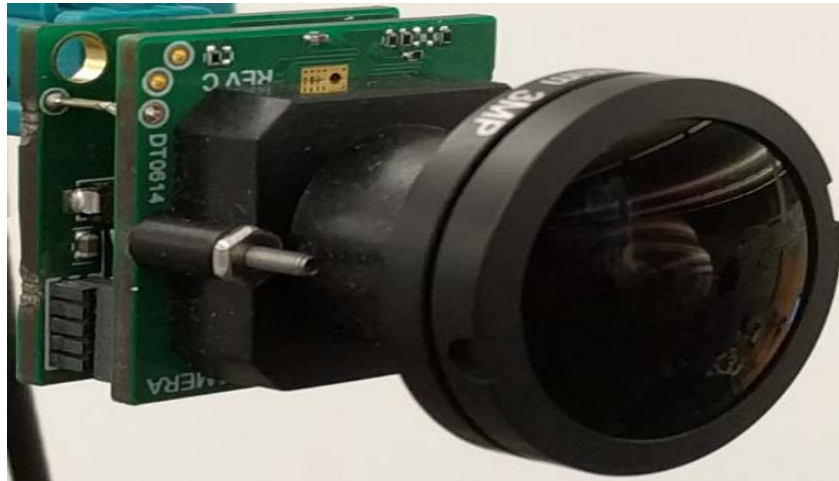


# MAXCAM705OV10640



## Introduction

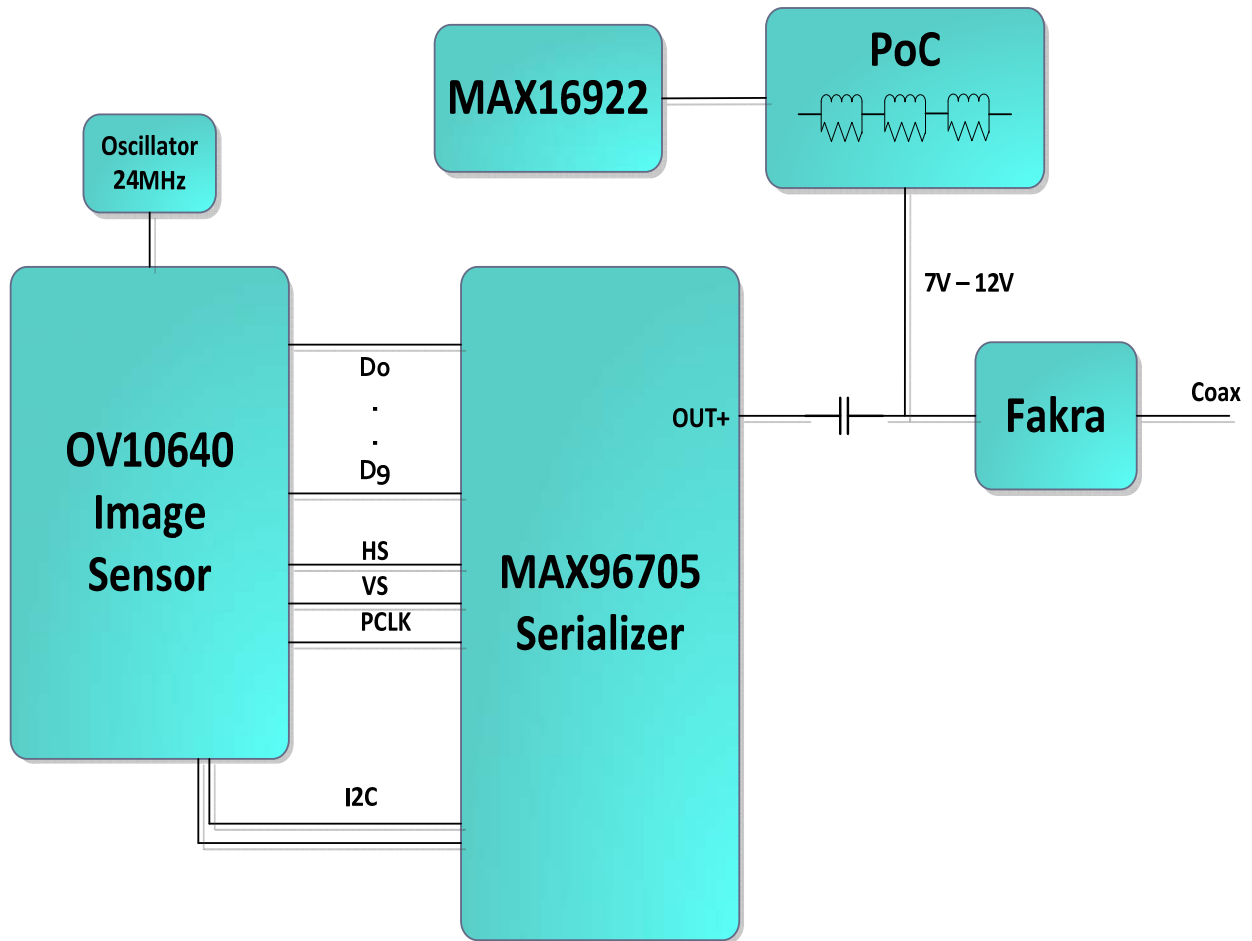
MAXCAM705OV10640 demonstrates an OV10640 One Megapixel automotive image sensor paired with a Maxim Serializer (SER). The design showcases how power, video, & control channel can all be handled over a single coaxial cable. The MAX9670x series Serializers allow data rates up to 12-bits at 116MHz or 14-bits at 58MHz.

