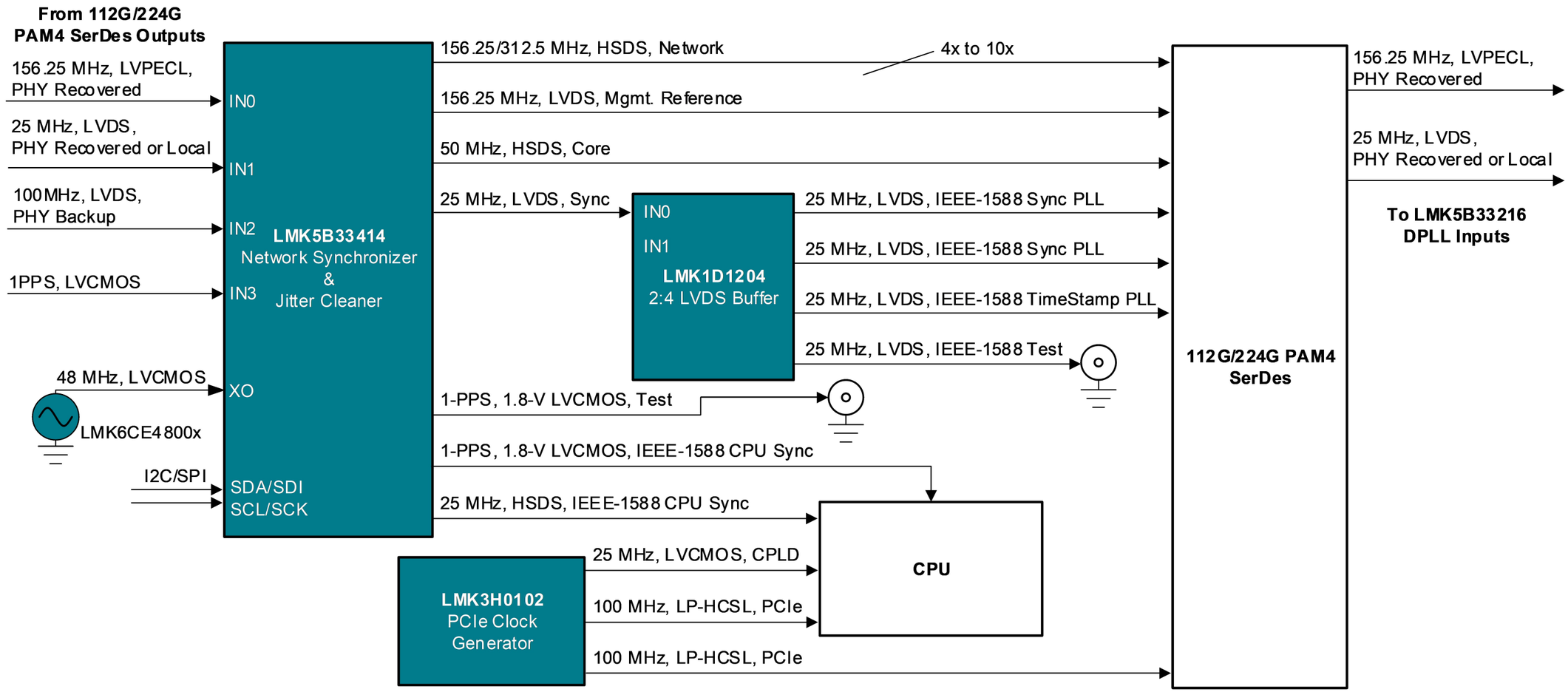

Orderable: Multi EVMs	Designed for: Public Release	Mod. Date: 9/23/2024
TID #: N/A	Project Title: Tomahawk 5 Network Switch Reference Design	
Number: N/A Rev: A	Sheet Title: Network Switch Block Diagram	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 1 of 7
Drawn By: Riley Nguyen	File: Network Switch Block Diagram.SchDoc	Size: B
Engineer: Riley Nguyen	Contact: https://e2e.ti.com/	

