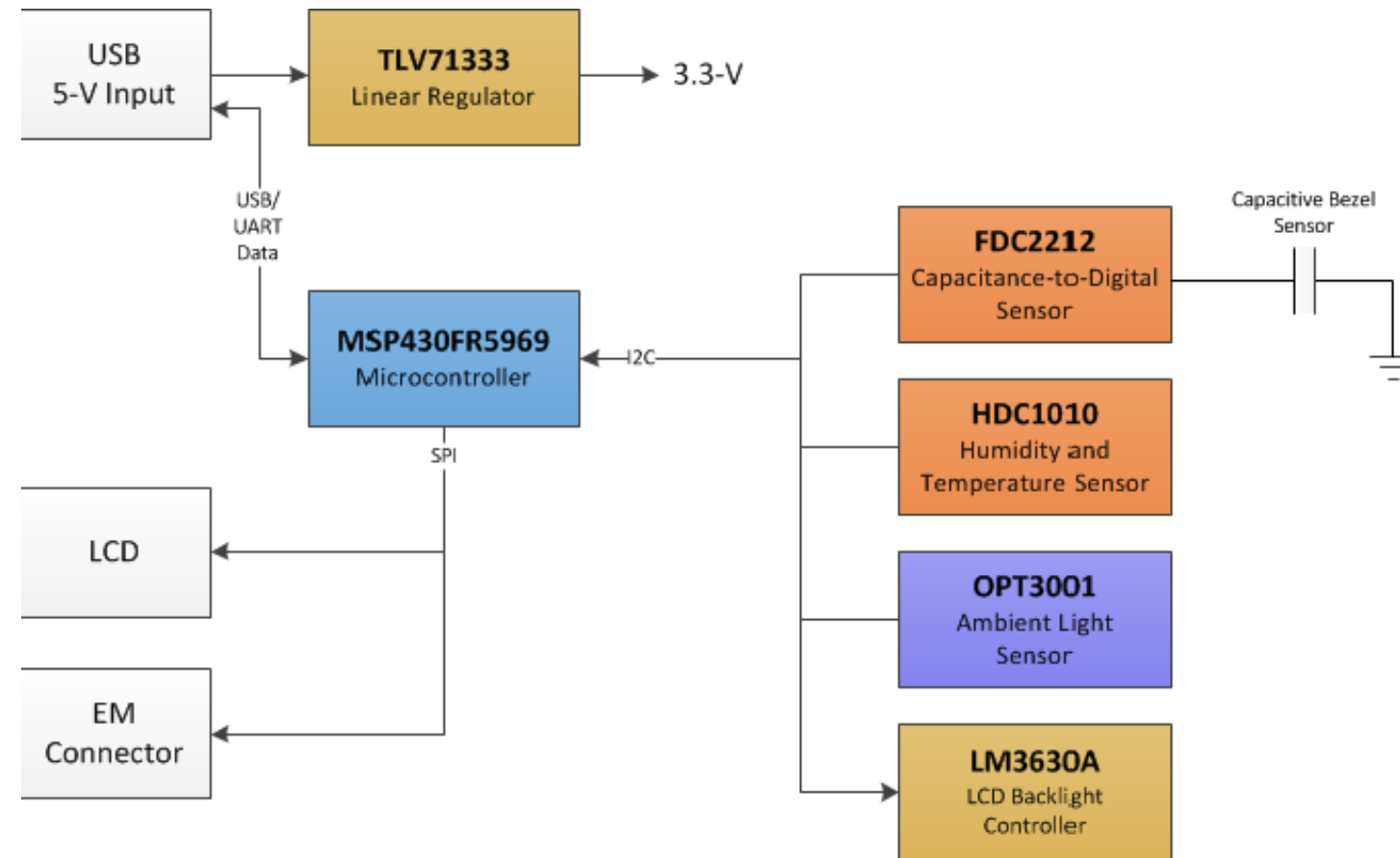



# TIDA-00754

## Backlight and Smart Lighting Control by Ambient Light and Noise-Immune Proximity Sensor Reference Design

Revision History	
Revision	Notes
E1	Initial Board Release
E2	Replaced HDC1000 with HDC1010



