

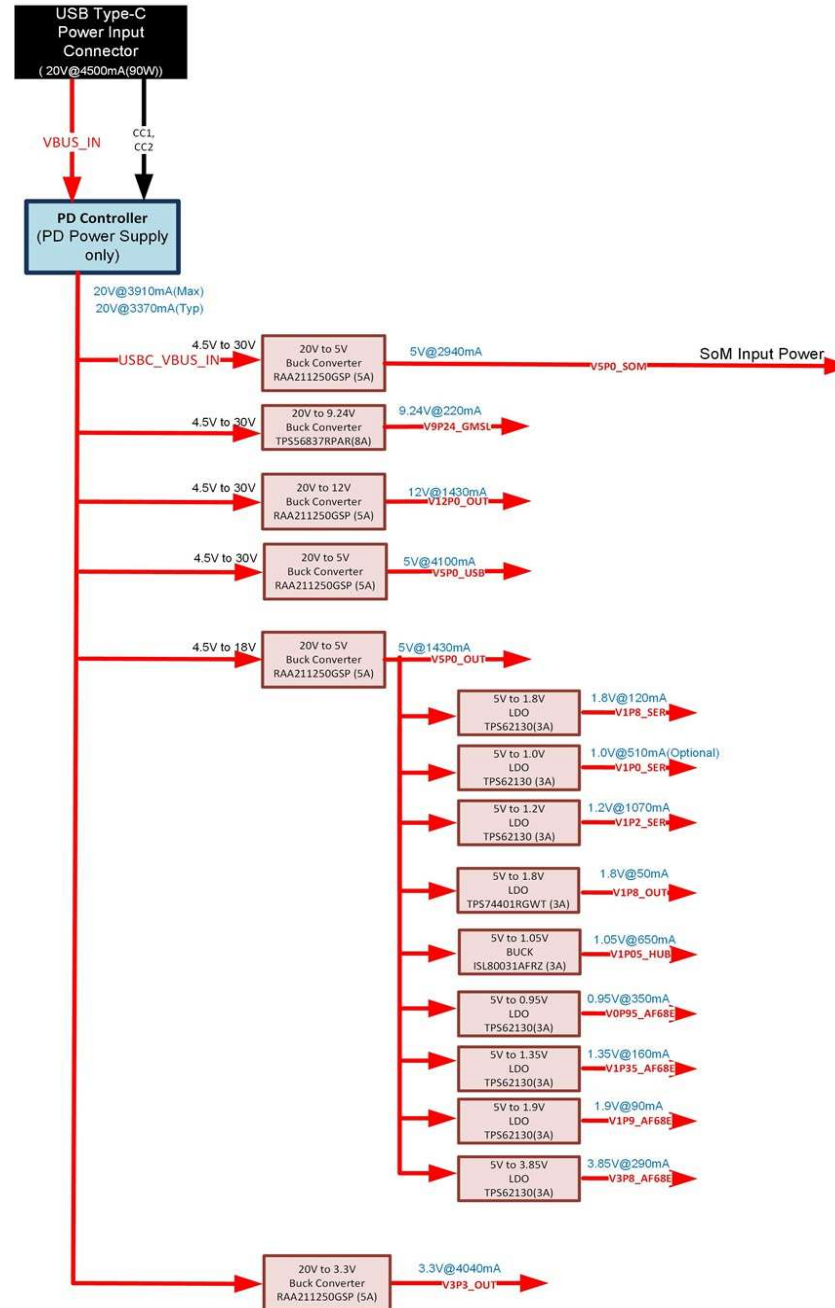
QCS615 Carrier Board Architecture



Date: Monday, March 10

TESSOLVE CONFIDENTIAL

Block Diagram_Power Topology



TESSOLVE
A HERO ELECTRONIX VENTURE

Block Diagram Power Topology		
File: QCS815_SMARC22_CARRIER BOARD		P0
Size C	Document Number: 24090051-200-030	Rev: V0.2
Date: Monday, March 10, 2025	Sheet: 4	of 40