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Power Input: 12V, 1A

VIN
C74
35V
47uF
GND
+12V
0805
C80
10uF
25V
0805
C81
10uF
25V
0402
C82
25V
2200pF
R157
0
R159
18.2k
GND
U6
VIN
EN/SYNC
S-CONF
PSNS
PGND
SW
VO
FB
NR/SS
PG
TPS62913RPUT
XGL4030-222MEC
L2
VIO_3P3V
0805
C76
10V
22uF
0805
C77
10V
22uF
0805
C78
10V
22uF
GND
L1
BLE18PS080SN1
R158
5.60k
C86
270pF
50V
DNP
R160
1.80k
C87
470nF
25V
0805
C83
10V
22uF
0805
C84
10V
22uF
0805
C85
10V
22uF
GND

S-CONF top resistor = 0 for 2.2MHz no sync no discharge, open if bottom resistor is chosen
S-CONF bottom resistor = 18.2k for 2.2MHz, no sync, with output discharge
S-CONF bottom resistor = 27.4k for 2.2MHz +/-20% sync with discharge

DCDC_3P3V_OUT provides 3.3V supply to core power planes: VDD_PLANE, VDDO_PLANE, and VCC_XO

TP1
DCDC_3P3V

VDD POWER (3.3V)

R11
0
VDD_PLANE
C11
10V
10uF
GND

VDDO POWER (3.3V)

L3
BLE18PS080SN1
VDDO_PLANE
C31
10V
10uF
GND

VCC XO POWER (3.3V)

L4
BLE18PS080SN1
VCC_XO
C90
10V
10uF
GND

Orderable: Multi EVMs		Designed for: Public Release	Mod. Date: 9/23/2024
TID #: N/A		Project Title: Tomahawk 5 Network Switch Reference Design	
Number: N/A	Rev: A	Sheet Title: Power Supply	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 2 of 7
Drawn By: Riley Nguyen		File: Power_Supply.SchDoc	Size: B
Engineer: Riley Nguyen		Contact: https://e2e.ti.com/	

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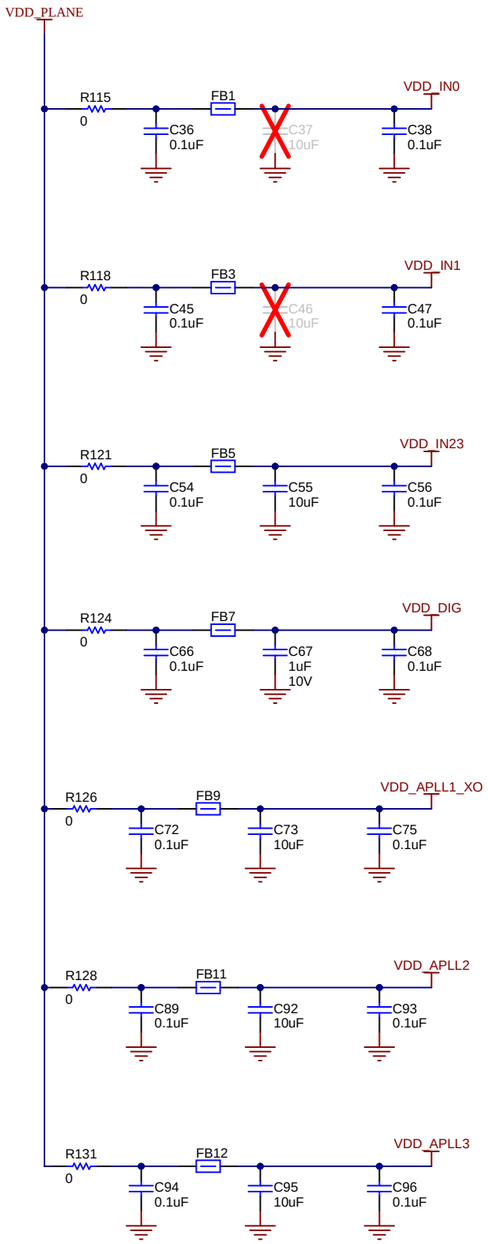
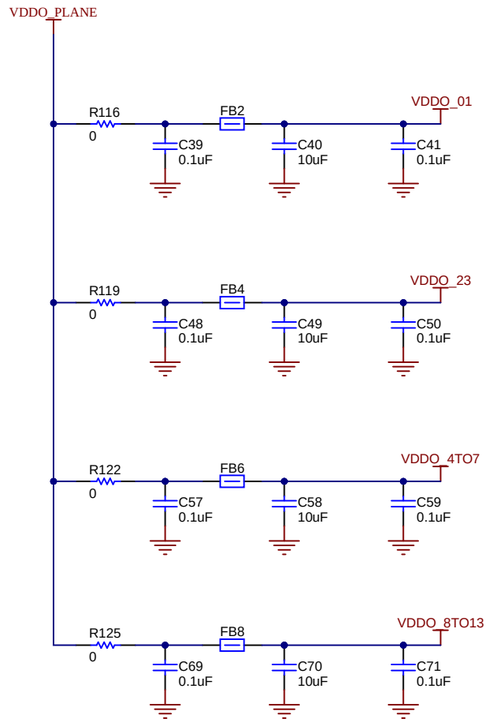
LMK5B33414 VDD CORE SUPPLY

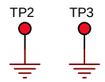


LMK5B33414 VDDO OUTPUT SUPPLY

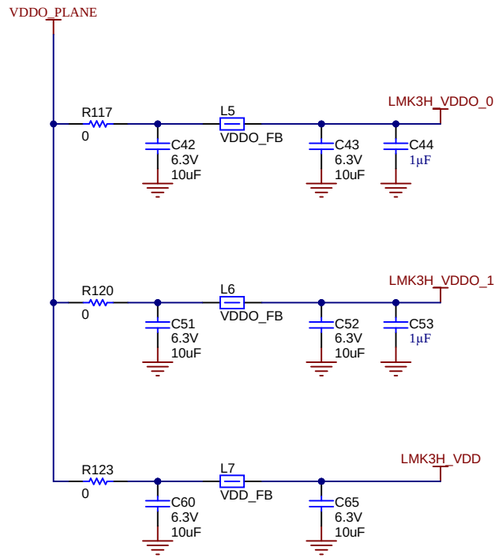


Place C38, C47, C56, C68, C75, C93, C96, C41, C50, C59, C71 close to LMK3B33414

GND TEST POINTS

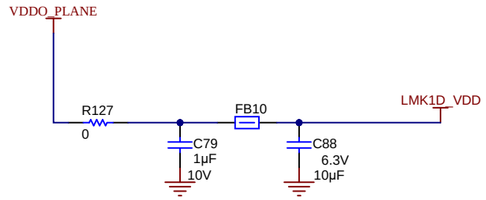


LMK3H0102 VDD & VDDO SUPPLY



Place C44, C53 close to LMK3H0102

LMK1D1204 LDD SUPPLY



Orderable: Multi EVMs	Designed for: Public Release	Mod. Date: 9/23/2024
TID #: N/A	Project Title: Tomahawk 5 Network Switch Reference Design	
Number: N/A Rev: A	Sheet Title: Power Distribution	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 3 of 7
Drawn By: Riley Nguyen	File: Power_Dist.SchDoc	Size: B
Engineer: Riley Nguyen	Contact: https://e2e.ti.com/	

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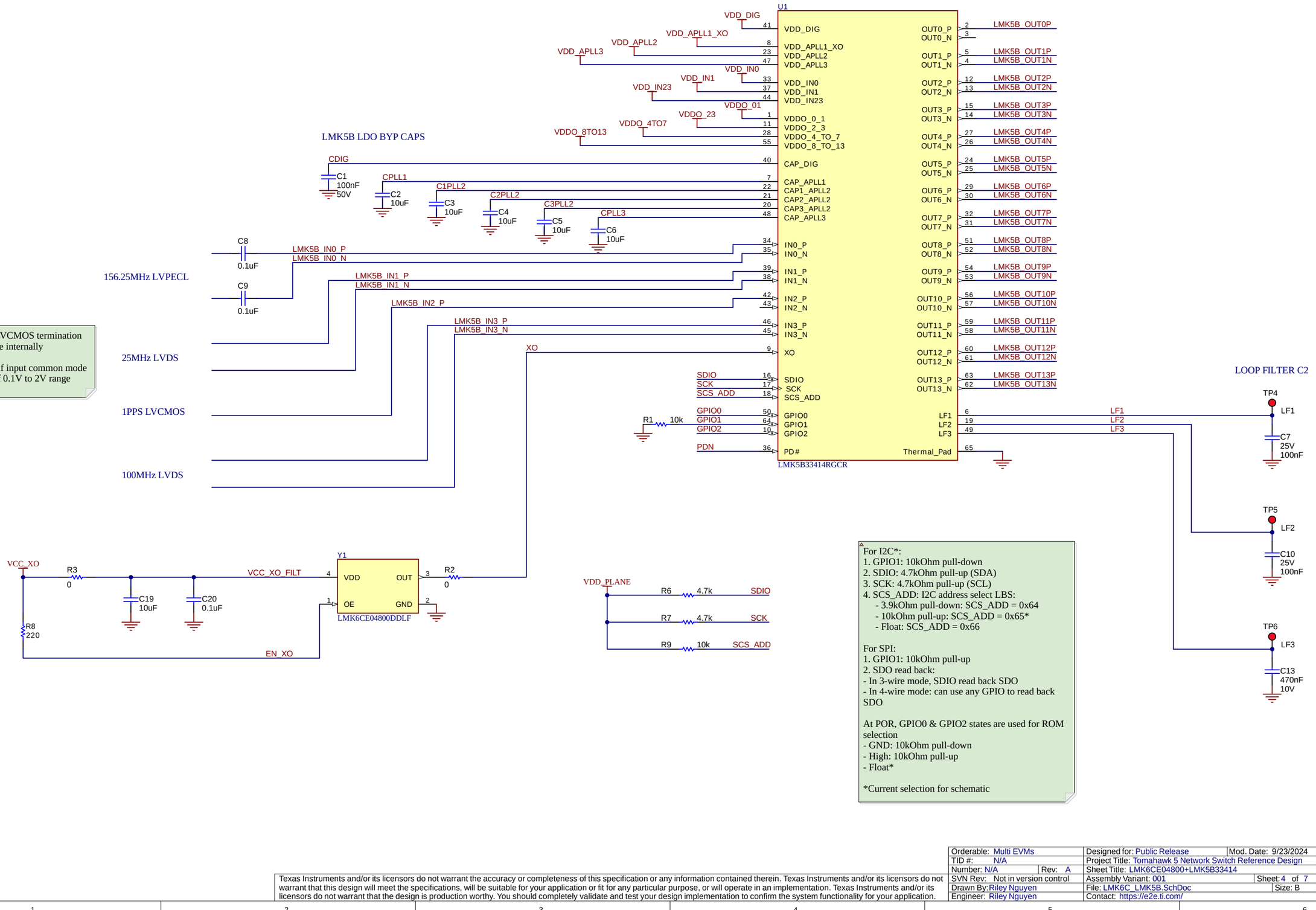

Orderable: Multi EVMs		Designed for: Public Release	Mod. Date: 9/23/2024
TID #: N/A		Project Title: Tomahawk 5 Network Switch Reference Design	
Number: N/A	Rev: A	Sheet Title: LMK6CE04800+LMK5B33414	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 4 of 7
Drawn By: Riley Nguyen		File: LMK6C_LMK5B.SchDoc	Size: B
Engineer: Riley Nguyen		Contact: https://e2e.ti.com/	

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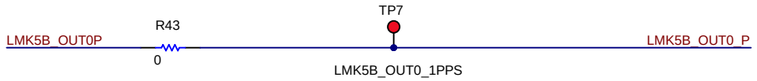
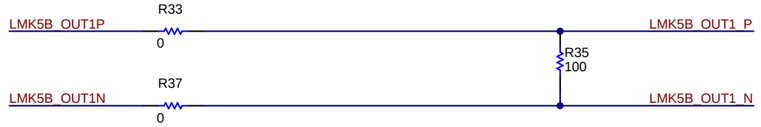
1. 100Ohm load is not present internally
Place external 100Ohm load close to receiver side

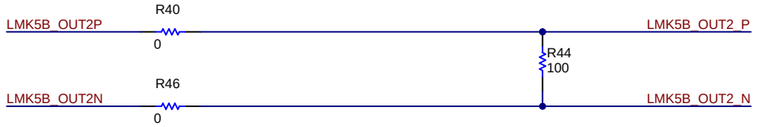
2. Termination on OUT3 is placed close to LMK1D1204 IN0