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Orderable: N/A	Designed for: Public Release	Mod. Date: 5/12/2016	 <a href="http://www.ti.com">http://www.ti.com</a> © Texas Instruments 2016
TID #: TIDA-00754	Project Title: TIDA-00754 Backlight Control and Proximity Sensin		
Number: ISE4044	Rev: E2	Sheet Title: Cover Sheet	
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 1 of 5	
Drawn By: Jarrod Krebs	File: ISE4044_TIDA-00754_CoverSheet.SchDoc	Size: B	
Engineer: Jarrod Krebs	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>		

H1 NY PMS 440 0025 PH  
 H2 NY PMS 440 0025 PH  
 H3 NY PMS 440 0025 PH  
 H4 NY PMS 440 0025 PH

H11 NY PMS 256 0025 PH  
 H12 NY PMS 256 0025 PH

H5 1902E  
 H6 1902E  
 H7 1902E  
 H8 1902E

H13 NY HN 256  
 H14 NY HN 256

DNP FID1  
 DNP FID2  
 DNP FID3  
 DNP FID4  
 DNP FID5  
 DNP FID6

PCB Number: ISE4044  
 PCB Rev: E2

PCB LOGO  
 Texas Instruments  
 PCB LOGO  
 Pb-Free Symbol  
 PCB LOGO  
 FCC disclaimer

BL1  
 MECH  
 EA LED55X46-W

Label Table	
Variant	Label Text
001	S/N xxxx

ZZ1 DNP  
 These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ2 DNP  
 These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ3 DNP  
 These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

ZZ4 DNP  
 Place SH-J1 on J1 and SH-J2 on J3 (pins 1 -2) and SH-J3 to SH-J4 on J7, SH-J3 (pins 1-2)

ZZ5 DNP  
 Component BL1 must be assembled to U3 Before U3 is attached to the board.

ZZ6 DNP  
 Remove protective coverings from BL1 and U3

ZZ7 DNP  
 Slide pins of U3 into holes of BL1. BL1 must lie flat on the back of U3

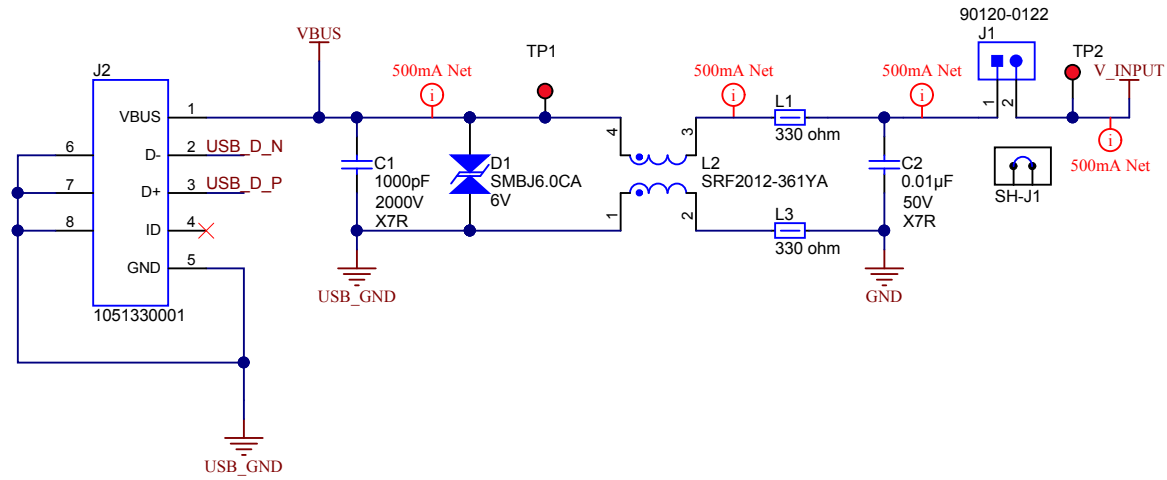
ZZ8 DNP  
 Solder U3 - BL1 assembly to the board.

ZZ9 DNP  
 Solder Pins 1, 2, 3, 18, 19, and 20 of U3 to BL1 from the top to insure electrical continuity.