Power Supply-12V and GMSL Camera

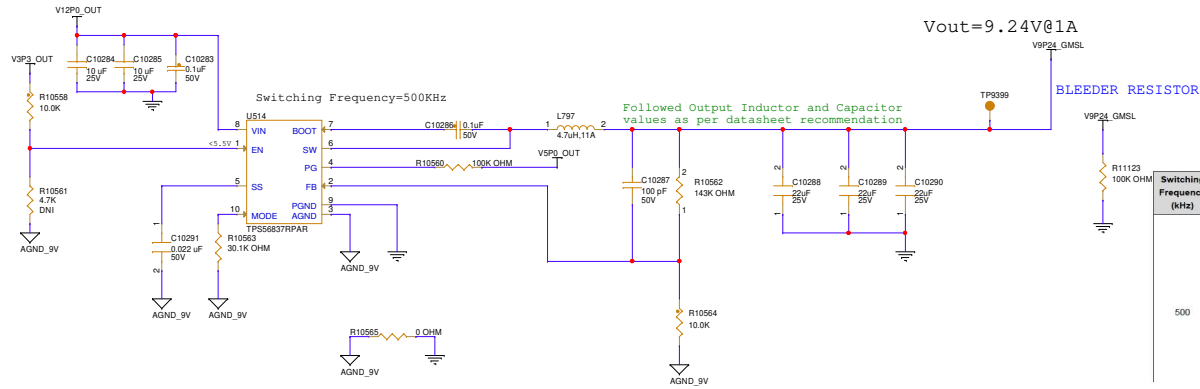
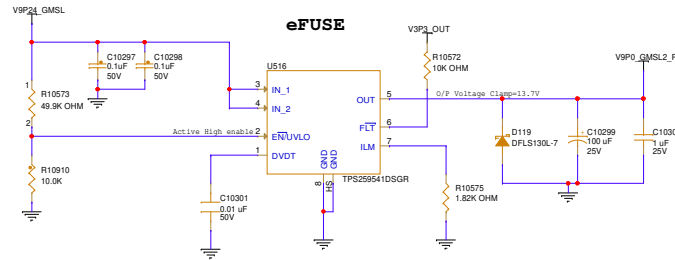


Table 7-2. Recommended Component Values

Switching Frequency (kHz)	Output Voltage ⁽¹⁾ (V)	R6 ⁽²⁾ (kΩ)	R7 (kΩ)	L1 (μH)	C _{out} ⁽³⁾			C19 ⁽⁴⁾ (μF)
					Minimum	Typical	Maximum	
500	1.05	7.5	10	1	22μF × 1	22μF × 3	22μF × 10	
	1.8	20	10	1.5	22μF × 1	22μF × 3	22μF × 10	
	3.3	45.3	10	2.2	22μF × 1	22μF × 3	22μF × 10	100-200 (150 typical)
	5	73.2	10	3.3	22μF × 1	22μF × 2	22μF × 10	100-200 (150 typical)
	9	140	10	4.7	22μF × 1	22μF × 2	22μF × 10	50-150 (100 typical)



