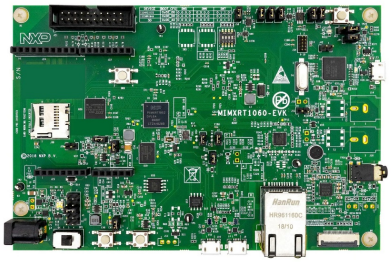

NXP IMXEBOOKDC5 i.MX Evaluation and Development Boards User Manual

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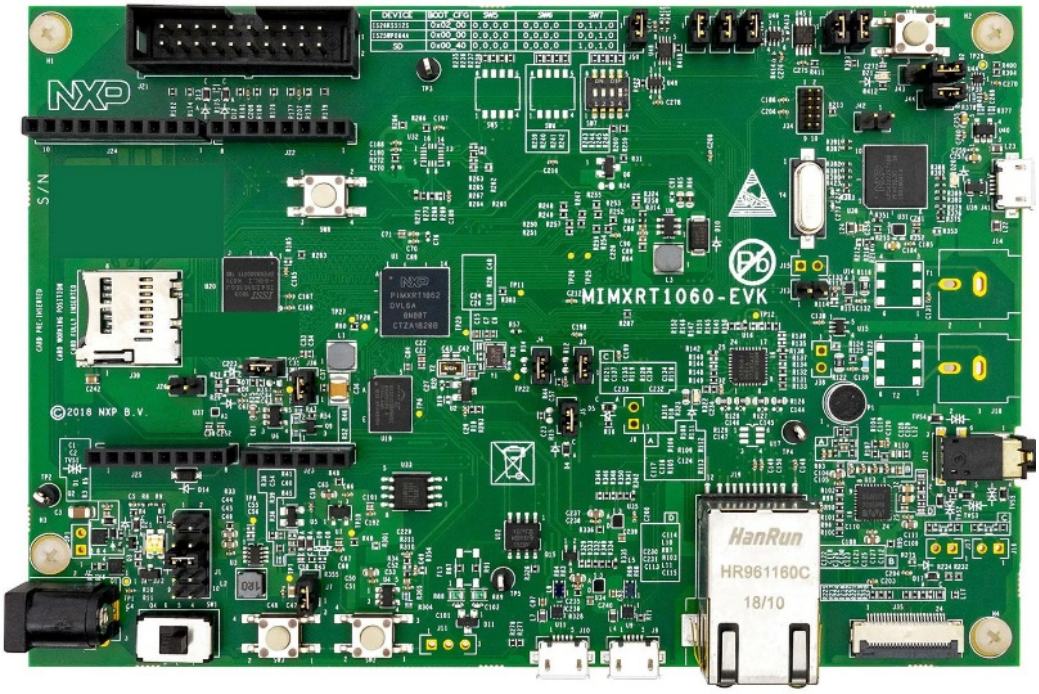


Document information

Information	Content
Keywords	IMXEBOOKDC5, e-paper display, EPD, EPDC, i.MX 8ULP, MCIMX8ULP-EVK
Abstract	IMXEBOOKDC5 is an accessory board that supports an e-paper display.

Contents

Overview

IMXEBOOKDC5 is an accessory board that supports an e-paper display. The IMXEBOOKDC5 board comes with a VB3300-FOC e-paper display module mounted which is a 6-inch, 1024×758 pixel e-paper display featuring capacitive touch panel with front light.

To work with the IMXEBOOKDC5 accessory board, the MCIMX8ULP-EVK board can be used as the main board. The IMXEBOOKDC5 board has a 120-pin connector that connects to the 120-pin connector of the MCIMX8ULP-EVK board.

This document provides details about IMXEBOOKDC5 interfaces, power supplies, connectors, jumpers, and push buttons.

Acronyms

Table 1 lists the acronyms used in this document.

Table 1. Acronyms

Acronym	Description
EPD	Electrophoretic display
EPDC	Electrophoretic Display Controller
FFC	Flexible flat cable
FPC	Flexible printed circuit
GPIO	General-purpose input/output
I2C	Inter-integrated circuit
MISO	Master input slave output
MOSI	Master output slave input
PCB	Printed circuit board
PMIC	Power management integrated circuit
SPI	Serial peripheral interface

Related documentation

Table 2 lists and explains the additional documents and resources that you can refer to for more information on the IMXEBOOKDC5 board. Some of the documents listed below may be available only under a non-disclosure agreement (NDA). To request access to these documents, contact your local field applications engineer (FAE) or sales representative.

Table 2. Related documentation

Document	Description	Link / how to obtain
MCIMX8ULP-EVK Board User Manual	Describes the MCIMX8ULP-EVK board interfaces, connectors, jumpers, push/slide buttons, and LEDs.	Contact NXP FAE / sales representative
i.MX 8ULP Processor Reference Manual	Provides a detailed description about the i.MX 8ULP processor and its features, including memory maps, power supplies, and clocks.	

