

MAX31914/MAX31915 Evaluation Kits

Evaluate: MAX31914 MAX31915

General Description

The MAX31914/MAX31915 evaluation kits (EV kits) provide the hardware necessary to evaluate the MAX31914 and MAX31915 industrial octal digital input translators. There is no software required for this EV kit.

EV Kit Contents

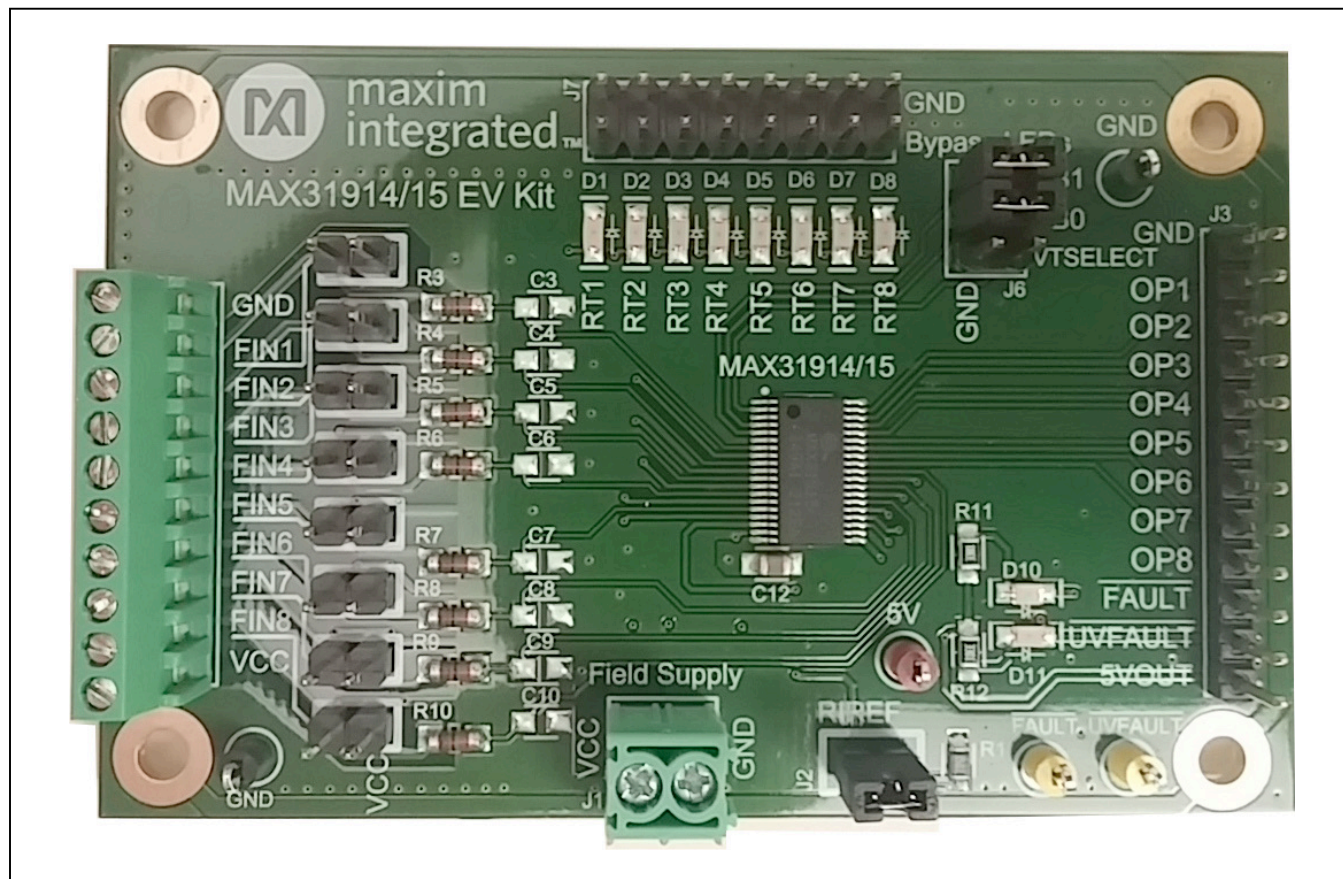
- Assembled circuit board including MAX31915

Features

- Easy Evaluation of the MAX31914 and MAX31915
- RoHS Compliant
- Proven PCB Layout
- Fully Assembled and Tested

Ordering Information appears at end of data sheet.

MAX31915 EV Kit Photo



Quick Start

Required Equipment

- MAX31914 and MAX31915 EV kits
- EV kit hardware (included)
- Screwdriver
- Wire
- 24V power supply

Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation:

- 1) Install a jumper on RIREF (J2).
- 2) Set the EV kit hardware on a nonconductive surface to ensure that nothing on the PCB gets shorted to the workspace.
- 3) Use the wires to connect J1 (VCC and GND) to a 24V power supply and tighten the screws on the wire.
- 4) Connect field inputs to J5 or install jumpers on FIN1–FIN8 to get the CMOS translation on J3 pins OP1–OP8.

Detailed Description of Hardware

Connect Field Inputs

To connect field inputs to the PCB, remove all pullup jumpers (FIN1–FIN8). Connect the field inputs to screw terminal J5 or to the left pin of jumpers FIN1–FIN8.

Adjust Current Limit

To adjust the current limit, remove the jumper on J2 and connect an external resistor to the RIREF pin on J2. Connect the other end of the resistor to GND. Another option is to keep the jumper on J2 populated and change the value of R1.

CMOS Logic Compatible Levels

To set the input trip points to CMOS logic compatible levels, populate the VTSELECT jumper on J6. When in this mode, the RTX pins must be grounded by populating the jumpers on J7 to bypass the LEDs. The reference resistor (R1) must also be changed to 100kΩ to adjust the current limit.

Table 1. Description of Jumpers

JUMPER	DESCRIPTION
J2	RIREF: Connects R1 to the RIREF pin.
J6*	DB0: Pulls DB0 down to GND. Used to select digital glitch filter.
	DB1: Pulls DB1 down to GND. Used to select digital glitch filter.
	VTSELECT: Pulls VTSELECT down to GND to set the field input trip points to CMOS-compatible logic. See the CMOS Logic-Compatible Levels section for more details.
J7	Bypass LEDs: Connects return path RTX to GND to bypass the LED.
FIN1–FIN8	Field Inputs Pullup: Connects field input FINX to VIN.

*These inputs have internal pullups.

Table 2. Description of LEDs (D1–D11)

LED	COLOR	DESCRIPTION
D1–D8	Red	Field Inputs: Field input is logic-high.
D10	Red	FAULT: The device has detected a fault. Either the field-supply voltage is too low, the IC temperature is too high, or both.
D11	Red	UVFAULT: The device has an undervoltage fault indicating the field supply voltage is too low.

Component Suppliers

SUPPLIER	WEBSITE
Bourns	www.bourns.com
ON Semiconductor	www.onsemi.com
Phoenix Contact	www.phoenixcontact.com
TE Connectivity	www.te.com
TDK Corp.	www.tdk.com
Vishay	www.vishay.com

Note: Indicate that you are using the MAX31915 when contacting these component suppliers..

Component List, PCB Files and Schematics

See the following links for component information, PCB files, and schematics:

- [MAX31914/MAX31915 EV BOM](#)
- [MAX31914/MAX31915 EV PCB Files](#)
- [MAX31914/MAX31915 EV Schematics](#)