TESSOLVE
A HERO ELECTRONIX VENTURE

Power Supply-12V and GMSL Camera

File: QCS815_SMARC22_CARRIER_BOARD

Size: Document Number 24090051-200-030

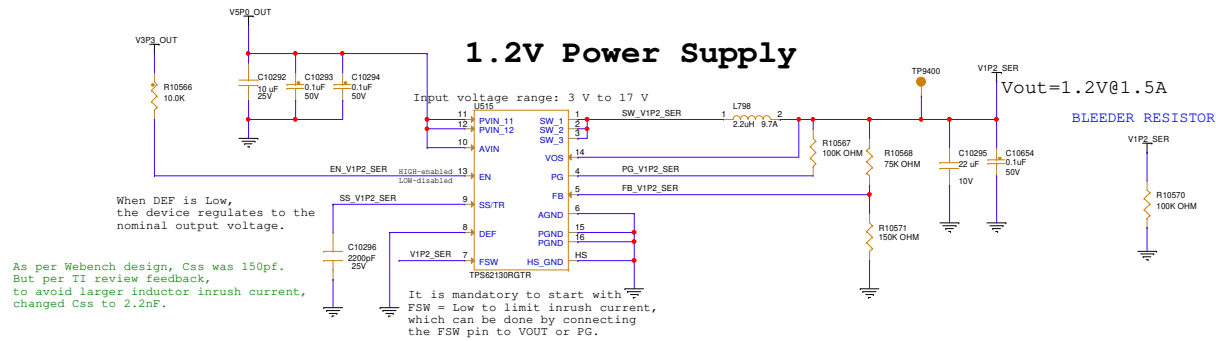
Date: Monday, March 10, 2025

Sheet: 10 of 40

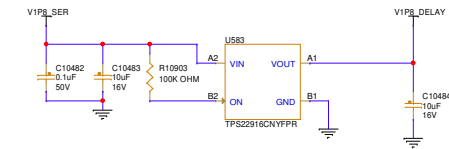
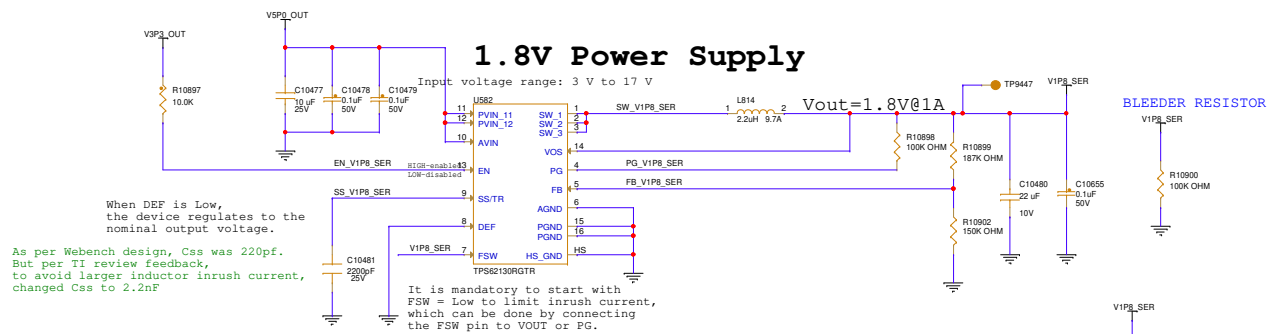
Rev: V0.2

Power Supply-Deserializer

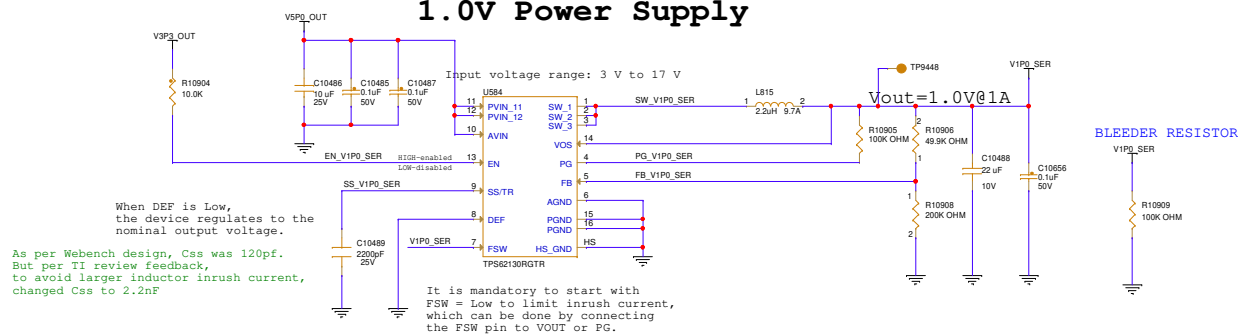
1.2V Power Supply



1.8V Power Supply



1.0V Power Supply



TESSOLVE
A HERO ELECTRONIX VENTURE

Power Supply-Deserializer		
File: QCS815_SMARC22_CARRIER BOARD		
Size: C	Document Number: 24090051-200-030	Rev: V0.2
Date: Friday, March 07, 2025	Sheet: 11	of 40

AF68E LGA Module-Power

3.85V Power Supply

Input voltage range:
3 V to 17 V

Vout=3.85V @2A

When DEF is Low,
the device regulates to the
nominal output voltage.

As per Webench design, C_{ss} was 470pf.
But per TI review feedback,
to avoid larger inductor inrush current,
changed C_{ss} to 2.2nF

It is mandatory to start with
FSW = Low to limit inrush current,
which can be done by connecting
the FSW pin to VOUT or PG.

0.95V Power Supply

Input voltage range:
3 V to 17 V

Vout=0.95V@2A

When DEF is Low,
the device regulates to the
nominal output voltage.

