MX6SL & MX508-EVK Based E-Book add-on Board 3

Table of Contents	
001	Cover Page
002	System Block Diagram
003	IPU Port#2 Docking Connector
004	Connector Output Selectors
005	E-Ink PMIC-A
006	E-Ink PMIC-B
007	E-Ink Display
008	3-Axis Sensor, SPI NOR Flash
009	Keyboard
010	Sipex AUO & LG
011	LCD Data Parallel Docking Connector

Revision History

REV	DATE	CHANGES	ENTERED BY
X1	03/09/12	First schematic review.	NI
A	03/30/12	Release to Prototype Phase	NI

SCH-27468
IMXEBOOKDC3-E

Important Notes

1. Unless Otherwise Specified:
   - All resistors are in ohms, 5%, 1/8 Watt
   - All voltages are DC
   - All polarized capacitors are aluminum electrolytic

2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

3. Device type number is for reference only. The number varies with the manufacturer.

4. Special signal usage:
   - _B Denotes - Active-Low Signal
   - <> or [] Denotes - Vectored Signals

5. All connector are identified with references "J*" and the part number is explicit near the drawing for each one.

6. Labels in bold green are used to:
   a. Aditional notes to be considered in the layout.
   b. Relevant information of this schematic.
   c. Extra identification for components in this schematic.

7. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

Usage Note: For use with LB060S04 Display

To use this board with the LG Display LB060S04 panel, make the folowing changes to a production board:

1. Cut the following shorting traces: SH7, SH13, SH24, SH25, SH26, SH27, SH28.

2. Depopulate the following resistors: R94, R101, R102, R103, R104.

3. Populate the following resistors: R16, R58, R174, R175, R176.

4. Populate the 1.2V regulator and associated components: U10, C64, C65, R177, R178.

When using the LG Display panel, the KEY_PAD_LOCK and the TOUCH_RESET_B traces will be disconnected from the EVK.

Freescale Internal Use Only

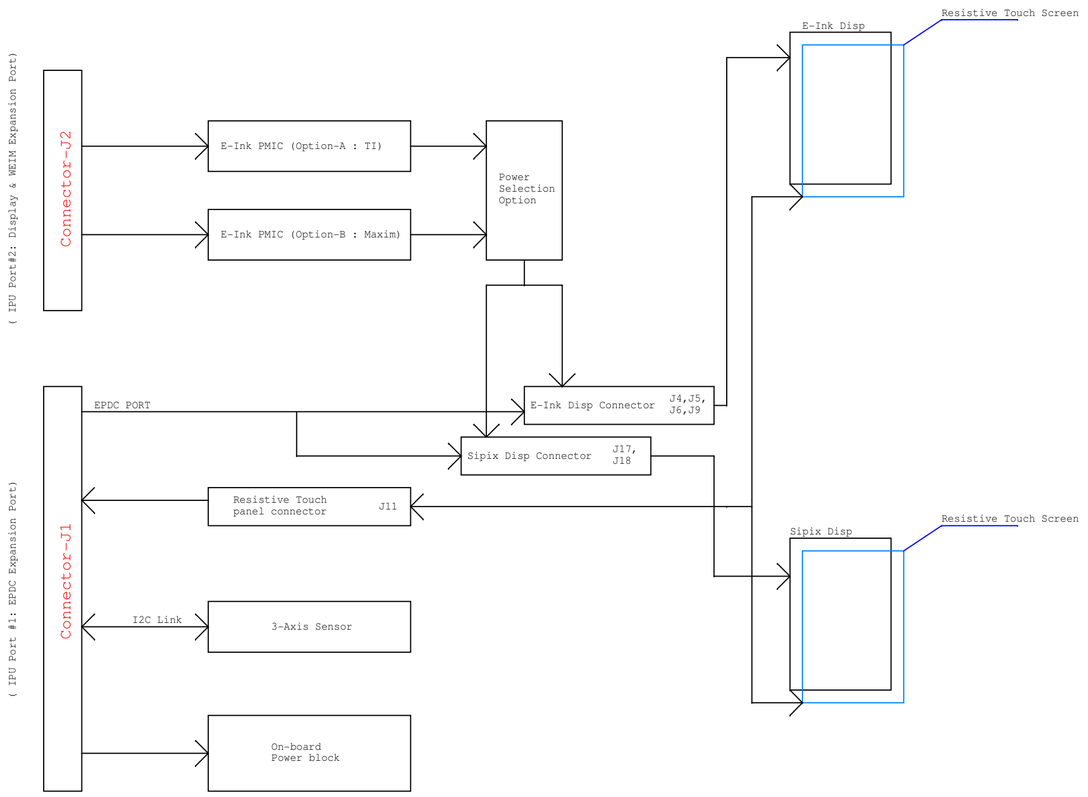
freescale semiconductor

Multimedia Application Division, Wireless & Mobile System Group

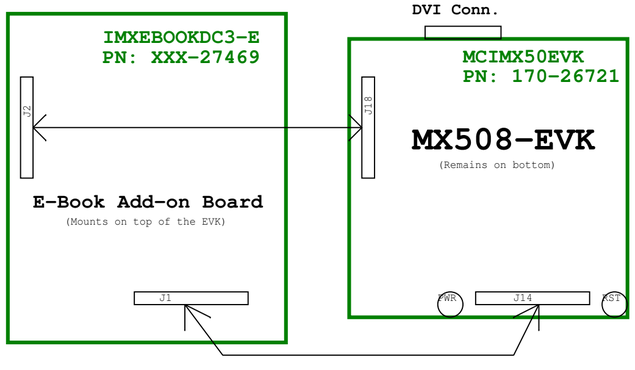
ICAP Classification: FCP: FIUO: PUBI: X

Designer: Nicolas Izquierdo	Drawing Title: IMXEBOOKDC3-E	
Drawn by: Nicolas Izquierdo	Page Title: COVER	
Approved:	Size C / Document Number SCH-27468	Rev A
	Date: Monday, April 02, 2012	Sheet 1 of 11

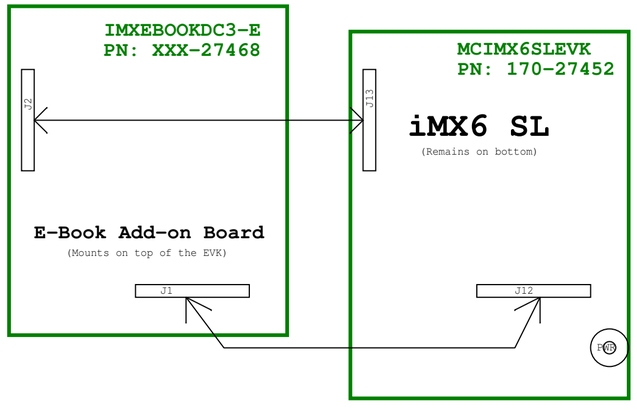
System Block Diagram



Docking Scheme



Docking Scheme



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ICAP Classification: FCP:___ FIUO: ___ PUBI: X