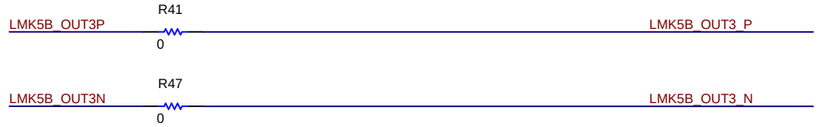
1PPS LVCMOS
To CPU



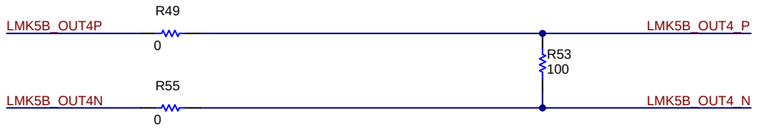
50MHz HSDS
To 112G/224G PAM4 SerDes



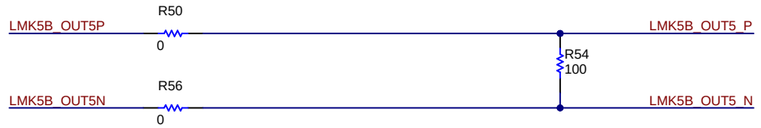
25MHz LVDS
To CPU



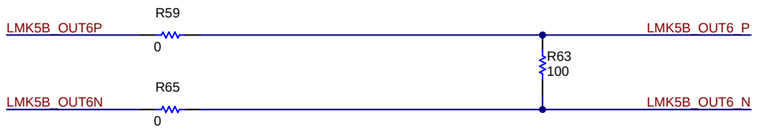
25MHz LVDS
To LMK1D IN0



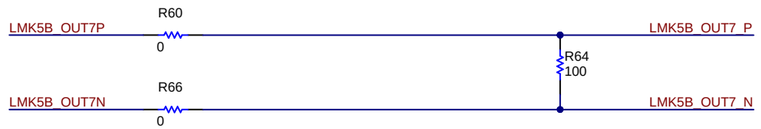
312.5MHz HSDS
To 112G/224G PAM4 SerDes



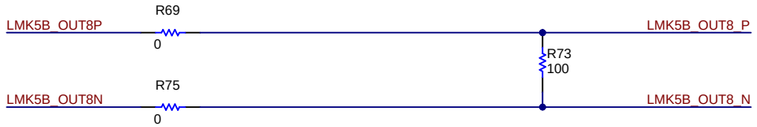
312.5MHz HSDS
To 112G/224G PAM4 SerDes



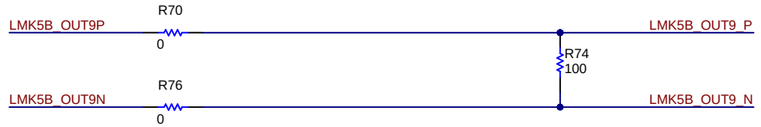
312.5MHz HSDS
To 112G/224G PAM4 SerDes



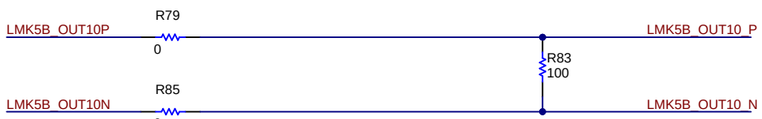
312.5MHz HSDS
To 112G/224G PAM4 SerDes



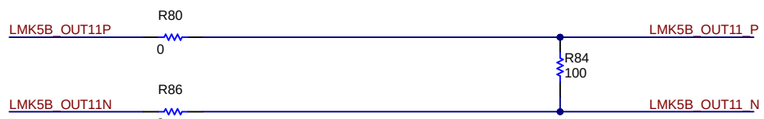
156.25MHz LVDS
To 112G/224G PAM4 SerDes



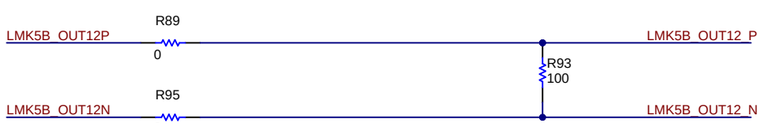
156.25MHz HSDS
To 112G/224G PAM4 SerDes



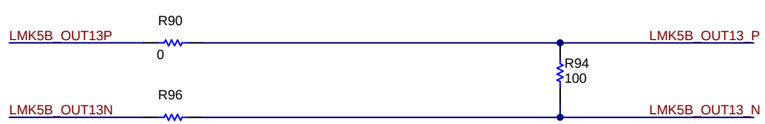
156.25MHz HSDS
To 112G/224G PAM4 SerDes



156.25MHz HSDS
To 112G/224G PAM4 SerDes