## Key Parameters

	Parameter	Value
<b>MAX96705</b>	Input	12.5MHz to 87MHz x 14 Bit + H/V Data
		36.66MHz to 116MHz x 12 Bit + H/V Data (1)
	Control Channel	9.6Kbps to 1Mbps (2)
	GPO	Connected to FSIN of OV10640
	Crossbar	Remap any data pin.
	Sync Timing	Retime VS, HS, or DE
<b>OV10640</b>	Max PCLK	100MHz
	Sensor Resolution	1280x1080
	Output Interface	12-bit DVP
	Formats	RAW
	Control Interface	I2C
	Frame Sync	Column Reset
<b>General</b>	Power Over Coax	7V to 12V
	Power	1W
	Ref Oscillator	24MHz
	Supply Rails	1.5V, 1.8V, 2.2V, & 3.3V

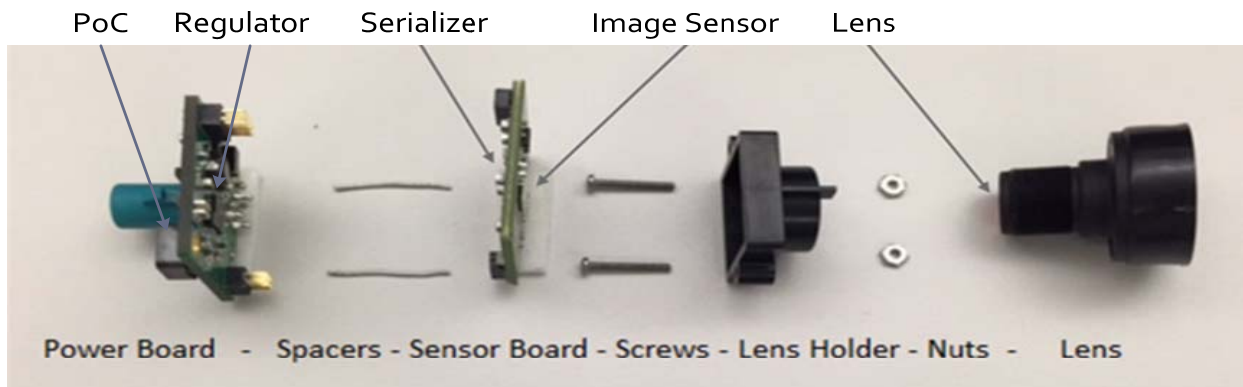
1. Limited to OV10640 max PCLK of 100MHz
2. Limited to OV10640 max 400Kbps

## Block Diagram



## Assembly

The MAXCAM705OV10640 features two boards. A power board and Serializer / image sensor board.