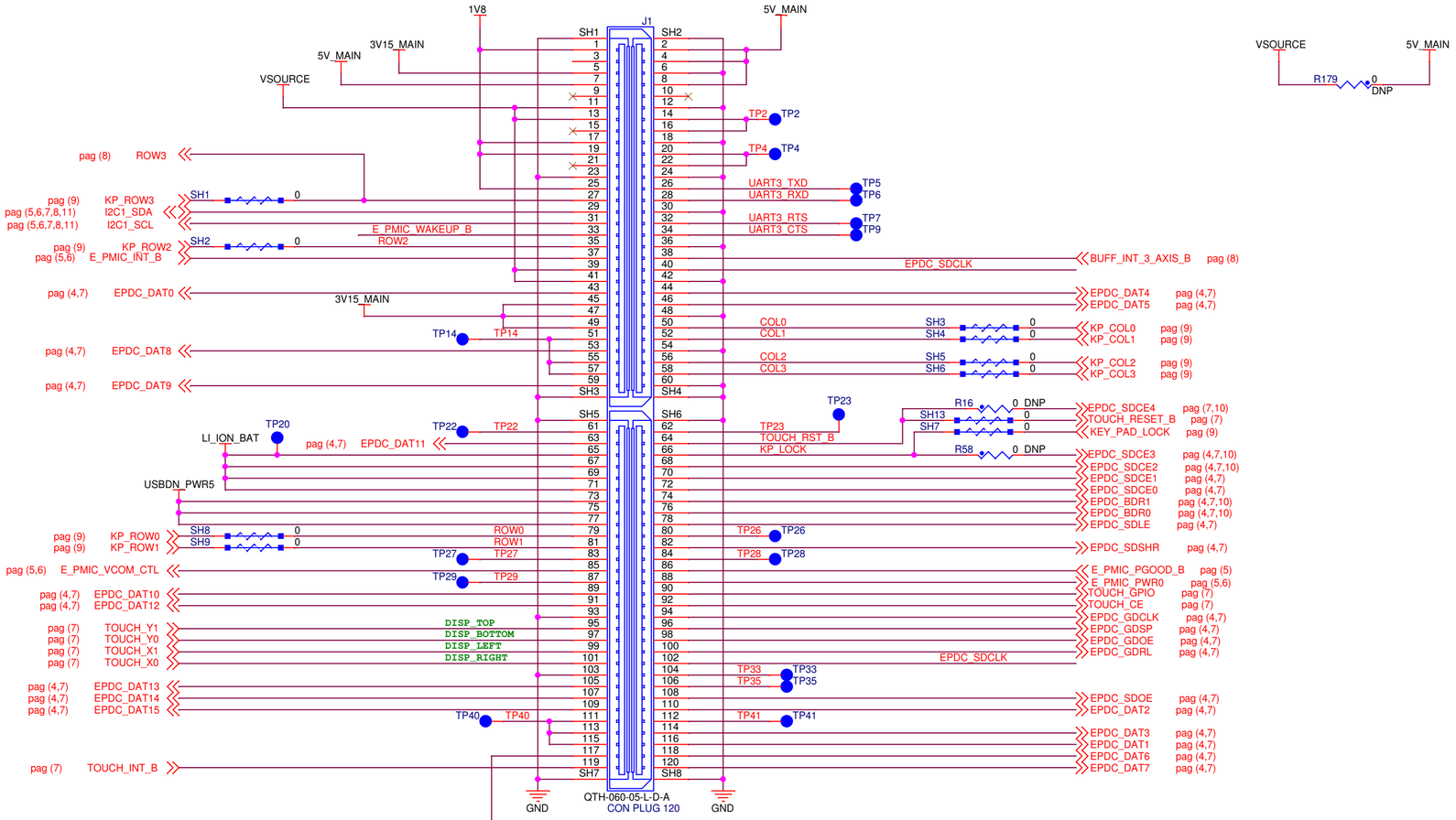
Drawing Title: **IMXEBOOKDC3-E**

Page Title: **System Block Diagram**

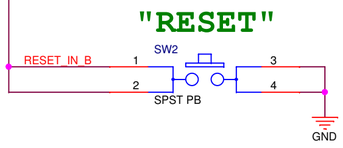
Size	Document Number	Rev
C	SCH-27468	A

Date: Monday, April 02, 2012 Sheet 2 of 11

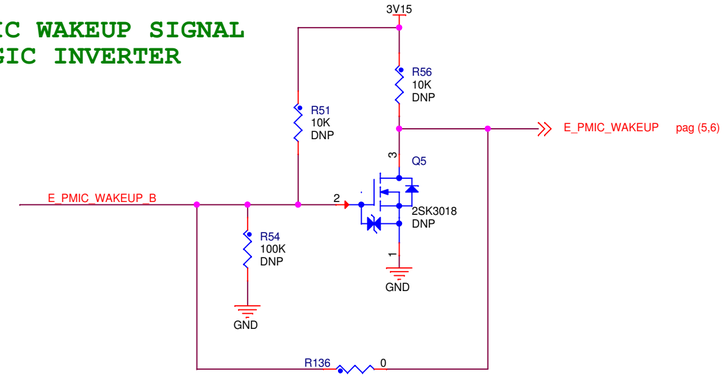
EPDC Expansion Port



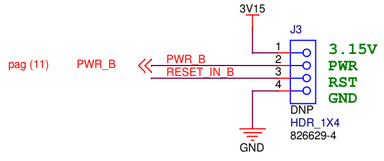
"RESET"



PMIC WAKEUP SIGNAL LOGIC INVERTER

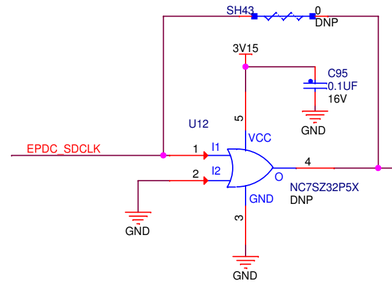


NOTE: Active low signal is currently inverted by software. DNP components provided if SW is changed to make signal active low again.



"J3" ADDITIONAL TESTPOINTS AVAILABLE FOR DEBUGGING.
THE CONNECTOR IS DNP

SH43, OPEN THIS SHORT CIRCUIT IF BUFFER IS POPULATED.



LAYOUT CONSTRAINTS
KEEP THE NET EPDC_SDCLK AS SHORT AS POSSIBLE
LENGTH NET < 1000 mils.

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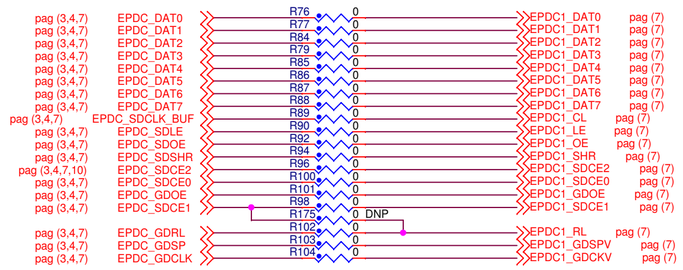
Drawing Title:	IMXEBOOKDC3-E
Page Title:	IPU Docking Connectors
Size: C	Document Number: SCH-27468 Rev: A
Date: Monday, April 02, 2012	Sheet 3 of 11