Ordering Information

PART	TYPE
MAX31914EVKIT#	EV Kit
MAX31915EVKIT#	EV Kit

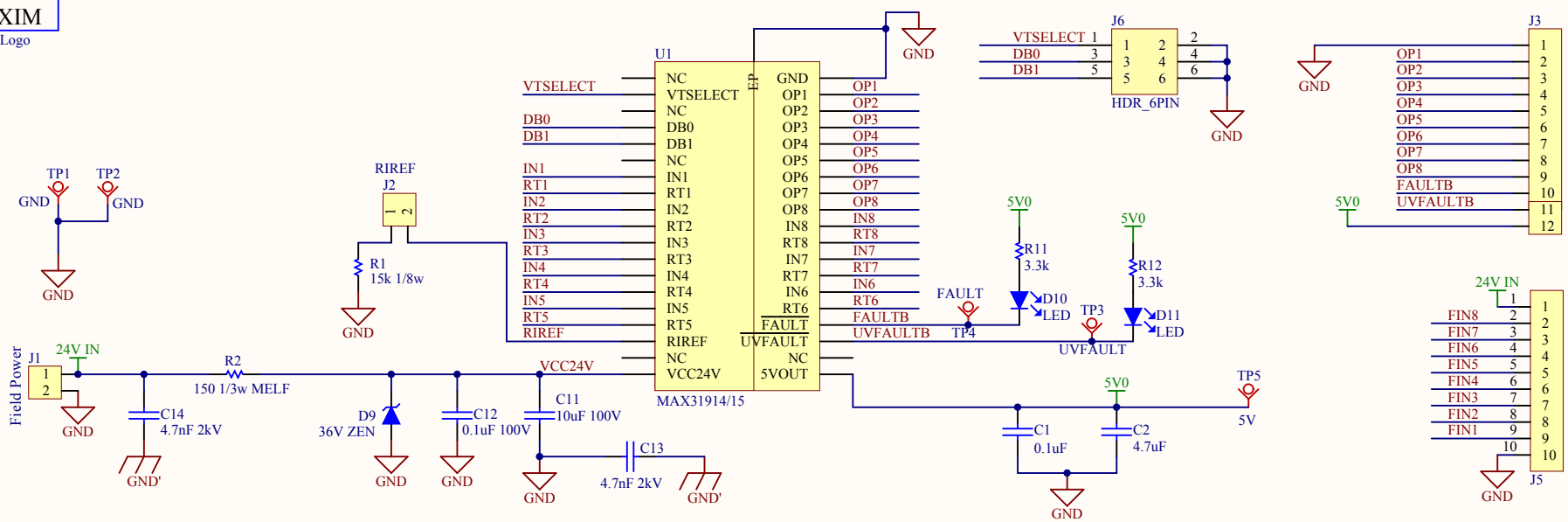
#Denotes RoHS compliant.

Revision History

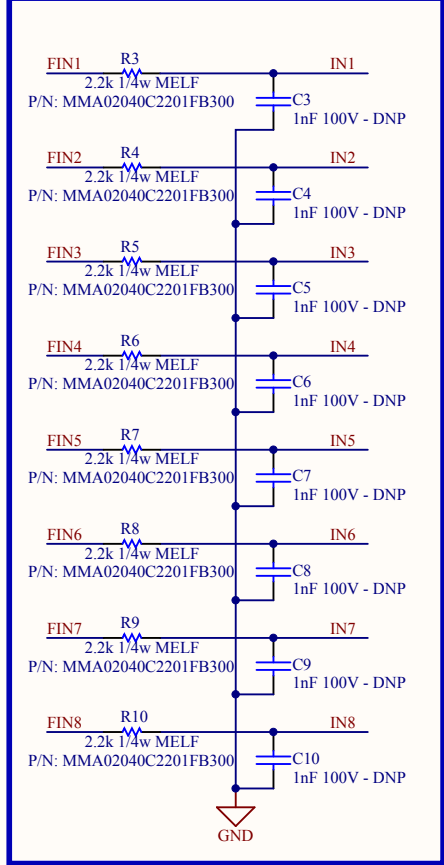
REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	8/13	Initial release	—
1	5/15	Added MAX31914 information to EV kit data sheet	1-7

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim Integrated's website at www.maximintegrated.com.

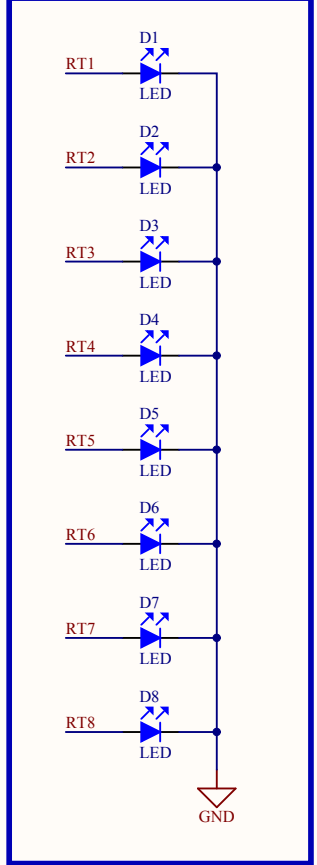
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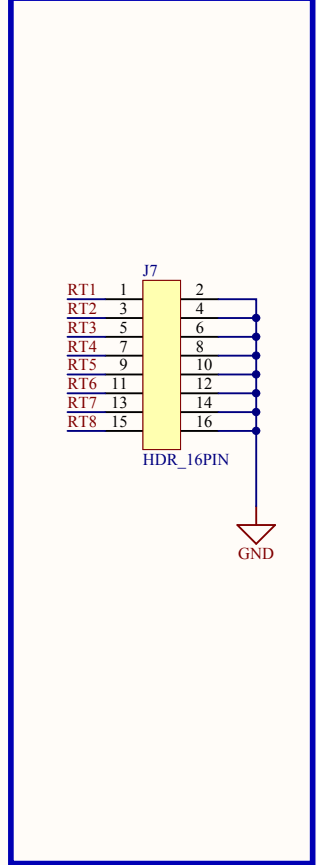
Input Filter Bank



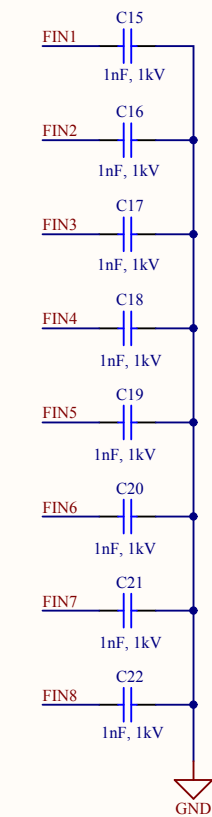
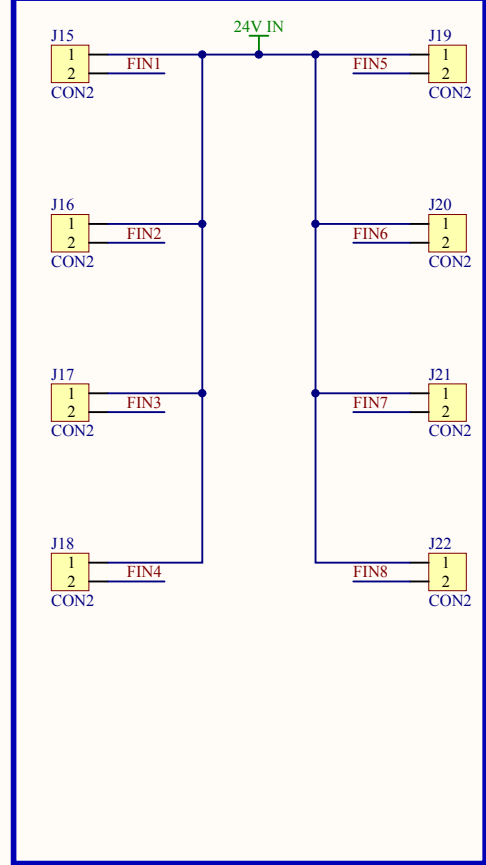
Input Indicator Bank

