

## OPEN CELLULAR POWER SOURCE BOARD SCHEMATICS

---

### REVISION HISTORY

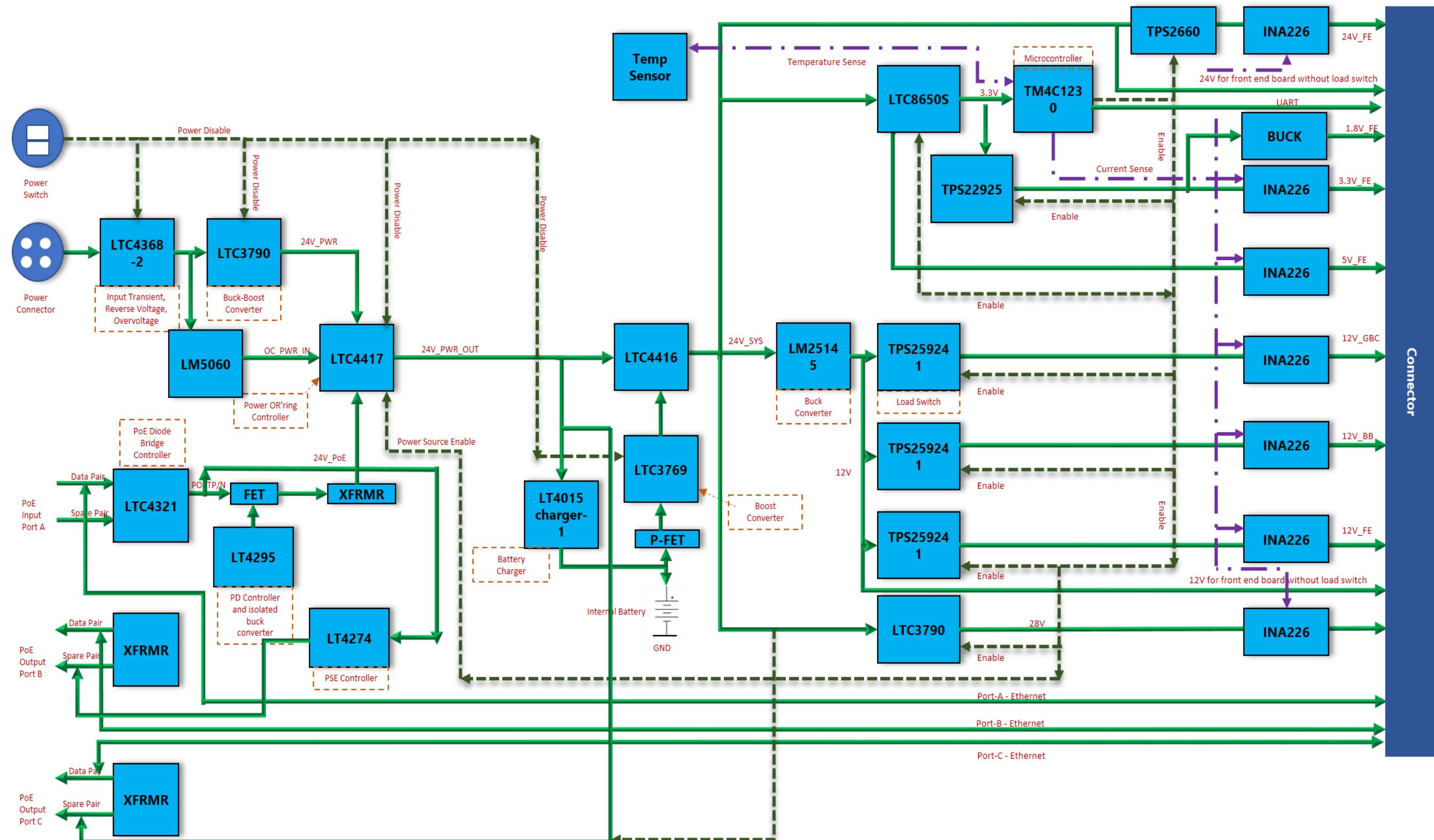
SI NO	REVISION	DATE	REMARKS
1	0.1	17-JUL-2018	RELEASE -1
2	0.2	09-OCT-2018	RELEASE -2

**NOTE: PLEASE USE ADOBE PDF VIEWER FOR BEST RESULTS**

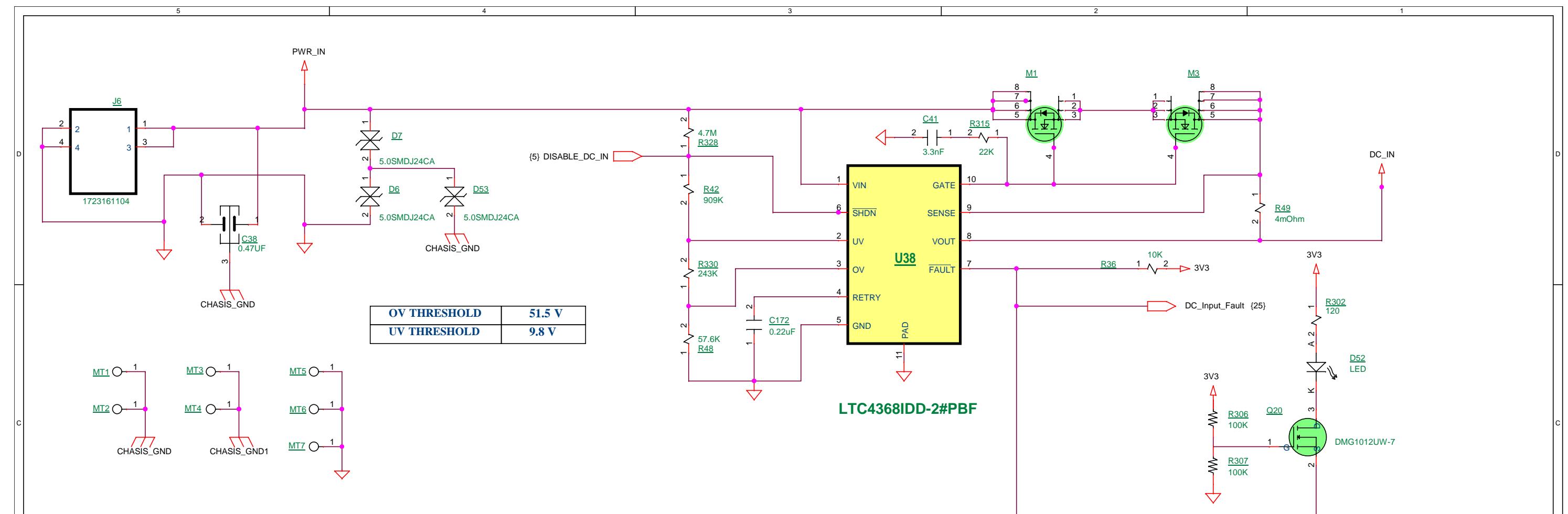
<b>Title</b>		OpenCellular Power Source Board
<b>Size</b>	<b>Document Number</b>	<b>Rev</b>
A3	<Doc>	0.2

Date: Monday, October 15, 2018 Sheet 1 of 27

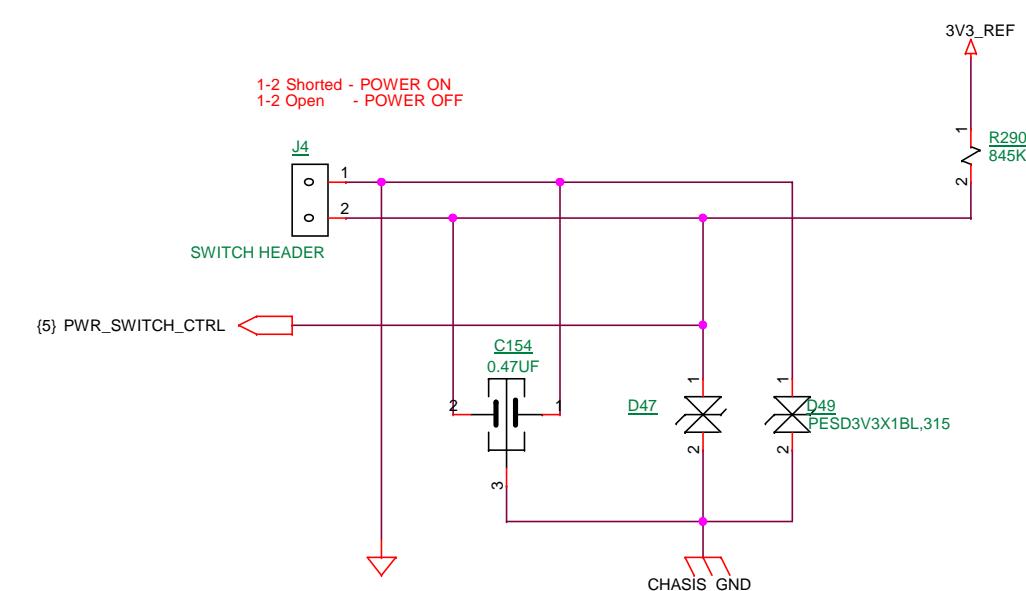
## BLOCK DIAGRAM



Title		
OpenCellular Power Source Board		
Size A3	Document Number <Doc>	Rev 0.2
Date: Monday, October 15, 2018	Sheet 1	of 27

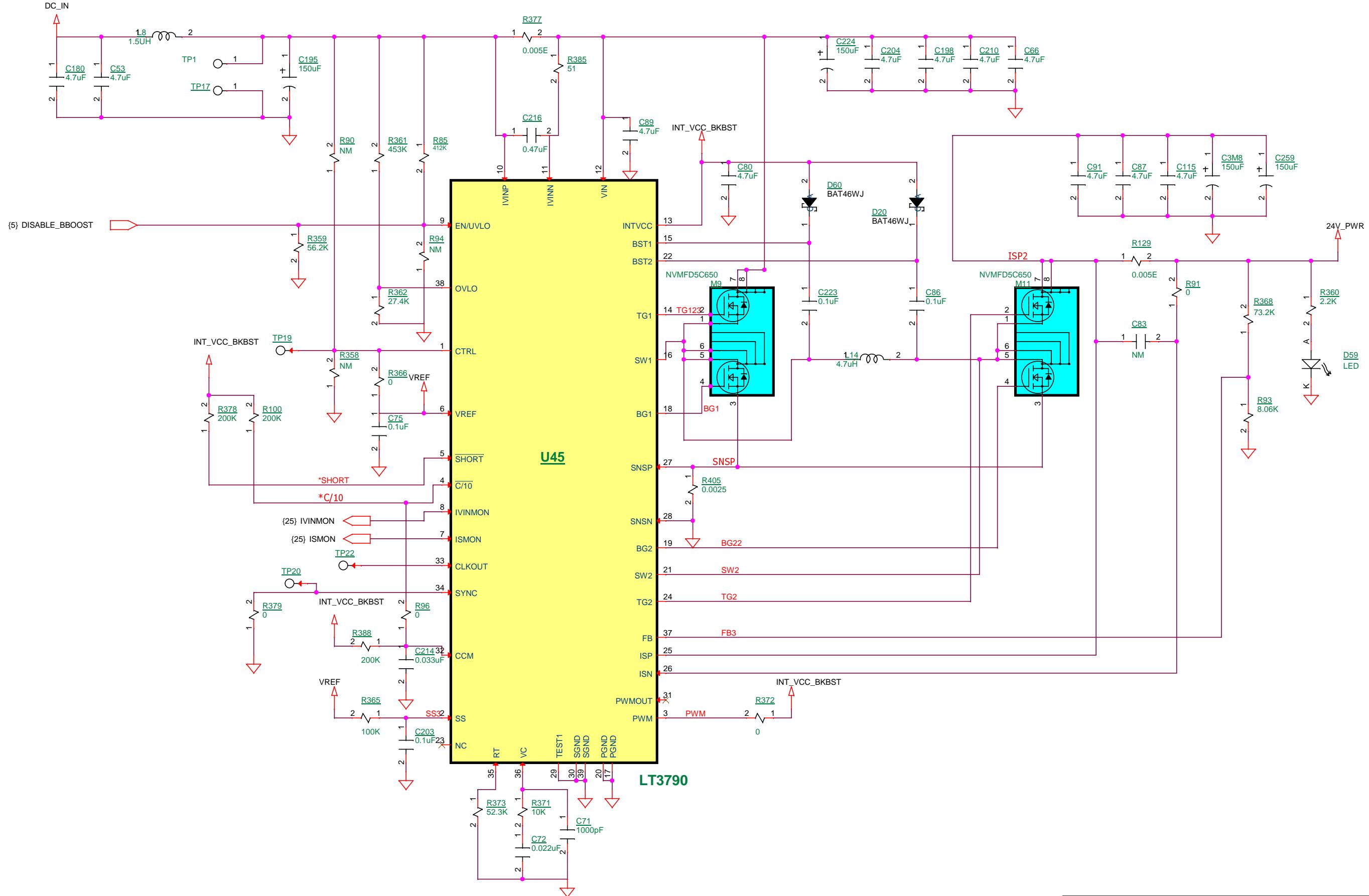


## DC INPUT UV/OV/REVERSE PROTECTION



Title	OpenCellular Power Source Board		
Size A3	Document Number <Doc>		Rev 0.2
Date:	Tuesday, October 16, 2018	Sheet	3 of 26

# DC INPUT (12VDC TO 48VDC) TO 24VDC CONVERTER

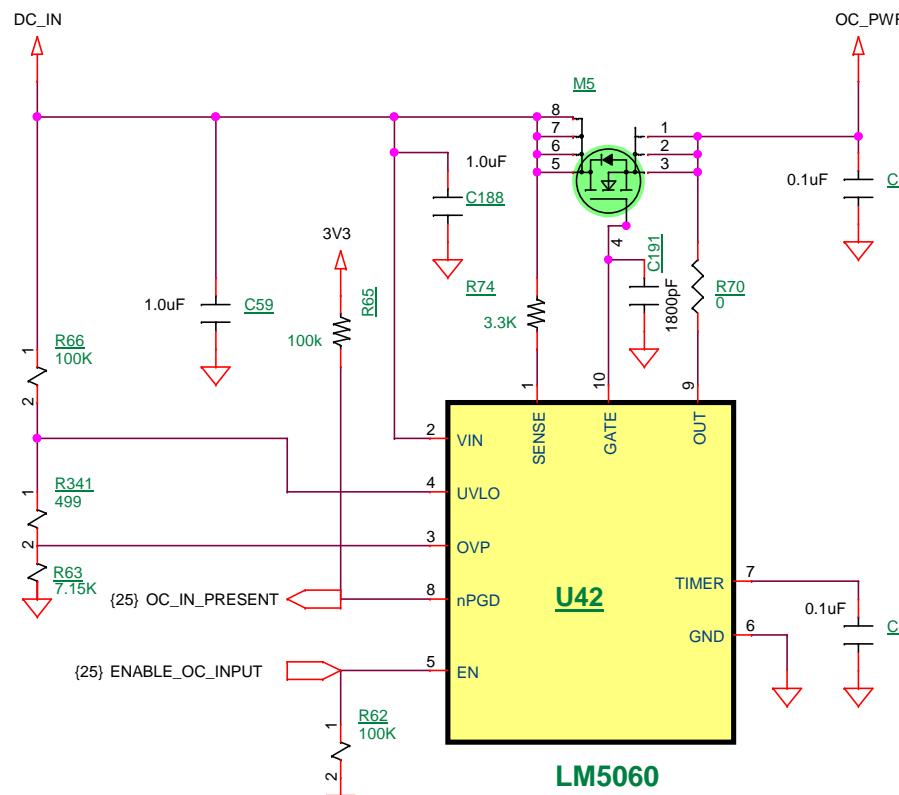


Title		
OpenCellular Power Source Board		
Size	Document Number	Rev
A3	<Doc>	0.2

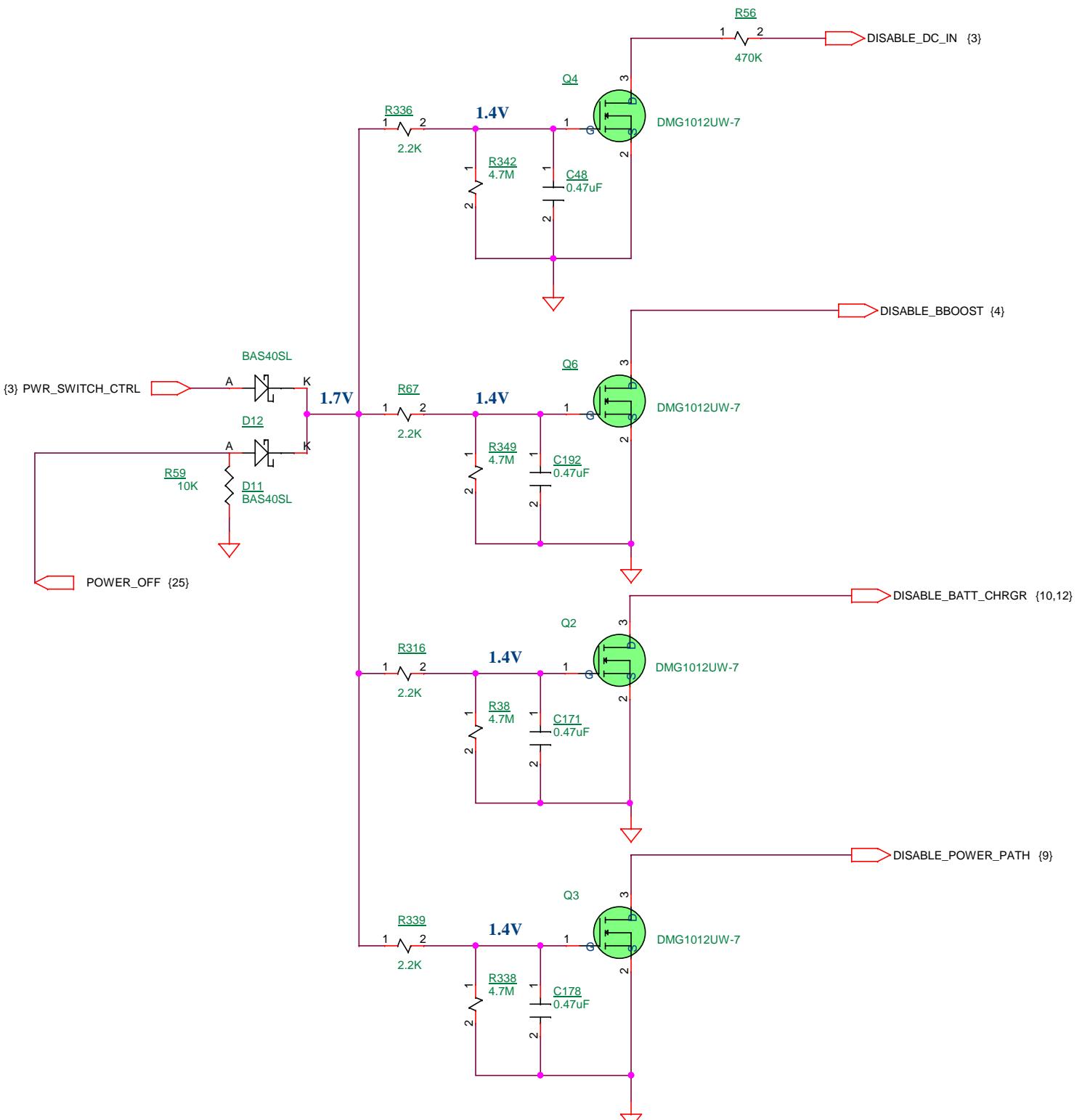
Date: Monday, October 15, 2018

Sheet 4 of 27

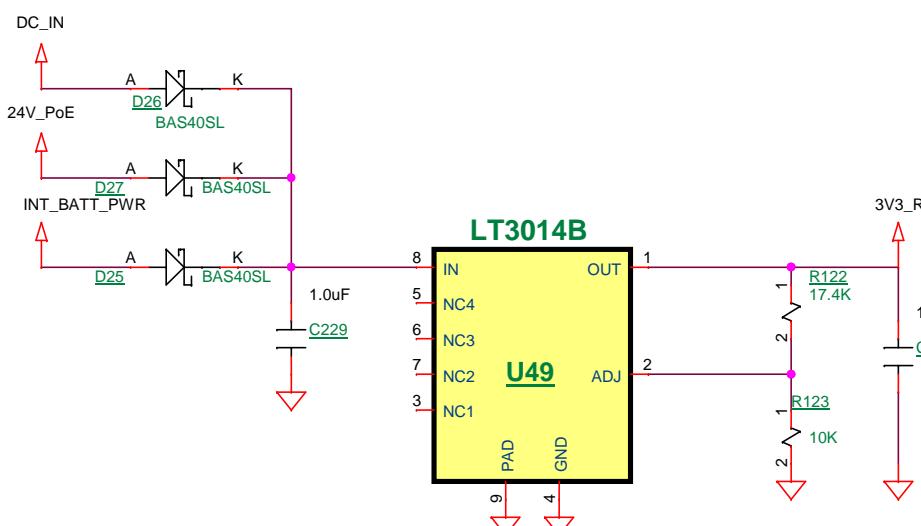
### OC POWER CONTROL CIRCUIT



### POWER SWITCH CONTROL LOGIC - Contd.,

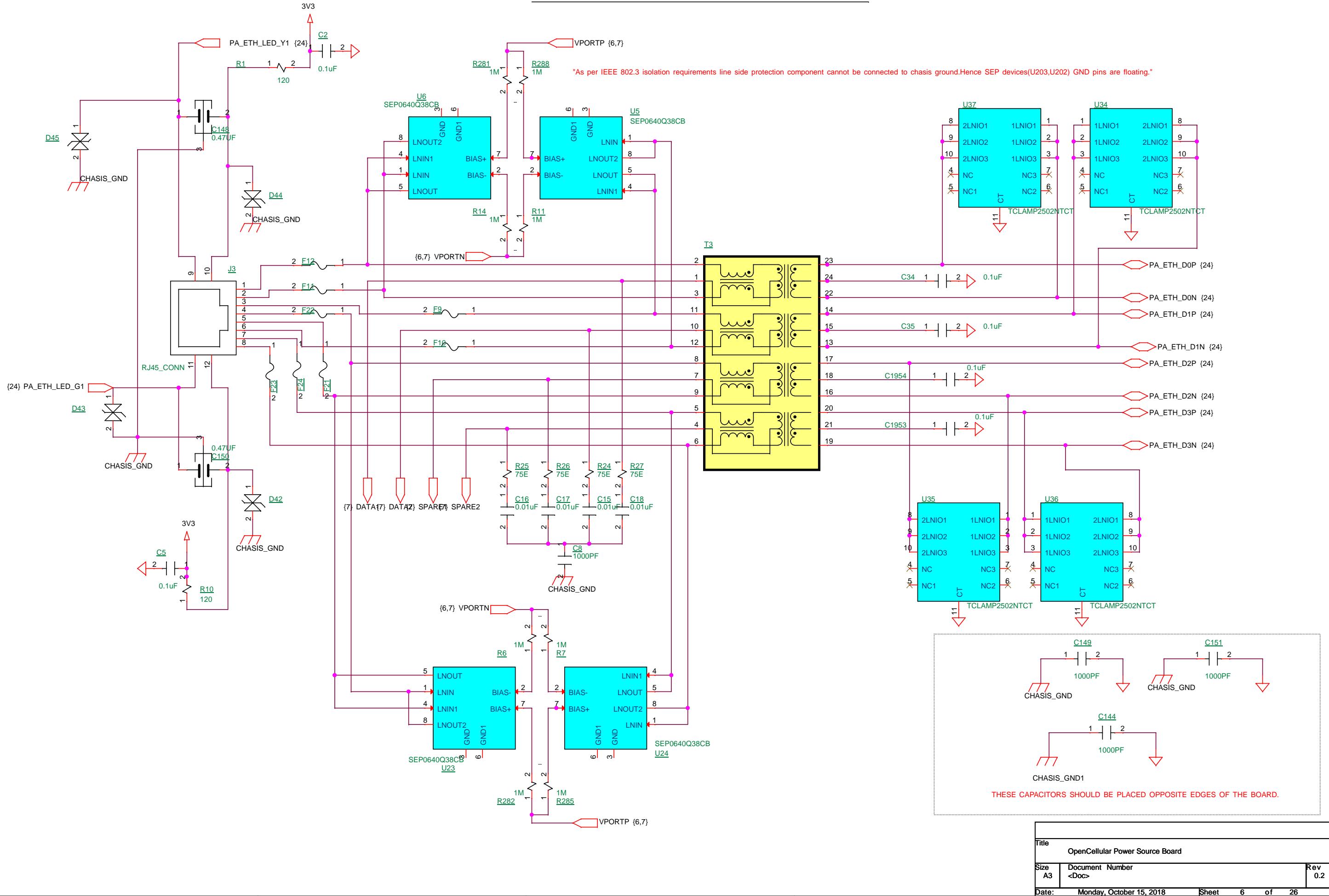


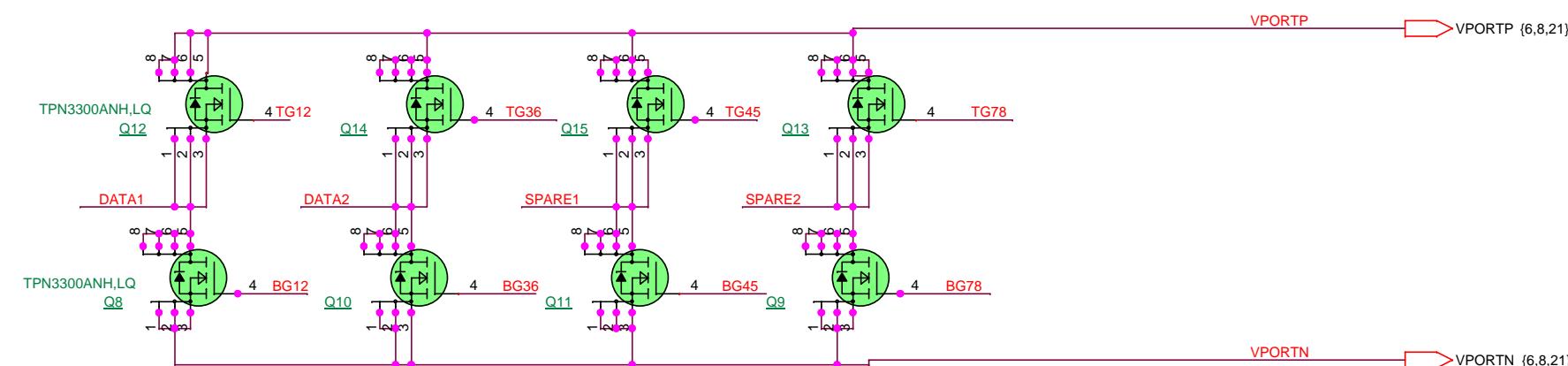
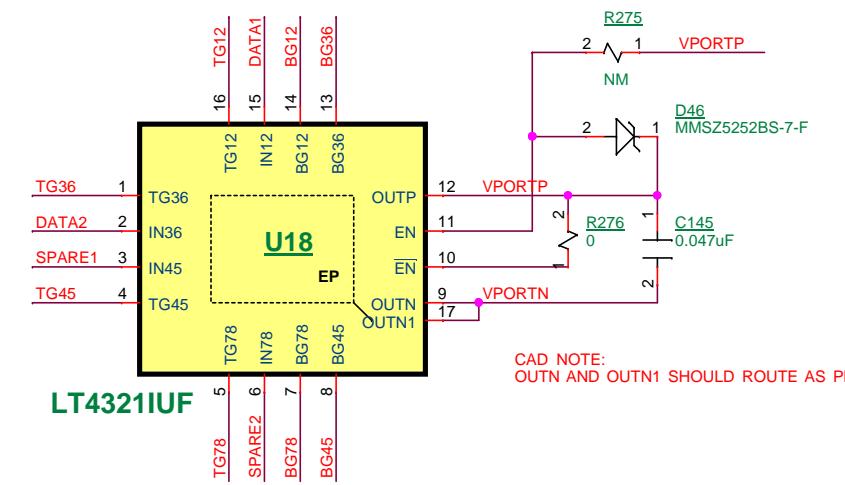
### REFERENCE VOLTAGE GENERATION



Title		
OpenCellular Power Source Board		
Size	Document Number	Rev
A3	<Doc>	0.2
Date:	Monday, October 15, 2018	Sheet 5 of 27