Connector Output Selectors

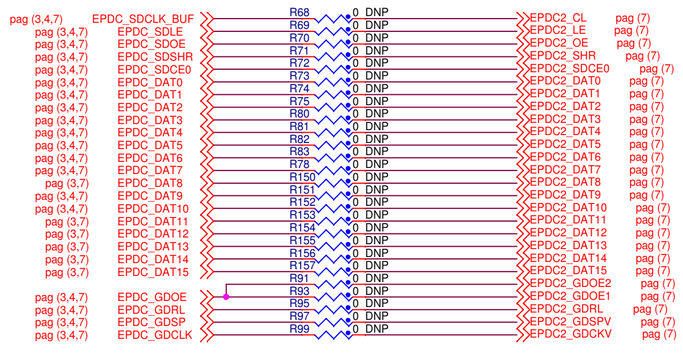
EPDC PORT FROM J1



E-Ink J4 & J6

ED060SCM, ED060SCC, ED060SC7

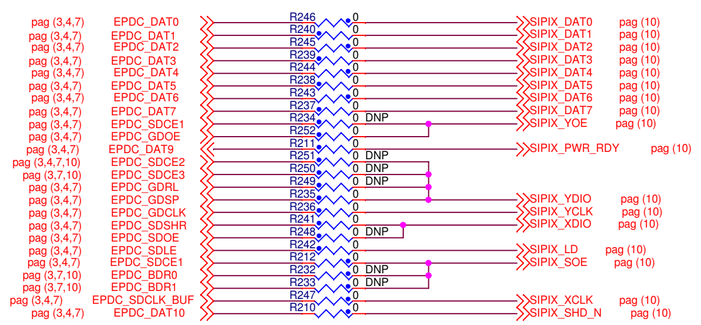
ED060SC4, ED060SC8, ED060SCD, LB060X01



E-Ink J5 & J9

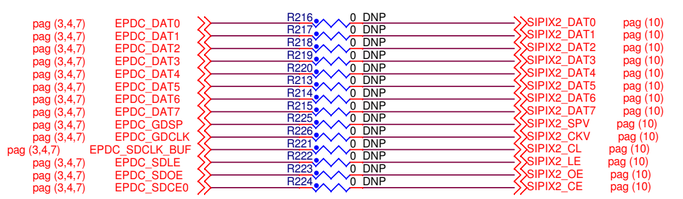
ED097OC1, ED097OC2 & ED097OC4

EC097SC1, ED097OC5 & ED097OC6



Sipix J17

AUO A060SE03 & A060SE01



Sipix J18

LG LB060X03

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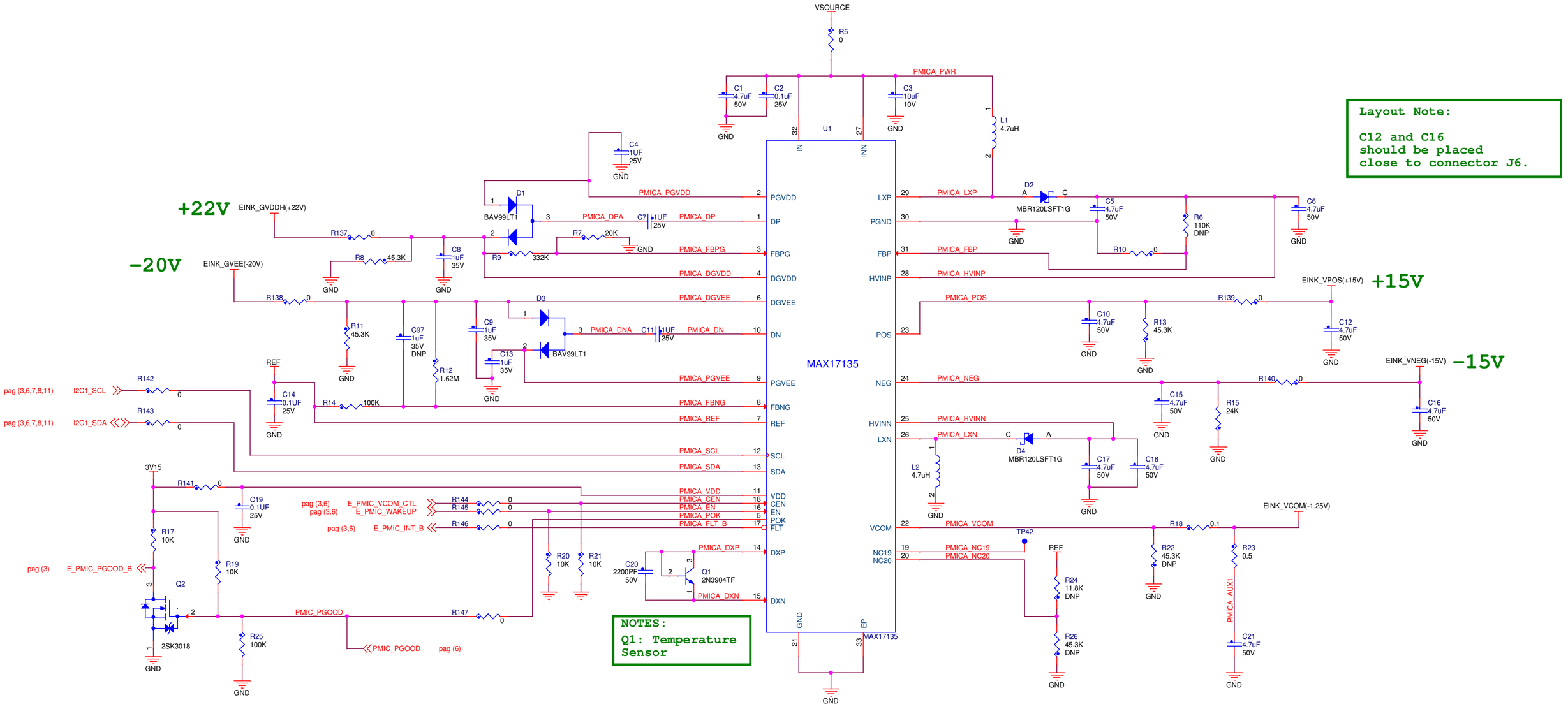
Drawing Title: **IMXEBOOKDC3-E**

Page Title: **Connector Output Selectors**

Size	Document Number	Rev
C	SCH-27468	A

Date: Monday, April 02, 2012 Sheet 4 of 11



Layout Note:

C12 and C16 should be placed close to connector J6.

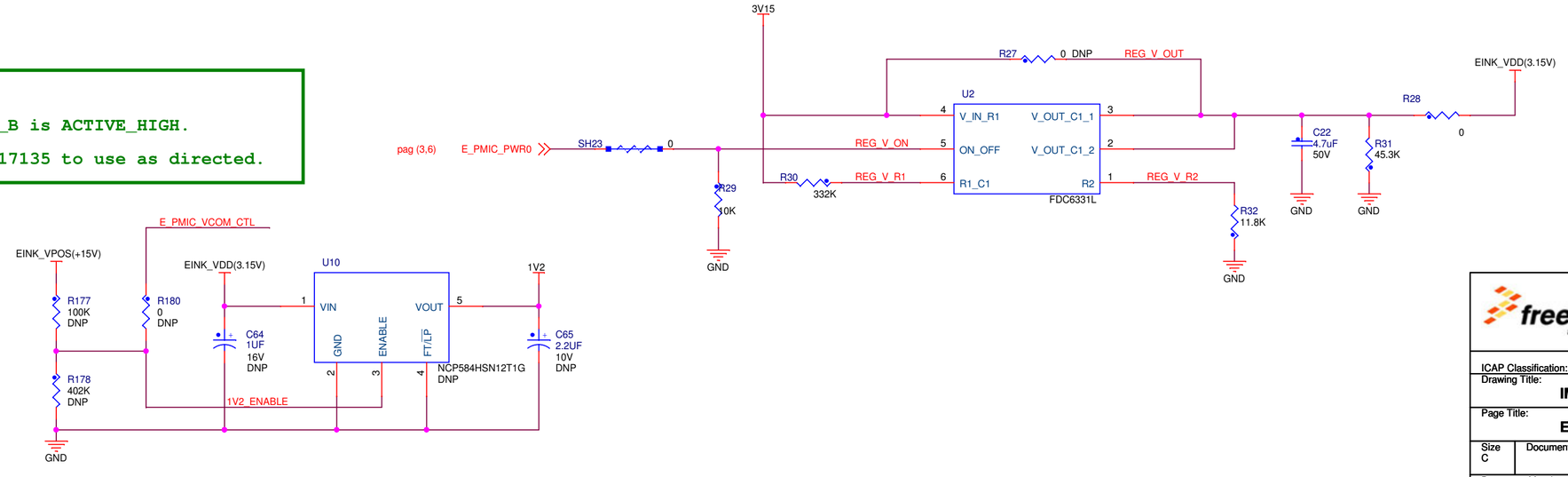
NOTES:

Q1: Temperature Sensor

NOTES:

1) For MAX17135 E-PMIC_WAKEUP_B is ACTIVE_HIGH.

2) C40 is added for Rev 4 MAX17135 to use as directed.



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ICAP Classification:	FCP:___ FIUO:___ PUBI: X	
Drawing Title:	**IMXEBOOKDC3-E**	
Page Title:	**E-Ink PMIC - A**	
Size C	Document Number SCH-27468	Rev A
Date: Monday, April 02, 2012	Sheet 5 of 11	

ALTERNATE PMIC INSTRUCTIONS

NOTE: In order to use the TI PMIC:
Populate the following parts –
R33, R35, R36, R39, R40, R41, R49, R50,
R55, R59, R60, R63, R66, R67, RT1, U3
Depopulate the following parts –
R5, R18, R137, R138, R139, R140, R141,
R142, R143, R144, R145, R146, R147

Layout consideration:
For PBKG and EPAD make sure they connect as close as possible to the VN output. As much area as possible for thermal relief is recommended.

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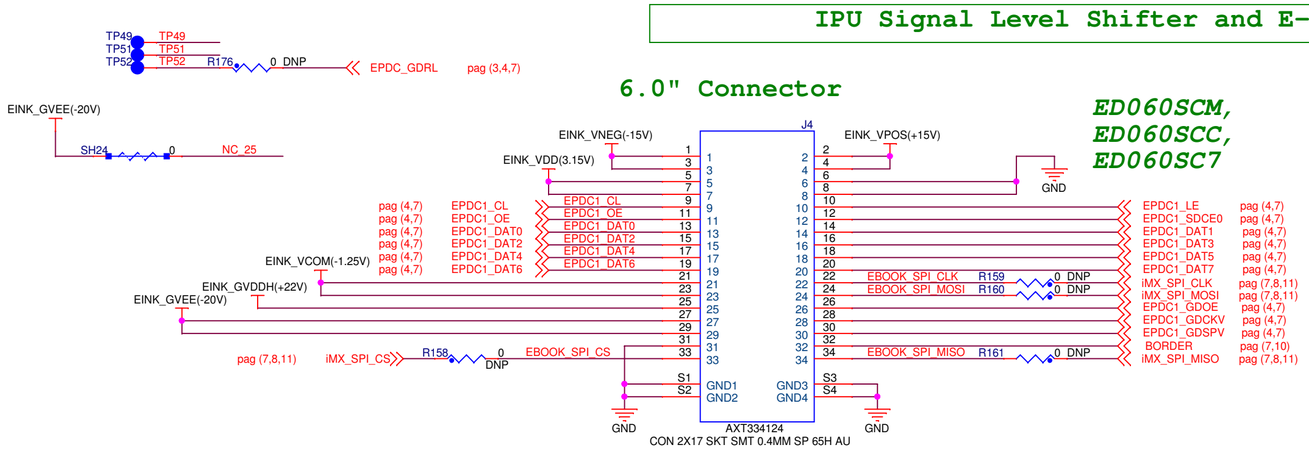
Drawing Title:	IMXEBOOKDC3-E		
Page Title:	E-Ink PMIC - B		
Size: C	Document Number: SCH-27468		Rev: A
Date: Monday, April 02, 2012		Sheet 6 of 11	