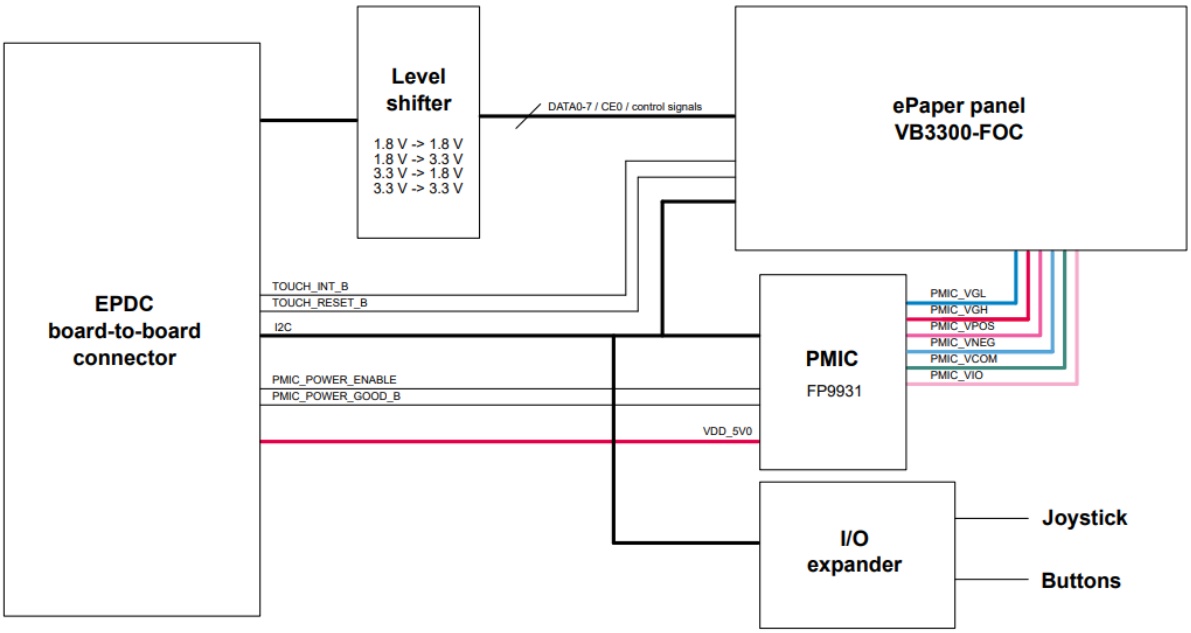
Table 2. Related documentation…continued

Document	Description	Link / how to obtain
i.MX 8ULP Applications Processor—Consumer Products Data Sheet	Provides information about electrical characteristics, hardware design considerations, and ordering information	
i.MX 8ULP Applications Processor—Industrial Products Data Sheet		
IMXEBOOKDC5 board design files	Board schematics, assembly layout	

Block diagram

Figure 1 shows the MCIMX8ULP-EVK9 block diagram.

Figure 1. IMXEBOOKDC5 block diagram



Board pictures

Figure 2 shows the top-side view of the IMXEBOOKDC5 board.

Figure 2. IMXEBOOKDC5 top-side view

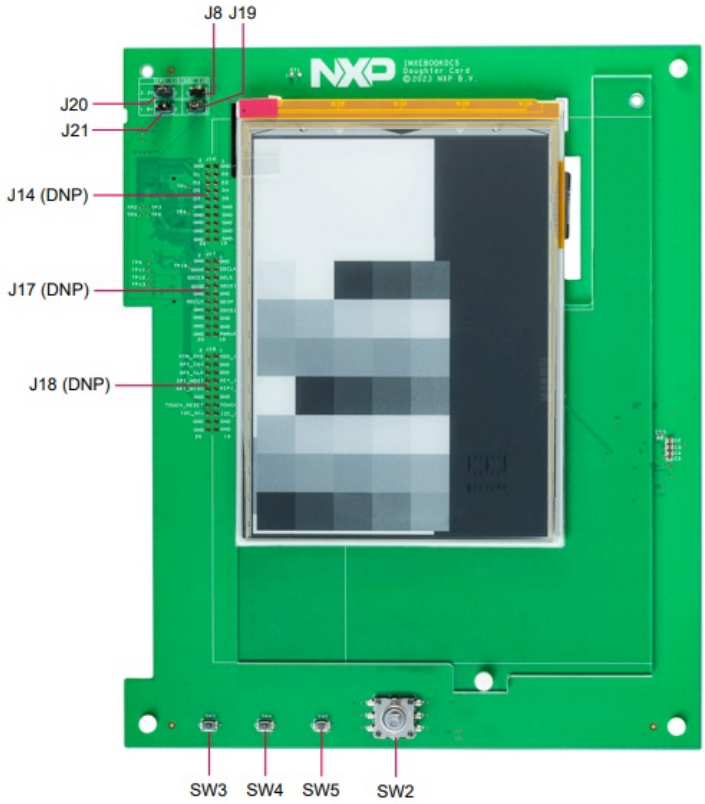


Figure 3 shows the bottom-side view of the IMXEBOOKDC5 board.

