Camera Adapter BoosterPack™

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1 Introduction

The camera adapter BoosterPack™ (BP), which contains SN74AVCx devices (voltage-level translators) from Texas Instruments, is an interface for interconnecting the LaunchPad™ (LP) operating at 3.3 V and the OV788 camera board operating at 1.85 V.

The 20-pin header ensures compatibility with other evaluation platforms, for easy prototyping and shorter development time. The OV788 camera board is mounted on 12-pin, 1.27-mm pitch headers.

1.1 What is Included

Kit contents:

- Camera adapter BP

1.2 Key System Specifications

Table 1 lists the key system specifications.

Table 1. Key System Specifications

Parameter	Specifications	Details
Operating voltage (VCCA and VCCB)	1.4 V to 3.6 V	–
Working environment	–30°C to 85°C	–
Peak current	1 A	Includes LaunchPad and OV788 reference design
Communication protocol	SPI	–

1.3 Regulatory Compliance

The BOOSTXL-OV788ADAPT BoosterPack is FCC Part 15 and IC ICES-003 Class A compliant.

This is a class A product, as defined by standard EN 61326-1:2013. The BOOSTXL-OV788ADAPT is in compliance with Directive 2014/30/EU. The full text of the EU declaration of conformity (DoC) is available in the BOOSTXL-OV788ADAPT BoosterPack EC DoC.

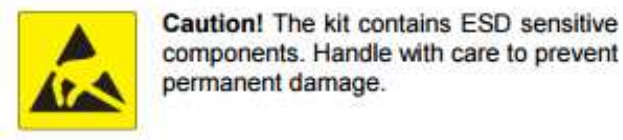


Figure 1. ESD Caution

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2 Hardware Description

Figure 2 shows the BOOSTXL-OV788ADAPT board.

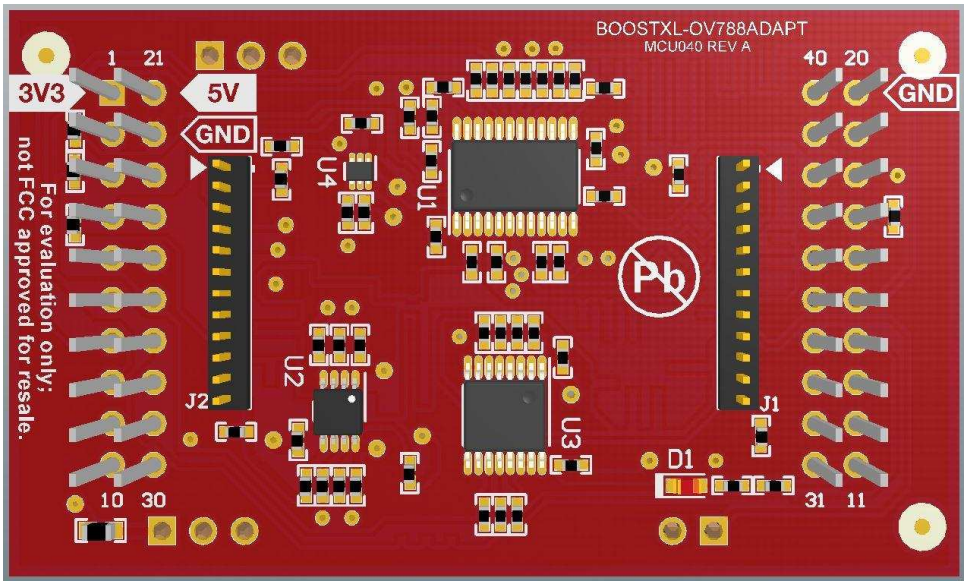
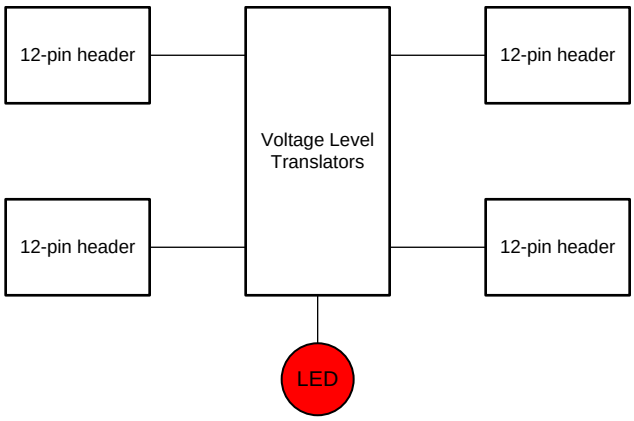


Figure 2. BOOSTXL-OV788ADAPT

2.1 Block Diagram

Figure 3 shows the block diagram.



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Figure 3. Camera Adapter Block Diagram

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2.2 Hardware Features

The hardware features follow:

- SN74AVCx voltage-level translators
- Two 20-pin headers
- Two 12-pin headers
- LED

2.3 Equipment

The required equipment follows:

- OV788 reference design board
- Apple® iPhone® or iPad®, or Android™ smartphone
- BOOSTXL-OV788ADAPT BP
- CC3200 LaunchPad
- Micro-USB cable
- 802.11 b/g/n Wi-Fi® access point

2.4 Hardware Setup

Set up the demo as shown in Figure 4.

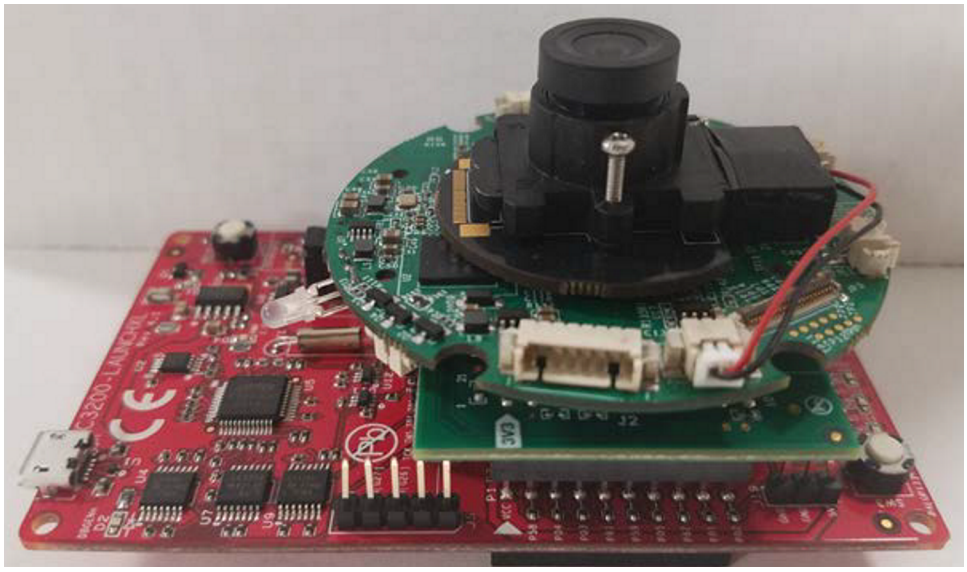


Figure 4. System Setup

Mount the adapter on the CC3200 LP, ensuring the VCC and GND pins are aligned. The OV788 board is then mounted on the adapter, aligning the GND and power pins (see Figure 4).

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3 Operation Description

Table 2, Table 3, and Table 4 show the pin connector settings.

Table 2. 12-Pin Header Pinout

Reference	J2 Signal	J1 Signal
1	GND	GND
2	OVT1V8	OVT3V3
3	HOST_WAKE_1V8	
4	WAKEFLOW_1V8	SPI_CS_1V8
5	REG_ON_1V8	SPI_CLK_1V8
6	WLAN_ON_1V8	SPI_MISO_1V8
7	OVT_POR_1V8	SPI_MOSI_1V8
8	POWER_EN_1V8	
9	DC_DC_CNTL_3V3	OVT_TX_1V8
10	OVT_SYNC_1V8	OVT_RX_1V8
11	OVT_RDY_1V8	
12	OVT1V8	OVT3V6

Table 3. P1 and P3 Header Pinout

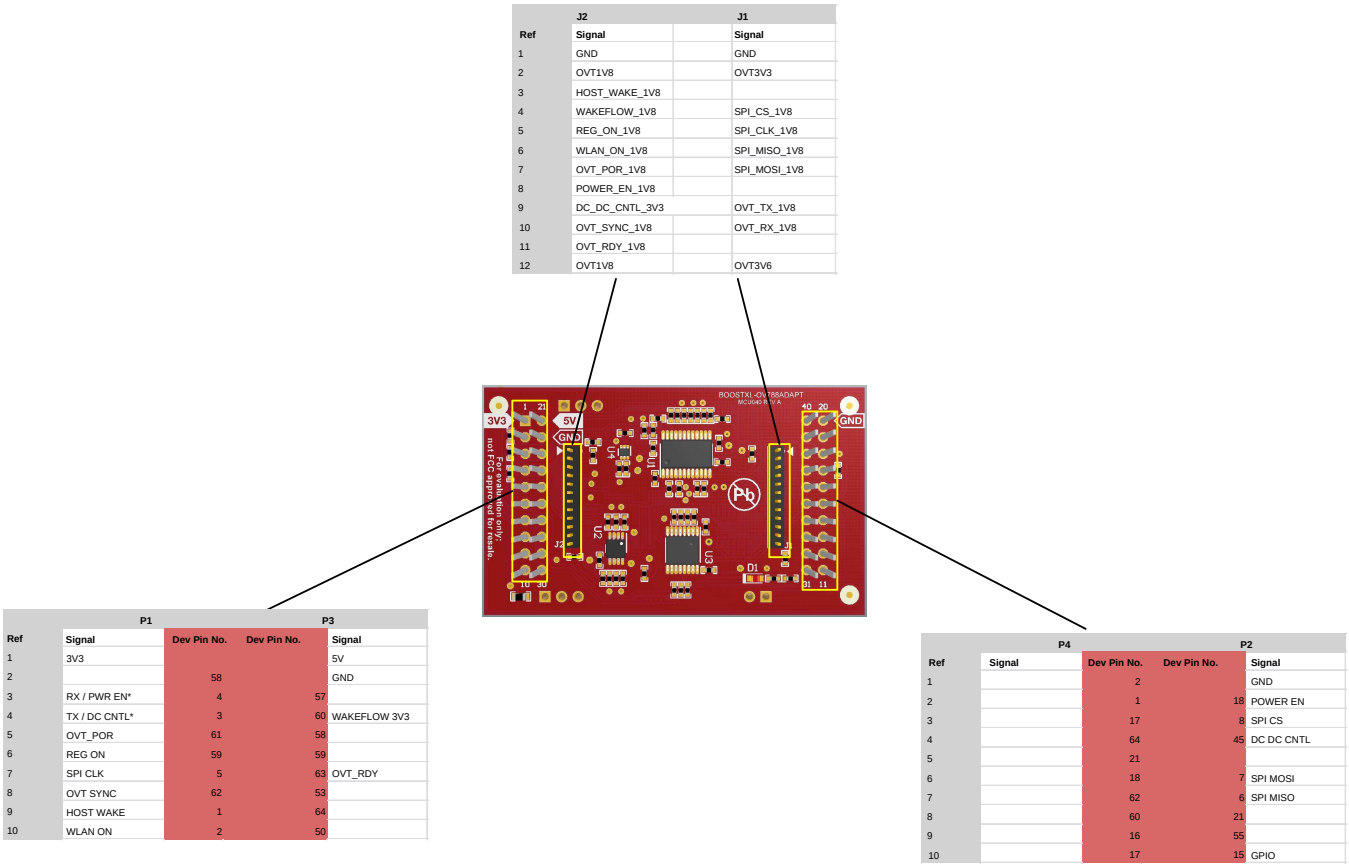
Reference	P1		P3	
	Signal	DEV Pin No.	Signal	DEV Pin No.
1	3V3		5V	
2		58	GND	
3	RX / PWR EN*	4		57
4	TX / DC CNTL*	3	WAKEFLOW 3V3	60
5	OVT_POR	61		58
6	REG ON	59		59
7	SPI CLK	5	OVT_RDY	63
8	OVT SYNC	62		53
9	HOST WAKE	1		64
10	WLAN ON	2		50

Table 4. P4 and P2 Header Pinout

Reference	P4		P2	
	Signal	DEV Pin No.	Signal	DEV Pin No.
1		2	GND	
2		1	POWER EN	18
3		17	SPI CS	8
4		64	DC DC CNTL	45
5		21		
6		18	SPI MOSI	7
7		62	SPI MISO	6
8		60		21
9		16		55
10		17	GND	15

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Figure 5 shows the pin connector.