IPU Signal Level Shifter and E-Ink Display Panel Connector

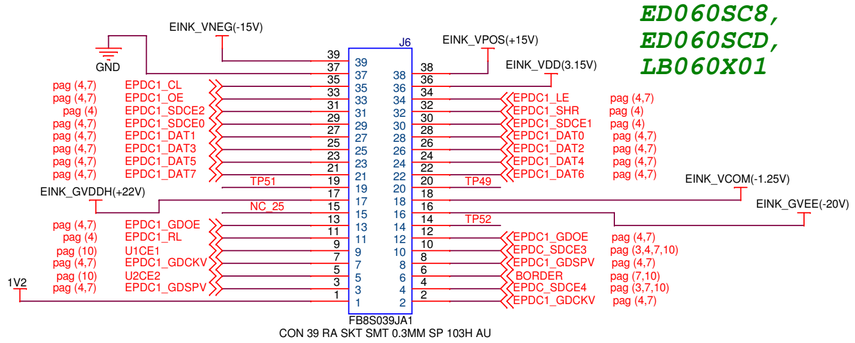
6.0" Connector

ED060SCM, ED060SCC, ED060SC7



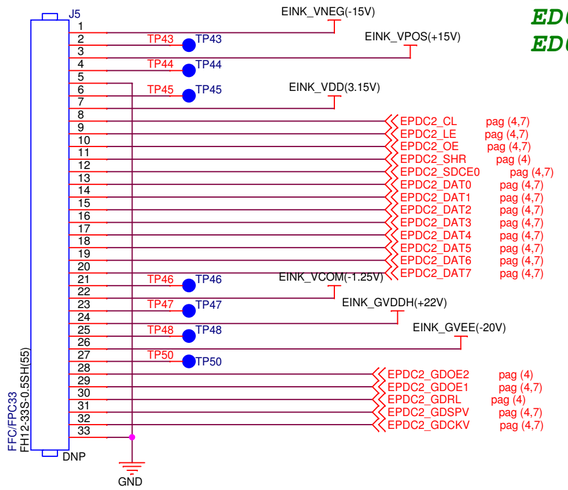
6.0" Connector

ED060SC4, ED060SC8, ED060SCD, LB060X01

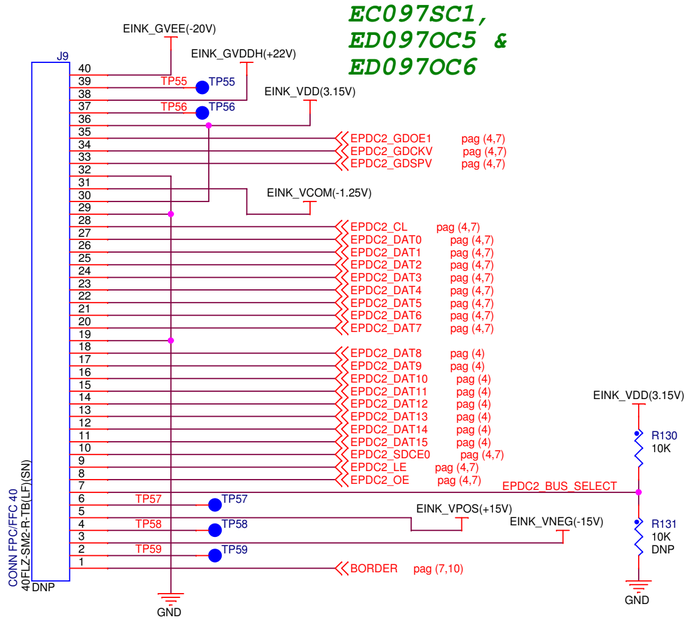


9.7" Connector

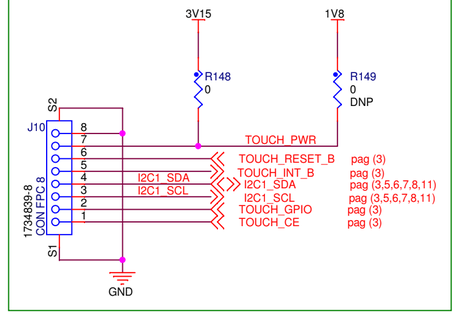
ED097OC1, ED097OC2 & ED097OC4



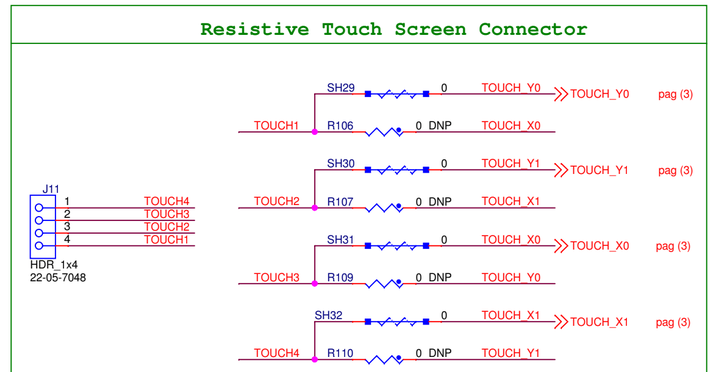
EC097SC1, ED097OC5 & ED097OC6



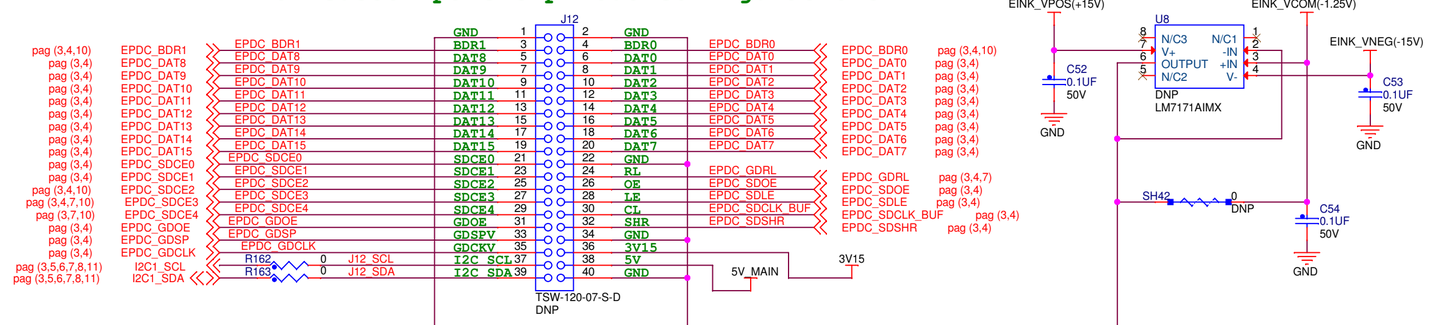
Capacitive Touch Screen Connector



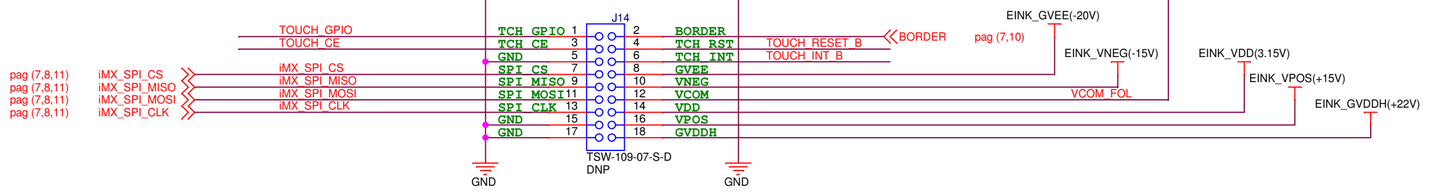
Resistive Touch Screen Connector



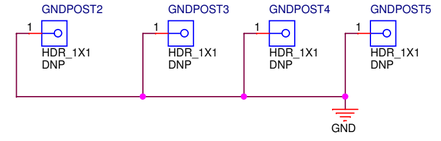
Additional J12 connector for EPDC signal for custom panels pinout configurations



Additional J14 connector for Power & Serial communication signals.



GND Posts



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ICAP Classification: FCP:___ FIUO: ___ PUBI: X

Drawing Title: **IMXEBOOKDC3-E**

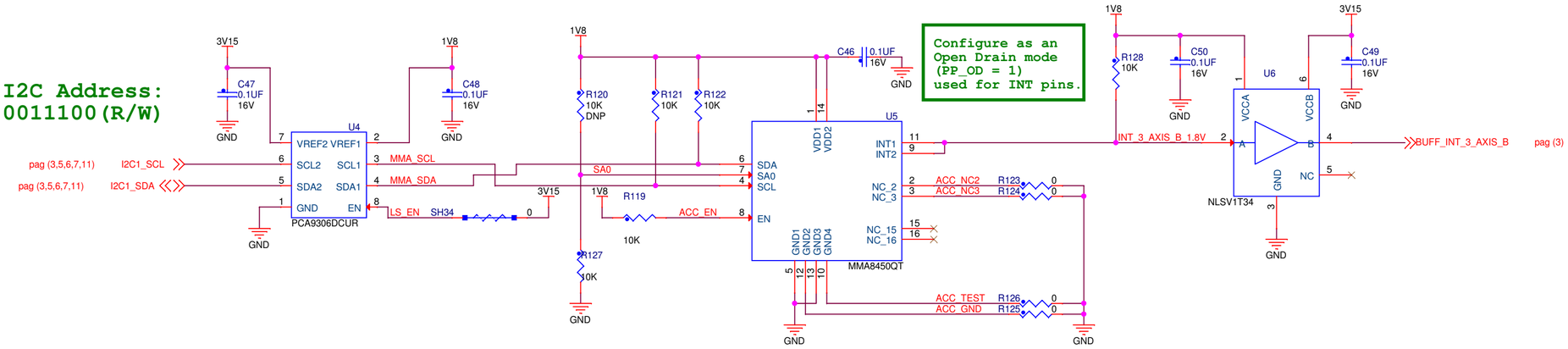
Page Title: **Level Shifters and E-Ink Display**