Figure 3. IMXEBOOKDC5 bottom-side view

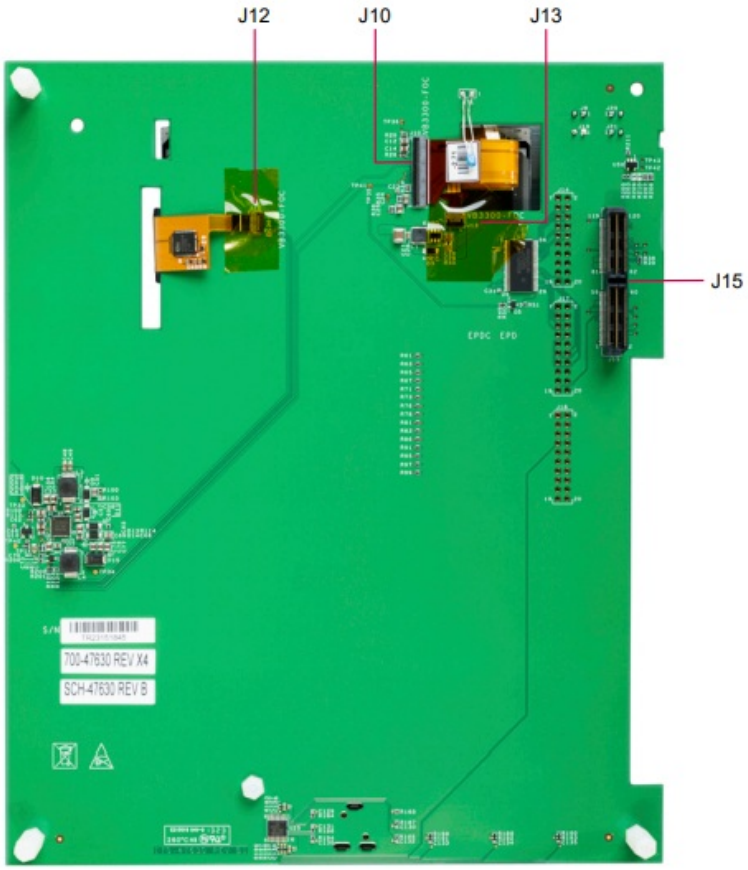
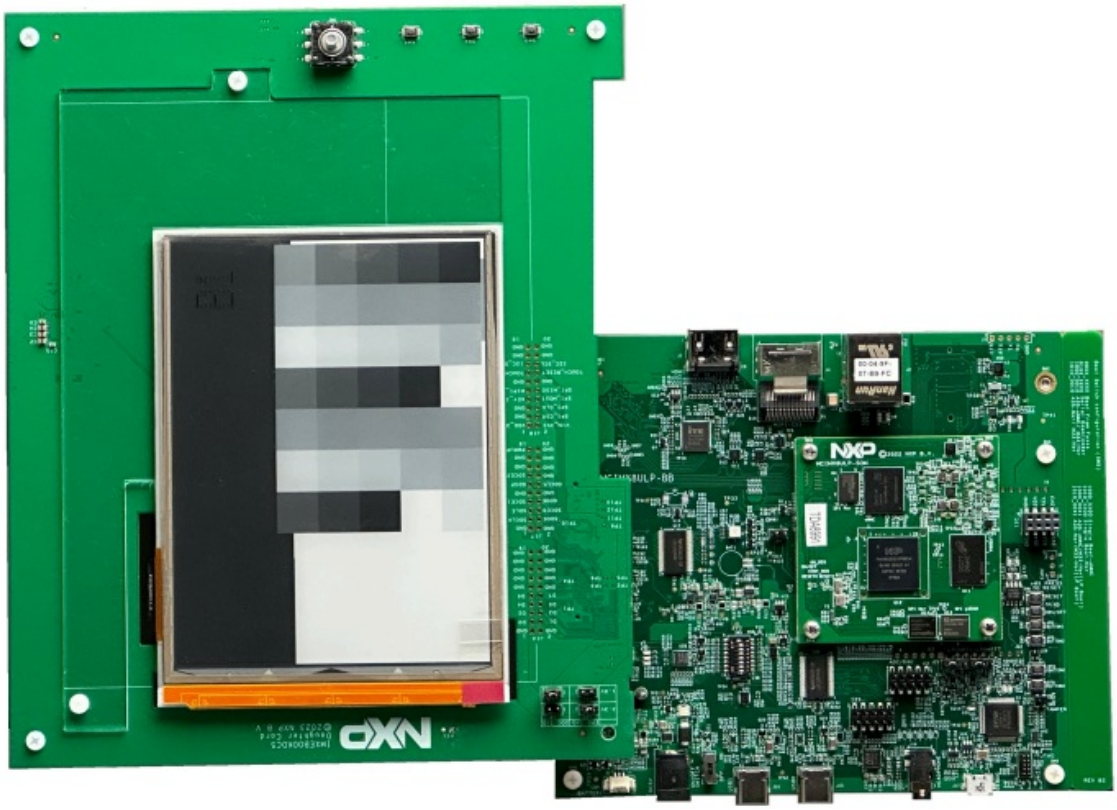


Figure 4 shows the connection between the IMXEBOOKDC5 and MCIMX8ULP-EVK boards.
Figure 4. IMXEBOOKDC5 connected to MCIMX8ULP-EVK



Board features
Table 3 lists the features of the IMXEBOOKDC5 board.

Table 3. IMXEBOOKDC5 board features

Board feature	Description
Interfacing with main board	The IMXEBOOKDC5 board interfaces with the main board (MCIMX8ULP-EVK) through a 120-pin board-to-board connector.
EPD interface	Three connectors for plugging in an e-paper display: • 34-position power/data connector • 8-pin touch panel connector • 6-position front light connector
I2C interface	The IMXEBOOKDC5 board devices are configured through an I2C bus of the main board processor.
I/O expander	8-bit I2C-to-GPIO expander
Power	The IMXEBOOKDC5 board gets powered up from the main board, through its board-to- board connector.

