	CLKOUT	CLKOUT	CLKOUT	37	DPM_A12	EXT_A12	PIO49
4	TCLK	TCLK	TCLK	38	DPM_A11	EXT_A11	PIO50
5	GND	GND	GND	39	DPM_A10	EXT_A10	PIO53
6	RSTOUTn	RSTOUTn	RSTOUTn	40	DPM_A9	EXT_A9	PIO56
7	RSTINn	RSTINn	RSTINn	41	DPM_A8	EXT_A8	PIO57
8	PIO85	PIO85	PIO85	42	DPM_A7	EXT_A7	PIO60
9	PI040	PI040	PI040	43	DPM_A6	EXT_A6	PIO61
10	PI036	PI036	PI036	44	DPM_A5	EXT_A5	PIO64
11	DPM_INT	EXT_IRQ	PIO47	45	DPM_A4	EXT_A4	PIO65
12	DPM_RDY	EXT_RDY	PIO46	46	DPM_A3	EXT_A3	PIO66
13	GND	GND	GND	47	DPM_A2	EXT_A2	PIO69
14	DPM_RDn	EXT_RDn	PIO52	48	DPM_A1 / DPM_BE2n	EXT_A1	PIO70
15	DPM_WRHn / DPM_BE3n	EXT_WRHn	PIO44	49	DPM_A0 / DPM_BE0n	EXT_A0	PIO73
16	DPM_WRLn	EXT_WRLn	PIO45	50	GND	GND	GND
17	WDGACT / DPM_D19	WDGACT	WDGACT	51	DPM_D15	EXT_D15	PIO41
18	DPM_WIFn / DPM_D17	EXT_ALE	PIO35	52	DPM_D14	EXT_D14	PIO42
19	DPM_BHEn / DPM_BE1n	EXT_BHEn	PIO43	53	DPM_D13	EXT_D13	PIO37
20	GND	GND	GND	54	DPM_D12	EXT_D12	PIO38
21	DPM_D30 / *SEL_A18*	EXT_CS3n	PIO84	55	DPM_D11	EXT_D11	PIO39
22	DPM_D28 / *SEL_A16*	EXT_CS2n	PIO79	56	DPM_D10	EXT_D10	PIO33
23	DPM_D29 / *SEL_A17*	EXT_CS1n	PIO80	57	DPM_D9	EXT_D9	PIO34
24	DPM_CSn	EXT_CS0n	PIO51	58	DPM_D8	EXT_D8	PIO32
25	GND	GND	GND	59	DPM_D7	EXT_D7	PIO74
26	DPM_D27 / *SELA_A15*	EXT_A23	PIO72	60	DPM_D6	EXT_D6	PIO75
27	DPM_D26 / *SELA_A14*	EXT_A22	PIO71	61	DPM_D5	EXT_D5	PIO76
28	DPM_D25 / *SELA_A13*	EXT_A21	PIO68	62	DPM_D4	EXT_D4	PIO77
29	DPM_D24 / *SELA_A12*	EXT_A20	PIO67	63	DPM_D3	EXT_D3	PIO78
30	DPM_D23 / *DPM_A19*	EXT_A19	PIO63	64	DPM_D2	EXT_D2	PIO81
31	DPM_D22 / *DPM_A18*	EXT_A18	PIO62	65	DPM_D1	EXT_D1	PIO82
32	DPM_D21 / *DPM_A17*	EXT_A17	PIO59	66	DPM_D0	EXT_D0	PIO83
33	GND	GND	GND	67	+3.3V	+3.3V	+3.3V
34	DPM_A15	EXT_A15	PIO55	68	DPM_D20 / *DPM_A16*	EXT_A16	PIO58

XMAC / IO connector, X5:

Pin	Signal	Pin	Signal
1	MMIO04 (XM1_TX)	15	MMIO09 (GPIO09)
2	MMIO05 (XM1_IO1)	16	MMIO10 (GPIO10)
3	MMIO06 (XM1_RX)	17	MMIO11 (GPIO11)
4	MMIO07 (XM1_IO0)	18	MMIO20 (GPIO12)
5	MMIO01 (XM0_TX)	19	MMIO21 (GPIO13)
6	MMIO00 (XM0_RX)	20	MMIO22 (GPIO14)
7	MMIO03 (XM0_IO0)	21	MMIO24 (GPIO24)
8	MMIO02 (XM0_IO1)	22	MMIO25 (GPIO25)
9	GND	23	MMIO26 (GPIO26)
10	+3V3	24	MMIO27 (GPIO27)
11	MMIO28 (PIO0)	25	MMIO30 (PIO2)
12	MMIO29 (PIO1)	26	MMIO31 (PIO3)
13	RSTOUTn	27	+3V3
14	MMIO08 (GPIO08)	28	GND

DIP switch / LED assignment:

Switch	assigned IO	LED	assigned IO
S30 - 1	n.c.	V19	MMIO39 (GPIO31)
S30 – 2	MMIO22 (GPIO14)	V18	MMIO38 (GPIO30)
S30 – 3	MMIO21 (GPIO13)	V17	MMIO37 (GPIO29)
S30 – 4	MMIO20 (GPIO12)	V16	MMIO36 (GPIO28)
S30 – 5	MMIO11 (GPIO11)	V15	MMIO27 (GPIO27)
S30 – 6	MMIO10 (GPIO10)	V14	MMIO26 (GPIO26)
S30 – 7	MMIO09 (GPIO09)	V13	MMIO25 (GPIO25)
S30 – 8	MMIO08 (GPIO08)	V12	MMIO24 (GPIO24)

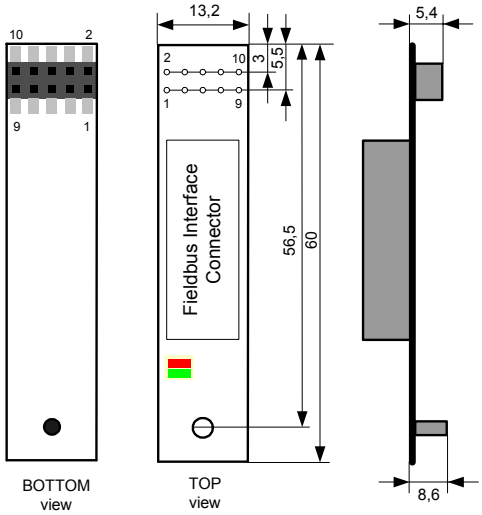
Note: - LEDs are active low (setting the IO to '0' will turn on LED)

- DIP switches are active high (switch in 'ON' position -> IO reads '1')
- MMIO signal mapping is a recommendation. Signals in brackets will not be available before the appropriate MMIO mapping has been programmed in the MMIO_CFG registers! (For details on MMIOs, see netX50 Technical Reference Manual and Program Reference Guide)

4 Accessories

4.1 Fieldbus Adapters

Fieldbus Interface with Duo Status LED (Ready / Error) for NXHX Boards.



Pin	Signal	Pin	Signal
1	XMAC TX	6	+3,3V
2	XMAC RX	7	PIO 4
3	XMAC IO 0	8	PIO 5
4	XMAC IO 1	9	RSTOUT
5	GND	10	n.c.

Connector to NXHX Board.

4.1.1 NXHX-DP

Fieldbus Interface Profibus (RS485)

Connector: D-Sub DE-9 female

Interface not isolated

Order Number: 7923.410

Pin	Signal	Pin	Signal
1	n.c.	6	n.c.
2	n.c.	7	n.c.
3	TXD/RXD-P	8	TXD/RXD-N
4	n.c.	9	n.c.
5	GND		

4.1.2 NXHX-CO

Fieldbus Interface CAN

Connector: D-Sub DE-9 male

Interface not isolated

Order Number: 7923.500

Pin	Signal	Pin	Signal
1	n.c.	6	n.c.
2	CAN-L	7	CAN-H
3	DGND	8	nc.
4	n.c.	9	n.c.
5	n.c.		

4.1.3 NXHX-DN

Fieldbus Interface DeviceNet

Connector: Combicon MSTBA 2,5

Interface not isolated

Order Number: 7923.510

Pin	Signal
1	DGND
2	CAN-L
3	n.c.
4	CAN-H
5	DN V+

4.1.4 NXHX-RS

Interface RS232

Connector: D-Sub DE-9 male

Interface not isolated

Order Number: 7923.010

Pin	Signal	Pin	Signal
1	n.c.	6	n.c.
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	n.c.
5	GND		

4.1.5 NXHX-CC

Fieldbus Interface CC-Link:

Connector: Combicon MSTBA 2,5

Interface not isolated

Order Number: 7923.740

Pin	Signal
1	DA
2	DB
3	DG
4	SLD
5	FG

4.2 NXAC-Power

Power Supply for NXHX Boards

(included with NXHX50-RE)

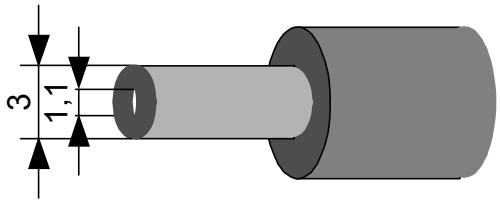
Technical Data:

Input: 100-240V ~0,4A (47-63Hz)

Output: 24V / 0,625mA

Cable: 1,8 m

Order Number: 7930.000



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