## Power Board

- Fakra Coax Connector
- 3 Network PoC
- MAX16922ATPK/V+ Dual DC-DC & Dual LDO Regulator
- MAX8515AEXK-T Shunt Regulator

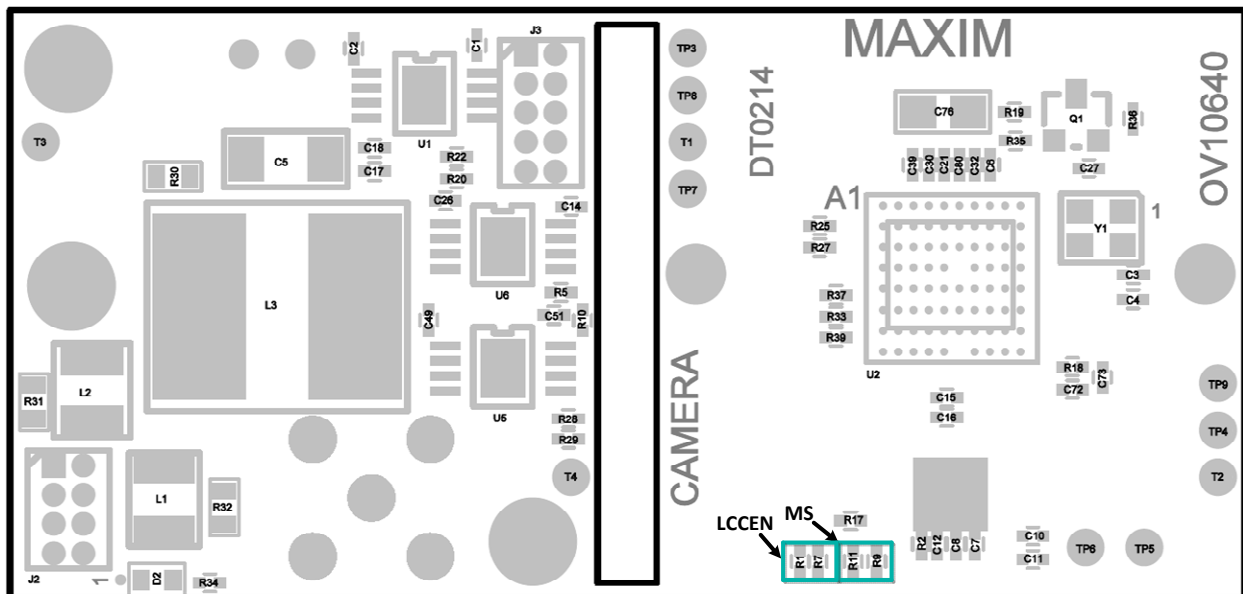
## Serializer Board

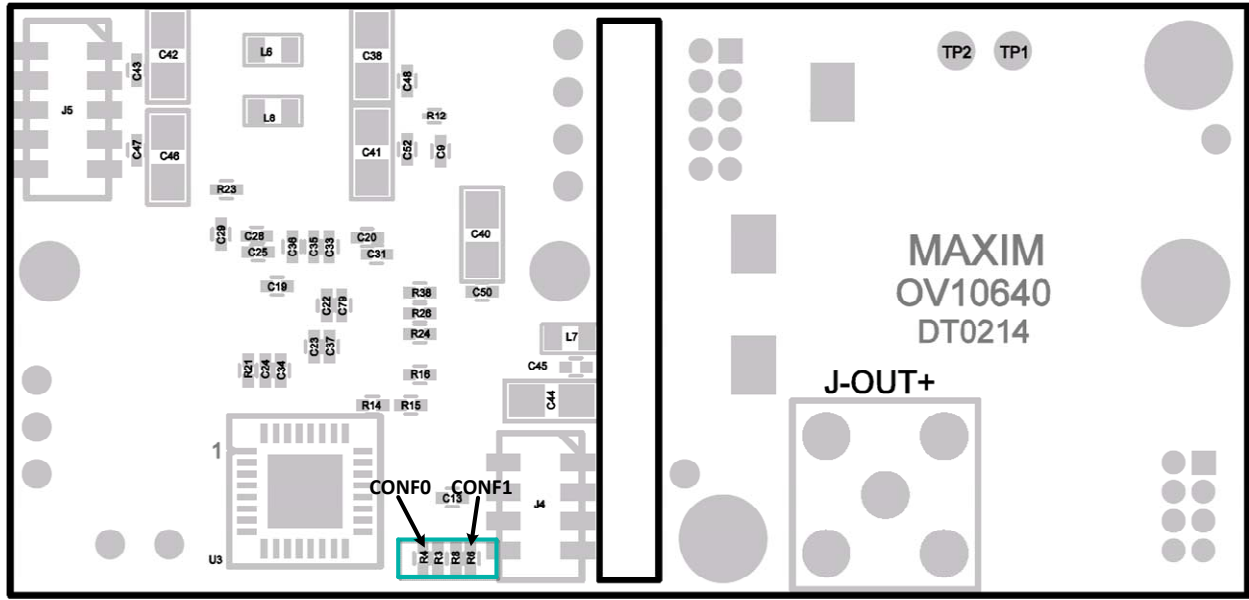
- MAX96705 1.74Gbps Serializer
- OV10640 1280x1080 RAW

# Default Settings

## Resistor Selection

Pin	High	Low	Description
CONF0	R3	R4	Default to Coax, PCLK Latch Rising Edge, I2C to I2C
CONF1	R6	R8	Reference Table 13 of MAX96705 Data Sheet
LCCEN	R7	R1	Local Control Channel Enable.
MS	R9	R11	Enable Base Mode for I2C transactions. Reference UART Bypass Mode in Data Sheet
BWS		R2	Set BWS = low for 22-bit input latch. Set BWS = high for 30-bit input latch.
HS	R33	R19	Default SER HS to OV10640 HREF