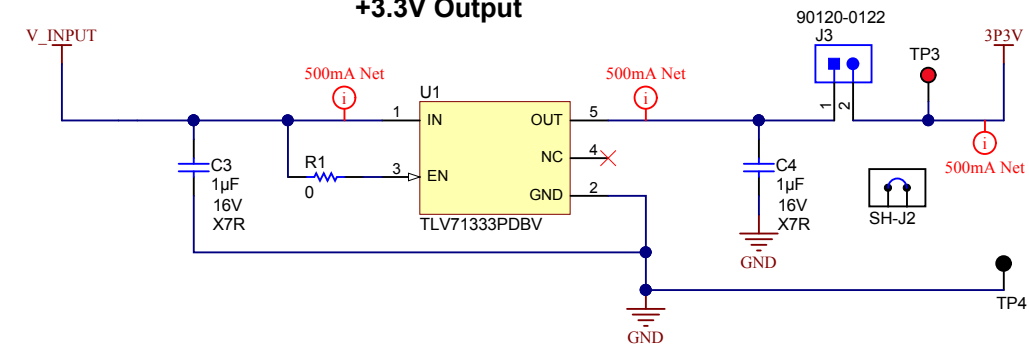
Orderable: N/A	Designed for: Public Release	Mod. Date: 5/12/2016
TID #: TIDA-00754	Project Title: TIDA-00754 Backlight Control and Proximity Sensin	
Number: ISE4044	Rev: E2	Sheet Title: Hardware
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 2 of 5
Drawn By: Jarrod Krebs	File: ISE4044_TIDA-00754_TID_Hardware.SchDoc	Size: B
Engineer: Jarrod Krebs	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	

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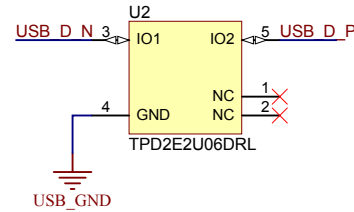
### USB Connection