Size	Document Number	Rev
C	SCH-27468	A

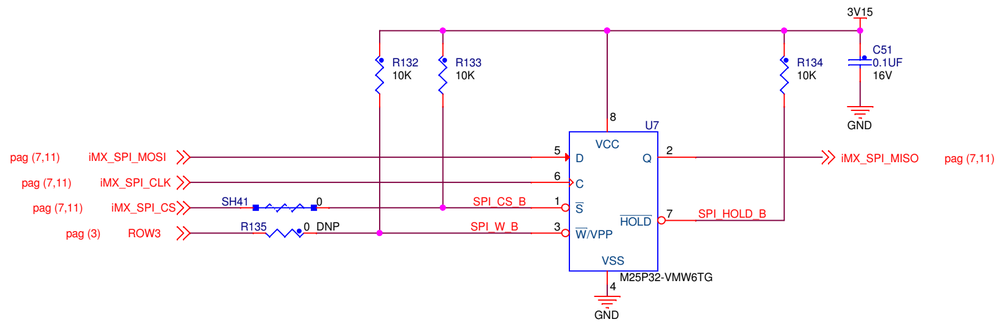
Date: Monday, April 02, 2012 Sheet 7 of 11

3-Axis Orientation Sensor

I2C Address:
0011100(R/W)



SPI NOR FLASH



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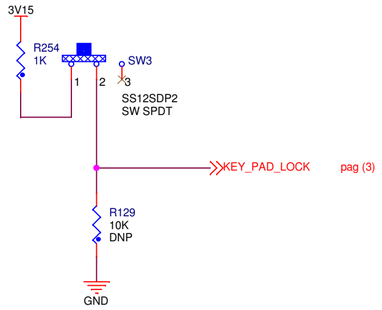
ICAP Classification: FCP: ___ FIUO: ___ PUBI: X

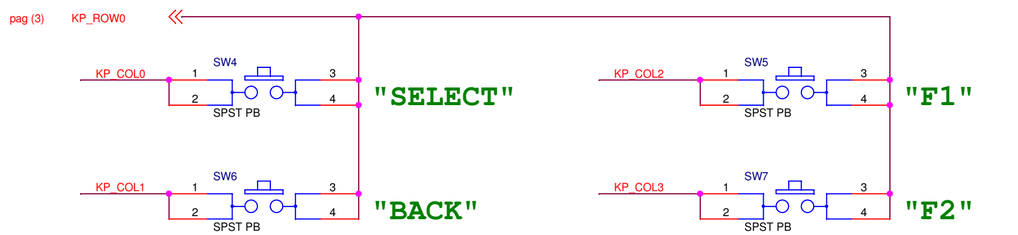
Drawing Title:
IMXEBOOKDC3-E

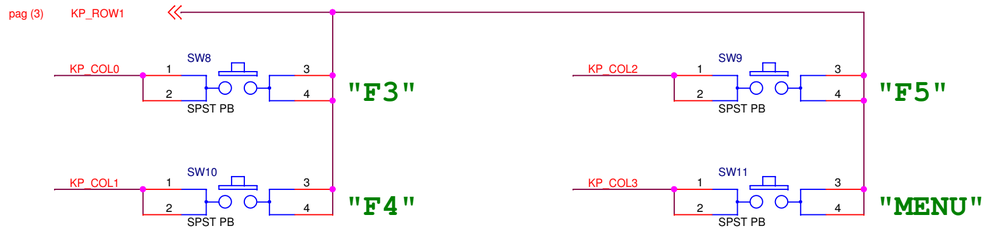
Page Title:
3-Axis Sensor, SPI NOR Flash

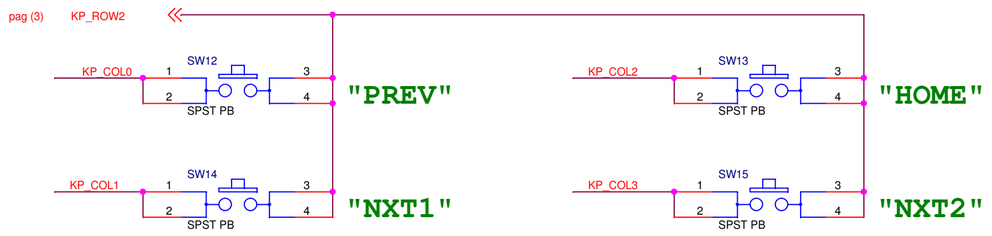
Size	Document Number	Rev
C	SCH-27468	A

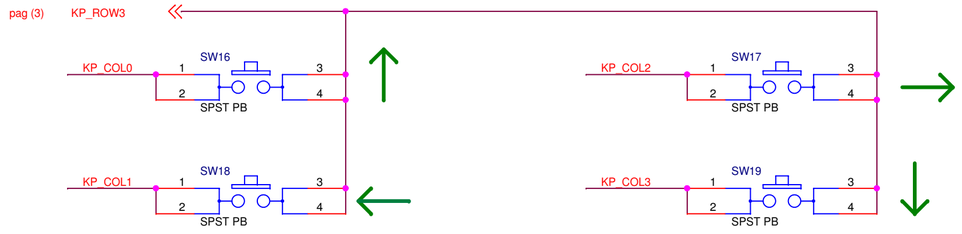
Date: Monday, April 02, 2012 Sheet 8 of 11



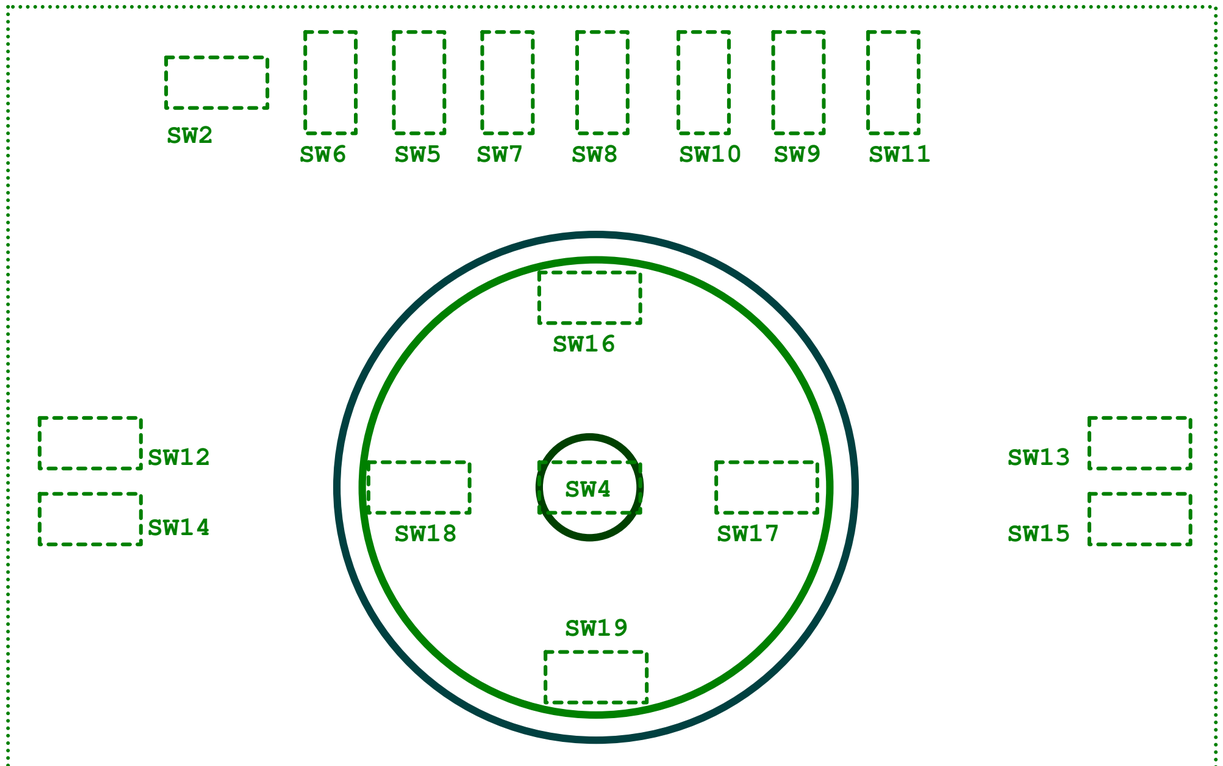








LAYOUT RECOMENDATIONS FOR SW4 TO SW19 & RESET (SW2).