Connectors

describes the connectors of the IMXEBOOKDC5 board. The connectors are shown in Figure 2 and Figure 3.

Table 4. IMXEBOOKDC5 connectors

Part identifier	PCB label	Connector type	Description	Reference section
J15	–	2×60-pin connector	EPDC board-to-board connector for connecting the IMXEBOOKDC5 board to the MCIMX8ULP-EVK board	Section 2.2
J10	VB3300-FOC	34-position FPC/FFC connector	e-paper display (VB3300-FOC) power/data connector	Section 2.3
J12	VB3300-FOC	8-pin FPC/FFC connector	e-paper display (VB3300-FOC) touch panel connector	
J13	VB3300-FOC	6-position FPC/FFC connector	e-paper display (VB3300-FOC) front light connector	
J14 (DNP)	–	2×10-pin header	Alternative EPD headers	Section 2.3.1
J17 (DNP)	–	2×10-pin header		
J18 (DNP)	–	2×10-pin header	Alternative touch panel header	

Jumpers

Table 5 describes the jumpers available on the IMXEBOOKDC5 board. The jumpers are shown in Figure 2.

Table 5. IMXEBOOKDC5 jumpers

PCB labelJumper typeDescriptionReference section • J19 is shorted (default setting): SoC I/O voltageis 1.8 V. This setting is applicable for the NXP MCIMX8ULP-EVK board.EPD I/O1x2-pin headere-paper display I/O voltage:• J20 is shorted (default setting): e-paper display I/O voltage is 3.3 V. This setting is applicable for VB3300-FOC.• J21 is shorted: e-paper display I/O voltage is 1.8V. This setting is reserved.1×2-pin header

Part identifier	PCB label	Jumper type	Description	Reference section
J8	SOC I/O	1×2-pin header	SoC input/output voltage:• J8 is shorted: SoC I/O voltage is 3.3 V. This setting is applicable for a legacy NXP EVK board.	Section 2.3
J19		1×2-pin header		
Part identifier				
J20				
J21				

Joystick and push buttons

Table 6 describes one joystick and three push buttons available on the IMXEBOOKDC5 board. These board components are shown in Figure 2.

Table 6. IMXEBOOKDC5 joystick and push buttons

Part identifier	Button type	Description
SW2	Joystick	Buttons for controlling content on e-paper display
SW3	Push button	
SW4		
SW5		

Functional description

This section contains the following subsections:

- Power supply
- EPDC board-to-board connector
- EPD interface
- I2C interface
- I2C-to-GPIO expander
- PCB information

Power supply
The IMXEBOOKDC5 board gets the primary power supplies from the main board, through its board-to-board connector J15. The primary power supplies are used to produce more (secondary) power supplies to power up the IMXEBOOKDC5 board devices.

Table 7 describes the IMXEBOOKDC5 power supplies.

Table 7. IMXEBOOKDC5 power supplies

Power source	Manufacturer and part number	Power supply	Description
EPDC connector J15	Samtec QTH-060-02-L-D-A	MAIN_5V0 (5 V)	Default input power source for power switch U58
		SRC_5V0 (5 V)	Alternative input power source for power switch U58
		VDD_1V8 (1.8 V)	• Produces VDD_EXT_IO supply through 2- pin jumper J19, which is shorted by default.• Produces VDD_EPD_IO supply through 2- pin jumper J21, which is open by default.
		VDD_3V3 (3.3 V)	• Produces VDD_EXT_IO supply through 2- pin jumper J8, which is open by default.• Produces VDD_EPD_IO supply through 2- pin jumper J20, which is shorted by default.• Supplies power to:– Touch panel header J18 (not populated)– e-paper display touch panel connector J12– Joystick SW2– Push buttons SW3, SW4, and SW5– I2C-to-GPIO expander U25– One of the two power supplies for EPD PMIC U9
		LI_ION_4V2 (4.2 V)	Unused
		USB_5V0 (5 V)	Unused
Power switch U58	Diodes Incorporated AP22814 AW5	VDD_5V0 (5 V)	• Another power supply for EPD PMIC U9• Supplies power to LED driver U1, which drives front light for e-paper display through e-paper display front light connector J13.
Power source	Manufacturer and part number	Power supply	Description
From VDD_1V8 supply through jumper J19 (default source) / from VDD_3V3 supply through jumper J8 (alternative source)	–	VDD_EXT_IO (1.8 V / 3.3 V)	Supplies VCCA power to voltage translator U2.
From VDD_3V3 supply through jumper J20 (default source) / from VDD_1V8 supply through jumper J21 (alternative source)	–	VDD_EPD_IO (1.8 V / 3.3 V)	Supplies VCCB power to voltage translator U2.

EPD PMIC U9	Fitipower FP9931WM	PMIC_VGH	Supplies power to e-paper display power / data connector J10.
		PMIC_VGL	
		PMIC_VPOS	
		PMIC_VNEG	
		PMIC_VCOM	
		PMIC_3V3 (3.3 V)	• Produces PMIC_3V3_1V8 supply if resistor R206 is populated (populated by default)• Supplies power to voltage regulator U10.
From PMIC_3V3 supply (if resistor R206 is populated, default setting)	–	PMIC_3V3_1V8 (3.3 V (default value) / 1.8 V)	Supplies power to e-paper display power / data connector J10.
Voltage regulator U10 (if resistor R206 is not populated)	Richtek RT9169-18GVL		

EPDC board-to-board connector

The IMXEBOOKDC5 board has a 120-pin, 0.5 mm pitch high-speed board-to-board connector J15 (Samtec QTH-060-02-L-D-A) to interface with the main board (MCIMX8ULP-EVK). This connector is plugged into the 120-pin Electrophoretic Display Controller (EPDC) connector (J7) of the MCIMX8ULP-EVK board.