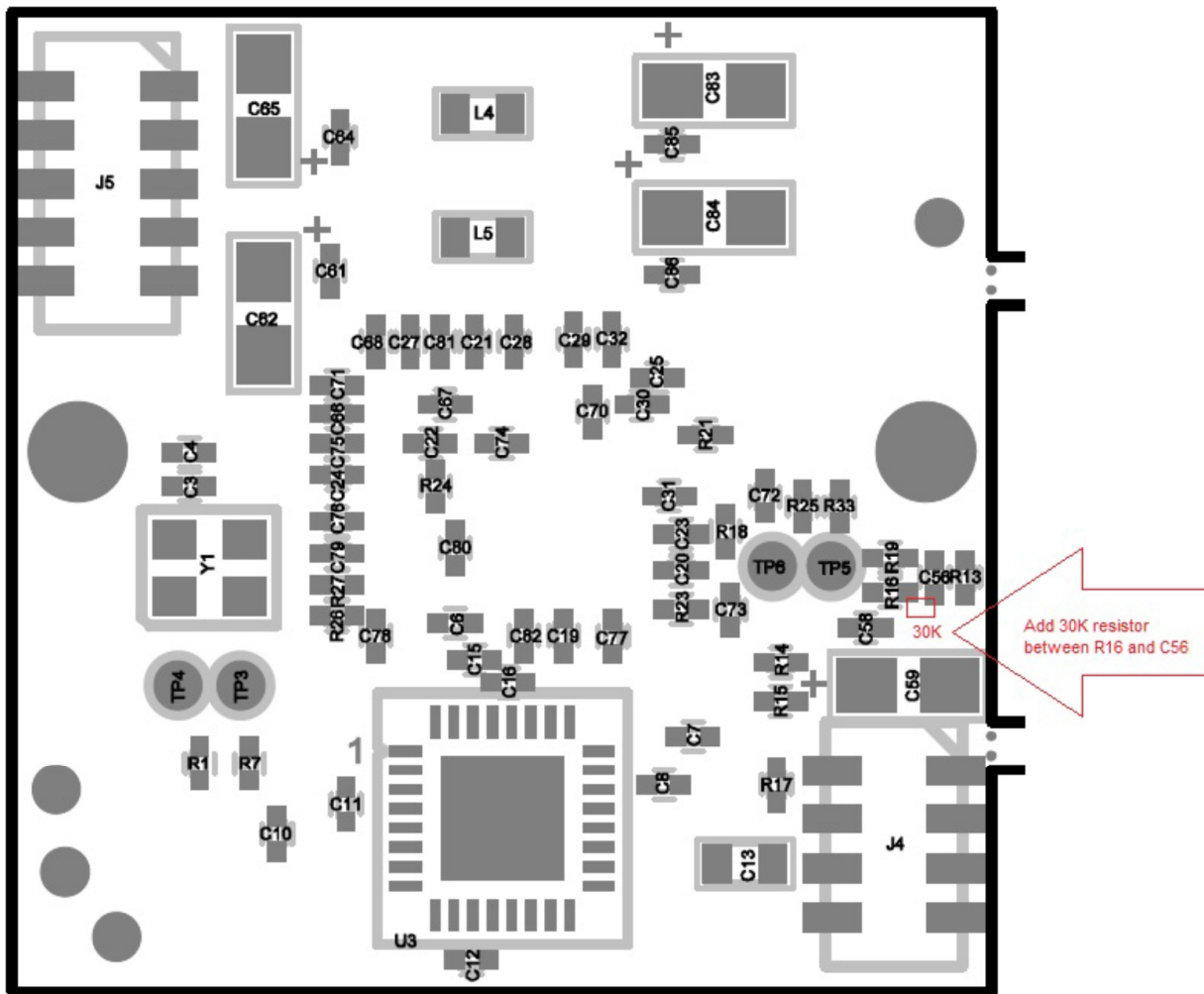




# High Immunity Mode

## Hardware Rework MAXCAM705OV10635AAA#

- Install 30K resistor between C56 and R16 as shown



## Software:

- Recommend HIM on power up. See MAXCAM Users Guide Rev B Table 1 for more software details.

<b>HIM</b>					
<b>Step</b>	<b>Operation</b>	<b>Device</b>	<b>Bit Name</b>	<b>Value</b>	<b>Description</b>
3a	Write	DES	REV_AMP, REV_AMP_X	Default	Set DES reverse channel amplitude back to default
	Delay			2ms	Wait 2ms after any change to reverse channel settings *Note 2
3b	Write	DES	EN_REV_CFG	1	Enable custom reverse channel & first pulse length
	Delay			2ms	Wait 2ms after any change to reverse channel settings *Note 2
3c	Write	SER	CLINKEN	1	Enable configuration link
	Delay			5ms	Configuration link takes 5ms to establish
6a	Write	SER	HIM	1	Enable HIM mode
	Delay			2ms	Wait 2ms after any change to reverse channel settings *Note 2
6b	Write	DES	EN_REV_CFG	1	Disable DES custom reverse channel parameters
	Delay			2ms	Wait 2ms after any change to reverse channel settings *Note 2
2a	Write	DES	HIM	1	Enable HIM mode.
	Delay			2ms	Wait 2ms after any change to reverse channel settings *Note 2