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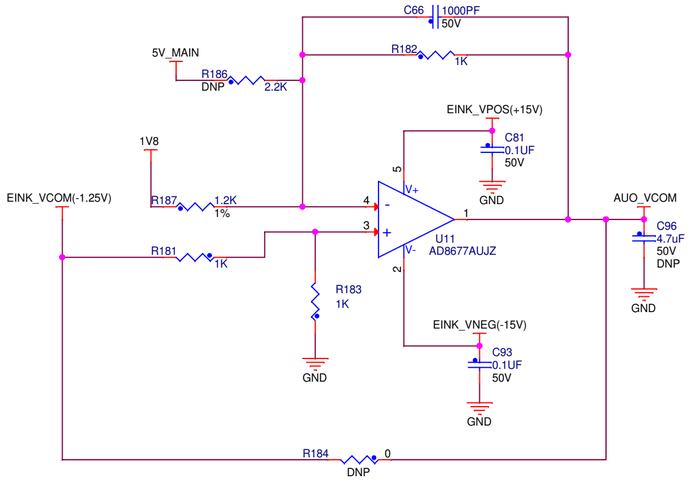
Drawing Title: **IMXEBOOKDC3-E**

Page Title: **Keyboard**

Size	Document Number	Rev
C	SCH-27468	A

Date: Monday, April 02, 2012 Sheet 9 of 11

VCOM Shifter Subtractor



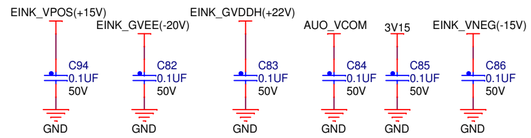
$$Vout = Vcom\left(\frac{(R182+R181)*R183}{(R183+R187)*R181}\right) - 1.8V\left(\frac{R182}{R181}\right)$$

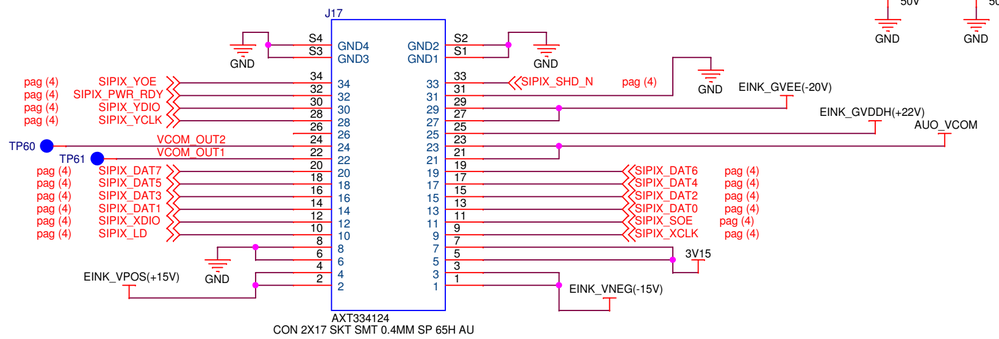
Min for EINK_Vcom = -0.5V
AUO_Vcom = -1.958V
Max for EINK_Vcom = -3.05V
AUO_Vcom = -4.293V

NOTE:
Max Requirements for AUO_Vcom:
Current 9.2mA
Range Voltage: -4.0 to -2.0 Volts
AD8677
Current Drain Max 15mA

AUO
A060SE03 & A060SE01

Layout Consideration
Close to J17

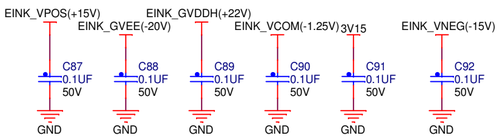


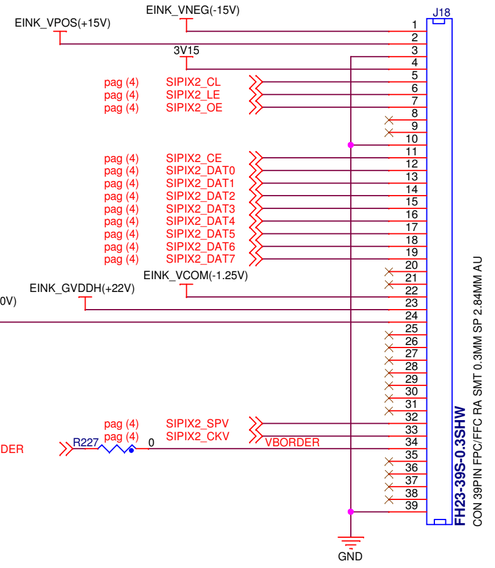


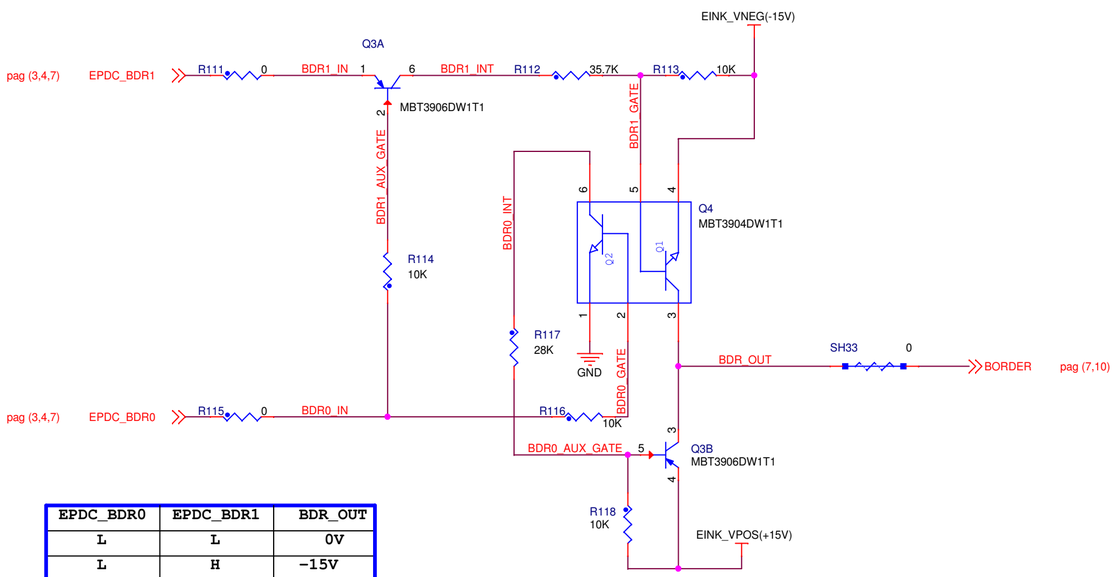
NOTE:
Next are GPIOs:
EPDC_DAT9 => iMX as Input
EPDC_DAT10 => iMX as Output