Table 8 describes the EPDC board-to-board connector J15 pinout.

Table 8. EPDC board-to-board connector J15 pinout

Connection detailsEPDC_DAT6EPDC data 6Connects to e-paper display power/data connector J10 (through voltage translator U2) (default setting) or alternative EPD header J17 (DNP).EPDC_SDCE1EPDC source driver pulse start data 1 (not used)Connects to EPD PMIC U9 (default setting) or alternative EPD header J17 (DNP).PMIC_POWER_GOOD_BPMIC power goodPower good signal from EPD PMIC U9TOUCH_RESET_BTouch panel resetConnects to e-paper display (VB3300-FOC) touch panel connector J12 or alternative touch panel header J18 (DNP).TOUCH_INT_BTouch panel interruptConnects to alternative touch panel header J18 (DNP).SPI_CLKSPI clockConnects to e-paper display (VB3300-FOC) front light connector J13 through LED driver U1.I2C_SDAI2C dataProvides I2C bus to IMXEBOOKDC5 peripherals.I2C_SCLI2C clockProvides 1.8 V supply.MAIN_5V05 V power outputProvides 5 V supply.VDD_3V33.3 V power outputProvides 3.3 V supply.SRC_5V05 V power output (not used by default)Provides 5 V supply.LI_ION_4V24.2 V lithium-ion battery power output (not used)Provides 4.2 V supply.USB_5V05 V power output when using lithium-ion battery (not used)Provides 5 V supply.
Connection detailsEPDC_DAT6EPDC data 6Connects to e-paper display power/data connector J10 (through voltage translator U2) (default setting) or alternative EPD header J17 (DNP).EPDC_SDCE1EPDC source driver pulse start data 1 (not used)Connects to EPD PMIC U9 (default setting) or alternative EPD header J17 (DNP).PMIC_POWER_GOOD_BPMIC power goodPower good signal from EPD PMIC U9TOUCH_RESET_BTouch panel resetConnects to e-paper display (VB3300-FOC) touch panel connector J12 or alternative touch panel header J18 (DNP).TOUCH_INT_BTouch panel interruptConnects to alternative touch panel header J18 (DNP).SPI_CLKSPI clockConnects to e-paper display (VB3300-FOC) front light connector J13 through LED driver U1.I2C_SDAI2C dataProvides I2C bus to IMXEBOOKDC5 peripherals.I2C_SCLI2C clockProvides 1.8 V supply.MAIN_5V05 V power outputProvides 5 V supply.VDD_3V33.3 V power outputProvides 3.3 V supply.SRC_5V05 V power output (not used by default)Provides 5 V supply.LI_ION_4V24.2 V lithium-ion battery power output (not used)Provides 4.2 V supply.USB_5V05 V power output when using lithium-ion battery (not used)Provides 5 V supply.Signal nameDescriptionConnection details—Connects to test point

TP13.—Connects to test point TP12.—Connects to test point TP10.—Connects to test point TP11.—Connects to test point TP9.—Connects to test point TP5.—Connects to test point TP4.—Connects to test point TP6.—Connects to test point TP2.—Connects to test point TP3.—Connects to test point TP1.36, 42, 48, 51, 54, 55,57, 60, 61, 62, 66, 74,76, 80, 83, 84, 87, 93,103, 104, 106, 111,113, 115—Connects to ground.27, 28, 32, 34, 35, 53,59, 63, 79, 81, 89, 91,95, 97, 99, 100, 101,105, 107, 109—Unused

Table 8. EPDC board-to-board connector J15 pinout

Pin numbers	Signal name	Description	Connection details
43	EPDC_DAT0	EPDC data 0	
116	EPDC_DAT1	EPDC data 1	
110	EPDC_DAT2	EPDC data 2	
114	EPDC_DAT3	EPDC data 3	
44	EPDC_DAT4	EPDC data 4	
46	EPDC_DAT5	EPDC data 5	
Pin numbers	Signal name	Description	
18			
120	EPDC_DAT7	EPDC data 7	
68	EPDC_SDCE2	EPDC source driver pulse star t data 2 (not used)	
70			
72	EPDC_SDCE0	EPDC source driver pulse star t data 0	
78	EPDC_SDLE	EPDC source driver latch ena ble	
102	EPDC_SDCLK	EPDC source driver clock	
108	EPDC_SDOE	EPDC source driver output en able	
94	EPDC_GDCLK	EPDC gate driver clock	
96	EPDC_GDSP	EPDC gate driver pulse start	
98	EPDC_GDOE	EPDC gate driver output enabl e	
33	EPDC_PMIC_PWRUP	EPDC PMIC power-ON reque st	
86			
64			
119			
50	SPI_CS0	SPI chip select 0	Connects to e-paper display (VB3300-FOC) power/data con nector J10 (through voltage tr
52			