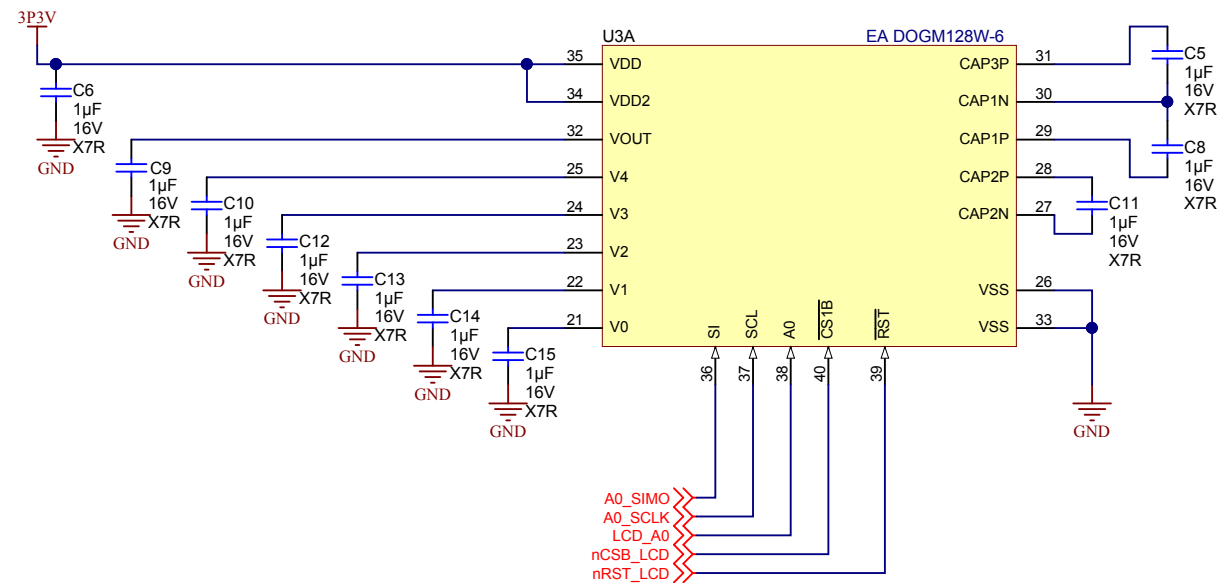
### +3.3V Output



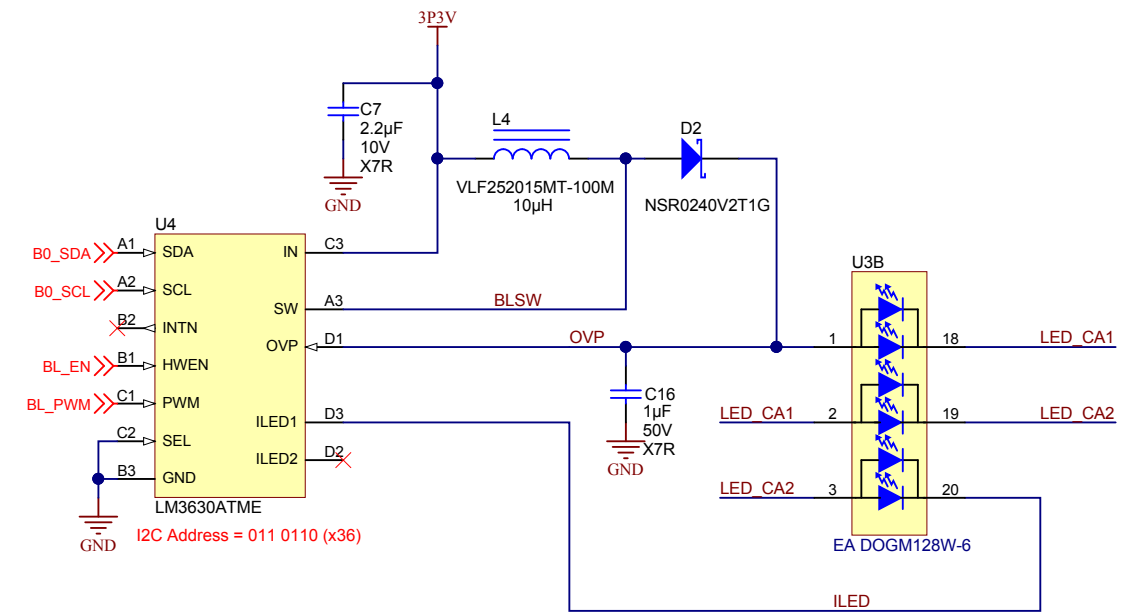
### USB ESD Protection



### LCD Display



### LCD Backlight & Driver

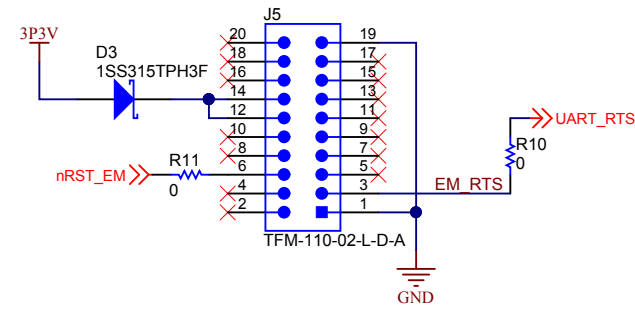
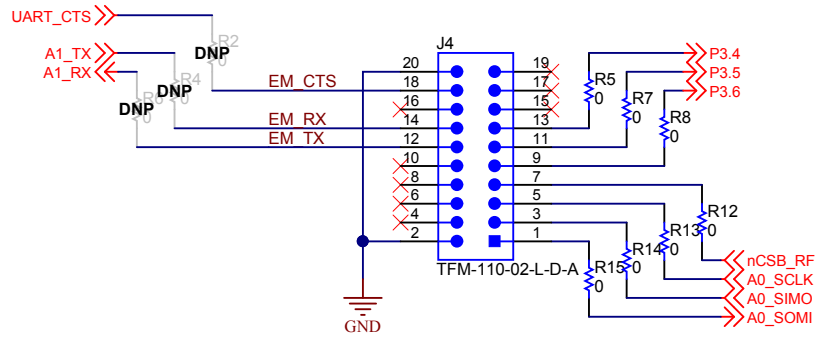