	J2		J1
Ref	Signal		Signal
1	GND		GND
2	OVT1V8		OVT3V3
3	HOST_WAKE_1V8		
4	WAKEFLOW_1V8		SPI_CS_1V8
5	REG_ON_1V8		SPI_CLK_1V8
6	WLAN_ON_1V8		SPI_MISO_1V8
7	OVT_POR_1V8		SPI_MOSI_1V8
8	POWER_EN_1V8		
9	DC_DC_CNTL_3V3		OVT_TX_1V8
10	OVT_SYNC_1V8		OVT_RX_1V8
11	OVT_RDY_1V8		
12	OVT1V8		OVT3V6

	P1		P3	
Ref	Signal	Dev Pin No.	Dev Pin No.	Signal
1	3V3			5V
2		58		GND
3	RX / PWR EN*	4	57	
4	TX / DC CNTL*	3	60	WAKEFLOW 3V3
5	OVT_POR	61	58	
6	REG ON	59	59	
7	SPI CLK	5	63	OVT_RDY
8	OVT SYNC	62	53	
9	HOST WAKE	1	64	
10	WLAN ON	2	50	

	P4		P2	
Ref	Signal	Dev Pin No.	Dev Pin No.	Signal
1		2		GND
2		1	18	POWER EN
3		17	8	SPI CS
4		64	45	DC DC CNTL
5		21		
6		18	7	SPI MOSI
7		62	6	SPI MISO
8		60	21	
9		16	55	
10		17	15	GPIO

Figure 5. Pin Connector

Figure 6 shows the UART and power connectors.

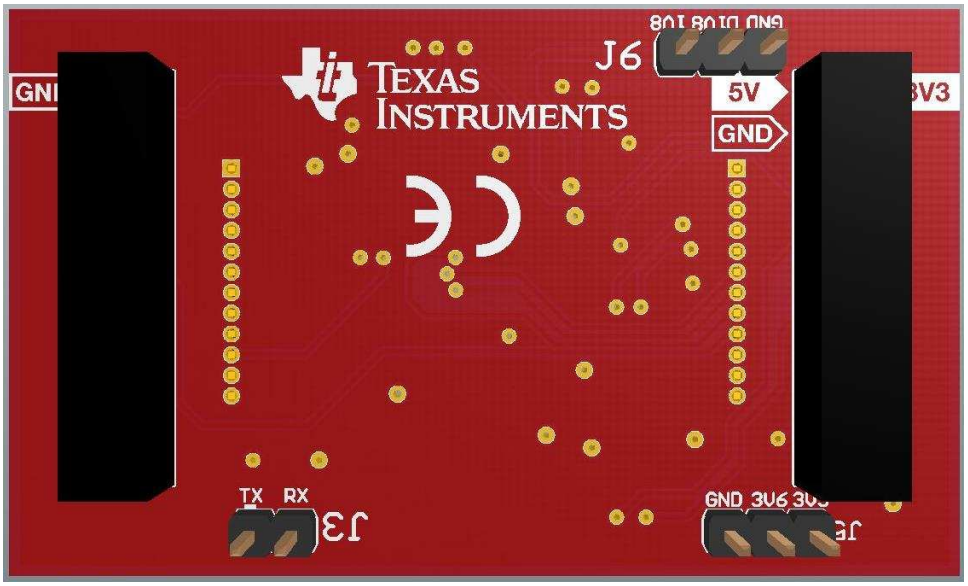


Figure 6. UART and Power Connectors

The header J3 provides access to the UART RX and TX pin for debugging using the serial terminal.

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3.1 Powering the Setup

For dual power, follow these instructions:

1. Power the LaunchPad using the USB port.
2. Power the OVT788 device through JP3 on the camera board. Alternatively, the OVT788 device can be powered by supplying 3.6 V between the 3V6 pin and GND to J5 on the BOOSTXL-OV788ADAPT board.

For unified power, follow these instructions:

1. Place the jumper connecting 3V3 and 3V6 on J5.
2. Power the LaunchPad using the USB port on the LaunchPad.

See the SimpleLink™ CC3200-OV788 Video and Audio Streaming Over Wi-Fi® Reference Design for more operating information.

4 Design Files

4.1 Hardware Files

All design files including the schematics, layout, bill of materials, gerber files, and documentation, are available for download on the CC3200-LAUNCHXL-RD product page.

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