6

5

4

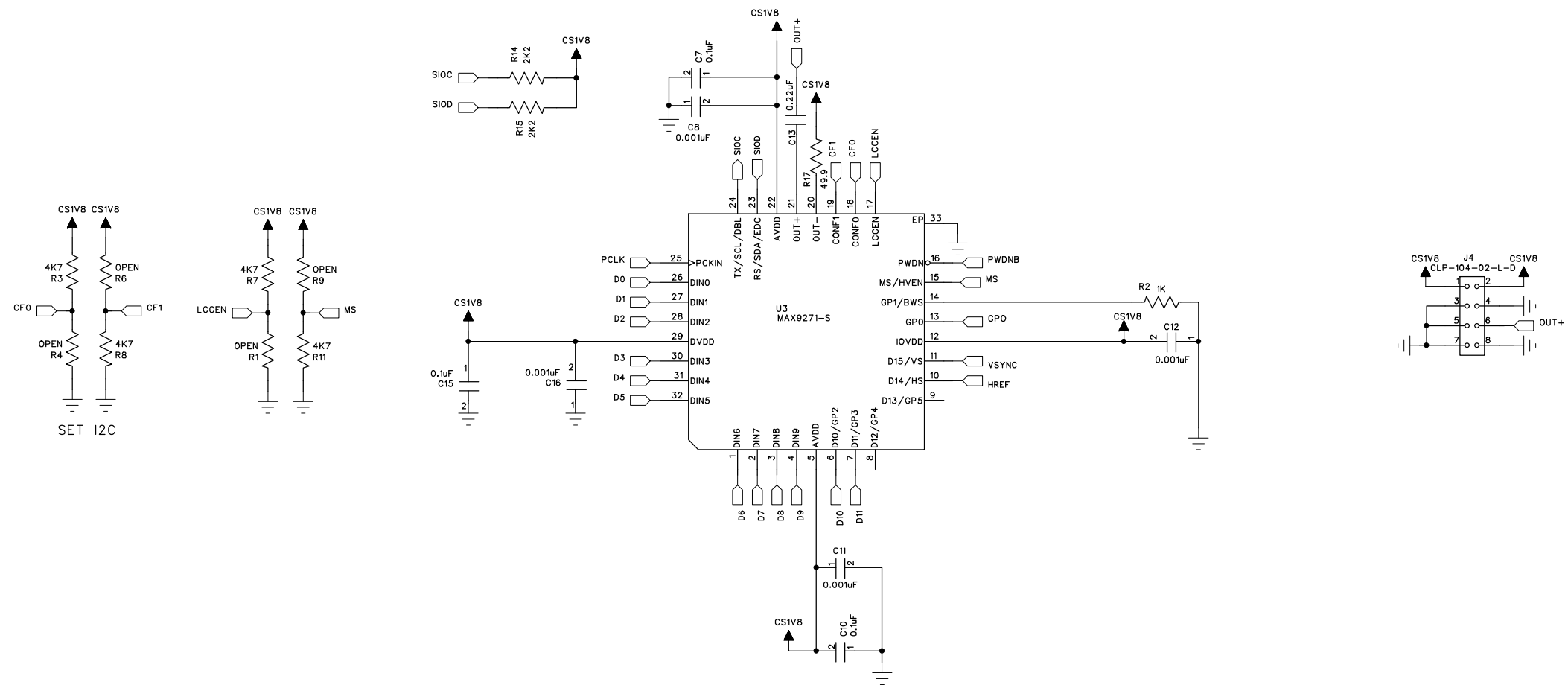
3

2

1

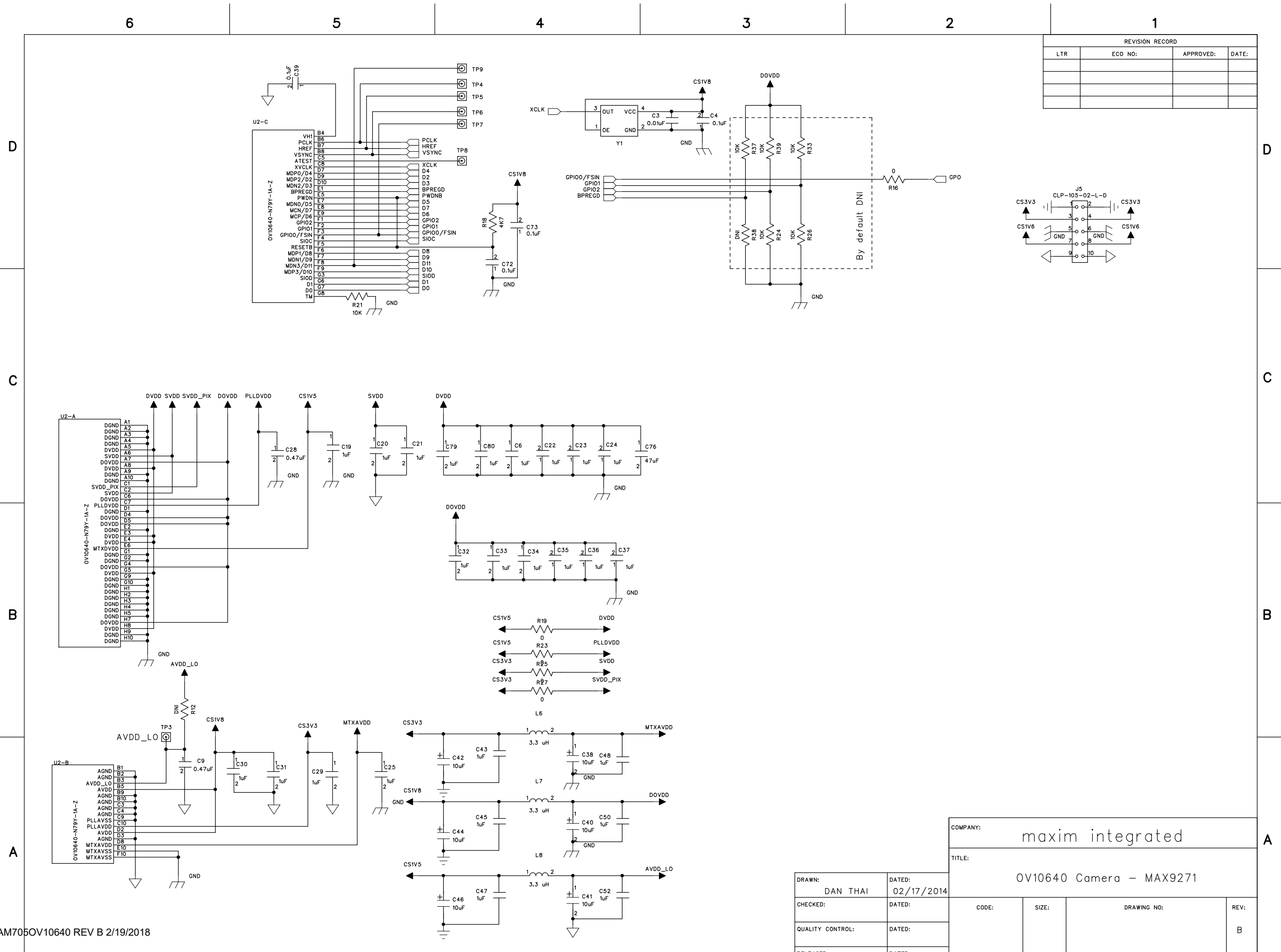
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

PWDN connected to Power and add R12  
Change OSC



COMPANY: maxim integrated			
TITLE: OV10640 Camera - MAX9271			
DRAWN: DAN THAI	DATED: 02/17/2014	CODE:	REV: B
CHECKED:	DATED:	SIZE: C	DRAWING NO:
QUALITY CONTROL:	DATED:	SHEET: 1 OF 3	
RELEASED:	DATED:	SCALE:	

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

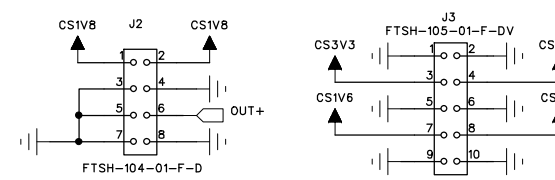
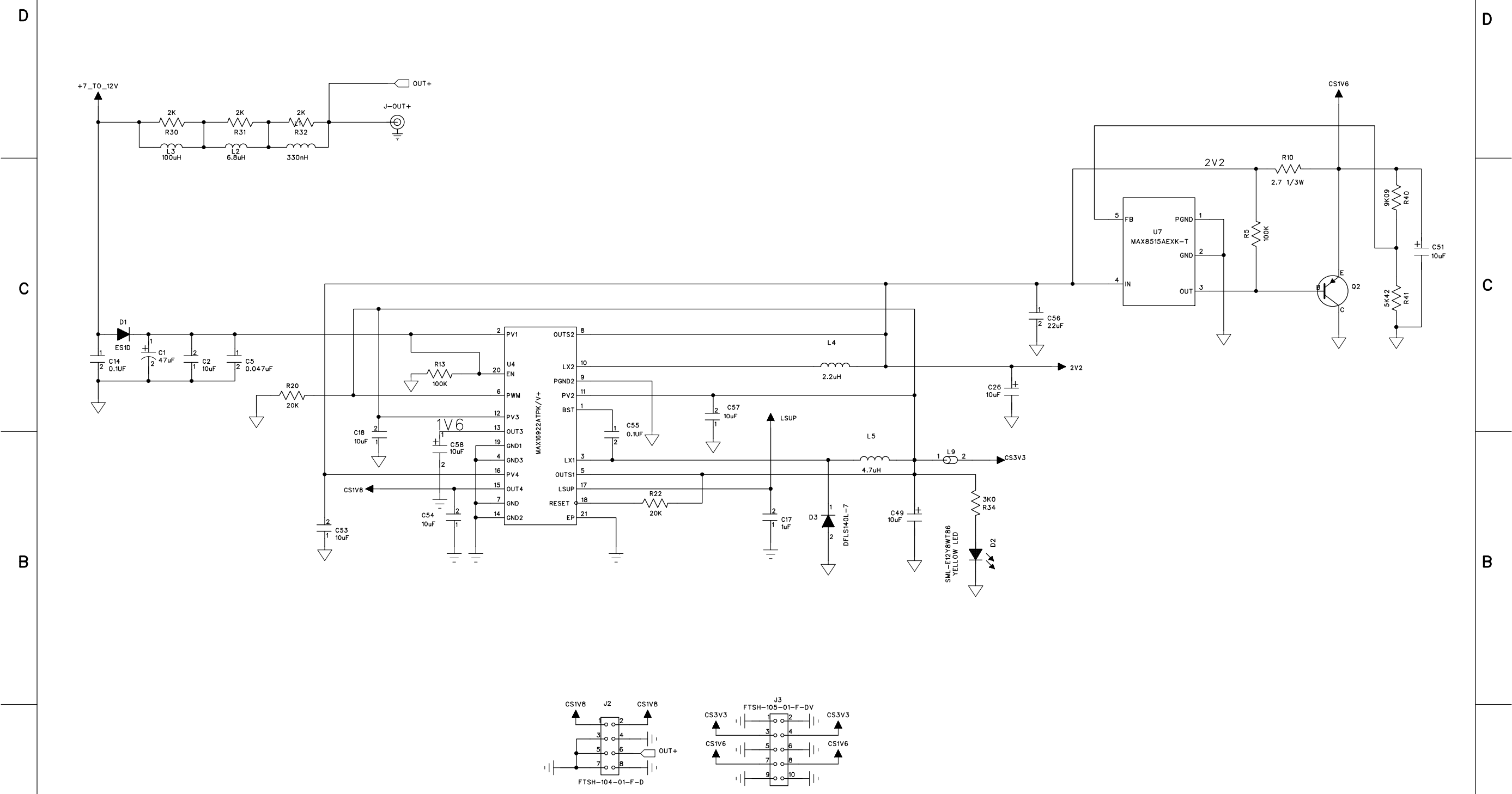


COMPANY:	maxim integrated		
TITLE:	OV10640 Camera - MAX9271		
DRAWN:	DAN THAI	DATED:	02/17/2014
CHECKED:		DATED:	
QUALITY CONTROL:		DATED:	
RELEASED:		DATED:	

CODE:				SIZE:				DRAWING NO:				REV:			
												B			
SCALE:												SHEET:2 OF 3			



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: maxim integrated			
TITLE: OV10640 Camera - MAX9271			
DRAWN: DAN THAI	DATED: 02/17/2014	CODE:	REV: B
CHECKED:	DATED:	SIZE:	DRAWING NO:
QUALITY CONTROL:	DATED:	SHEET:3 OF 3	
RELEASED:	DATED:	SCALE:	

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