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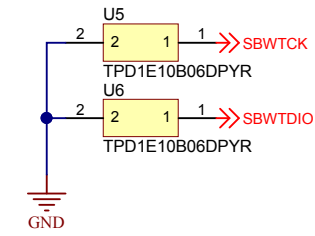
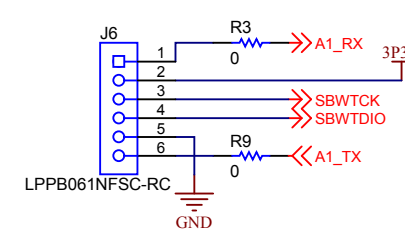
Orderable: N/A	Designed for: Public Release	Mod. Date: 5/12/2016
TID #: TIDA-00754	Project Title: TIDA-00754 Backlight Control and Proximity Sensin	
Number: ISE4044	Rev: E2	Sheet Title: Power and Display
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 3 of 5
Drawn By: Jarrod Krebs	File: ISE4044_TIDA-00754_Sheet1.SchDoc	Size: B
Engineer: Jarrod Krebs	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	



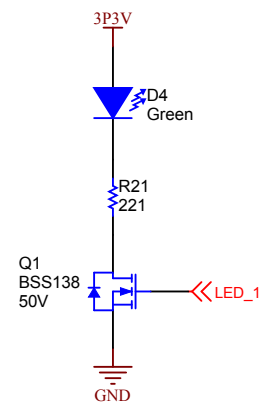
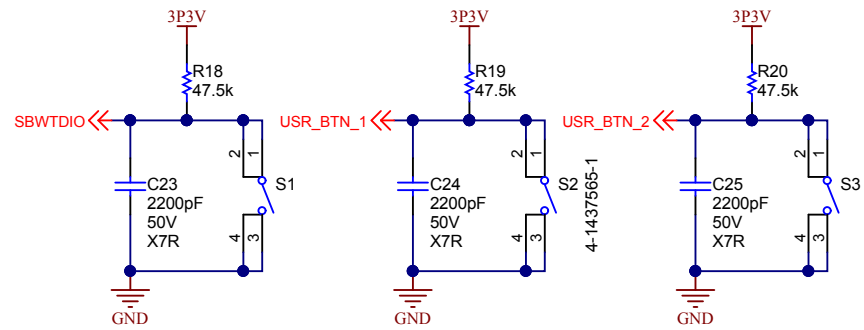
### EM Connector for Wireless Connectivity