## PoE PORT-A (PD PORT) CONNECTOR SECTION

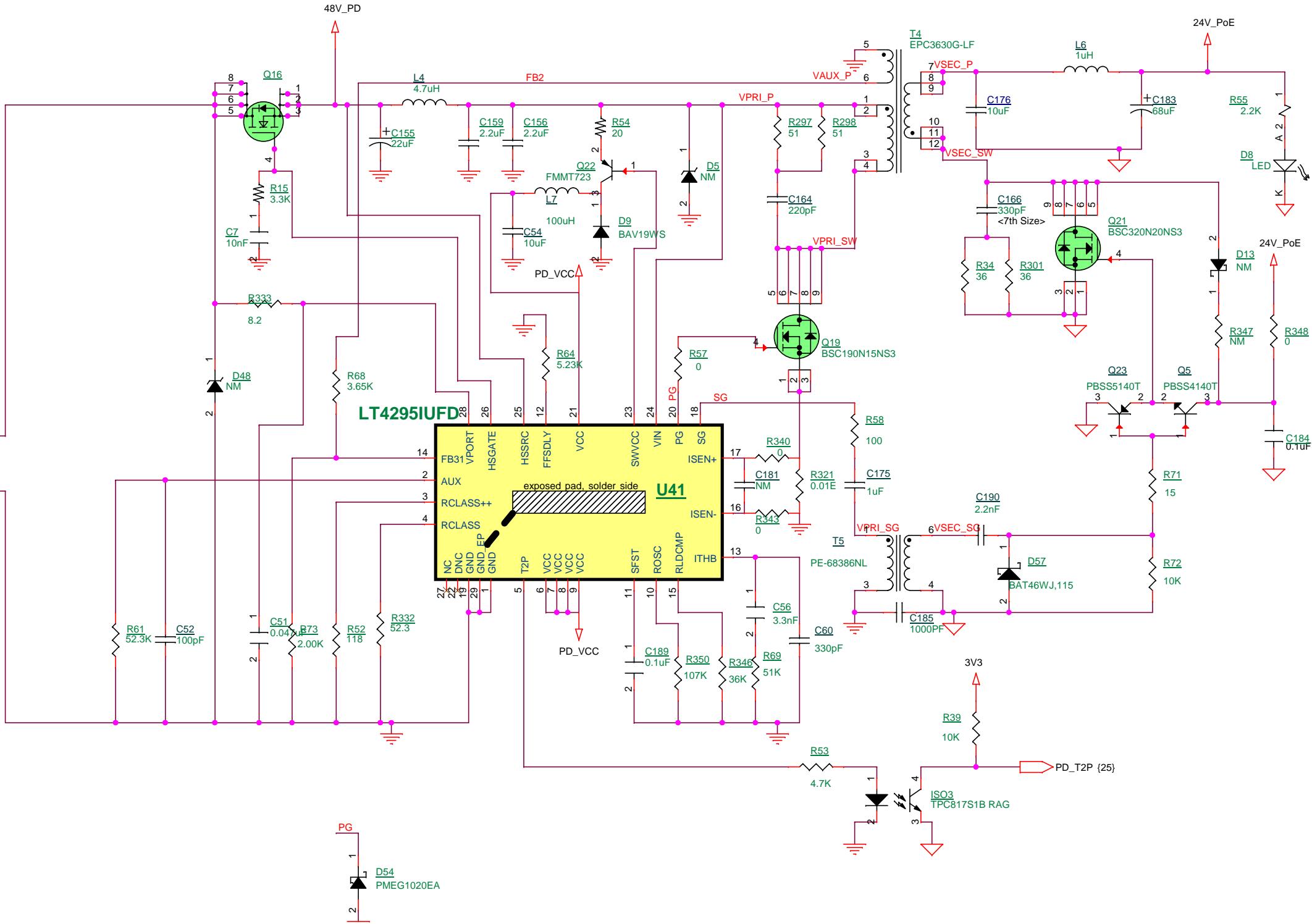


**PoE IDEAL DIODE BRIDGE CONTROLLER**

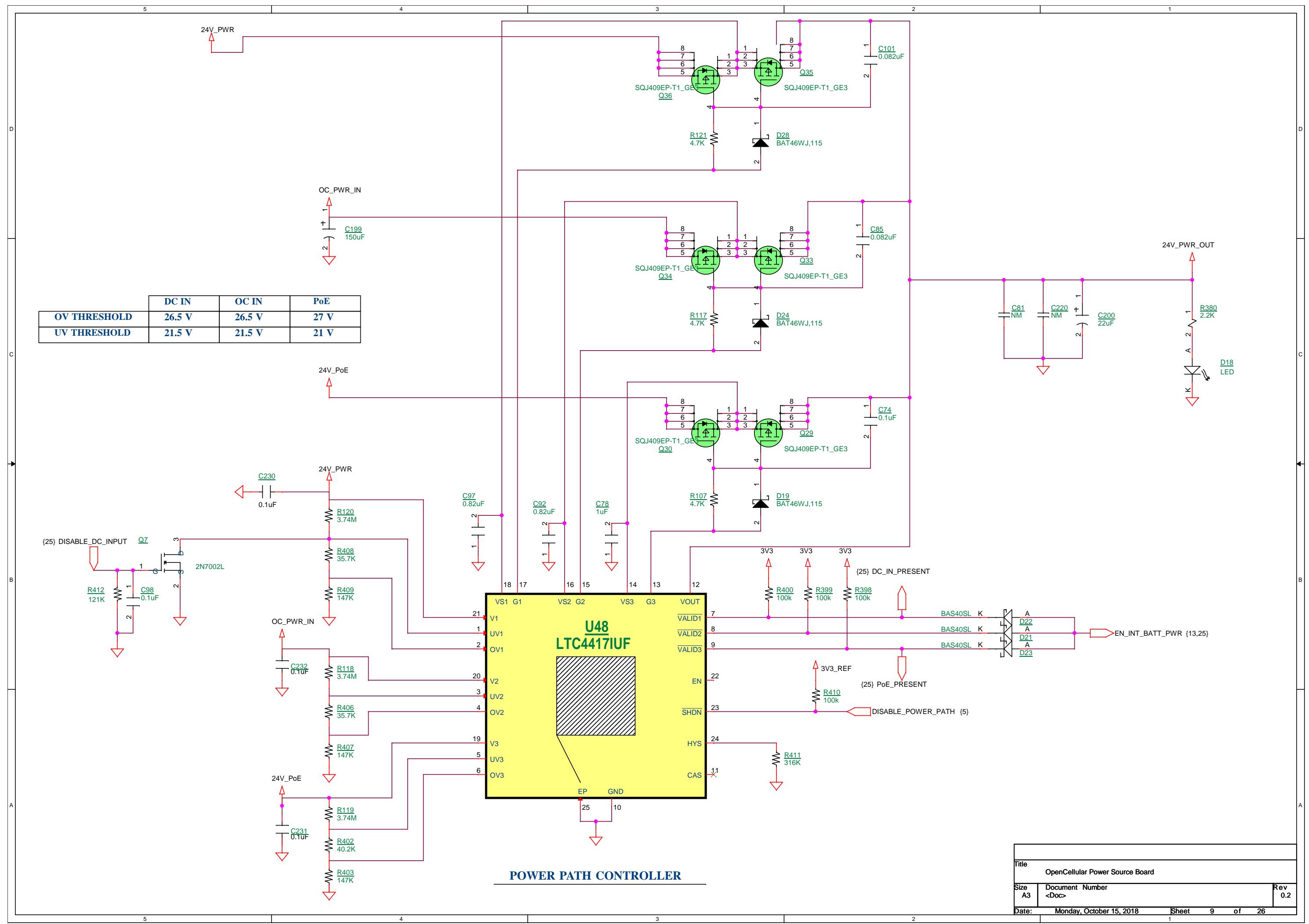
Title	OpenCellular Power Source Board	
Size	Document Number	Rev
A3	<Doc>	0.2

Date: Monday, October 15, 2018 Sheet 7 of 26

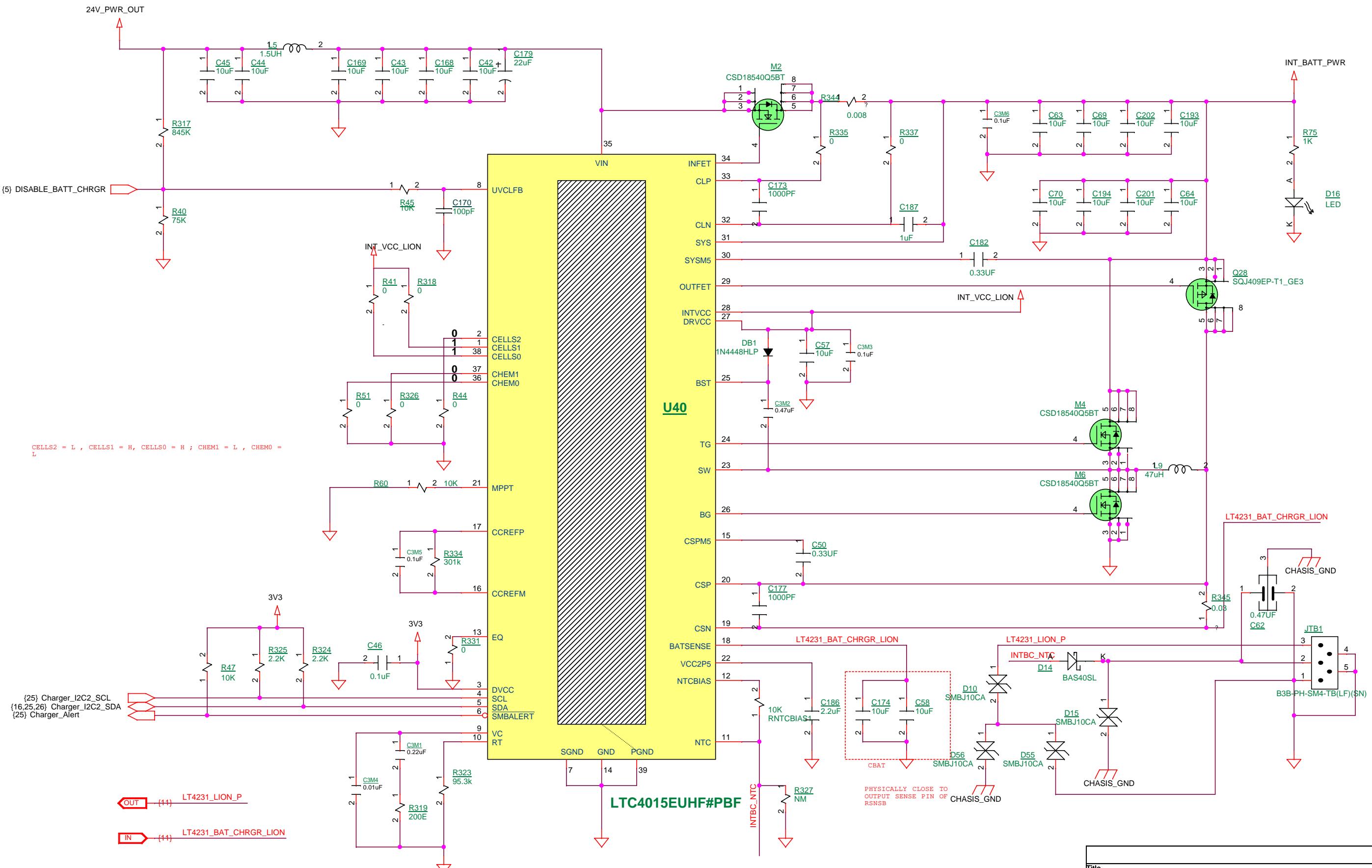
IEEE 802.3bt PD INTERFACE WITH FLYBACK CONTROLLER



Title					
OpenCellular Power Source Board					
Size A3	Document Number <Doc>	Rev 0.2			
Date:	Monday, October 15, 2018	Sheet	8	of	26



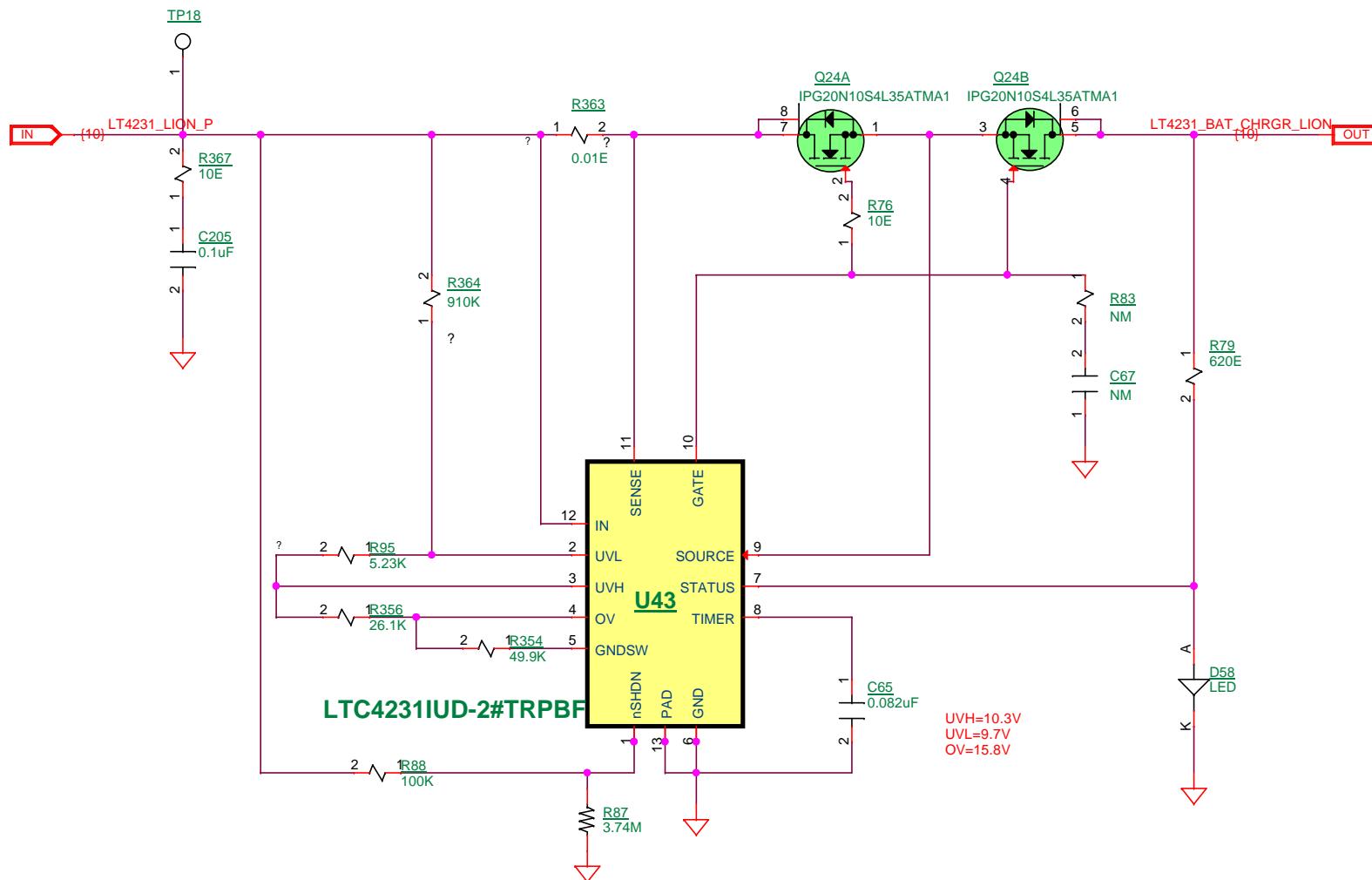
## BATTERY CHARGER



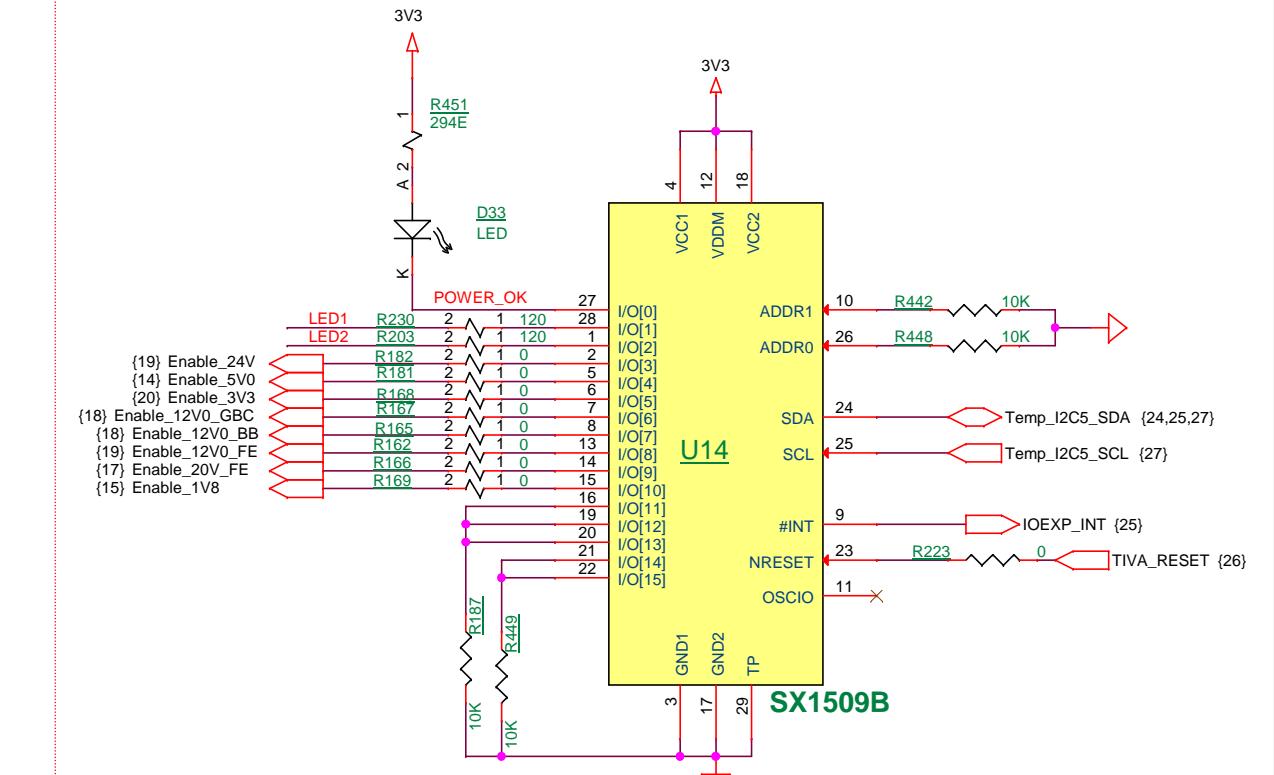
Title		OpenCellular Power Source Board
Size	Document Number	Rev
A3	<Doc>	0.2

Date: Monday, October 15, 2018 Sheet 10 of 26

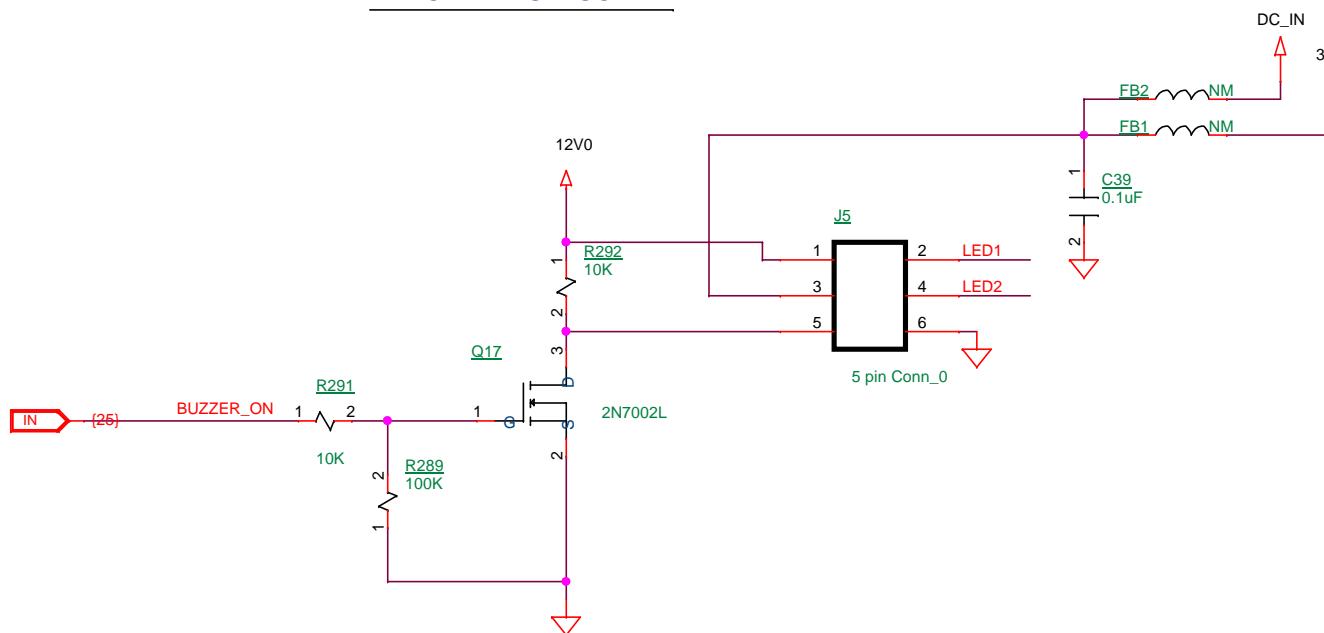
### HOT SWAP CONTROLLER



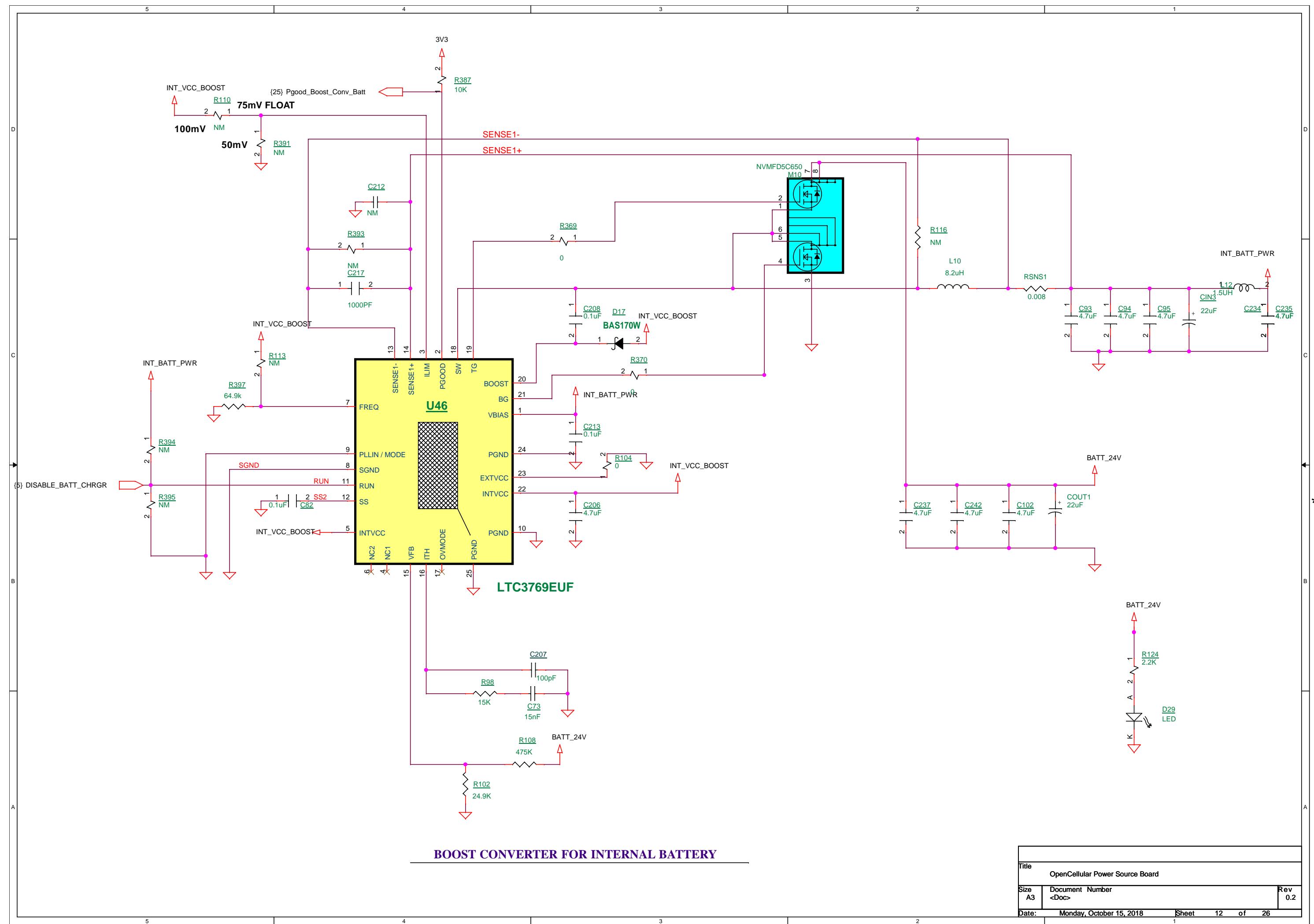
### IO EXPANDER

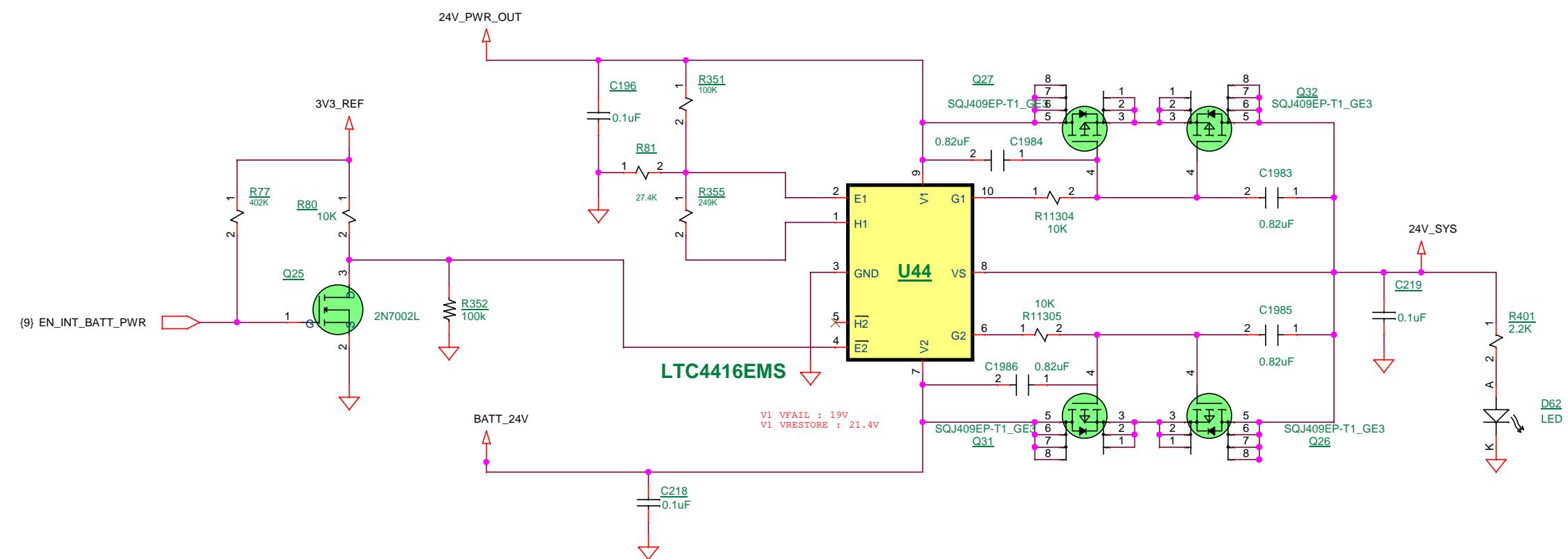


### BUZZER CIRCUIT



Title		OpenCellular Power Source Board	
Size	A3	Document Number	<Doc>
Date:	Monday, October 15, 2018	Sheet	11 of 26

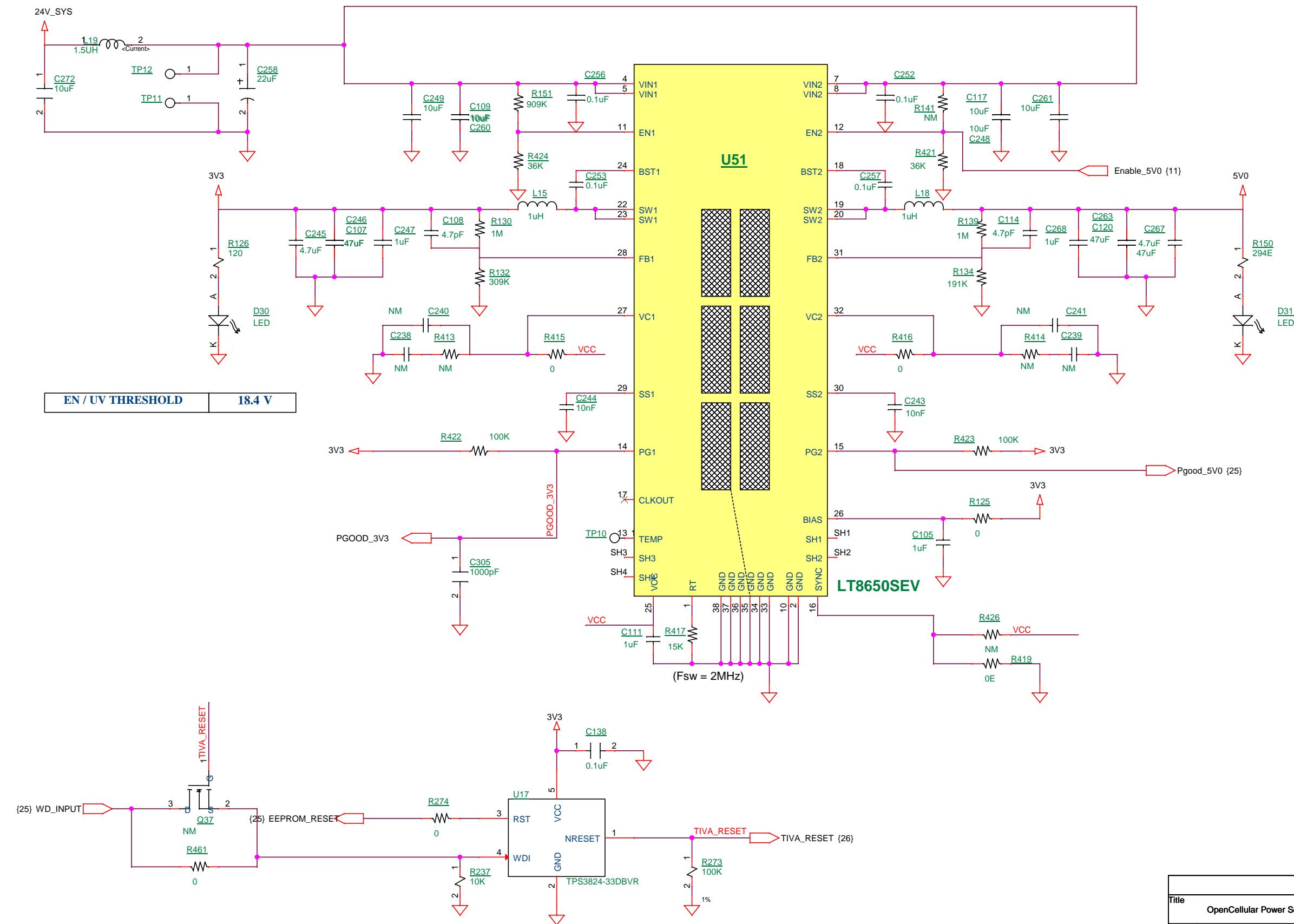


**POWER PATH CONTROLLER**

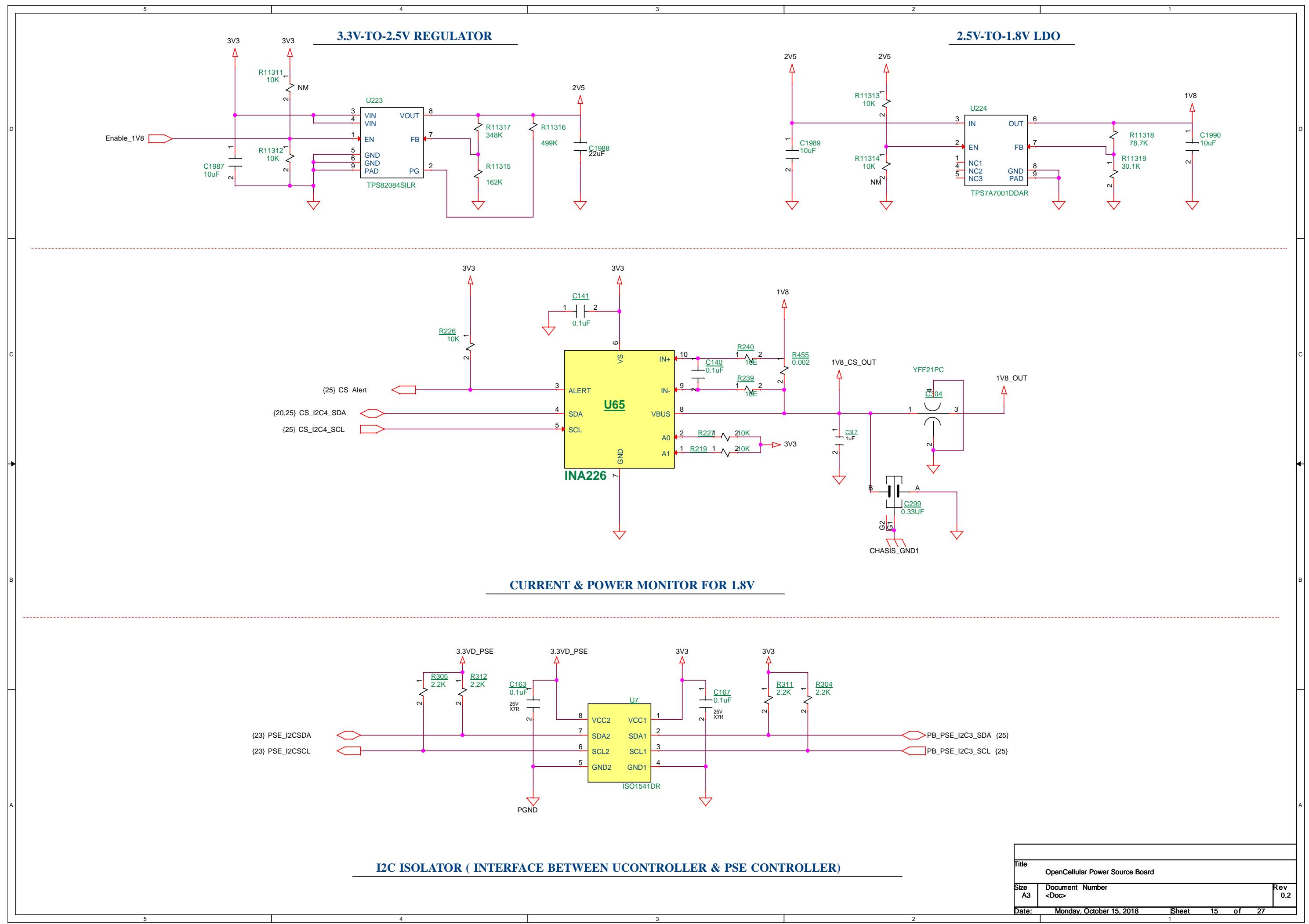
Title	OpenCellular Power Source Board	
Size	Document Number	Rev
A3	<Doc>	0.2