As per Webench design, C_{ss} was 120pf.
But per TI review feedback,
to avoid larger inductor inrush current,
changed C_{ss} to 2.2nF

It is mandatory to start with
FSW = Low to limit inrush current,
which can be done by connecting
the FSW pin to VOUT or PG.

1.9V Power Supply

Input voltage range:
3 V to 17 V

Vout=1.9V @1A

When DEF is Low,
the device regulates to the
nominal output voltage.

As per Webench design, C_{ss} was 240pf.
But per TI review feedback,
to avoid larger inductor inrush current,
changed C_{ss} to 2.2nF

It is mandatory to start with
FSW = Low to limit inrush current,
which can be done by connecting
the FSW pin to VOUT or PG.

1.35V Power Supply

Input voltage range:
3 V to 17 V

Vout=1.35V @1A

When DEF is Low,
the device regulates to the
nominal output voltage.

As per Webench design, C_{ss} was 180pf.
But per TI review feedback,
to avoid larger inductor inrush current,
changed C_{ss} to 2.2nF

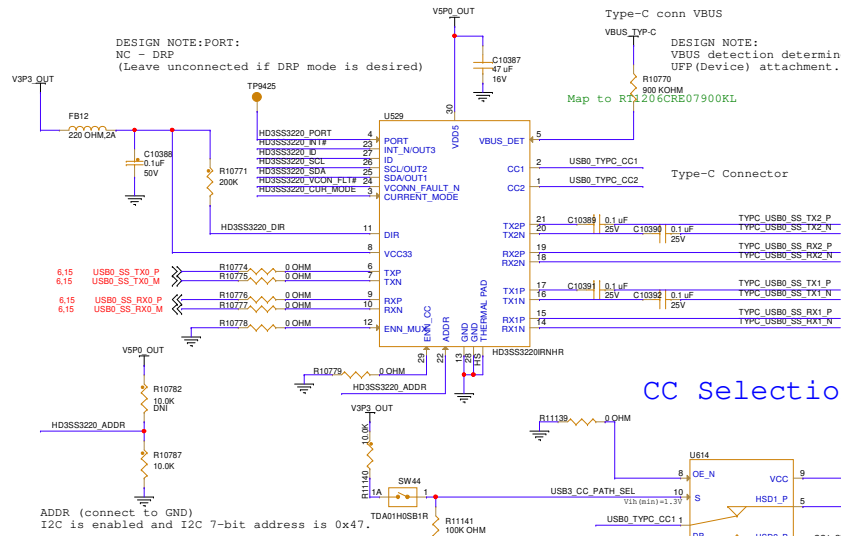
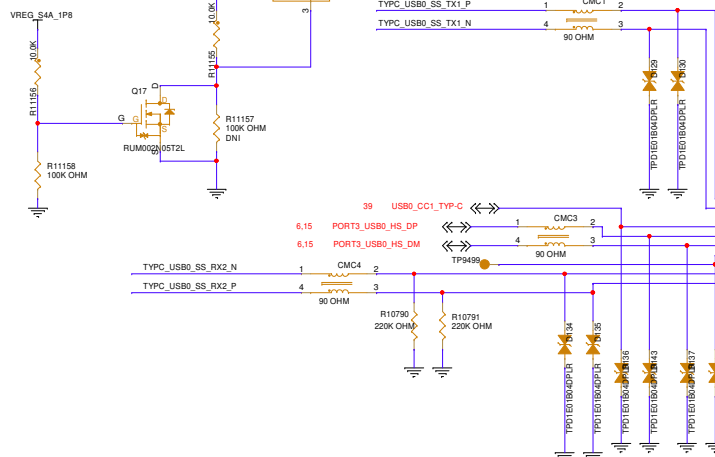
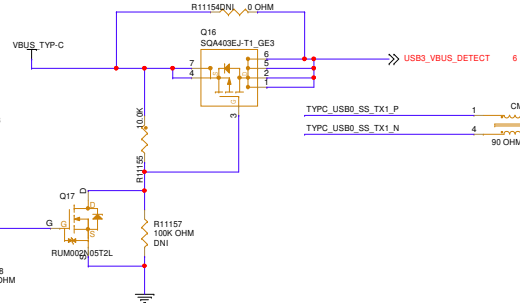
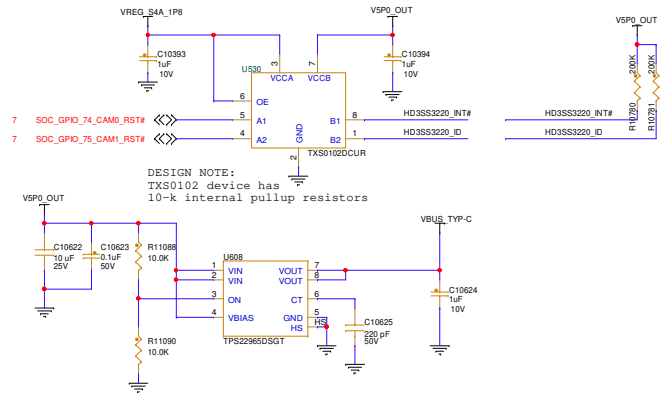
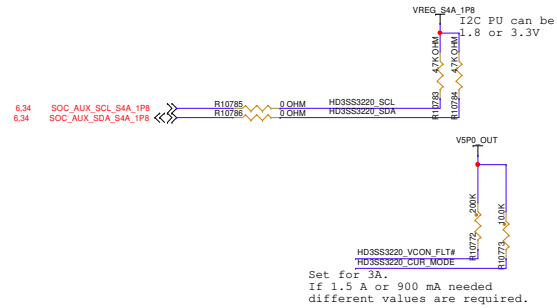
It is mandatory to start with
FSW = Low to limit inrush current,
which can be done by connecting
the FSW pin to VOUT or PG.