LG LB060X03

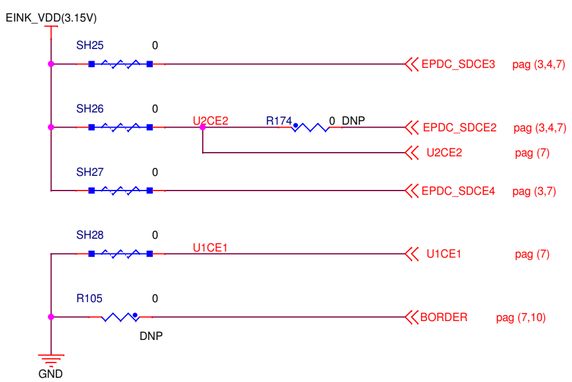
Layout Consideration
Close to J18







EPDC_BDR0	EPDC_BDR1	BDR_OUT
L	L	0V
L	H	-15V
H	L	15V
H	H	15V



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Drawing Title:
IMXEBOOKDC3-E

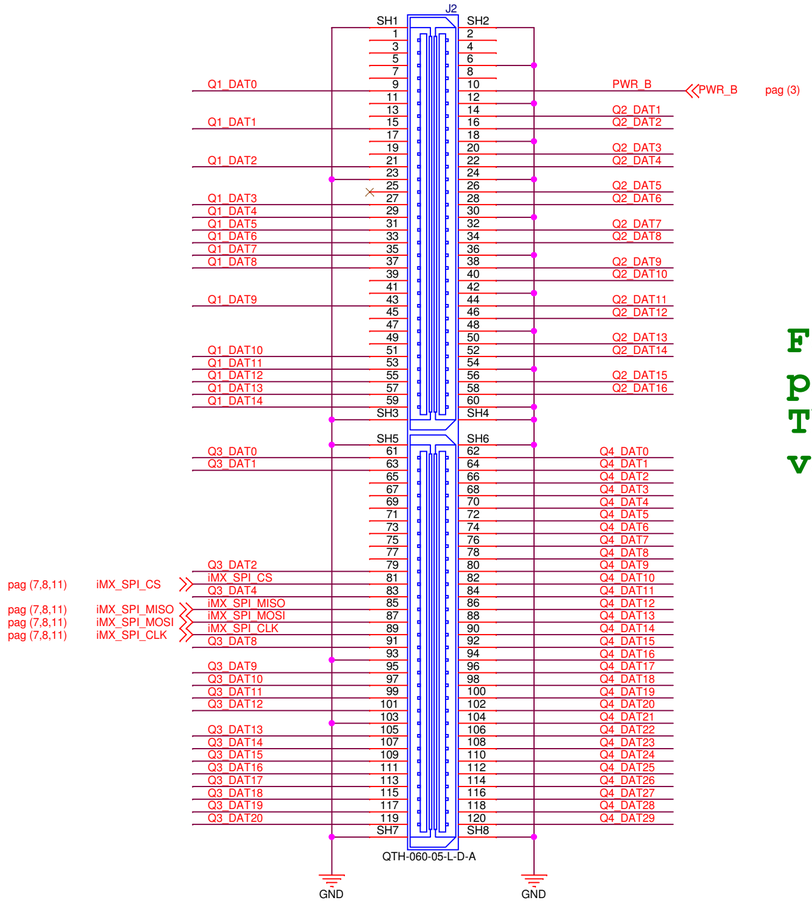
Page Title:
Sipex AUO & LG

Size	Document Number	Rev
C	SCH-27468	A

Date: Monday, April 02, 2012 Sheet 10 of 11

LCD Expansion Port

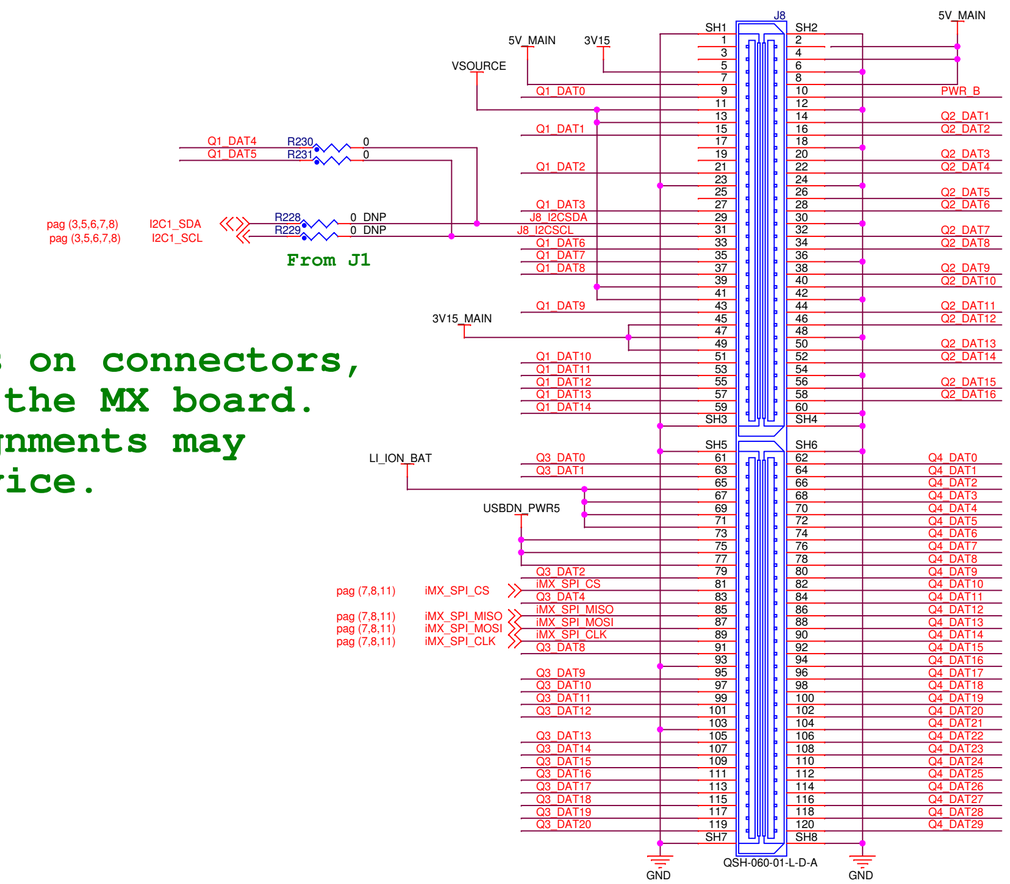
Bottom Layer



For signal names on connectors, please refer to the MX board. The signal assignments may vary by i.MX device.

LCD Pass-Through Signals

Top Layer



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ICAP Classification: FCP: ___ FIUO: X PUBI: ___

Drawing Title:

IMXEBOOKDC3-E

Page Title:

Docking Connectors

Size	Document Number	Rev
C	SCH-27468	A

Date:	Monday, April 02, 2012	Sheet	11	of	11