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# VisionCB-6ULL-IND v.1.0 Datasheet and Pinout

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# VisionCB-6ULL-IND v.1.0 Datasheet and Pinout

## General description



VisionCB-6ULL-IND is a carrier board for the VisionSOM family of computer-on-modules which are powered by NXP i.MX 6UL or i.MX 6ULL application processors (ARM Cortex-A7). A carrier board, together with a System on Module (SoM), makes a complete development platform similar to SBC. The carrier board houses the most common interfaces such as USB, Ethernet, additional microSD socket, etc. A large variety of interfaces allows to use it as both a complete development platform or as a stand-alone end-product.

The carrier board connects with the SoM via a standard SODIMM connector.

## Applications


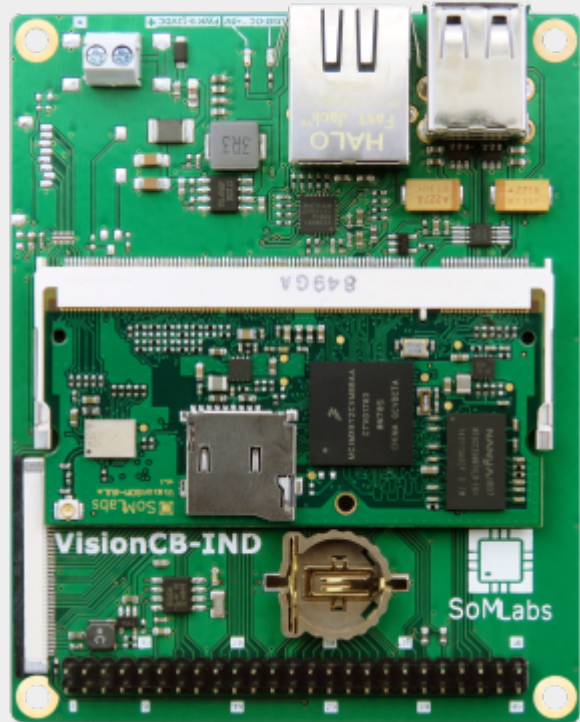
- Industrial embedded Linux computer
- Home Appliances
- Home Automation - Smart Home
- Human-machine Interfaces (HMI)
- Point-of-sales (POS) terminals
- Cash Register
- 2D barcode scanners and printers

- Smart grid Infrastructure
- IoT gateways
- Residential gateways
- Machine vision equipment
- Robotics
- Fitness/outdoor equipment

## Features

- Industrial grade Carrier Board (Base Board) compatible with the VisionSOM family of modules based on NXP i.MX 6UL / 6ULL application processors
- Core clock up to 696MHz (VisionSOM-6UL) or up to 900MHz (VisionSOM-6ULL)
- Up to 512MB SDRAM DDR3L (depends on used VisionSOM module)
- Up to 512MB NAND Flash / 32GB eMMC / uSD memory card (depends on used VisionSOM module)
- Optional Murata 802.11b/g/n Wi-Fi and Bluetooth v4.1+EDR module
- SoM Interface: SODIMM200
- Expansion Connectors:
  - 2x25 Pin Headers (Female)
- Communication Connectors:
  - 1x Ethernet 10/100Mbit/s, RJ45
  - 2x USB Host Type A connectors
- Display Interface: 50-pin FFC/FPC Parallel RGB - 24-bit, (1366 x 768 Max. Resolution)
- Embedded Real-Time Clock (RTC) with back-up battery option (CR1220 battery needed)
- Power Supply
  - Terminal block connector: Input Voltage 9-12V DC
- Temperature Range: -40 to +85°C
- Board Size: 98mm x 79mm x 22mm

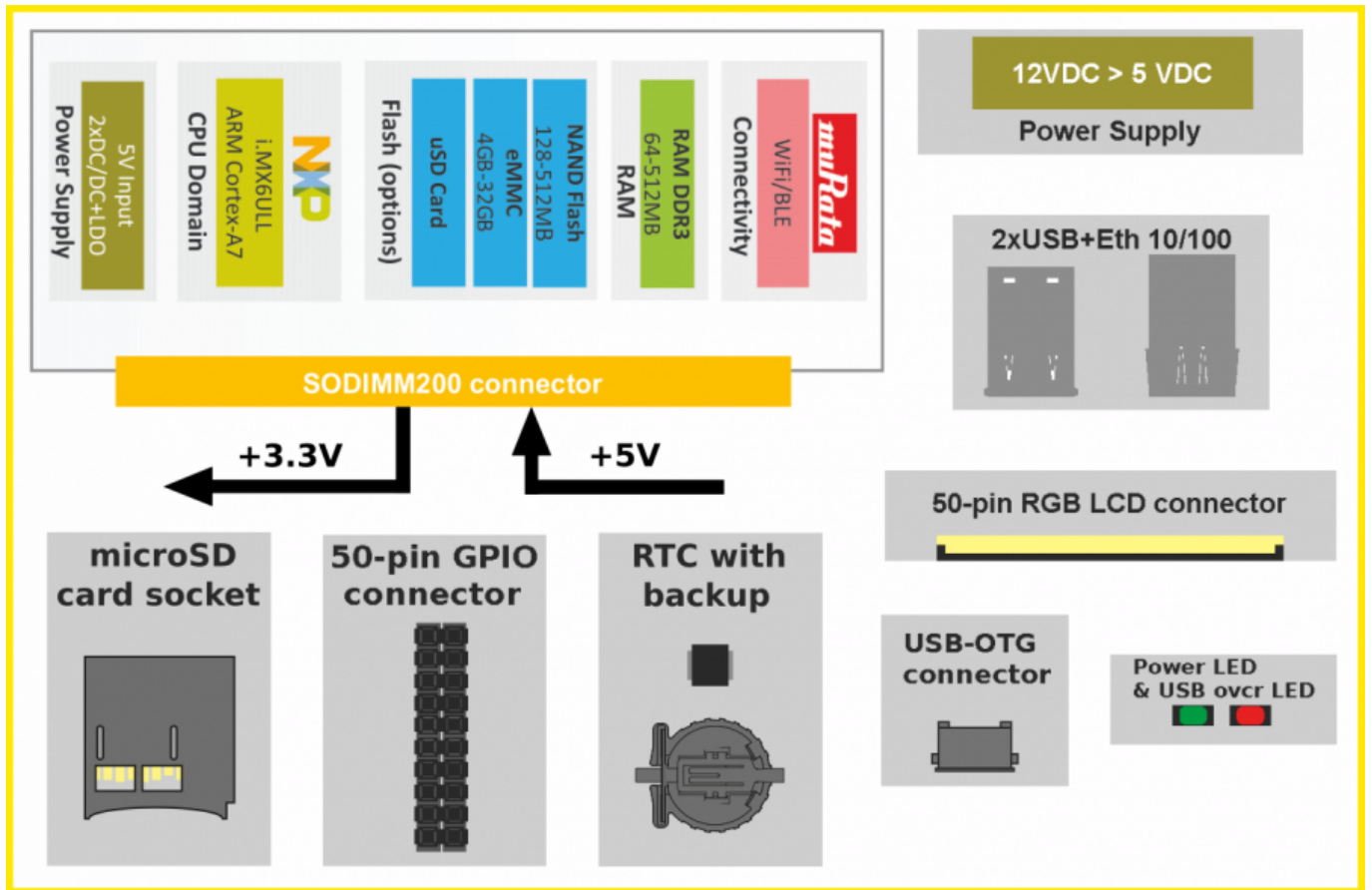
## Pictures of VisionCB-6ULL-IND board

Version	Photo
<p data-bbox="119 600 448 629">VisionCB-6ULL-IND board only</p>	
<p data-bbox="119 1357 632 1386">VisionCB-6ULL-IND board with VisionSOM-6ULL</p>	

## Ordering info

VisionCB-6ULL-IND v.1.0

# Block Diagram





## Electrical parameters

Parameter	Value			Units	Comment
	Min.	Typ.	Max.		
Power Supply (Con100 input)	9.0	11.0	12.0	V	Polarized terminal block connector
Supply current	-	-	0.15	A	Excluding LCD, USB and antoher external loads
Output GPIO voltage (Con1)	0	-	3.3	V	GPIO connector (current limited; max <250mA [RMS])

## Onboard LEDs



LED	Color	Description
LED100 (PWR)	Green	Power indicator
LED200 (USB OVR)	Red	USB Overcurrent indicator

## 2x25 pin header



J504 Pin	Default function name	Description
1	CSI-HSYNC	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
2	CSI-VSYNC	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
3	CSI-DATA0	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
4	CSI-DATA2	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
5	CSI-DATA1	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
6	CSI-DATA3	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
7	CSI-DATA4	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
8	CSI-DATA5	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
9	CSI-MCLK	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
10	CSI-DATA7	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
11	CSI_PIXCLK	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
12	CSI-DATA6	Video CMOS sensor signal or universal GPIO with 3.3V logic levels.
13	ENET2_TXD0	Default: ENET2 TXD0 line or universal GPIO with 3.3V logic levels.
14	UART3-RTS	Default: UART3 RTS line or universal GPIO with 3.3V logic levels.
15	ENET2_TXEN	Default: ENET2 TXEN line or universal GPIO with 3.3V logic levels.
16	UART2-RTS	Default: UART2 RTS line or universal GPIO with 3.3V logic levels.

17	ENET2_CRSDV	Default: ENET2 CRS_DV line or universal GPIO with 3.3V logic levels.
18	UART3-CTS	Default: UART3 CTS line or universal GPIO with 3.3V logic levels.
19	ENET2_RXD1	Default: ENET2 RXD1 line or universal GPIO with 3.3V logic levels.
20	UART1-RTS	Default: UART1 RTS line or universal GPIO with 3.3V logic levels.
21	ENET2_RXER	Default: ENET2 RXER line or universal GPIO with 3.3V logic levels.
22	UART2-CTS	Default: UART2 CTS line or universal GPIO with 3.3V logic levels.
23	ENET2_TX_CLK	Default: ENET2 TX_CLK line or universal GPIO with 3.3V logic levels.
24	UART1-CTS	Default: UART1 CTS line or universal GPIO with 3.3V logic levels.
25	UART4-RXD	Default: UART4 RXD input or universal GPIO with 3.3V logic levels.
26	JTAG-TCK	Default: JTAG TCK input or universal GPIO with 3.3V logic levels.
27	UART4-TXD	Default: UART4 TXD output or universal GPIO with 3.3V logic levels.
28	JTAG-nTRST	JTAG TRST input line (active L).
29	UART3-RXD	Default: UART3 RxD input or universal GPIO with 3.3V logic levels.
30	JTAG-TMS	Default: JTAG TMS output or universal GPIO with 3.3V logic levels.
31	UART2-RXD	Default: UART2 RXD input or universal GPIO with 3.3V logic levels.
32	SNVS-TAMPER2	Tamper input (SNVS power domain) or GPIO 3.3V.
33	UART2-TXD	Default: UART2 TXD input or universal GPIO with 3.3V logic levels.
34	SNVS-TAMPER3	Tamper input (SNVS power domain) or GPIO 3.3V.
35	UART1-RXD	Default: UART1 RXD input or universal GPIO with 3.3V logic levels.
36	SNVS-TAMPER4	Tamper input (SNVS power domain) or GPIO 3.3V.
37	UART1-TXD	Default: UART1 TXD input or universal GPIO with 3.3V logic levels.
38	SNVS-TAMPER5	Tamper input (SNVS power domain) or GPIO 3.3V.
39	SNVS-TAMPER0	Tamper input (SNVS power domain) or GPIO 3.3V.
40	I2C-SCL	Universal GPIO with 3.3V logic levels.
41	SNVS-TAMPER1	Tamper input (SNVS power domain) or GPIO 3.3V.
42	I2C-SDA	Universal GPIO with 3.3V logic levels.
43	GPIO5	Default: General purpose pin GPIO5
44	JTAG-TDI	Default: JTAG TDI input or universal GPIO with 3.3V logic levels.
45	GPIO8	Default: General purpose pin GPIO8
46	GPIO9	Default: General purpose pin GPIO9
47	VCC-3V3	+3.3V generated by internal SOM LDO converter (limited load current, limit: < 250mA [RMS]).
48	GND	Ground
49	VCC-3V3	+3.3V generated by internal SOM LDO converter (limited load current, limit: < 250mA [RMS]).
50	GND	Ground

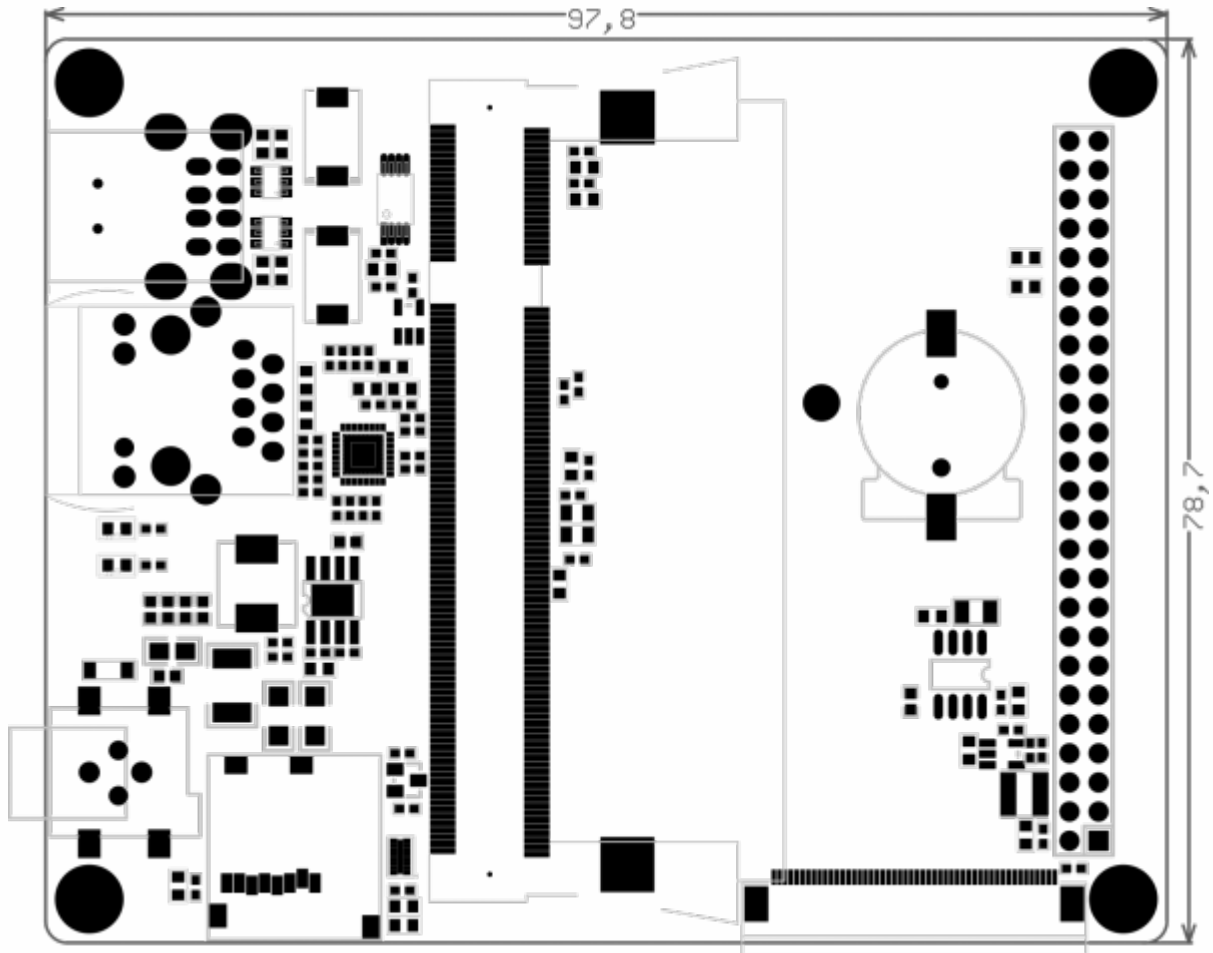
## TFT LCD connector (RGB 24b, J405)



J400 pin	Default function name	LCD interface name
1	LCD-DATA0	LCD-B0
2	LCD-DATA1	LCD-B1
3	LCD-DATA2	LCD-B2
4	LCD-DATA3	LCD-B3
5	LCD-DATA4	LCD-B4
6	LCD-DATA5	LCD-B5
7	LCD-DATA6	LCD-B6
8	LCD-DATA7	LCD-B7
9	GND	GND
10	LCD-DATA8	LCD-G0
11	LCD-DATA9	LCD-G1
12	LCD-DATA10	LCD-G2
13	LCD-DATA11	LCD-G3
14	LCD-DATA12	LCD-G4
15	LCD-DATA13	LCD-G5
16	LCD-DATA14	LCD-G6

17	LCD-DATA15	LCD-G7
18	GND	GND
19	LCD-DATA16	LCD-R0
20	LCD-DATA17	LCD-R1
21	LCD-DATA18	LCD-R2
22	LCD-DATA19	LCD-R3
23	LCD-DATA20	LCD-R4
24	LCD-DATA21	LCD-R5
25	LCD-DATA22	LCD-R6
26	LCD-DATA23	LCD-R7
27	GND	GND
28	LCD-DE	DE
29	LCD-HSYNC	HSYNC
30	LCD-VSYNC	VSYNC
31	GND	GND
32	LCD-PCLK	DCLK
33	GND	GND
34	GPIO4	TS-YPUL
35	GPIO3	TS-YNUR
36	GPIO2	TS-YPLL
37	GPIO1	TS-YNLR
38	-	-
39	-	-
40	-	-
41	-	-
42	UART5-TXD	I2C-SCL
43	UART5-RXD	I2C-SDA
44	GND	GND
45	VCC-LCD	+3.3V (controlled by ENET2_TXEN)
46	VCC-LCD	+3.3V (controlled by ENET2_TXEN)
47	VCC-5V0	+5.0V
48	VCC-5V0	+5.0V
49	LCD-RESET	RESET
50	JTAG-nTRST	PWREN

## Dimensions



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