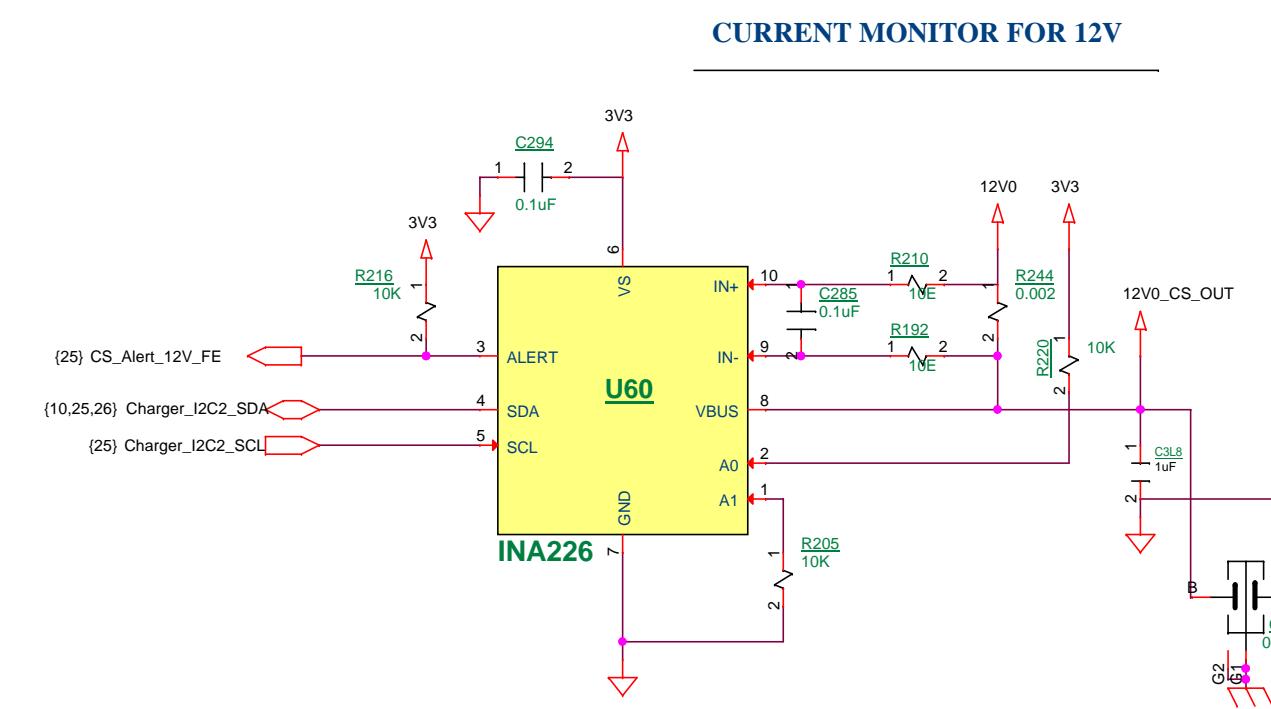
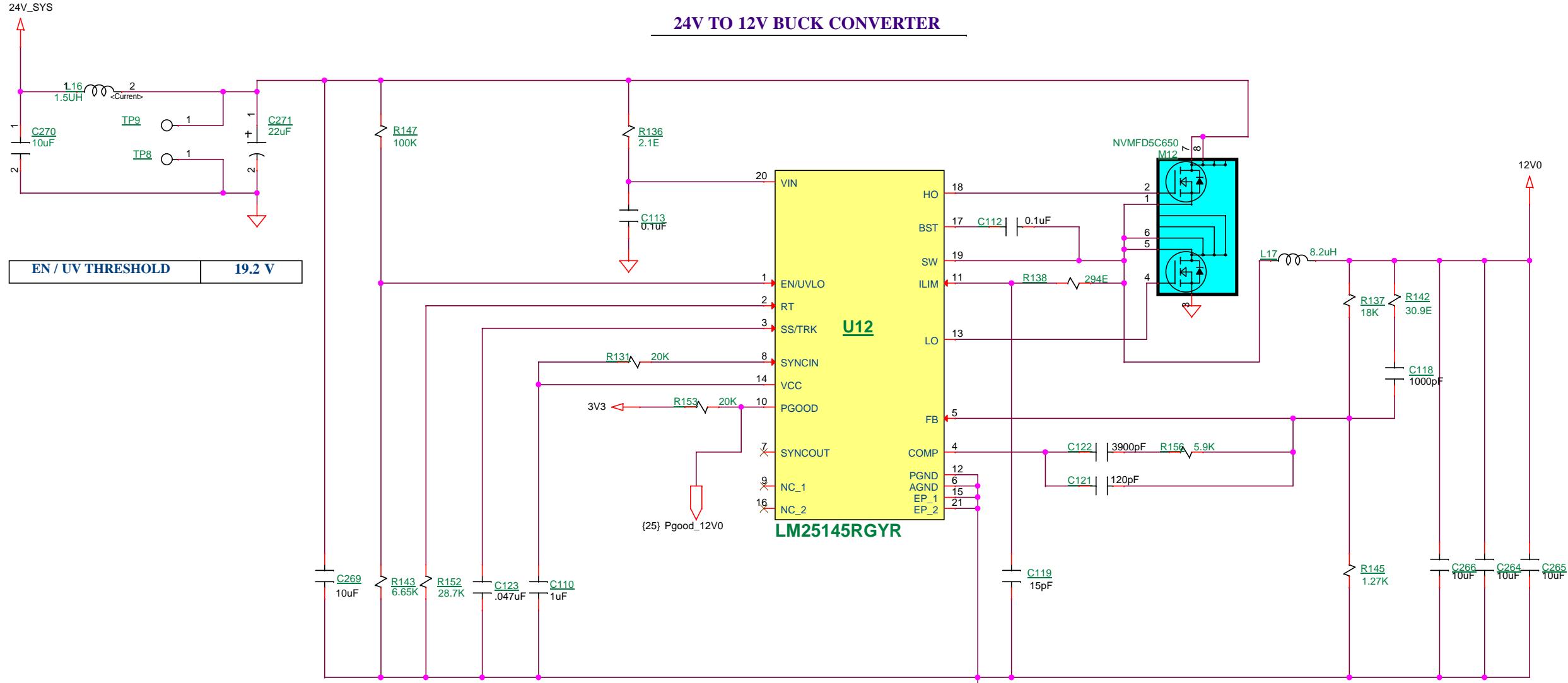
Date: Monday, October 15, 2018 Sheet 13 of 26

### **3.3V AND 5V BUCK CONVERTER CIRCUITRY**



Title	OpenCellular Power Source Board		
Size A3	Document Number <Doc>		Rev 0.2
Date:	Monday, October 15, 2018	Sheet	14 of 26



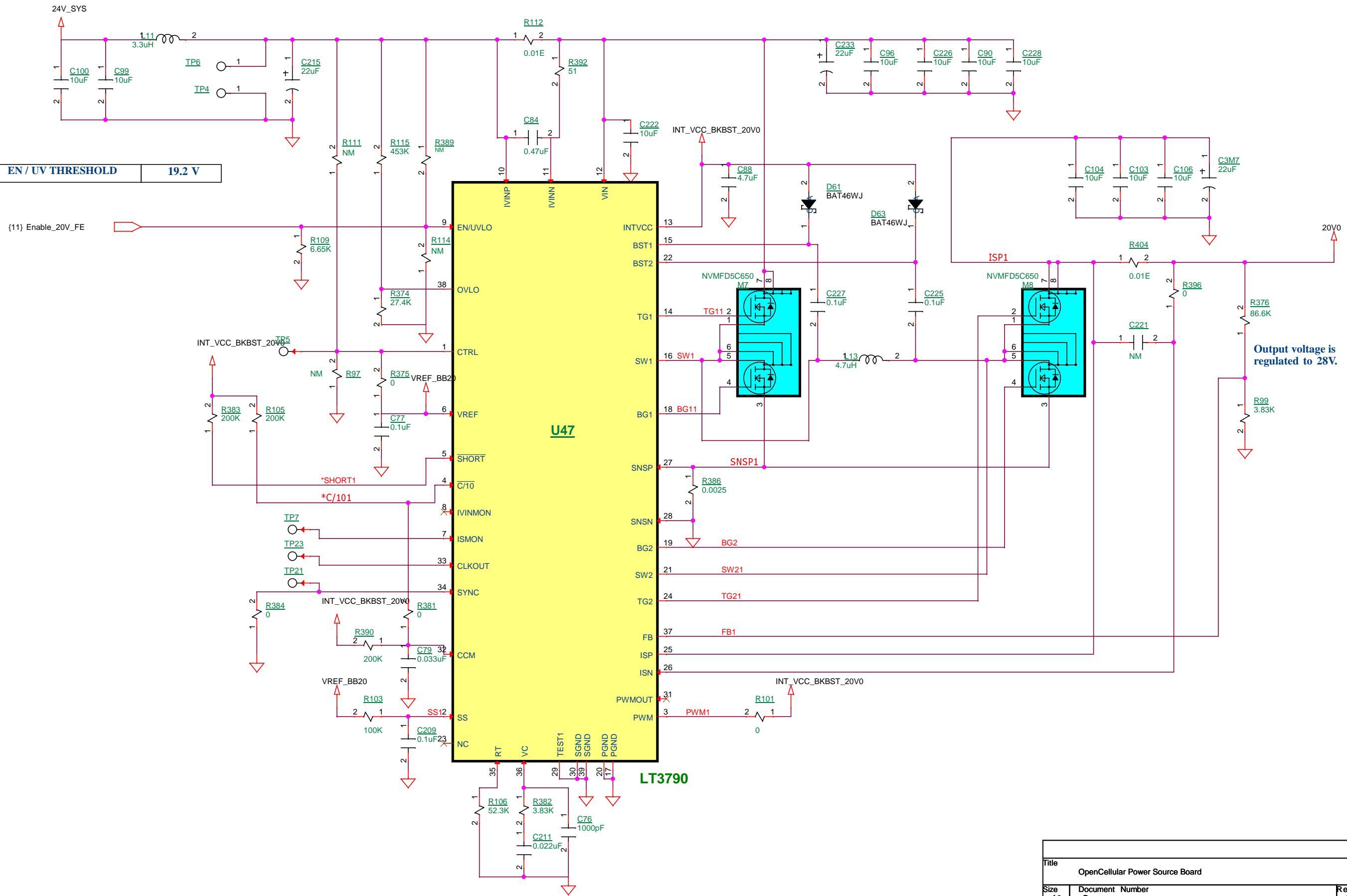


Title		OpenCellular Power Source Board	
Size	Document Number	<Doc>	Rev
A3			0.2

Date: Monday, October 15, 2018

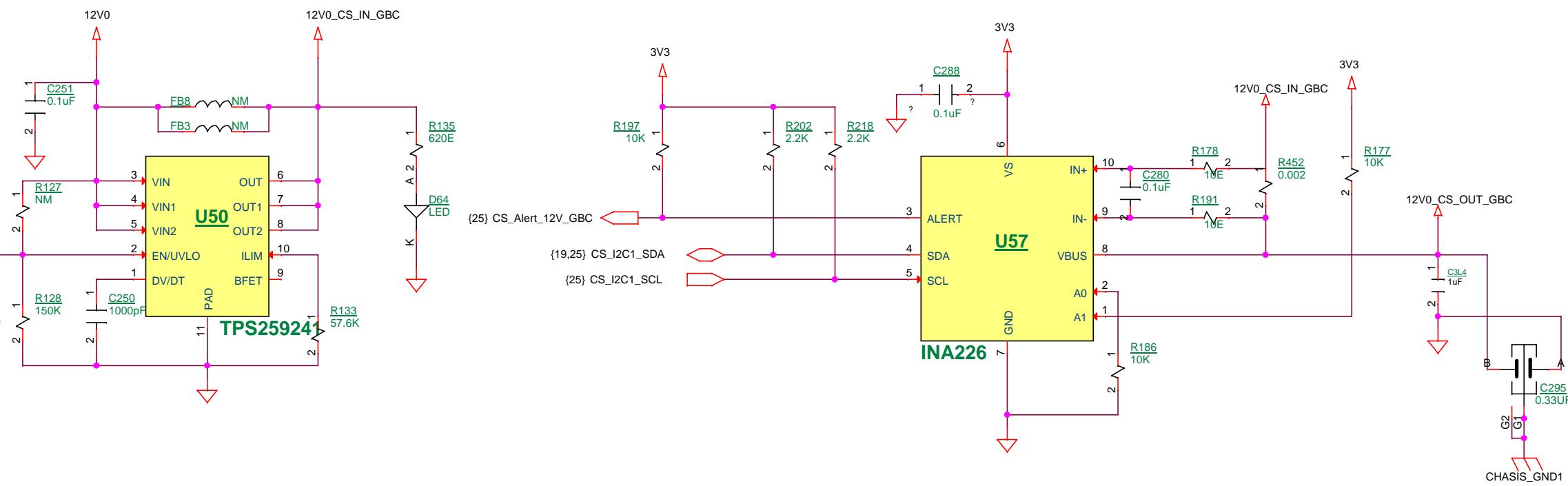
Sheet 16 of 27

BUCK-BOOST CONVERTER FOR 28V GENERATION

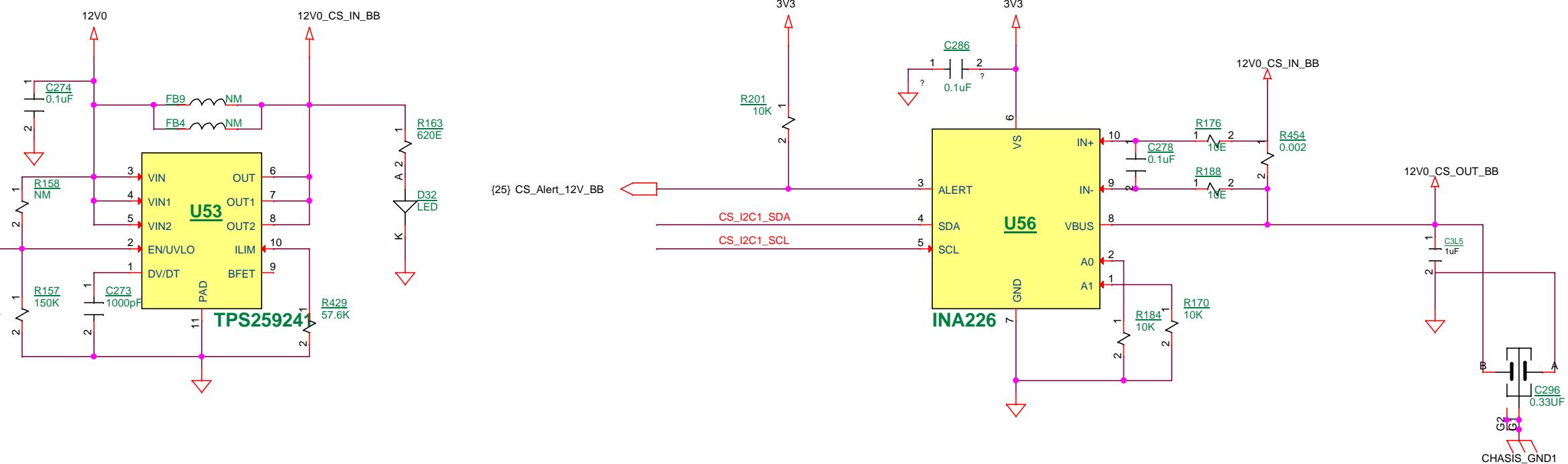


Title		OpenCellular Power Source Board		
Size A3		Document Number <Doc>		
Date:	Monday, October 15, 2018	Sheet	17	of 27
Rev	0.2			

### LOAD SWITCH, POWER & CURRENT MONITOR FOR 12V OF GBC BOARD



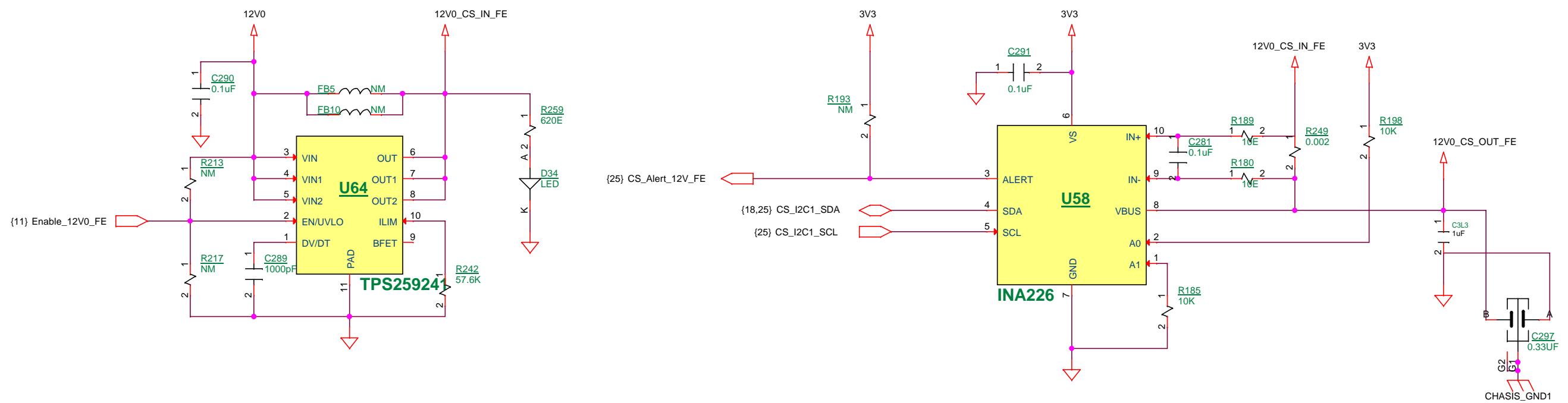
### LOAD SWITCH, POWER & CURRENT MONITOR FOR 12V OF BB BOARD



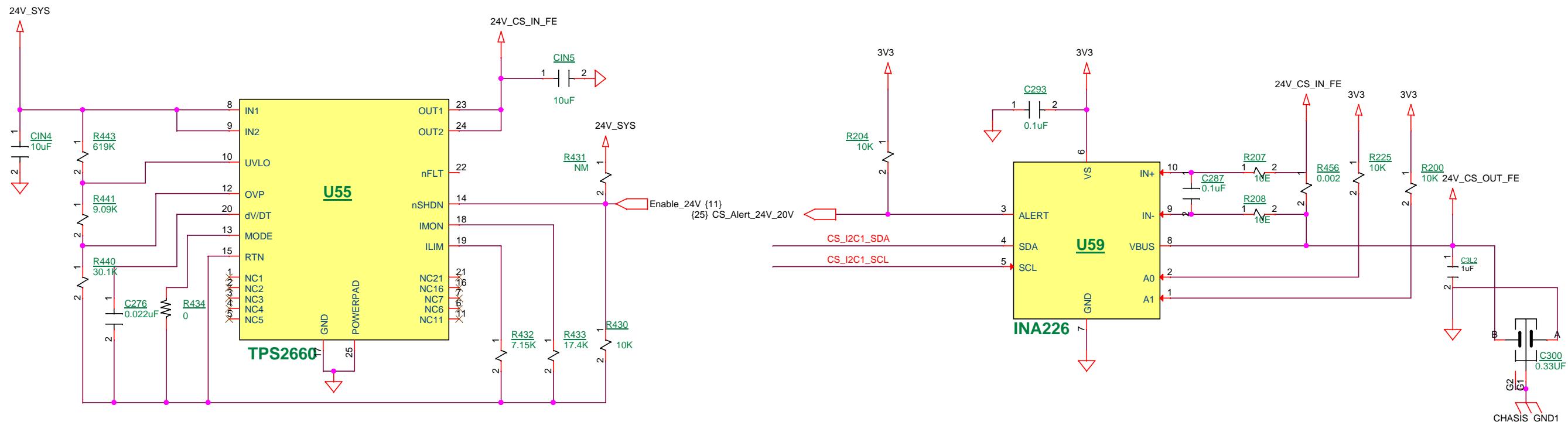
Title		
OpenCellular Power Source Board		
Size	Document Number	Rev
A3	<Doc>	0.2

Date: Monday, October 15, 2018 Sheet 18 of 27

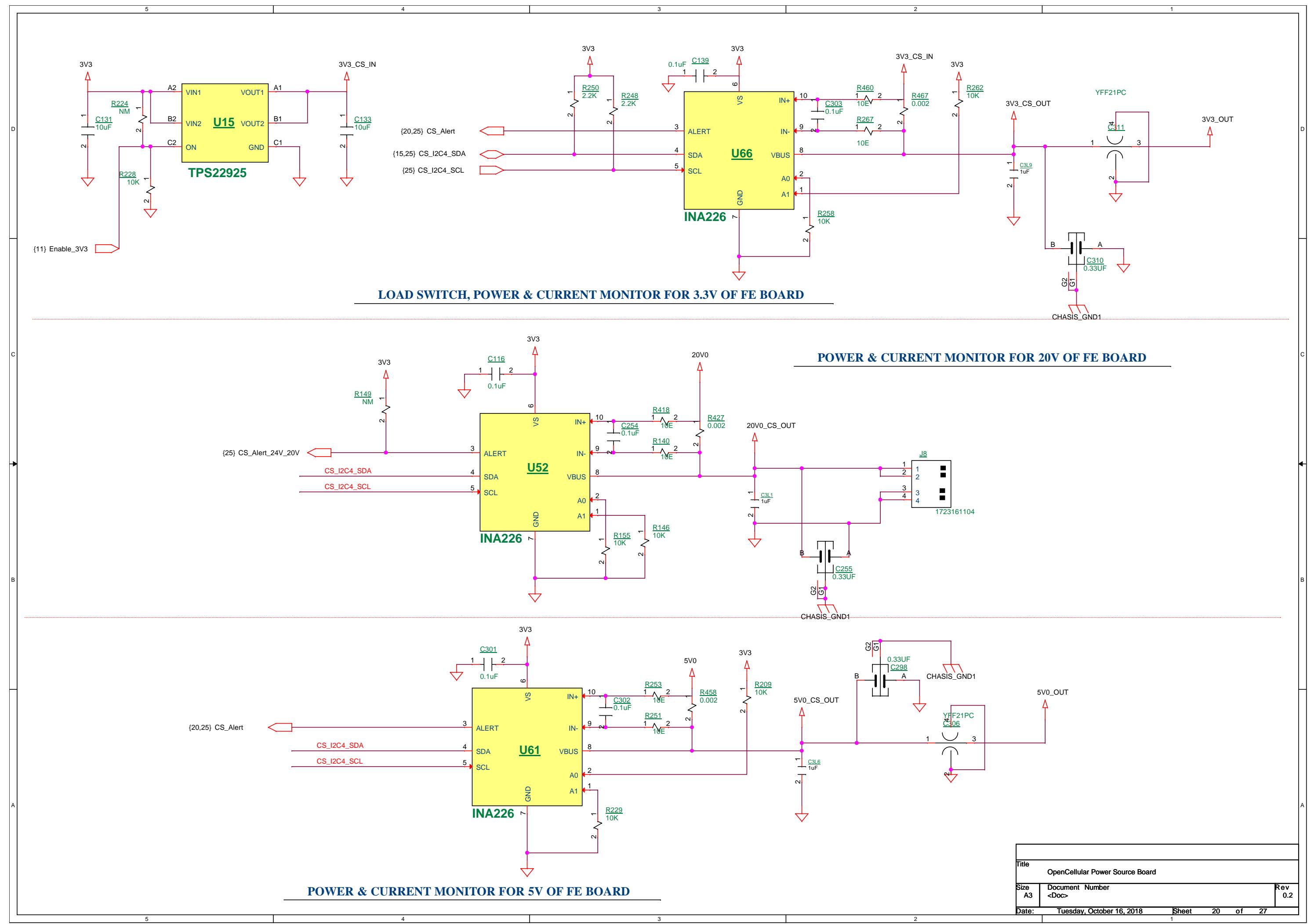
### LOAD SWITCH, POWER & CURRENT MONITOR FOR 12V OF FE BOARD



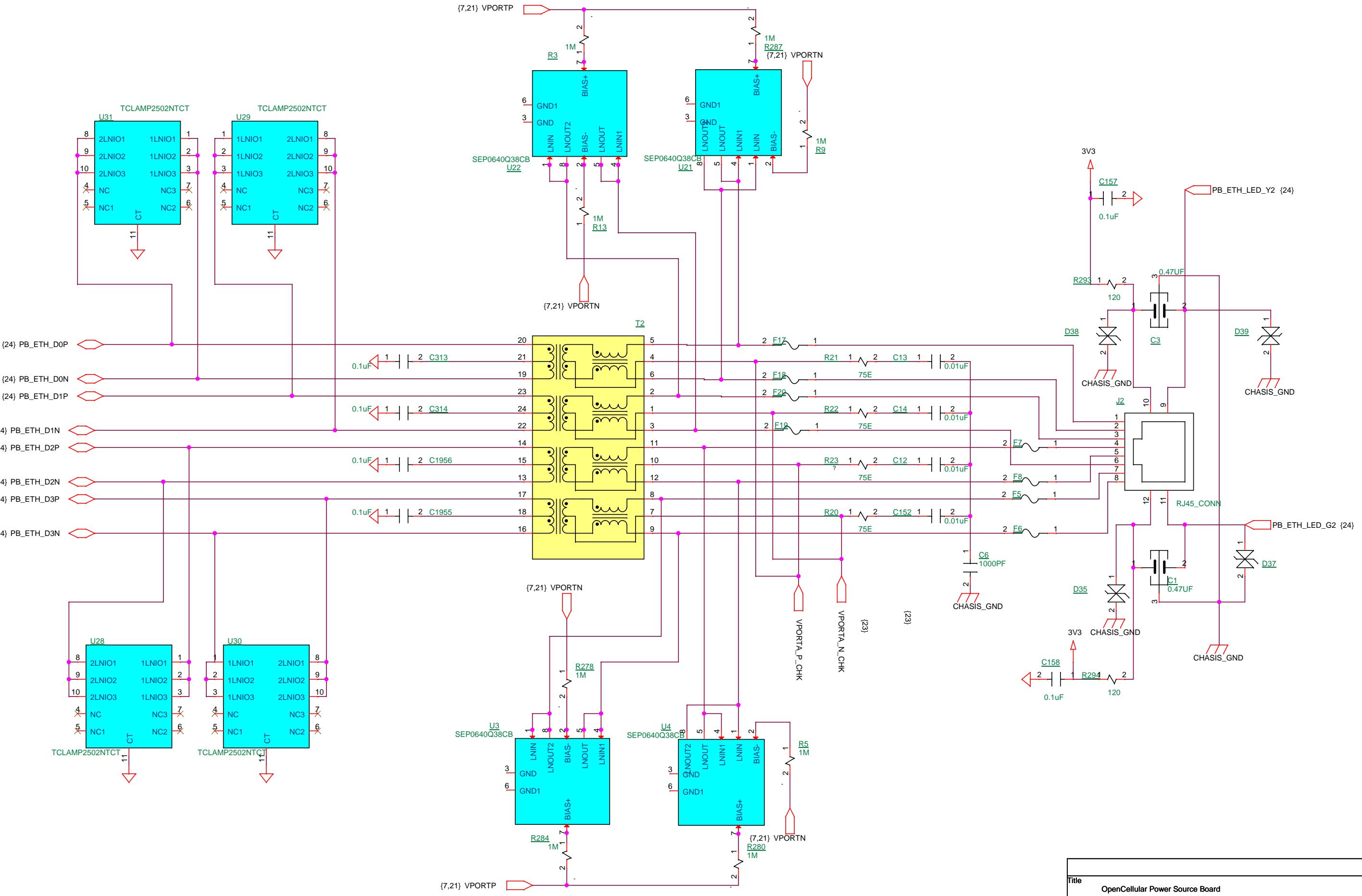
### LOAD SWITCH, POWER & CURRENT MONITOR FOR 24V OF GBC BOARD



Title		OpenCellular Power Source Board	
Size	A3	Document Number	<Doc>
Rev	0.2	Date:	Monday, October 15, 2018



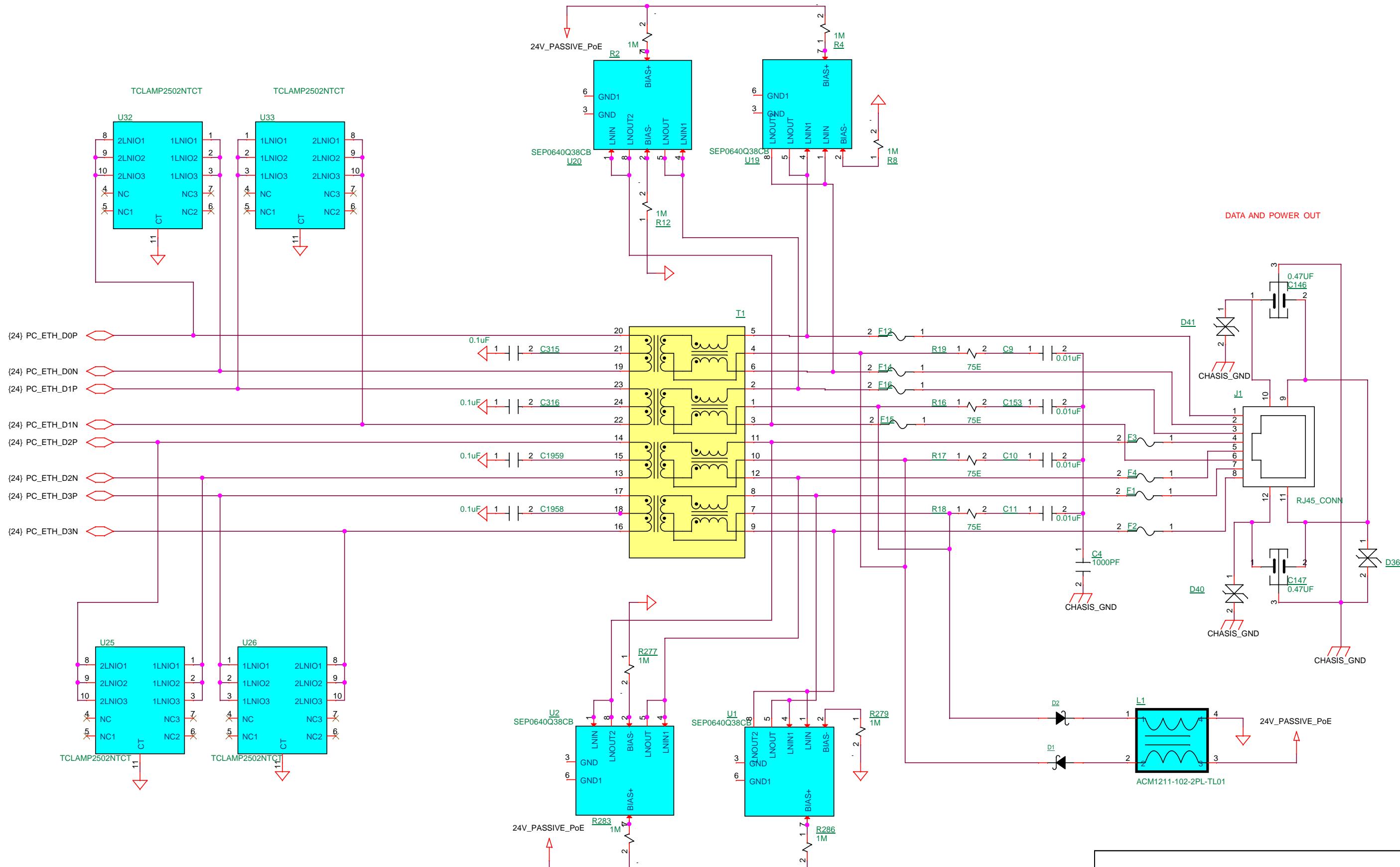
## PoE PORT-B (ACTIVE PSE PORT) CONNECTOR SECTION



"As per IEEE 802.3 isolation requirements line side protection component cannot be connected to chassis ground.Hence SEP devices(U203,U202) GND pins are floating."

Title		
OpenCellular Power Source Board		
Size A3	Document Number <Doc>	Rev 0.2
Date:	Monday, October 15, 2018	Sheet 21 of 27

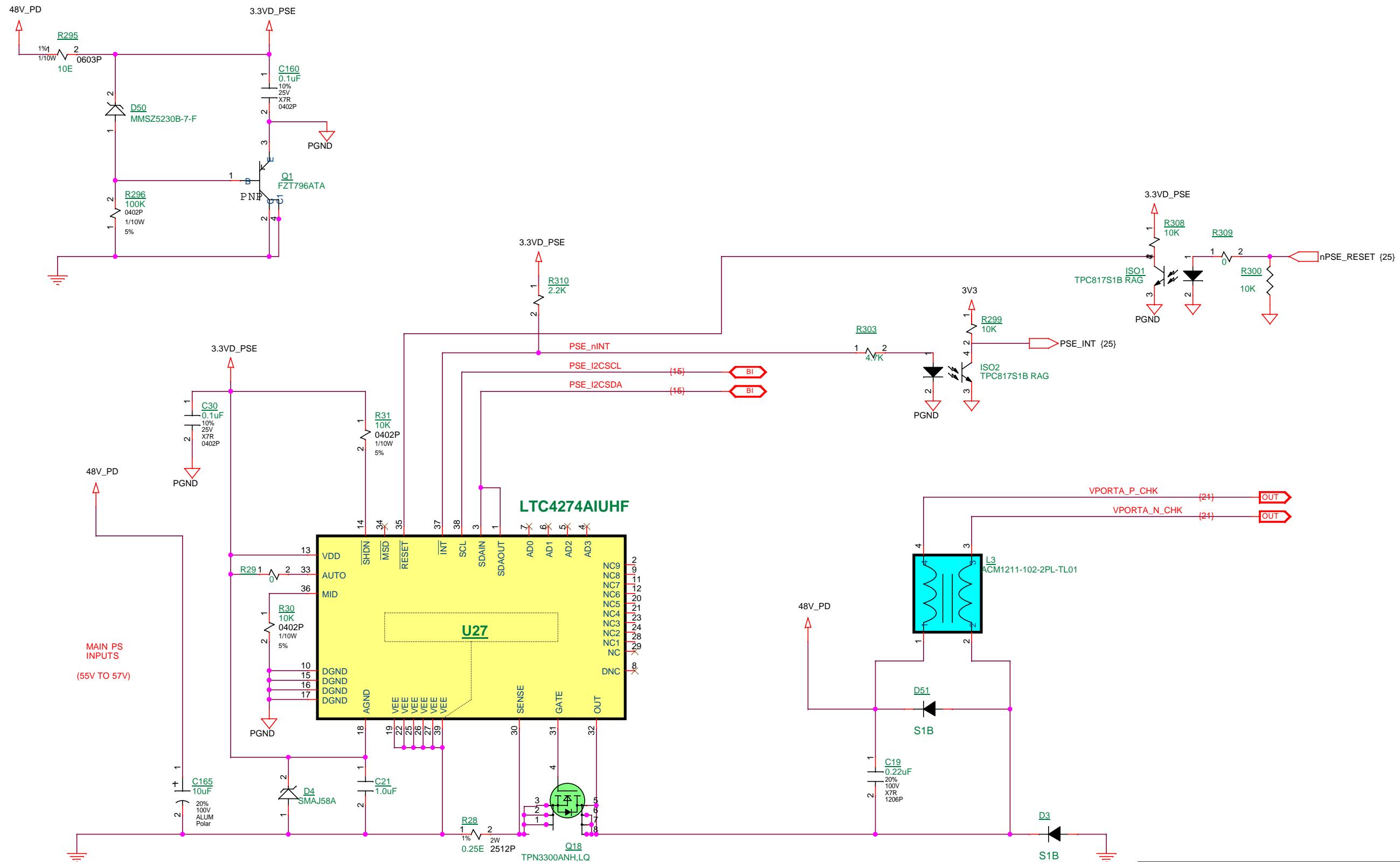
## PoE PORT-C (PASSIVE PSE PORT) CONNECTOR SECTION



"As per IEEE 802.3 isolation requirements line side protection component cannot be connected to chassis ground.Hence SEP devices(U203,U202) GND pins are floating."

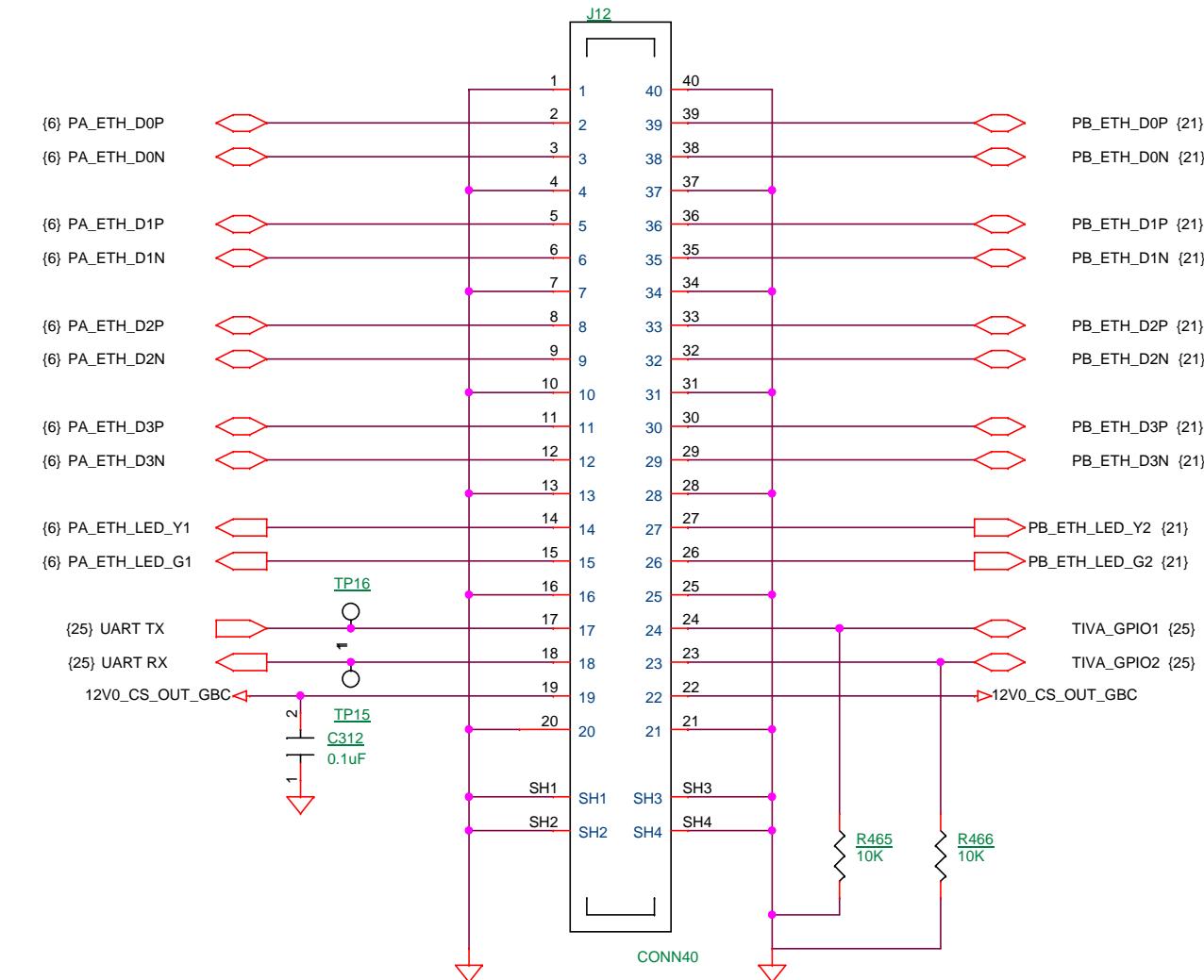
Title		
OpenCellular Power Source Board		
Size	Document Number	Rev
A3	<Doc>	0.2
Date:	Monday, October 15, 2018	Sheet 22 of 27

## SINGLE PoE+ PSE CONTROLLED

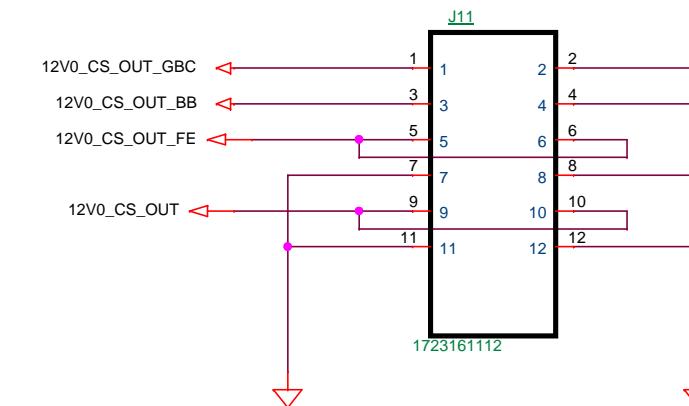


Title		OpenCellular Power Source Board		
Size A3		Document Number <Doc>		Rev 0.2
Date:	Monday, October 15, 2018	Sheet	23	of 27

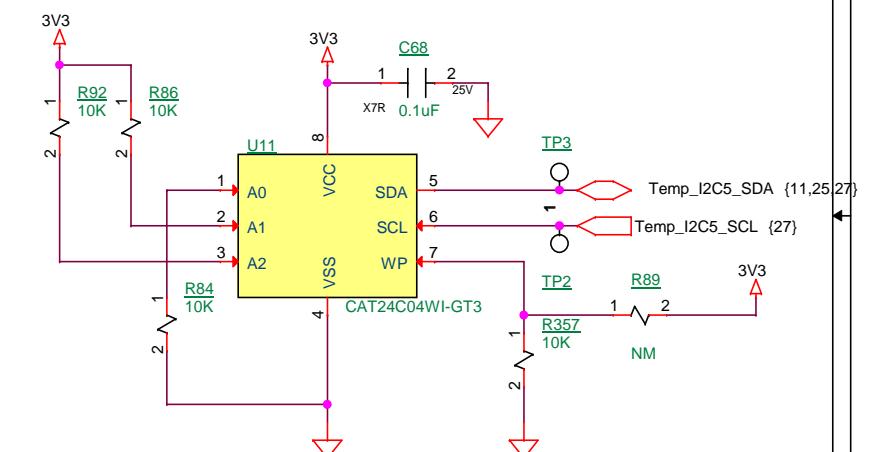
### BOARD TO BOARD CONNECTOR (GBC INTERFACE)



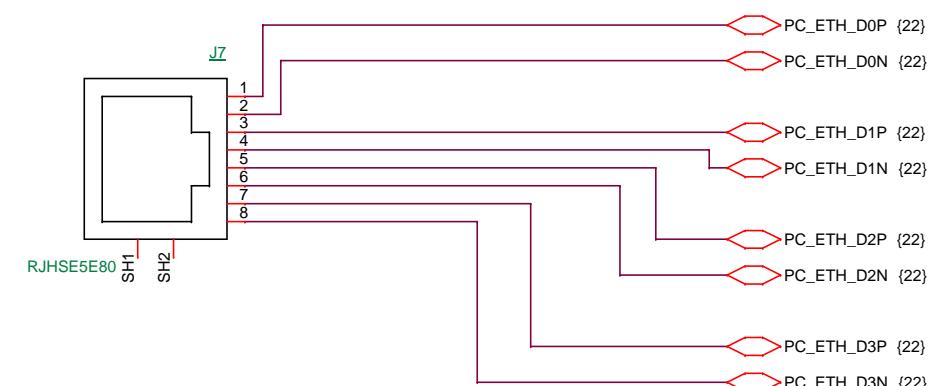
### 12V POWER CONNECTOR



### EEPROM

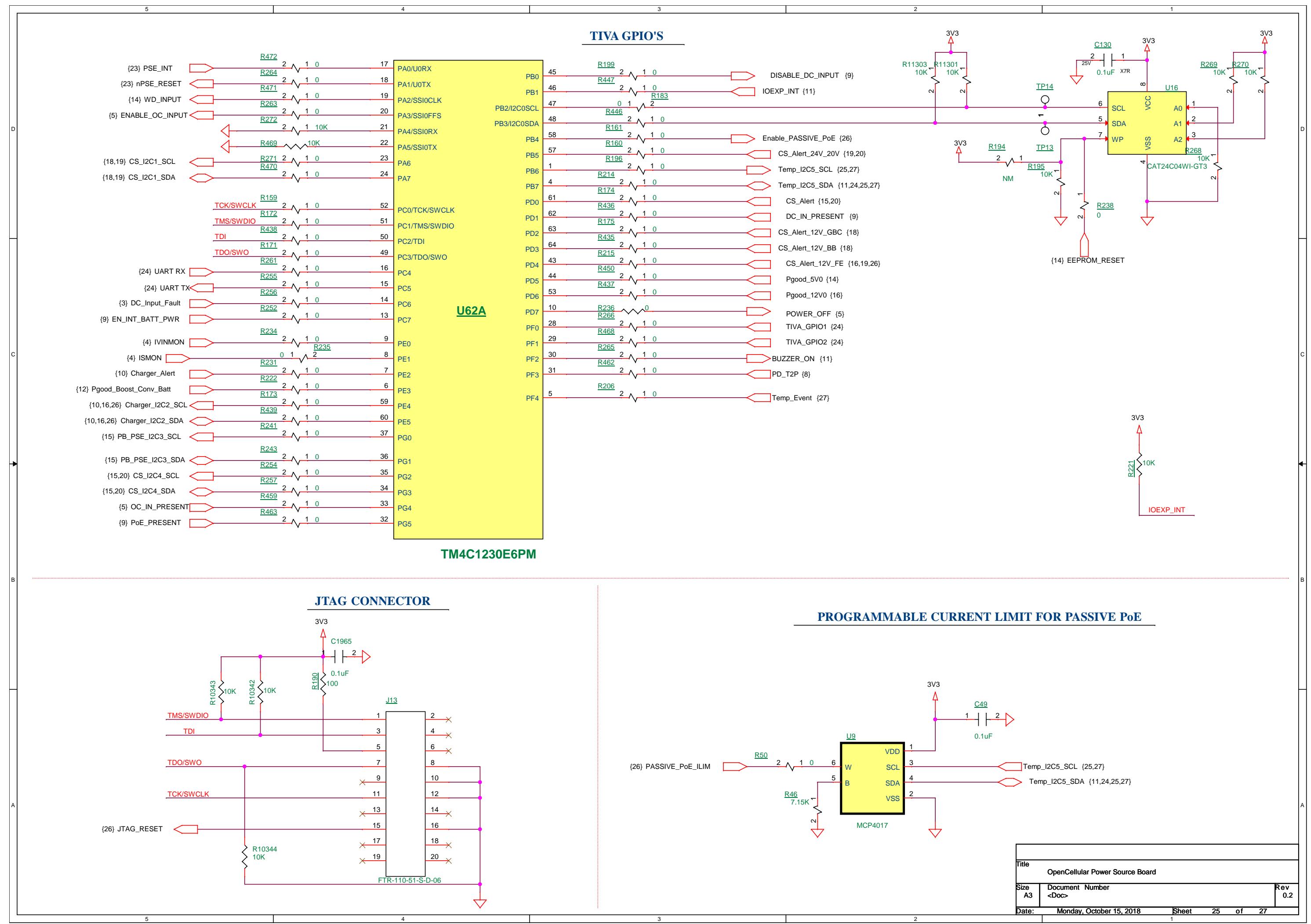


### ETHERNET PORT-C CONNECTOR (INTERFACE TO GBC CARD)

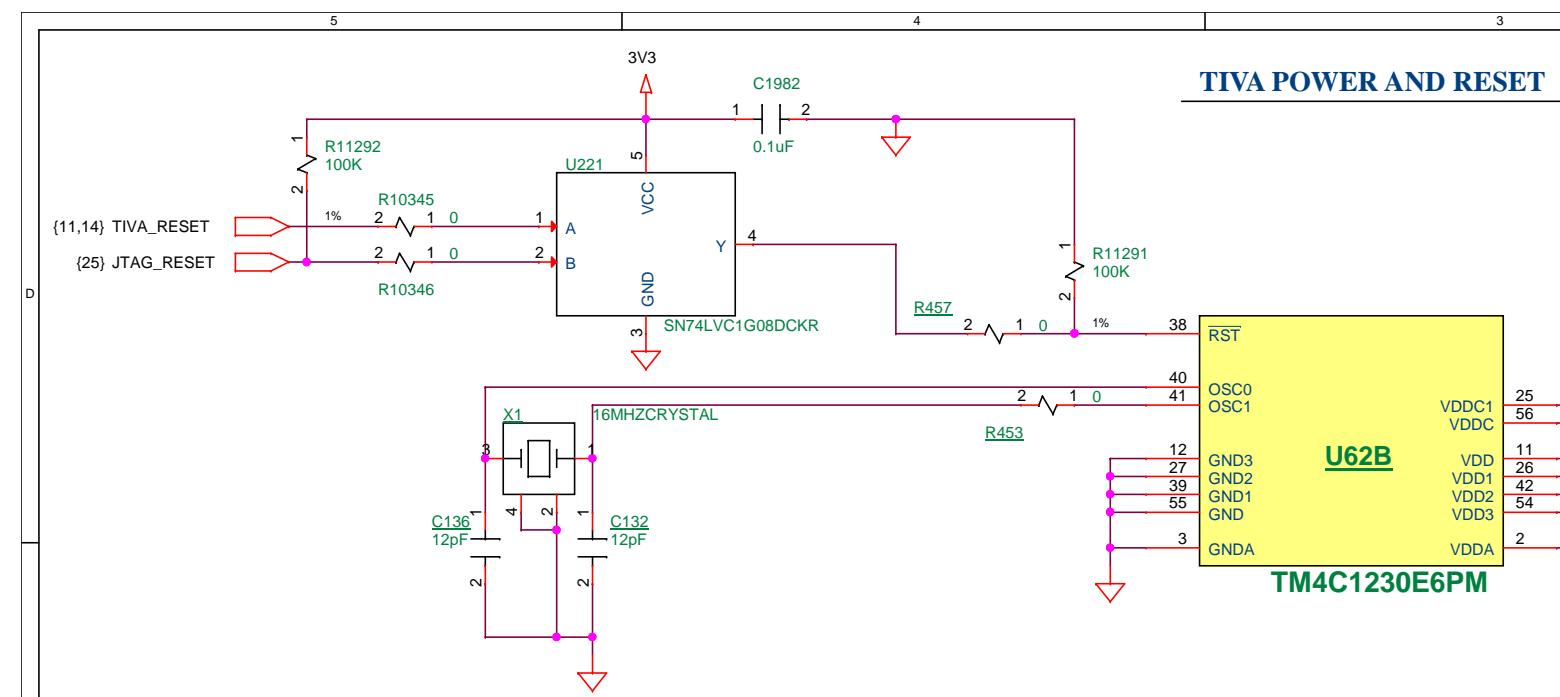


Title		OpenCellular Power Source Board
Size	Document Number	Rev
A3	<Doc>	0.2

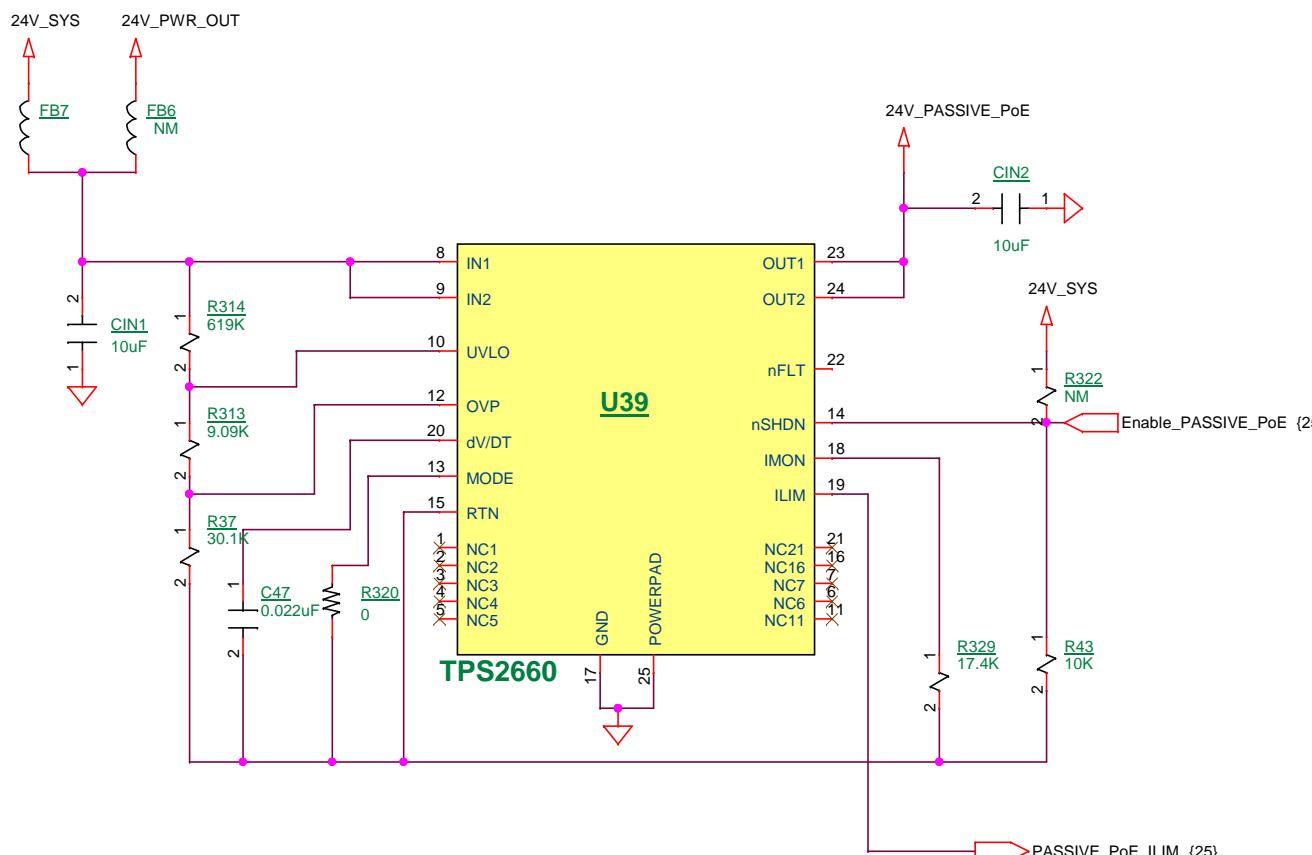
Date: Tuesday, October 16, 2018 Sheet 24 of 27



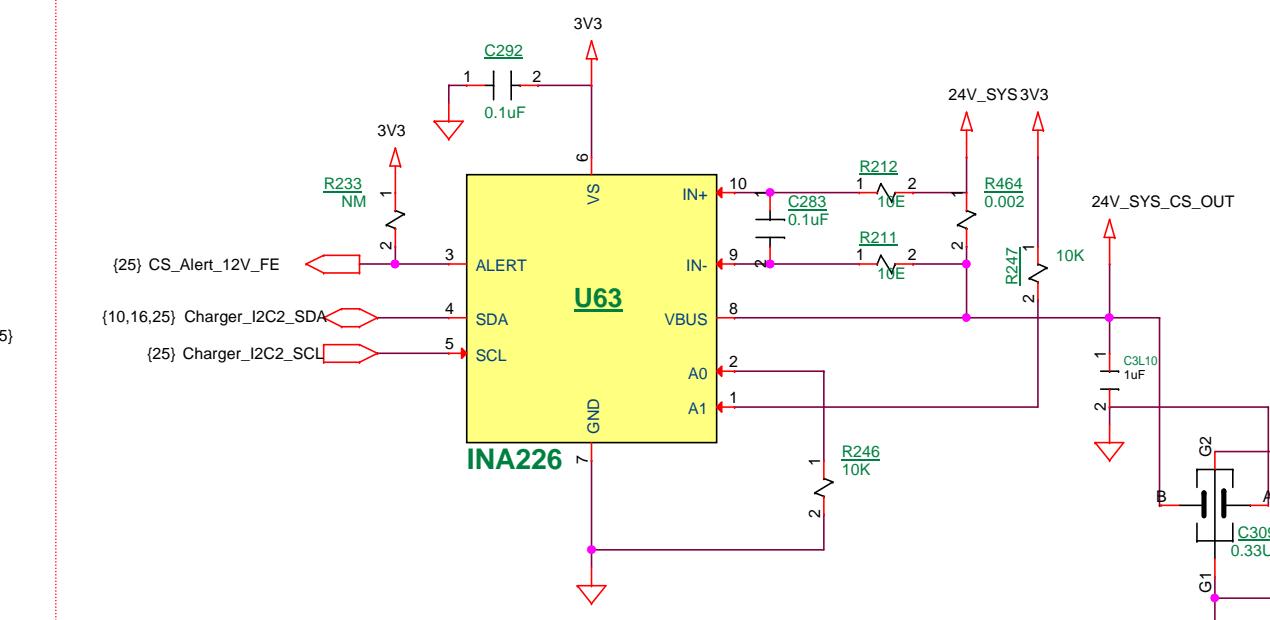
### TIVA POWER AND RESET



### LOAD SWITCH FOR PASSIVE PoE POWER

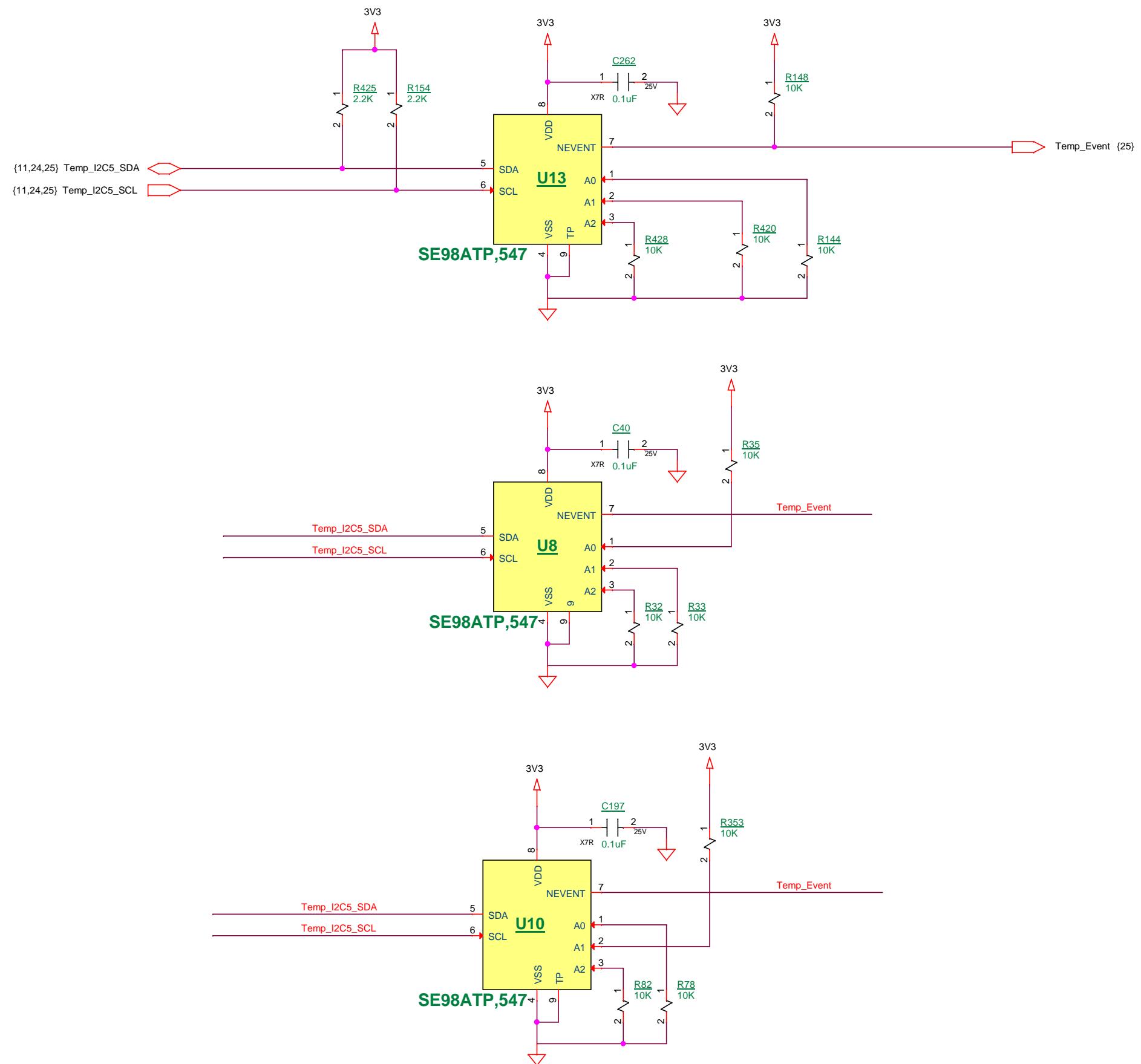


### CURRENT MONITOR FOR 24V



Title		OpenCellular Power Source Board	
Size	A3	Document Number	<Doc>
Date:	Monday, October 15, 2018	Sheet	26 of 27

## TEMPERATURE SENSORS



Title	OpenCellular Power Source Board	
Size	Document Number	Rev
A3	<Doc>	0.2
Date:	Tuesday, October 16, 2018	Sheet 27 of 27