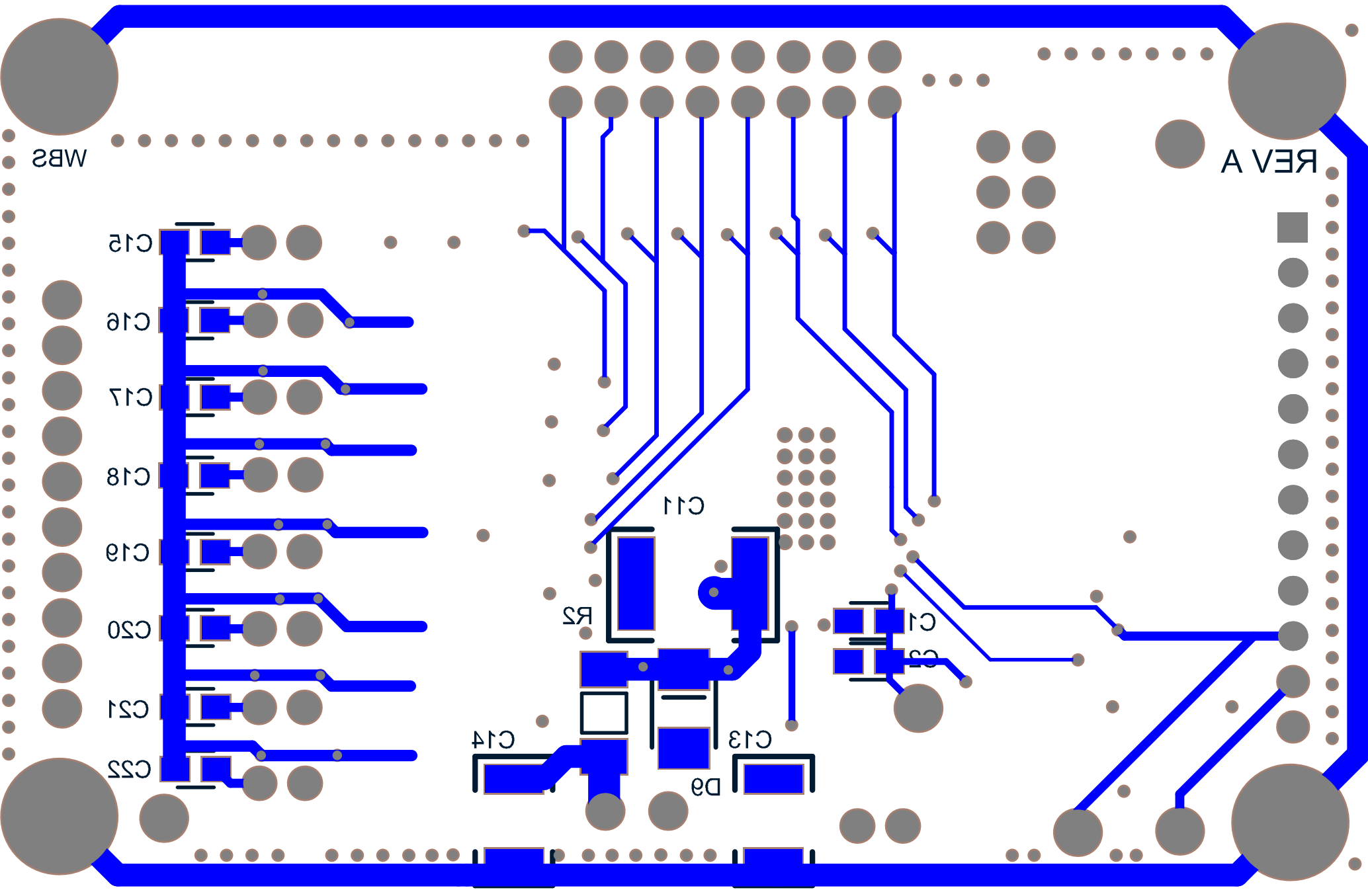


LED Bypass



Field Input Pull ups



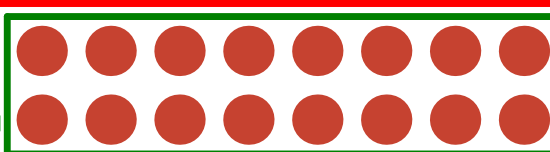




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MAX31914/15 EV Kit

J7

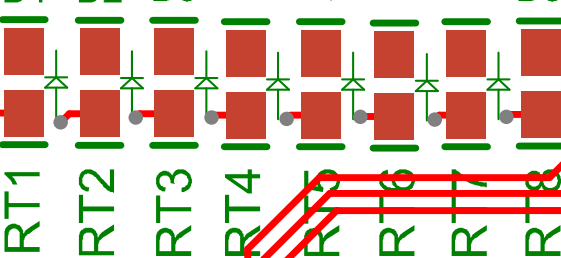


GND

Bypass LEDs

GND

D1 D2 D3 D4 D5 D6 D7 D8



DB1

DB0

VTSELECT

J3

GND

OP1

OP2

OP3

OP4

OP5

OP6

OP7

OP8

FAULT

UVFAULT

5VOUT

GND

FIN1

FIN2

FIN3

FIN4

FIN5

FIN6

FIN7

FIN8

VCC

R3

R4

R5

R6

R7

R8

R9

R10

C3

C4

C5

C6

C7

C8

C9

C10

MAX31914/15

C12

5V

R11

D10

D11

R12

R1REF

FAULT

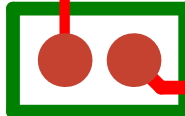
UVFAULT

Field Supply

VCC

GND

J2



FAULT

UVFAULT

GND

VCC

VCC

GND

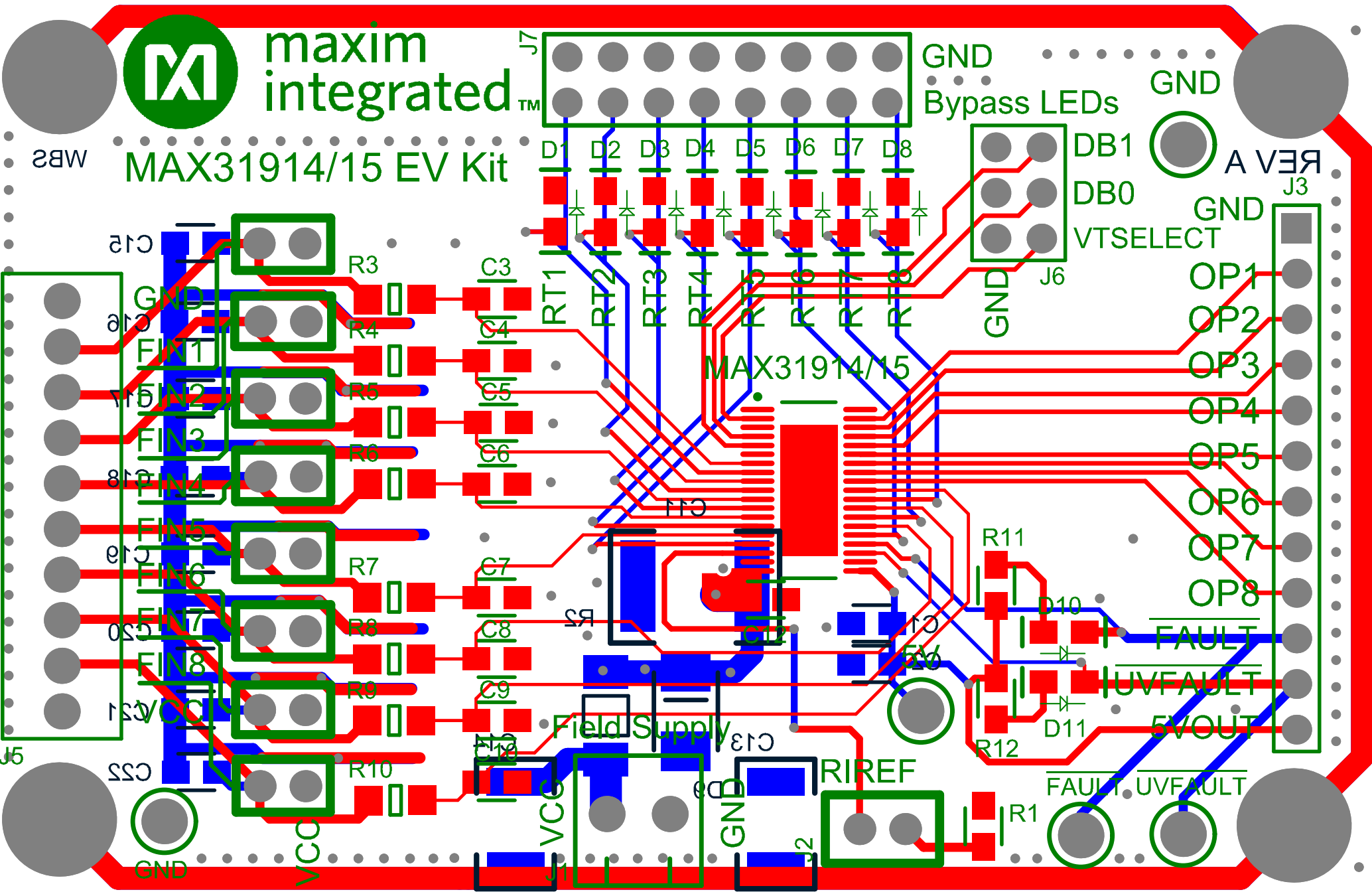
5V

5VOUT



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BILLS OF MATERIALS (BOM) 5/15 Revision

Comment	Designator	Quan	PN#	MFG
0.1uF	C1, C12	2	CGA4J2X7R2A104K	TDK
4.7uF	C2	1	CGA4J3X5R1H475K	TDK
10uF 60V	C11	1	C5750X7S2A106M	TDK
36V ZEN	D9	1	1SMB36AT3G	ON Semi
LED	D1, D2, D3, D4, D5, D6, D7, D8, D10, D11	10	HSMS-C170	Avago Technologies
Phoenix Contact 1984617	J1	1	1984617	Phoenix Contact
CON10	J5	1	1-282834-0	TE Connectivity
RIREF, FIN1, FIN2, FIN3, FIN4, FIN5, FIN6, FIN7 FIN8, VCC, RIREF	J2, J15, J16, J17, J18, J19, J20, J21, J22	9	961102-6404-AR	3M
15k 1/8w	R1	1	CRCW080515K0FKEA	Vishay/Dale
150 1/3w MELF	R2	1	MMB02070C1500FB20 0	Vishay
2.2k 1/4w MELF	R3, R4, R5, R6, R7, R8, R9, R10	8	MMA02040C2201FB30 0	Vishay
3.3k	R11, R12	2	CRCW0805560RFKEA	Vishay/Dale
GND	TP1, TP2	2	5001	Keystone (02- TPMINI5001-00)
5V	TP5	1	5000	Keystone (02- TPMINI5000-00)
4700pF - 2kV Caps	C13, C14	2	1812GC472KAT1A	AVX
1nF- 1kV	C15, C16, C17, C18, C19, C20, C21, C22	8	C0805C102KDRACTU	Kemet
Jumpers		9	969102-0000-DA	3M
CON	J3	1	M20-9991245	Harwin
HDR_6PIN	J6	1	961206-6404-AR	3M
HDR_16PIN	J7	1	961216-6404-AR	3M

UVFAULT, FAULT	TP3, TP4	2	5004	Keystone (02- TPMINI5004-00)
MAX31914/1 5	U1	1		

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- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
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