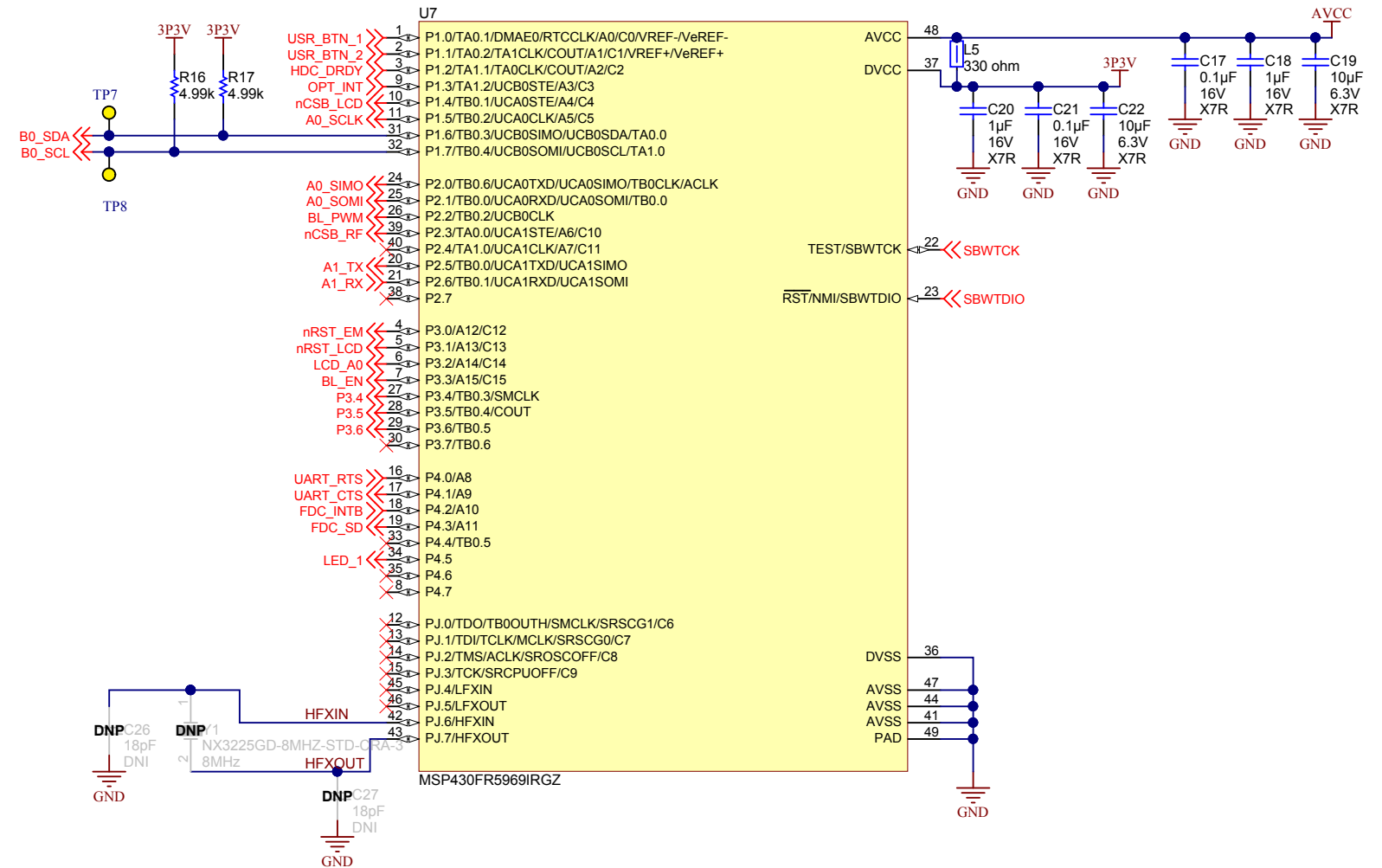
### JTAG Interface & ESD Protection



### Reset & User Buttons



### MSP430 Microcontroller



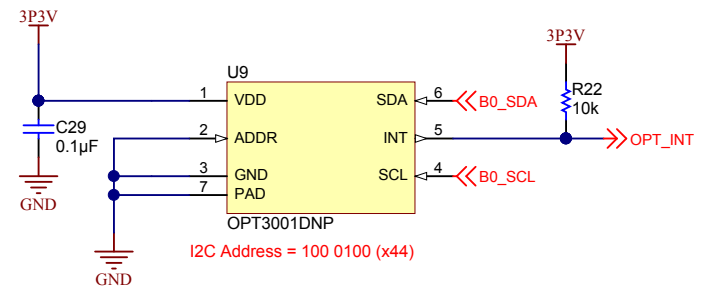
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Orderable: N/A	Designed for: Public Release	Mod. Date: 5/12/2016
TID #: TIDA-00754	Project Title: TIDA-00754 Backlight Control and Proximity Sensing	
Number: ISE4044	Rev: E2	Sheet Title: MCU and EM Connector
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 4 of 5
Drawn By: Jarrod Krebs	File: ISE4044_TIDA-00754_Sheet2.SchDoc	Size: B
Engineer: Jarrod Krebs	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	