156.25MHz HSDS
To 112G/224G PAM4 SerDes



156.25MHz HSDS
To 112G/224G PAM4 SerDes

Orderable: Multi EVMs	Designed for: Public Release	Mod. Date: 9/23/2024
TID #: N/A	Project Title: Tomahawk 5 Network Switch Reference Design	
Number: N/A Rev: A	Sheet Title: LMK5B33414 Outputs	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 5 of 7
Drawn By: Riley Nguyen	File: LMK5B_Outputs.SchDoc	Size: B
Engineer: Riley Nguyen	Contact: https://e2e.ti.com/	

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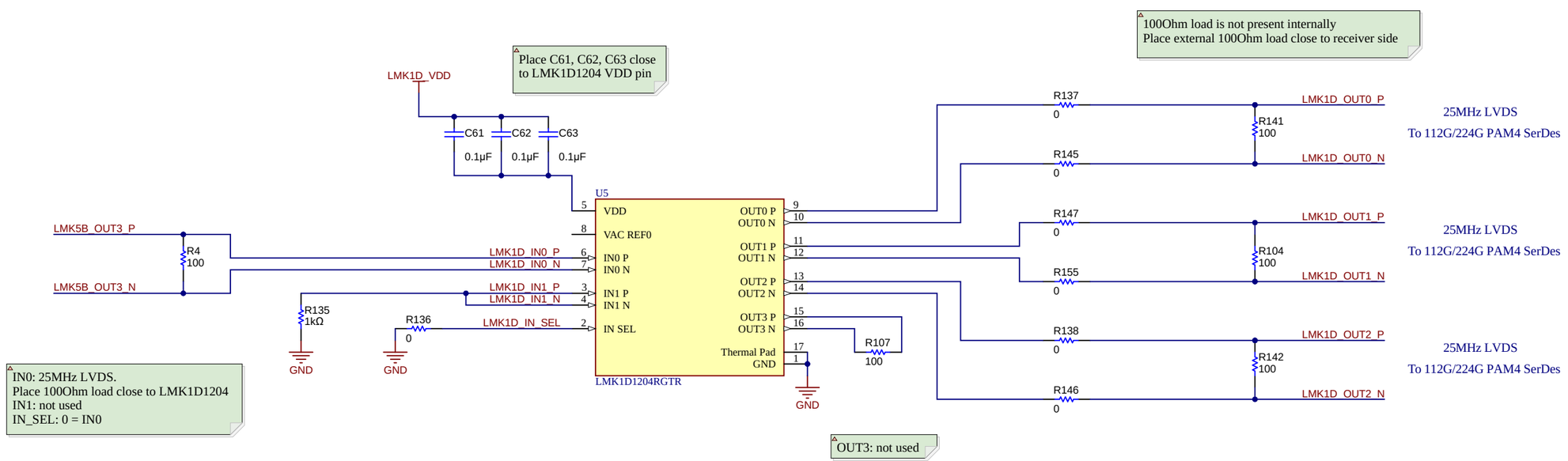

Orderable: Multi EVMs		Designed for: Public Release	Mod. Date: 9/23/2024
TID #: N/A		Project Title: Tomahawk 5 Network Switch Reference Design	
Number: N/A	Rev: A	Sheet Title: LMK1D1204	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 6 of 7
Drawn By: Riley Nguyen		File: LMK1D.SchDoc	Size: B
Engineer: Riley Nguyen		Contact: https://e2e.ti.com/	

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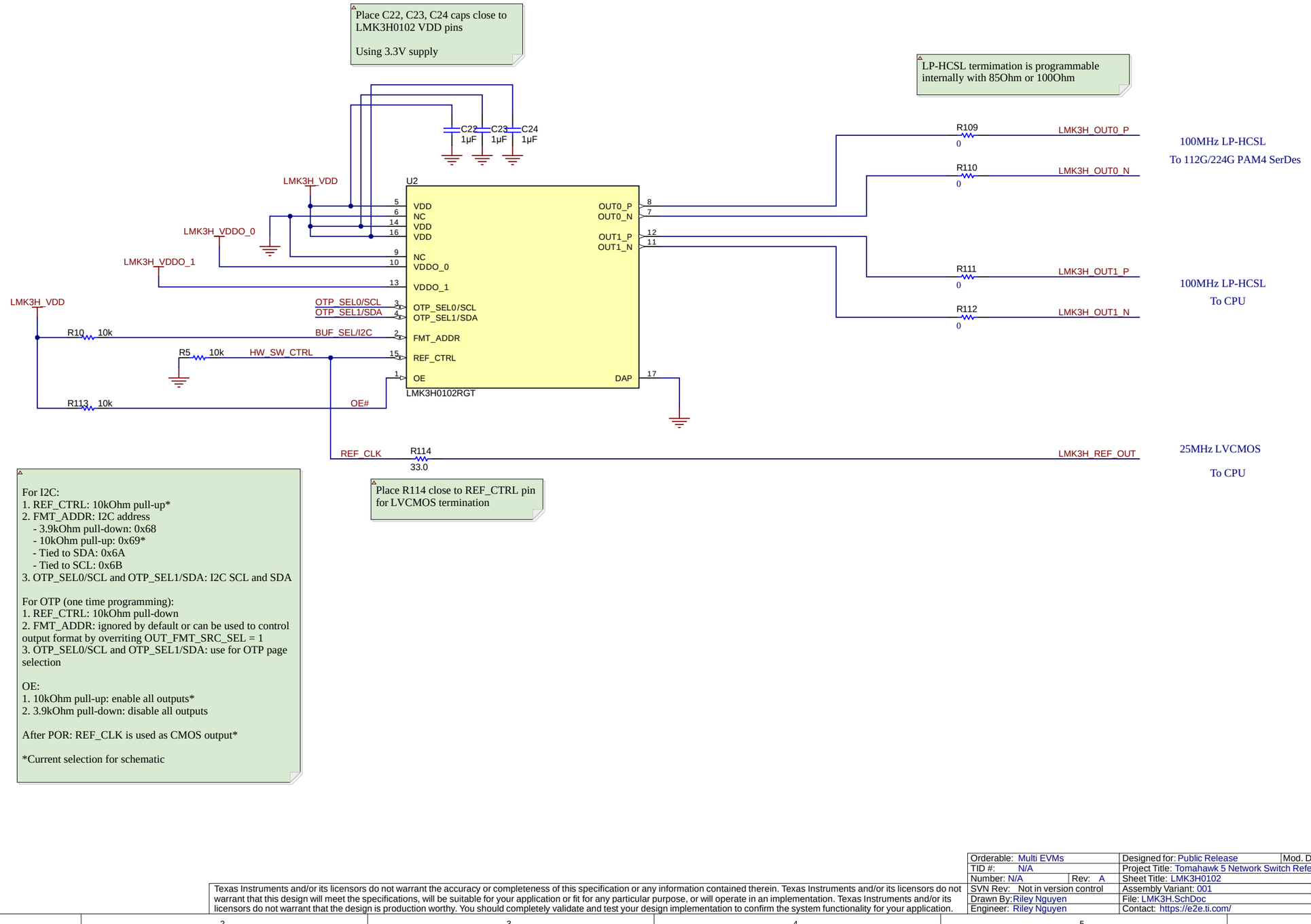

Orderable: Multi EVMs		Designed for: Public Release	Mod. Date: 9/23/2024
TID #: N/A		Project Title: Tomahawk 5 Network Switch Reference Design	
Number: N/A	Rev: A	Sheet Title: LMK3H0102	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 7 of 7
Drawn By: Riley Nguyen		File: LMK3H.SchDoc	Size: B
Engineer: Riley Nguyen		Contact: https://e2e.ti.com/	

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