56	SPI_MISO	SPI master input / slave output	anslator U2) (default setting) o r alternative EPD header J14 (DNP).
58	SPI_MOSI	SPI master output / slave input	
112	FRONT_LIGHT_ENABL E	Front light enable	
29			
31			
1, 17, 19, 25	VDD_1V8	1.8 V power output	
2, 4, 7, 8			
5, 45, 47, 49			
11, 13, 39, 41			
65, 67, 69, 71			
73, 75, 77			
Pin numbers			
14, 16			
20, 22			
37			
38			
40			
82			
85			
88			
90			
92			
117			
6, 12, 18, 23, 24, 3 0,			
3, 9, 10, 15, 21, 26,			

EPD interface

The IMXEBOOKDC5 board electrophoretic display (EPD) interface provides three FPC/FFC connectors for plugging in an e-paper display. These connectors are connected to the EPDC board-to-board connector J15 on the board, allowing the e-paper display to be controlled from the i.MX 8ULP processor on the MCIMX8ULP-EVK board.

The IMXEBOOKDC5 board comes with an e-paper display (E Ink VB3300-FOC) mounted on the front (top) side of the board, with the help of the three EPD interface connectors, which are placed on the back (bottom) side of the

board. For more information on VB3300-FOC, see VB3300-FOC/ED060XH7 data sheet.

The three EPD interface connectors are listed in Table 9.

Table 9. EPD interface connectors

Part identifier	Manufacturer and part number	Description
J10	Hirose Electric FH34SJ-34S-0.5SH (50)	34-position power/data connector for e-paper display (VB3300-FOC)
J12	–	8-pin touch panel connector for e-paper display (VB3300-FOC)
J13	–	6-position front light connector for e-paper display (VB3300-FOC)

Table 10. e-paper display power/data connector J10 pinout

Pin numbers	Signal name	Description	Connection details
15	EPD_PCeP_DAT7	EPD data 7	Connects to EPDC board-to- board connector J15 through voltage translator U2.
16	EPD_PCeP_DAT6	EPD data 6	
17	EPD_PCeP_DAT5	EPD data 5	
18	EPD_PCeP_DAT4	EPD data 4	
19	EPD_PCeP_DAT3	EPD data 3	
20	EPD_PCeP_DAT2	EPD data 2	
21	EPD_PCeP_DAT1	EPD data 1	
22	EPD_PCeP_DAT0	EPD data 0	
23	EPD_PCeP_SDCE0	EPD source driver pulse start data 0	
24	EPD_PCeP_SDOE	EPD source driver output enable	
25	EPD_PCeP_SDLE	EPD source driver latch enable	
27	EPD_PCeP_SDCLK	EPD source driver clock	
6	EPD_PCeP_GDSP	EPD gate driver pulse start	
7	EPD_PCeP_GDCLK	EPD gate driver clock	
8	EPD_PCeP_GDOE	EPD gate driver output enable	
1	PMIC_VGH	–	Connects to the PMIC_VGH supply.
2	PMIC_VPOS	–	Connects to the PMIC_VPOS supply.
4, 14	PMIC_VCOM	–	Connects to the PMIC_VCOM supply.
29	PMIC_3V3_1V8	–	Connects to the PMIC_3V3_1V8 supply.
33	PMIC_VGL	–	Connects to the PMIC_VGL supply.
34	PMIC_VNEG	–	Connects to the PMIC_VNEG supply.
3, 9, 26, 28, 32	–	–	Connects to ground.
5, 10, 11, 12, 13, 30,31	–	–	Unused

Table 11. e-paper display touch panel connector J12 pinout

Pin numbers	Signal name	Description	Connection details
3	TOUCH_RESET_B	Touch panel reset	Connects to EPDC board-to- b oard connector J15.
4	TOUCH_INT_B	Touch panel interrupt	
5	I2C_SDA	I2C data	I2C bus signals
6	I2C_SCL	I2C clock	

Pin numbers	Signal name	Connection details	
1, 2	LED_A	Connects to EPDC board-to-board conne ctor J15 through LED driver U1.	
5, 6	LED_C		
3, 4	–	Unused	

Table 12. e-paper display front light connector J13 pinout

Pin numbers	Signal name	Connection details
1, 2	LED_A	Connects to EPDC board-to-board connector J15 through LED driver U1.
5, 6	LED_C	
3, 4	–	Unused

The IMXEBOOKDC5 board uses a 20-bit bidirectional voltage translator U2 (Nexperia 74AVCH20T245DGG,11) for shifting voltage levels of signals between the processor and the e-paper display.

At U2, voltage level of processor signals can be 1.8 V (default setting) or 3.3 V. Voltage level of processor signals can be controlled through the settings of the 2-pin jumpers J8 and J19

Similarly, voltage level of e-paper display signals can be 1.8 V or 3.3 V (default setting). Voltage level of e-paper display signals can be controlled through the settings of the 2-pin jumpers J20 and J21.

Table 13 shows how to select the I/O voltage for processor signals at U2.

Jumper settings	Processor signal I/O vol tage	Applicable for (board)
J8 is shorted and J19 is open	3.3 V	Legacy EVK boards
J8 is open and J19 is shorted (default settings)	1.8 V	MCIMX8ULP-EVK board

Table 14. e-paper display signal I/O voltage selection

Jumper settings	e-paper display signal I/ O voltage	Applicable for (e-paper displa y)
J20 is shorted and J21 is open (default settings)	3.3 V	VB3300-FOC e-paper display
J20 is open and J21 is shorted	1.8 V	Reserved

Alternative EPD interface

Apart from the EPD interface described in Section 2.3, the IMXEBOOKDC5 board provides an alternative EPD interface, which includes the following three connectors (none of them is populated by default):

- 20-pin EPD header J14
- 20-pin EPD header J17
- 20-pin touch panel header J18

Table 15 describes the EPDC header J14 pinout.

Table 15. EPDC header J14 pinout

Pin numbers	Signal name	Description	Connection details
3	EPDC_DAT0	EPDC data 0	Connects to EPDC board-to- board connector J15.
4	EPDC_DAT1	EPDC data 1	
5	EPDC_DAT2	EPDC data 2	
6	EPDC_DAT3	EPDC data 3	
7	EPDC_DAT4	EPDC data 4	
8	EPDC_DAT5	EPDC data 5	
9	EPDC_DAT6	EPDC data 6	
10	EPDC_DAT7	EPDC data 7	
1, 2, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20	–	Ground	Connects to ground.

Table 16. EPDC header J17 pinout

Pin numbers	Signal name	Description	Connection details
3	EPDC_SDCLK	EPDC source driver clock	Connects to EPDC board-to- board connector J15.
4	EPDC_SDOE	EPDC source driver output enable	
5	EPDC_SDLE	EPDC source driver latch enable	
6	EPDC_SDCE0	EPDC source driver pulse start data 0	
7	EPDC_SDCE1	EPDC source driver pulse start data 1 (not used)	
13	EPDC_SDCE2	EPDC source driver pulse start data 2 (not used)	
8	EPDC_GDOE	EPDC gate driver output enable	
11	EPDC_GDSP	EPDC gate driver pulse start	
12	EPDC_GDCLK	EPDC gate driver clock	
19	EPDC_PMIC_PWRUP	EPDC PMIC power-ON request	
1, 2, 9, 10, 14, 15, 16,17, 18, 20	–	Ground	Connects to ground.

Table 17. Touch panel header J18 pinout

Connection detailsI2C_SDAI2C dataInterrupt signal from I2C-to-GPIO expander U25VDD_3V33.3 V power inputConnects to the VDD_3V3 supply.19, 20–GroundConnects to ground.

Pin numbers	Signal name	Description	Connection details
4	SPI_CS0	SPI chip select 0	Connects to EPDC board-to- board connector J15.
6	SPI_CLK	SPI clock	
8	SPI_MOSI	SPI master output / slave input	
10	SPI_MISO	SPI master input / slave output	
13	TOUCH_INT_B	Touch panel interrupt	
14	TOUCH_RESET_B	Touch panel reset	
Pin numbers	Signal name	Description	
15			
16	I2C_SCL	I2C clock	
7	KEY_INT	Interrupt input	
1, 2			
3, 5, 9, 11, 12, 17, 18,			

I2C interface

The Inter-Integrated Circuit (I2C) protocol is a serial bus protocol that allows multiple peripheral devices to communicate to one or more master devices with a pair of control and data signals.

The IMXEBOOKDC5 board devices are configured through an I2C bus of the main board processor. If MCIMX8ULP-EVK is used as the main board, then, the LPI2C1 bus of the i.MX 8ULP processor acts as the I2C master for the IMXEBOOKDC5 board devices.

Table 18 shows the IMXEBOOKDC5 I2C devices.

Table 18. IMXEBOOKDC5 I2C devices

7-bit I2C address[1]	Device	Description
0x18	Fitipower FP9931WM (U9)	EPD PMIC
0x21	NXP PCA6408APW (U25)	I2C-to-GPIO expander
0x15	E Ink VB3300-FOC	e-paper display attached to the EPD interface connectors (J10, J12, and J13). I2C signals are connected through pins 5 and 6 of the J12 connector.
[2]	–	e-paper display attached to the alternative EPD interface connectors (J14, J17, and J18). These connectors are not populated by default. I2C signals are connected through pins 15 and 16 of the J18 connector.

1. A 7-bit address does not include the read/write (R/W) bit.
2. I2C address depends on the plugged-in e-paper display.

I2C-to-GPIO expander

The IMXEBOOKDC5 board has a general-purpose input/output (GPIO) expander that provides remote I/O expansion via the I2C bus interface.

Table 19 describes the IMXEBOOKDC5 I2C-to-GPIO expander

Table 19. I2C-to-GPIO expander

Part identifier	Manufacturer and part number	Description
U25	NXP PCA6408APW	8-bit GPIO expander. It is controlled by the i.MX 8ULP processor (through EPDC board-to-board connector J15) over the LPI2C1 bus.

PCB information

The IMXEBOOKDC5 board is made from FR4 substrate material with standard 6-layer PCB technology. Figure 5 and Figure 6 show the IMXEBOOKDC5 PCB stack-up information.

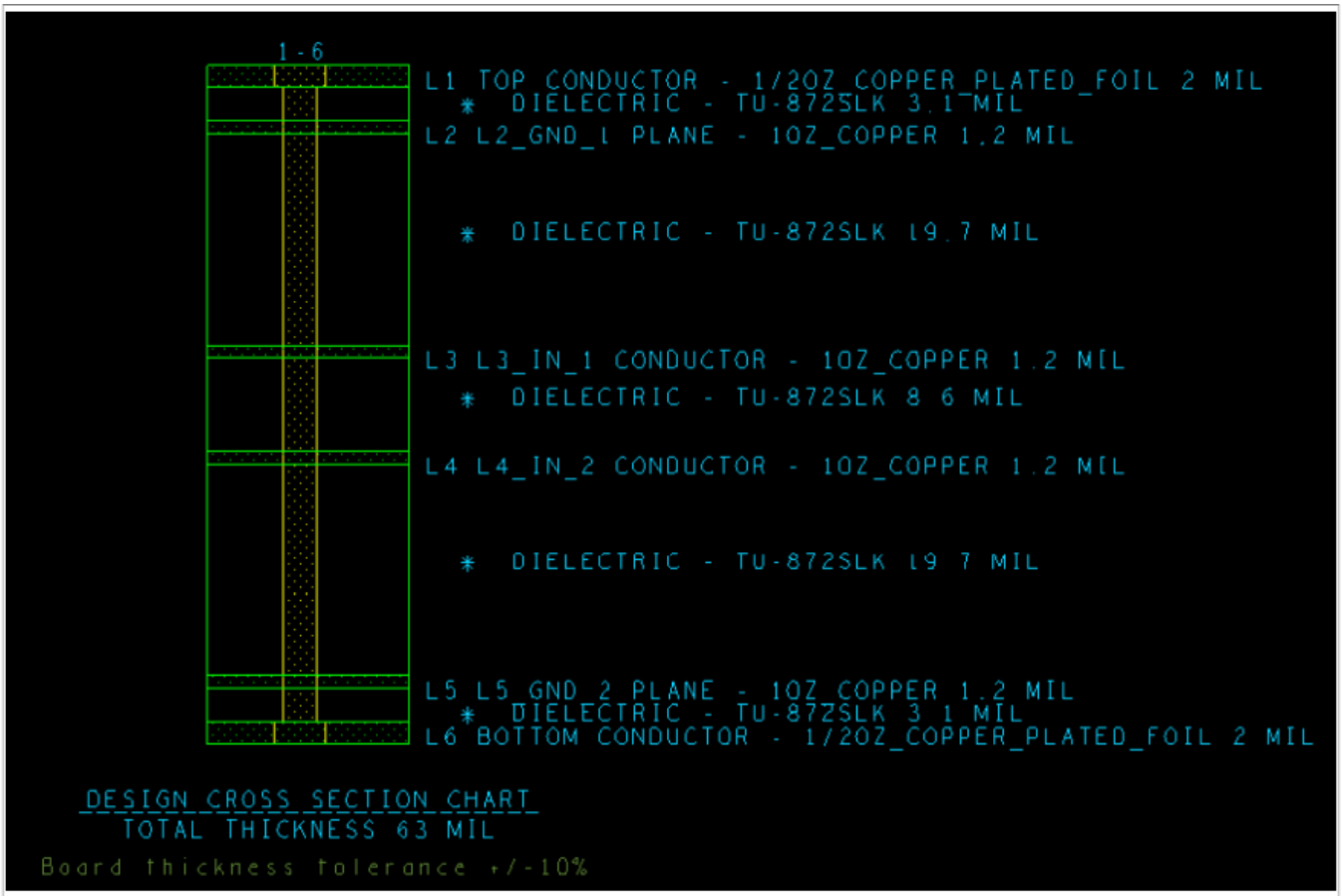


Figure 5. IMXEBOOKDC5 PCB stack-up

Objects		Types		Thickness	Physical		Embedded	Signal Integrity	
#	Name	Layer	Layer Function	Value mil	Layer ID	Material	Embedded Status	Conductivity mho/cm	Dielectric Constant
*	*	*	*	*	*	*	*	*	*
		Surface							1
1	TOP	Conductor	Conductor	2	1	1/2oz Copper Plated F...	Not embedded	580000	1
		Dielectric	Dielectric	3.1		Tu-872slk Lk Sp		0	4
2	L2_GND_1	Plane	Plane	1.2	2	1oz Copper	Not embedded	596000	1
		Dielectric	Dielectric	19.7		Tu-872slk Lk Sp		0	4
3	L3_IN_1	Conductor	Conductor	1.2	3	1oz Copper	Not embedded	596000	1
		Dielectric	Dielectric	8.6		Tu-872slk Lk Sp		0	4
4	L4_IN_2	Conductor	Conductor	1.2	4	1oz Copper	Not embedded	596000	1
		Dielectric	Dielectric	19.7		Tu-872slk Lk Sp		0	4
5	L5_GND_2	Plane	Plane	1.2	5	1oz Copper	Not embedded	596000	1
		Dielectric	Dielectric	3.1		Tu-872slk Lk Sp		0	4
6	BOTTOM	Conductor	Conductor	2	6	1/2oz Copper Plated F...	Not embedded	580000	1
		Surface							1

Figure 6. IMXEBOOKDC5 PCB stack-up information

Revision history

Table 20 summarizes the revisions to this document.

Revision number	Release date	Description
1	11 August 2023	Initial public release

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Documents / Resources

	**NXP IMXEBOOKDC5 i.MX Evaluation and Development Boards** [pdf] User Manual IMXEBOOKDC5, MCIMX8ULP-EVK, i.MX Evaluation and Development Boards, IMXEBOOKDC5 i.MX Evaluation and Development Boards, Evaluation and Development Boards, Development Boards, Boards