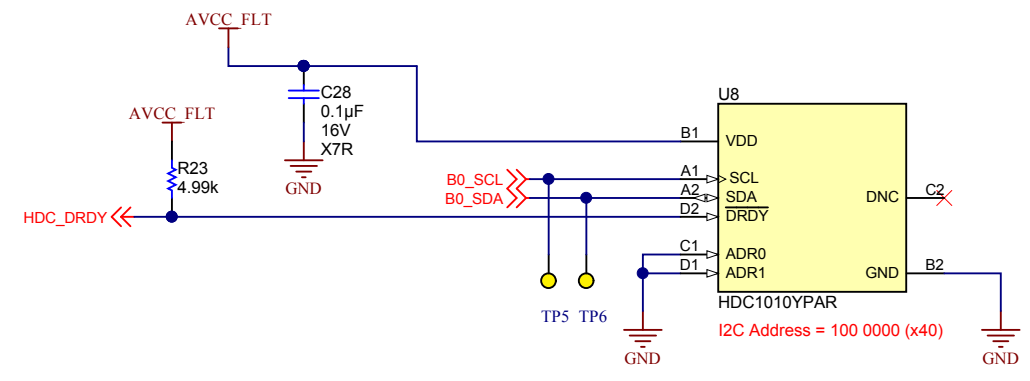
A

A

### Ambient Light Sensor



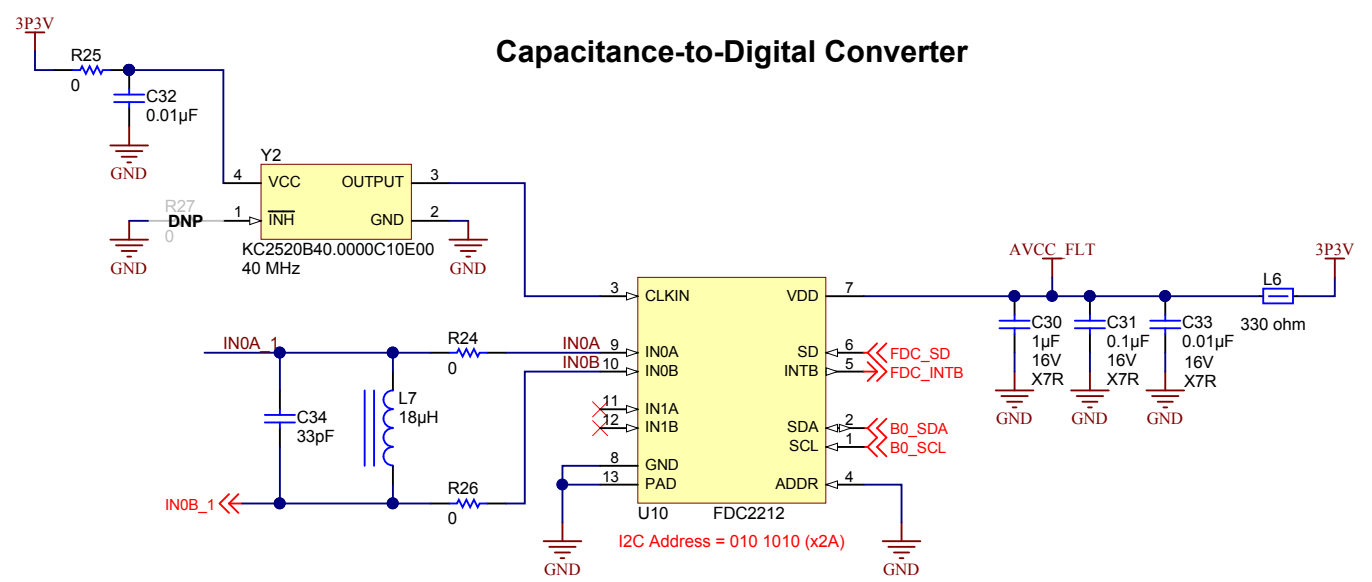
### Temperature / Humidity Sensor



B

B

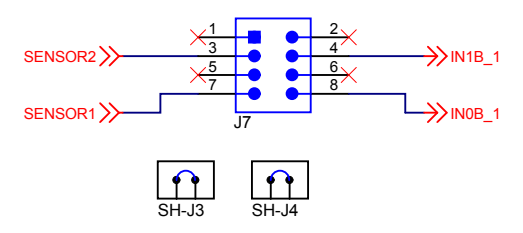
### Capacitance-to-Digital Converter



C

C

### CIN & SHLD Selection Headers



D

D

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TID #: TIDA-00754	Project Title: TIDA-00754 Backlight Control and Proximity Sensing		
Number: ISE4044	Rev: E2	Sheet Title: Sensors	
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet 5 of 5	
Drawn By: Jarrod Krebs	File: ISE4044_TIDA-00754_Sheet3.SchDoc	Size: B	
Engineer: Jarrod Krebs	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>		

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