TESSOLVE
A HERO ELECTRONIX VENTURE

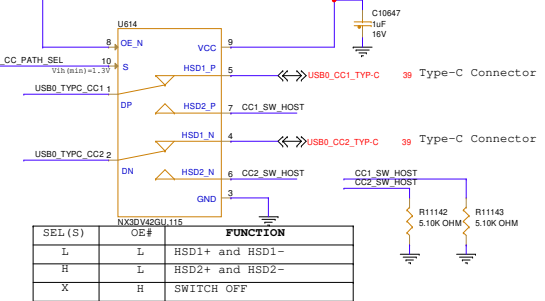
AF68E LGA Module-Power		
Title		
QCS815_SMARC2.2_CARRIER BOARD		
Size		
Document Number		
24090051-200-030		
Rev		
V0.2		
Date		
Friday, March 07, 2025		
Sheet		
12 of 40		

Codiac CC Controller+Type-C

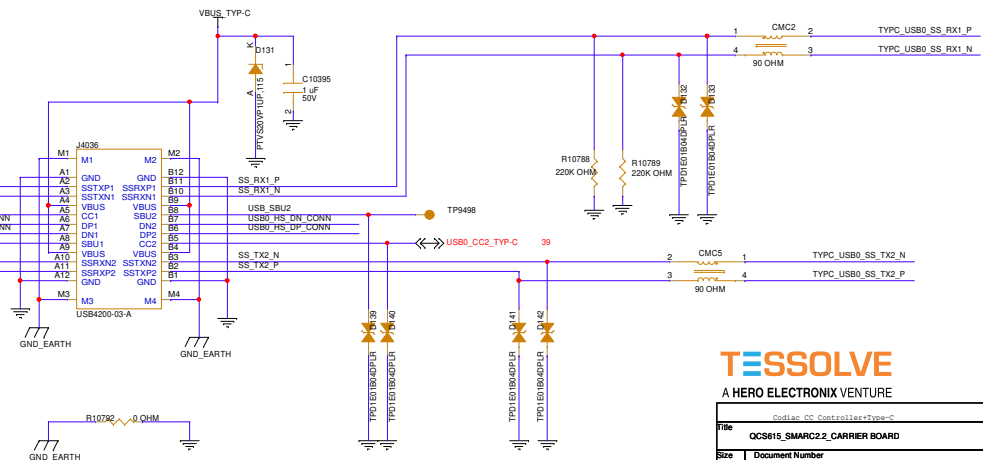
DRP Controller



CC Selection (OTG)



USB Type C connector



ERROR: undefined: lename
OFFENDING COMMAND: reviewresult.txt
STACK: