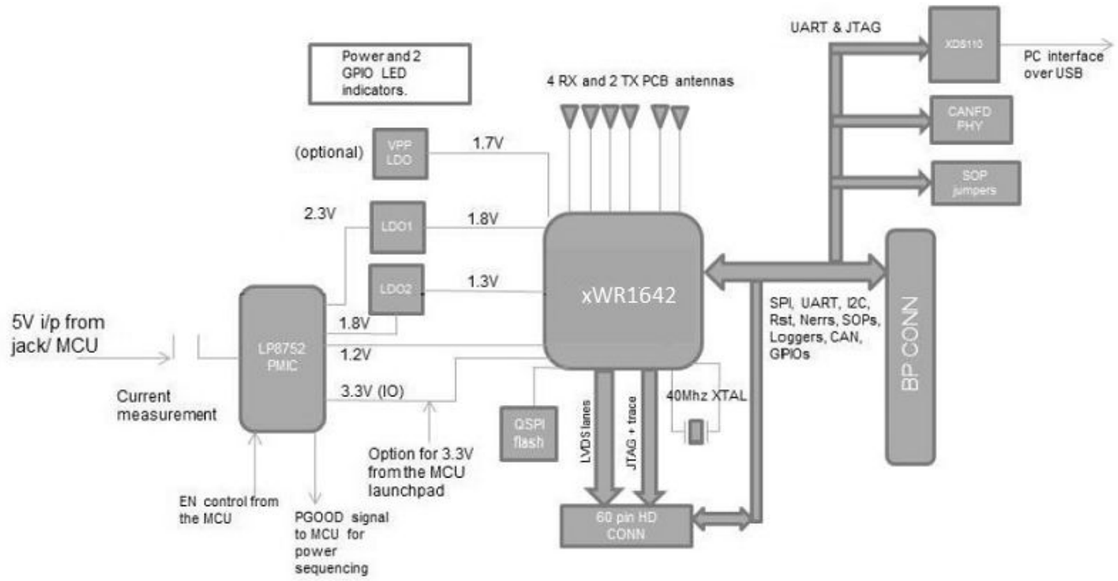
Revision History				
Rev	ECN #	Approved Date	Approved by	Notes
B	1	22/01/2018	Vivek dham	ADDED SWITCH CONTROL TO MOVE between SPI and CAN interface
B	2	22/01/2018	Vivek dham	Enabled by default the 5V supply from the 60pin HD connector.
B	3	22/01/2018	Vivek dham	Enabled by default the SYNC_IN signal connection to J6 connector
B	4	22/01/2018	Vivek dham	Serial flash part number updated to MX25V1635FZNQ
B	5	22/01/2018	Vivek dham	Added series resisters on I2C lines.
B	6	13/02/2018	Vivek dham	Removed the series diode on the NRST signal.
B	7	23/02/2018	J Quintal	added Variant 002, U2, PCB Label, revised AWR1642 to xWR1642

xWR1642BOOST
TABLE OF CONTENTS

SHEET NO.	SHEET NAME
1	PROC011B_COVERSHEET
2	PROC011B_DUT
3	PROC011B_Decoupling caps
4	PROC011B_LDO_01 (1.8V Output)
5	PROC011B_LDO_02 (1.3V Output)
6	PROC011B_VPP_Supply
7	PROC011B_Pwr_RST_LEDs
8	PROC011B_PMIC
9	PROC011B_QSPI flash section
10	PROC011B_LP Connector
11	PROC011B_HD Connector
12	PROC011B_XDS110 Interface_1A
13	PROC011B_XDS110 Interface_1B
14	PROC011B_CAN Interface
15	PROC011B_SOP selection
16	PROC011B_Tempsensor
17	PROC011B_Hardware

BLOCK DIAGRAM

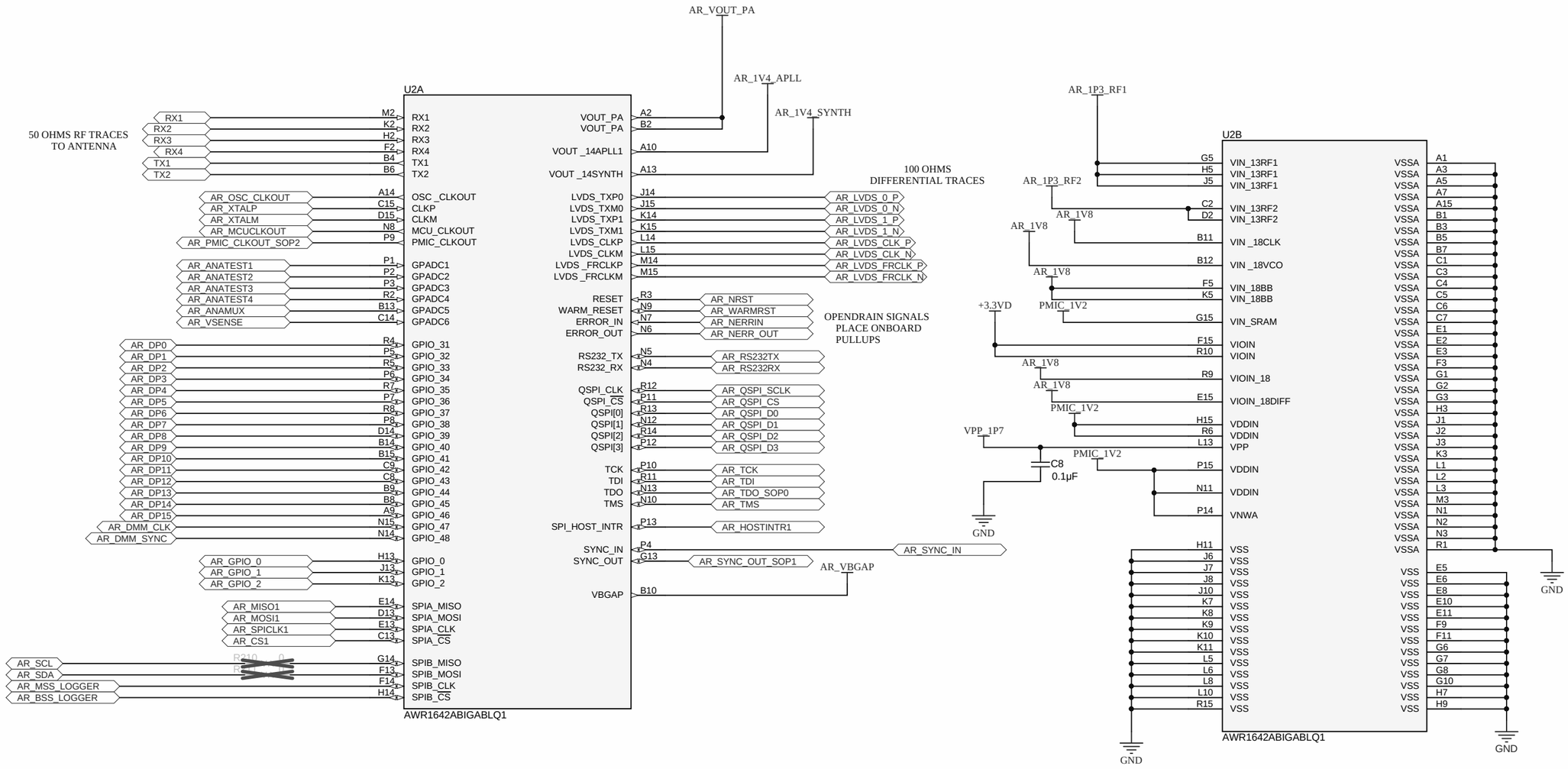


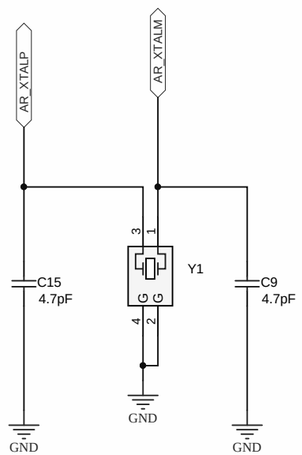
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 3/2/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: COVERSHEET	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 1 of 17
Drawn By:	File: PROC011B_COVERSHEET.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018





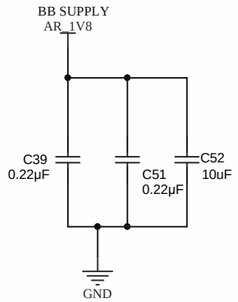
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

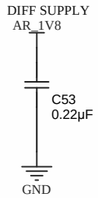
Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 3/13/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: DUT	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 2 of 17
Drawn By:	File: PROC011B_DUT.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

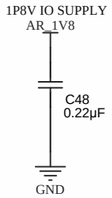
TEXAS INSTRUMENTS
http://www.ti.com

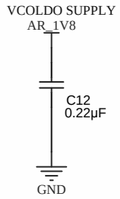
© Texas Instruments 2018

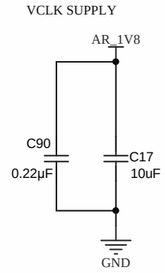
SUPPLY_DECOUPLING_CAPS

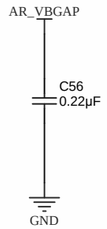


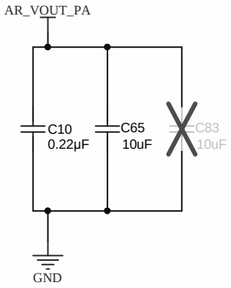


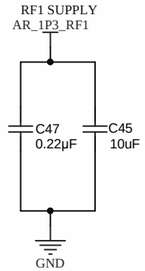


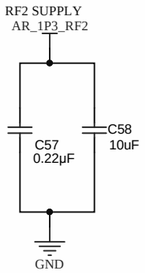


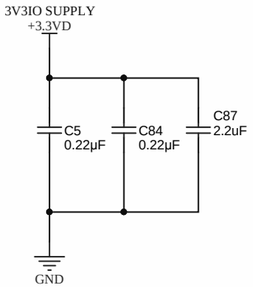


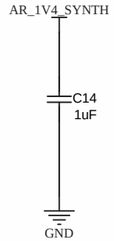


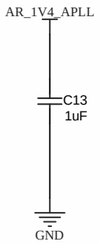


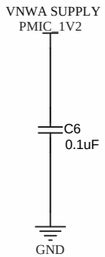


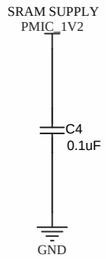


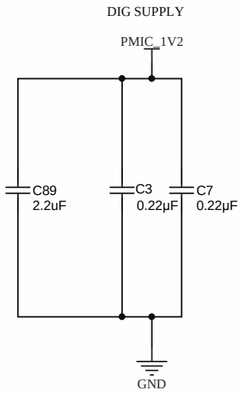




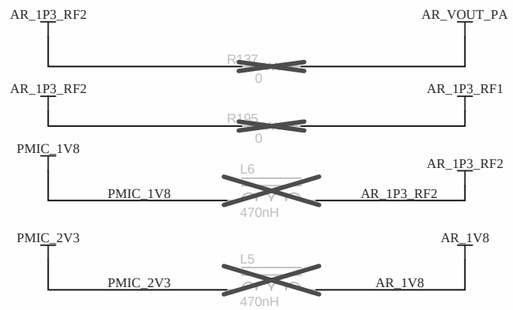








OPTIONS FOR INTERNAL DEBUG ONLY



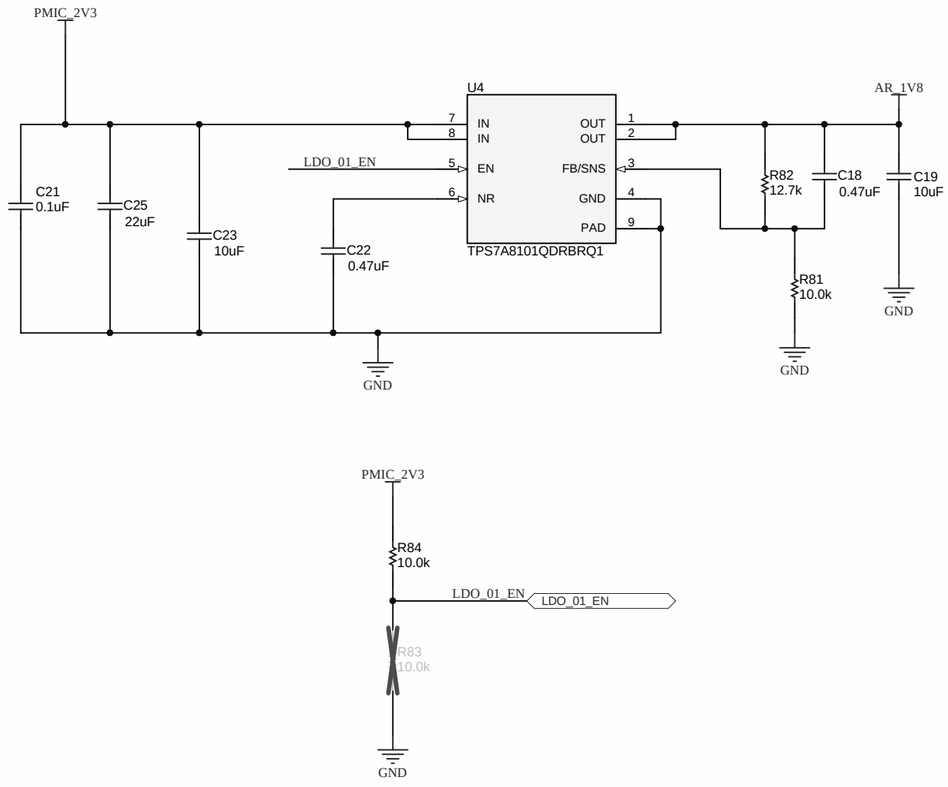
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: Decoupling caps	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 3 of 17
Drawn By:	File: PROC011B Decoupling caps.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

LDO_01 (1.8V OUTPUT)



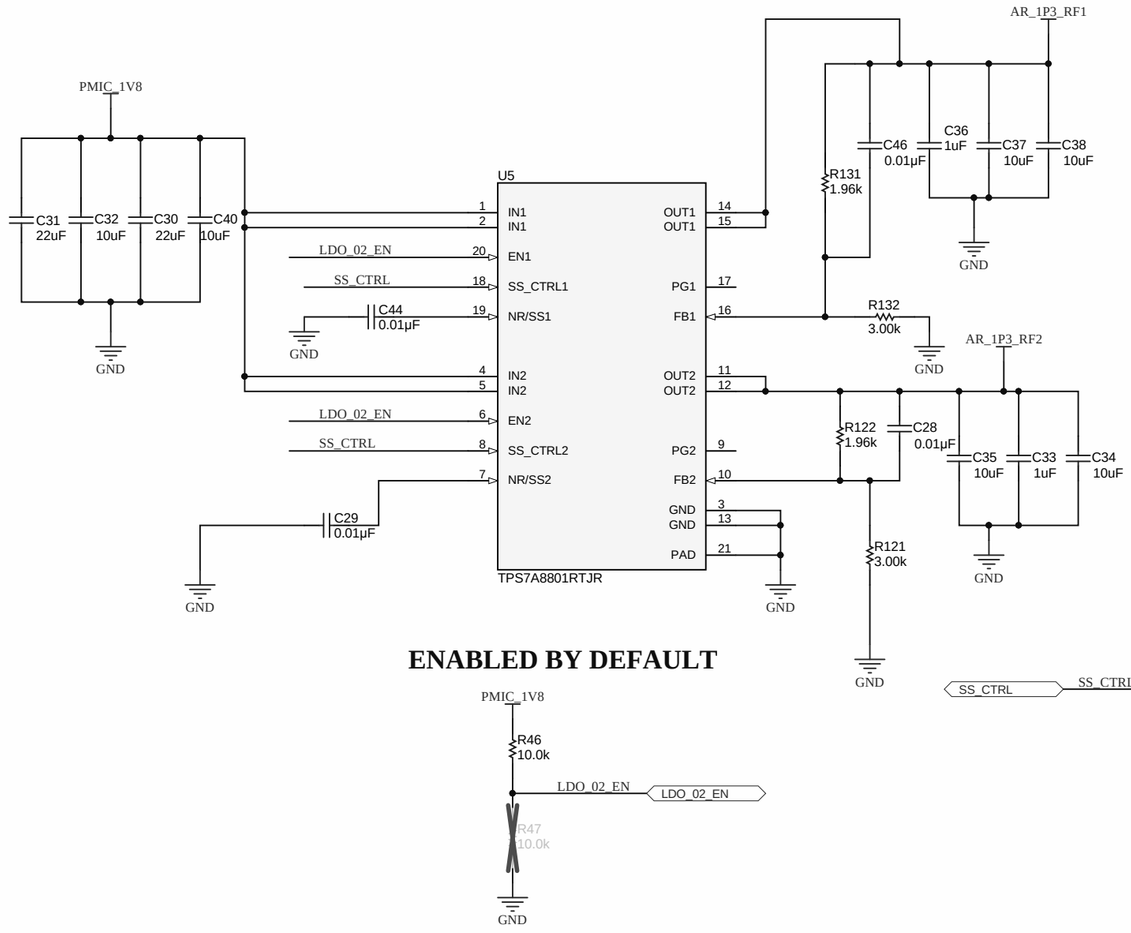
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: LDO_01 (1.8V Output)	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 4 of 17
Drawn By:	File: PROC011B_LDO_01 (1.8V Output).SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

LDO_02 (1.3V LDO)



ENABLED BY DEFAULT

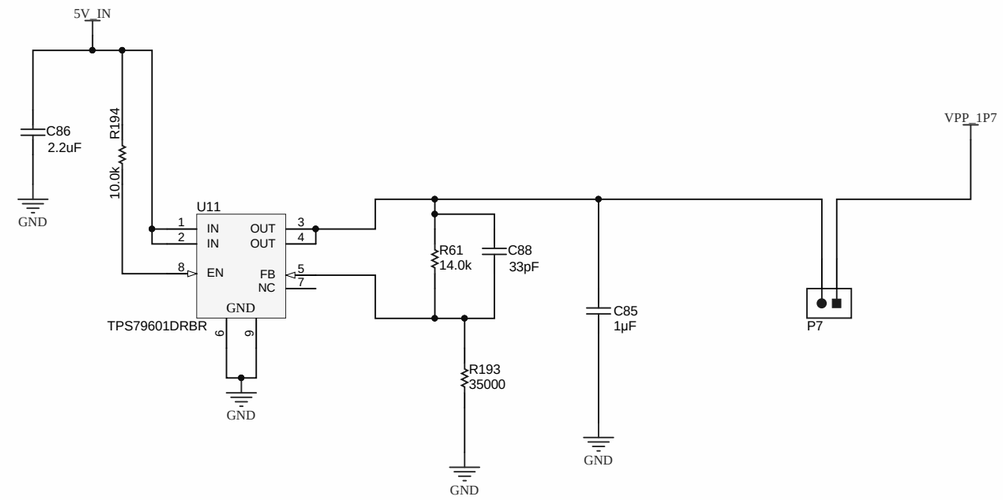
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: LDO_02 (1.3V Output)	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 5 of 17
Drawn By:	File: PROC011B_LDO_02 (1.3V Output).SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

VPP SUPPLY LDO



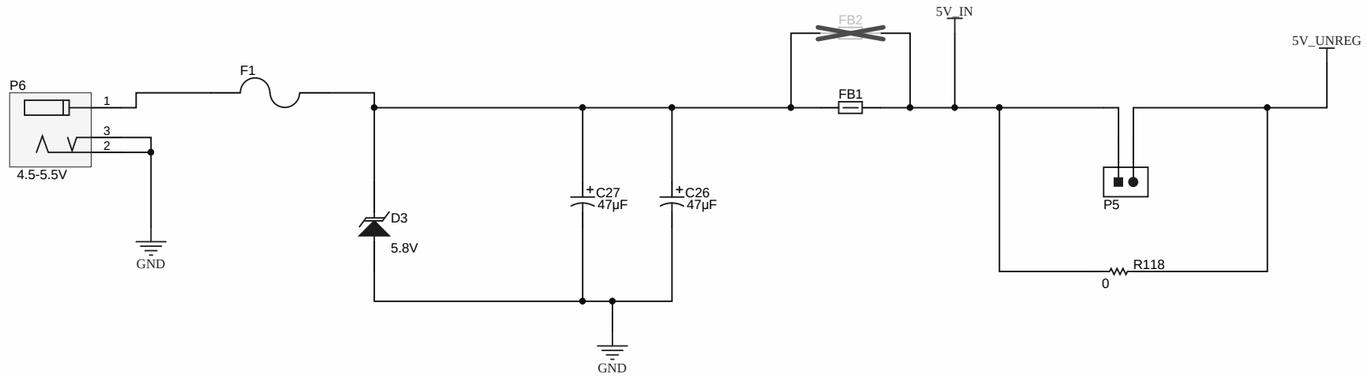
Orderable: AWR1642BOOST		Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A		Project Title: xWR1642BOOST	
Number: PROC011	Rev: B	Sheet Title: VPP_Supply	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 6 of 17
Drawn By:		File: PROC011B_VPP_Supply.SchDoc	Size: B
Engineer: Vivek Dham		Contact: http://www.ti.com/support	

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

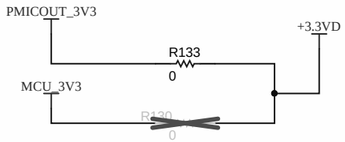
TEXAS INSTRUMENTS
http://www.ti.com

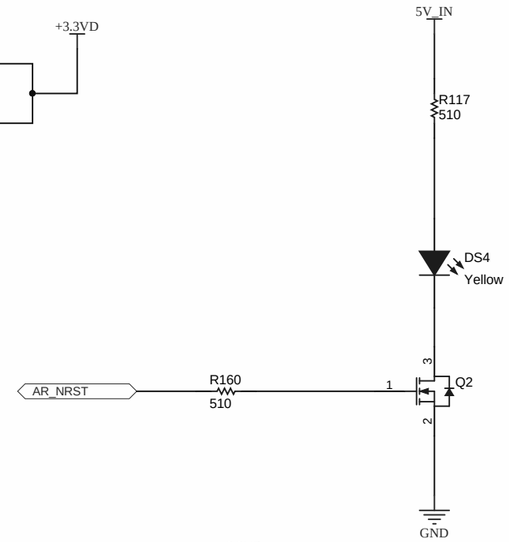
© Texas Instruments 2018

POWER SUPPLY CONNECTOR

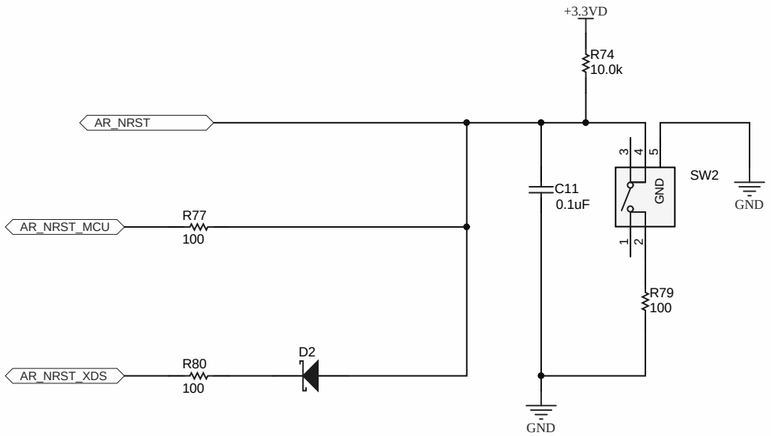


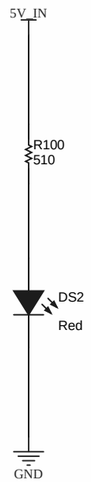
3P3 SUPPLY FROM PMIC OR FROM THE MCU



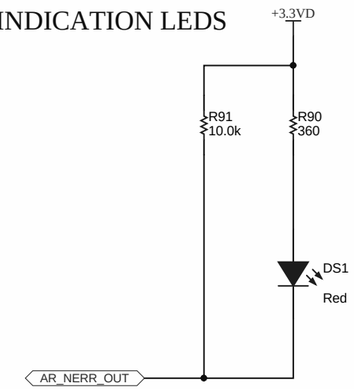


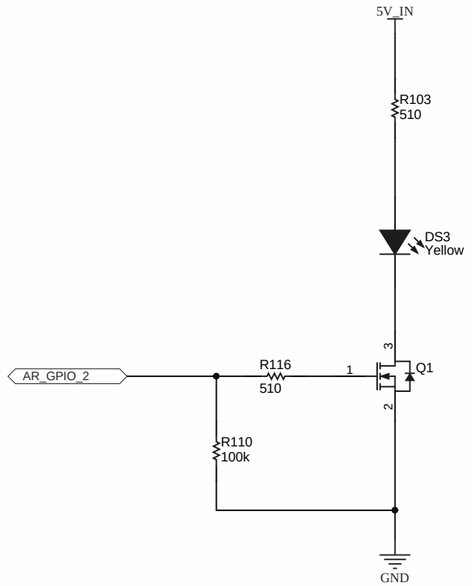
RESET AND LEDS

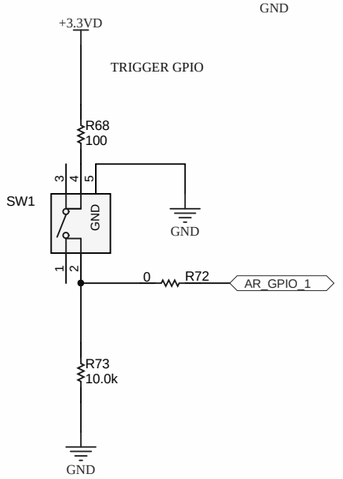




INDICATION LEDS







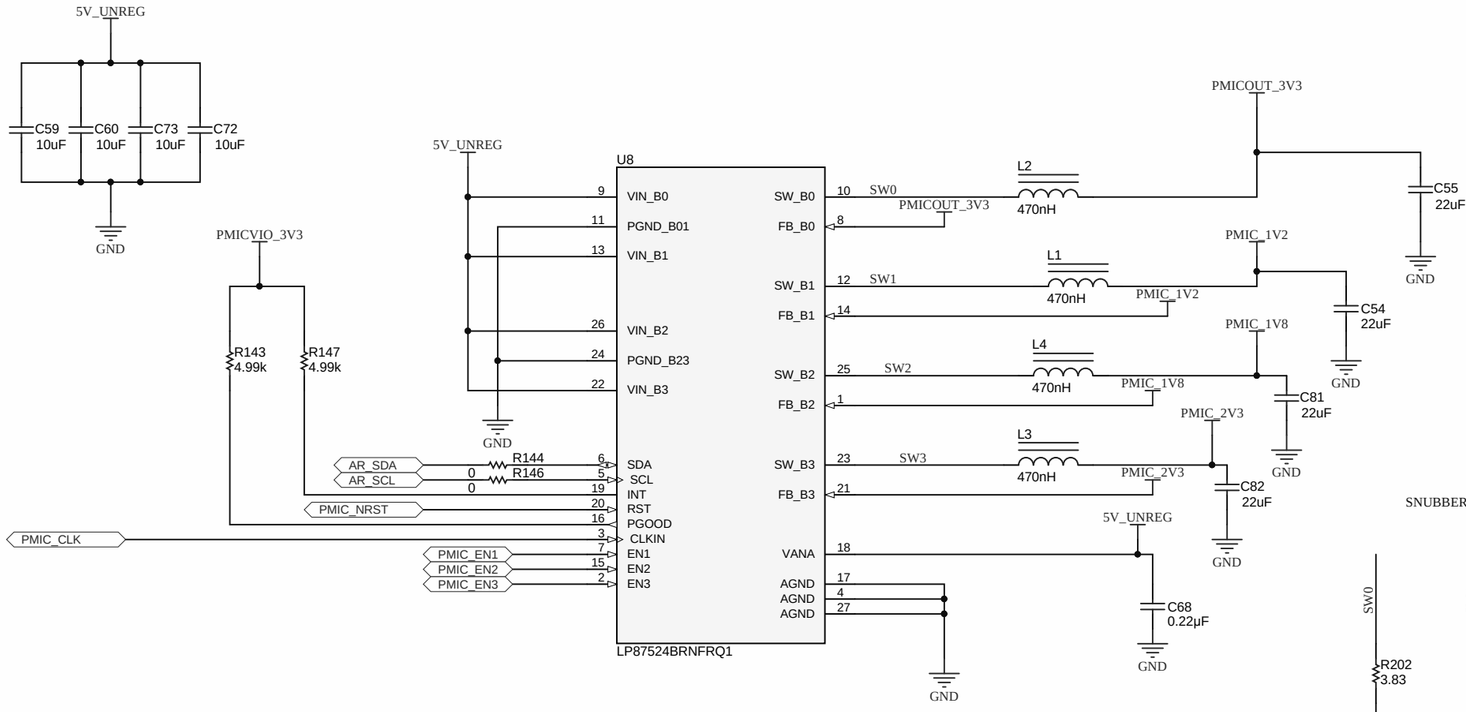
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST		Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A		Project Title: xWR1642BOOST	
Number: PROC011	Rev: B	Sheet Title: Pwr_RST_LEDs	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 7 of 17
Drawn By:		File: PROC011B_Pwr_RST_LEDs.SchDoc	Size: B
Engineer: Vivek Dham		Contact: http://www.ti.com/support	

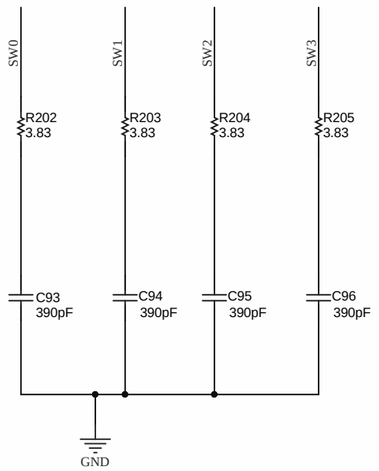
TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

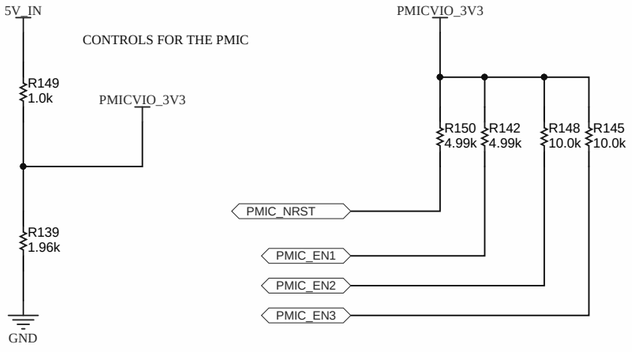
PMIC (3.3V, 1.2V, 1.8V,2.3V OUTPUTS)



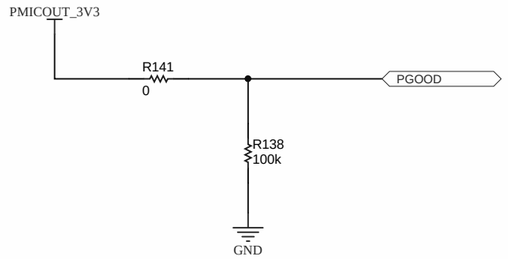
SNUBBER ON SWITCHING NODES



CONTROLS FOR THE PMIC



THE 3V3 OUTPUT FROM PMIC IS USED AS PGOOD.



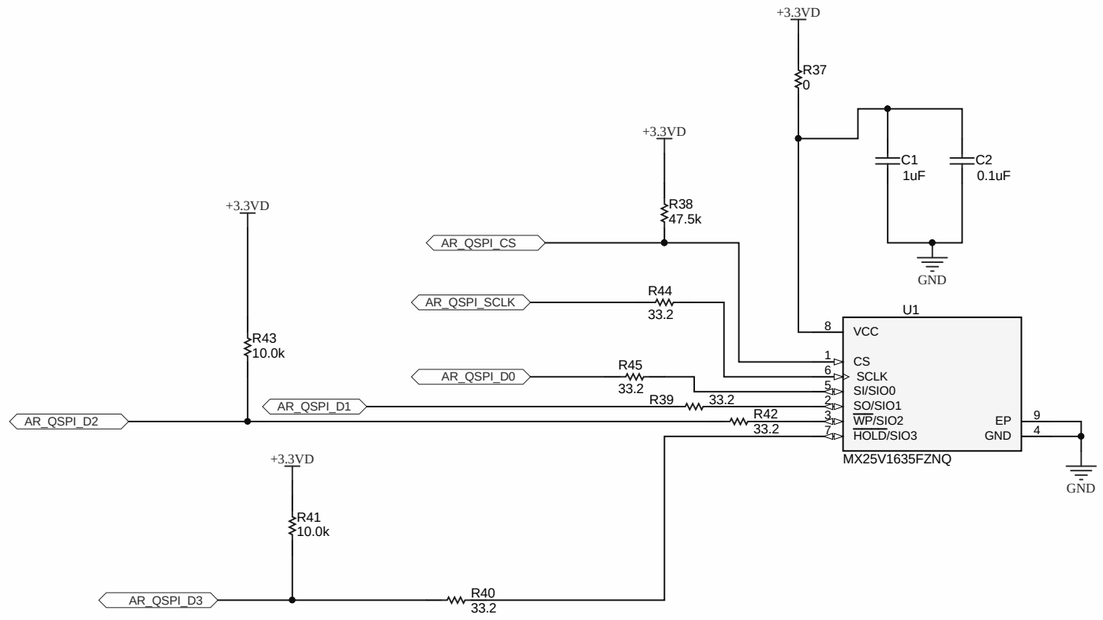
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: PMIC	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 8 of 17
Drawn By:	File: PROC011B_PMIC.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

QSPI FLASH



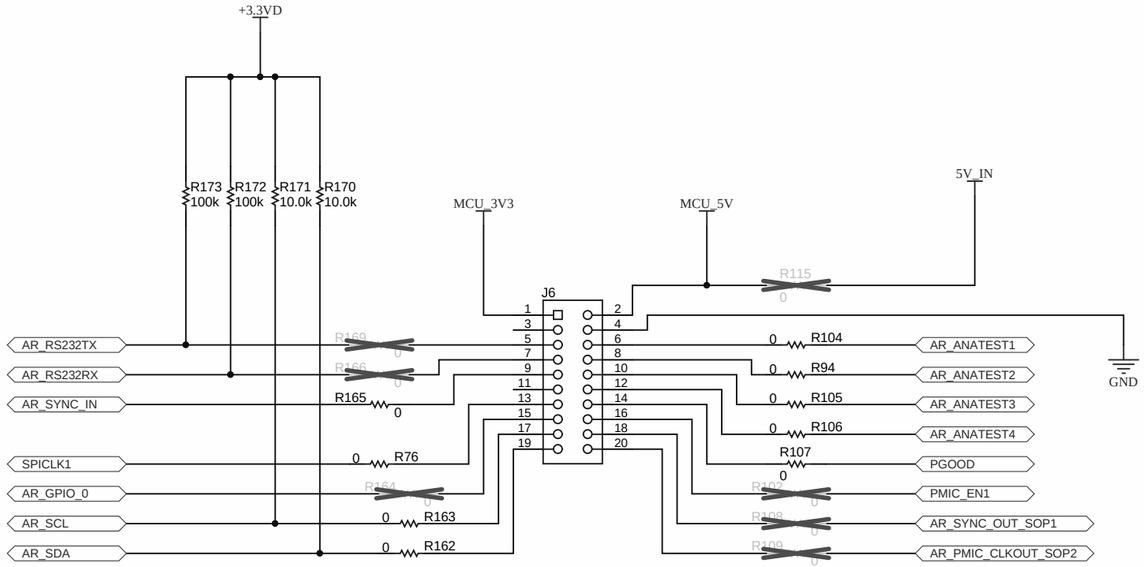
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

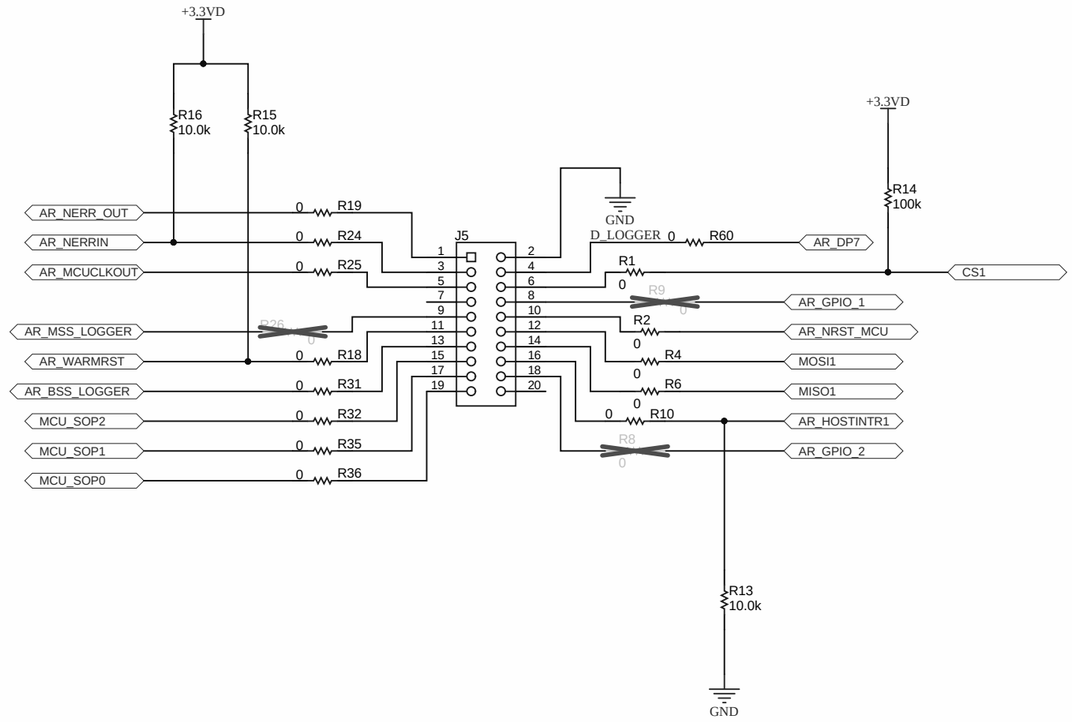
Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: QSPI flash section	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 9 of 17
Drawn By:	File: PROC011B_QSPI flash section.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

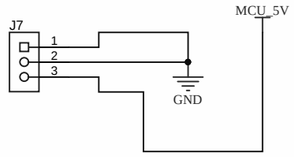
TEXAS INSTRUMENTS
http://www.ti.com

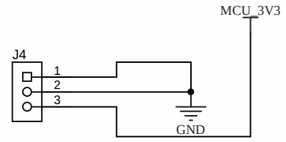
© Texas Instruments 2018

BP/LP CONNECTOR

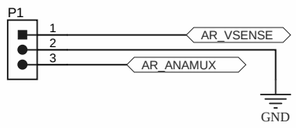








ANALOG SIGNALS



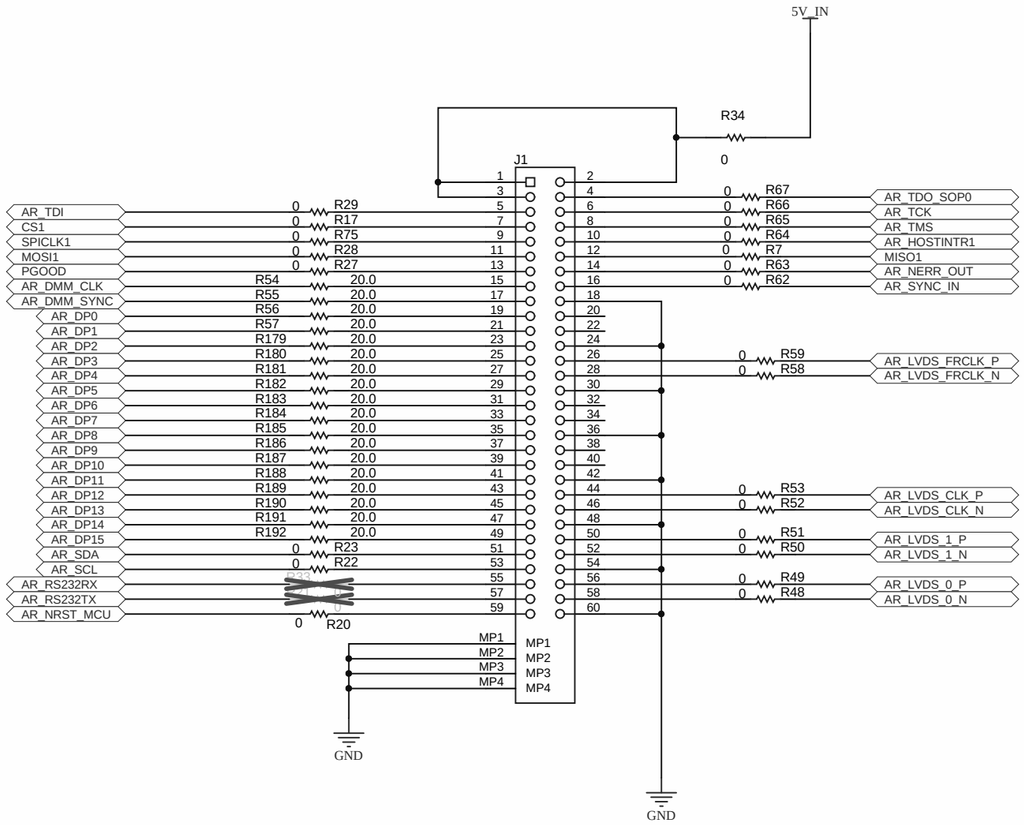
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

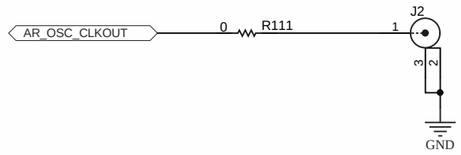
Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 3/7/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: LP Connector	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 10 of 17
Drawn By:	File: PROC011B_LP Connector.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

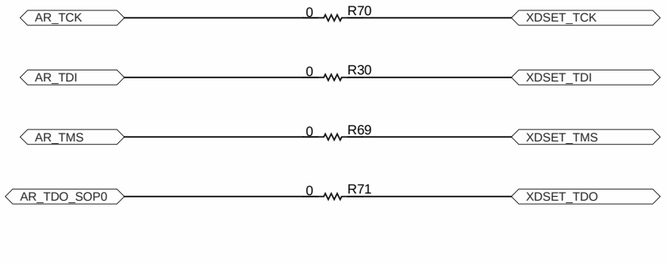
TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

HD CONNECTOR FOR LVDS/CSI AND JTAG







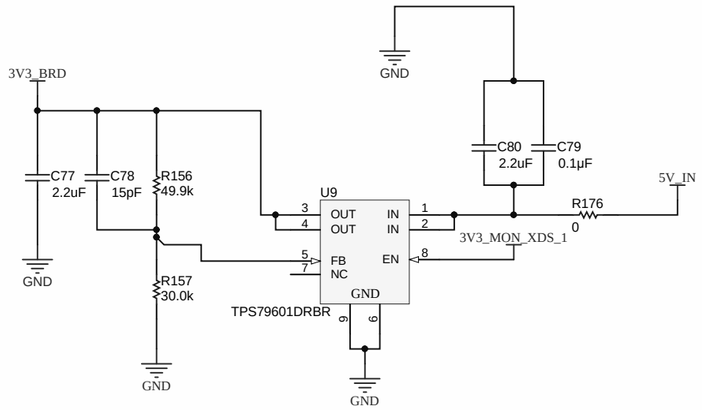
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

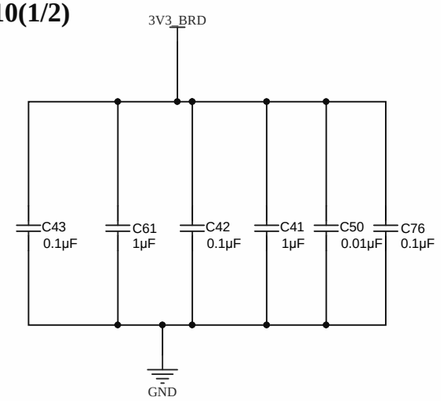
Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: HD Connector	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 11 of 17
Drawn By:	File: PROC011B_HD Connector.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

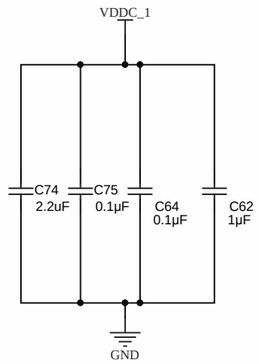
TEXAS INSTRUMENTS
http://www.ti.com

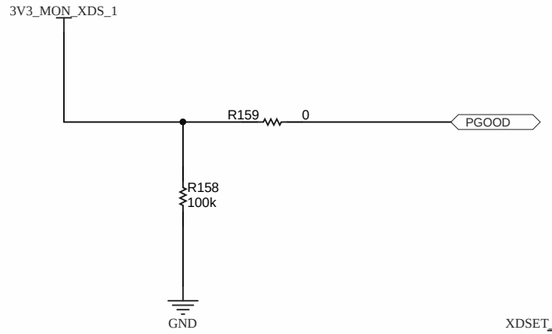
© Texas Instruments 2018

XDS110(1/2)



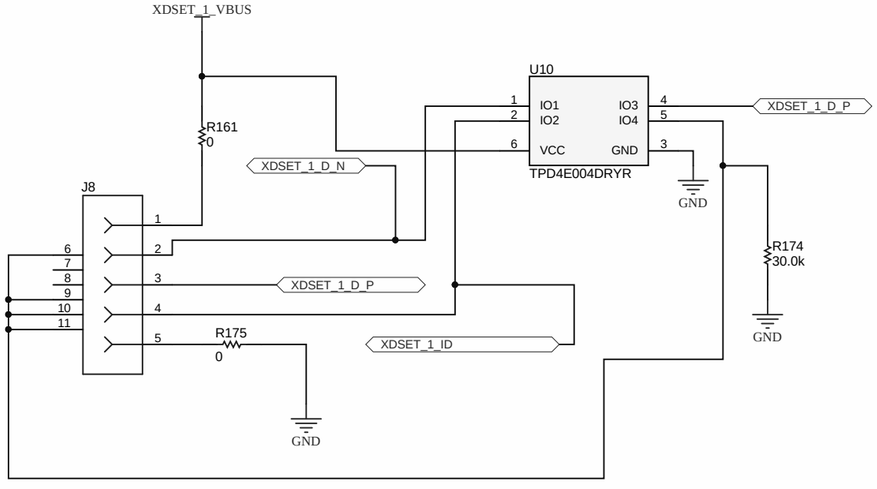


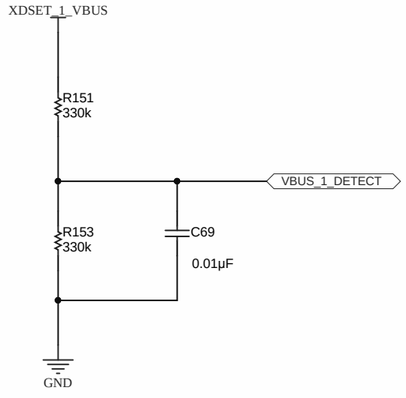




BY DEFAULT THE XDS SUPPLY IS DISABLED..

GETS ENABLED ONLY ONCE THE PMIC IS POWERED UP.





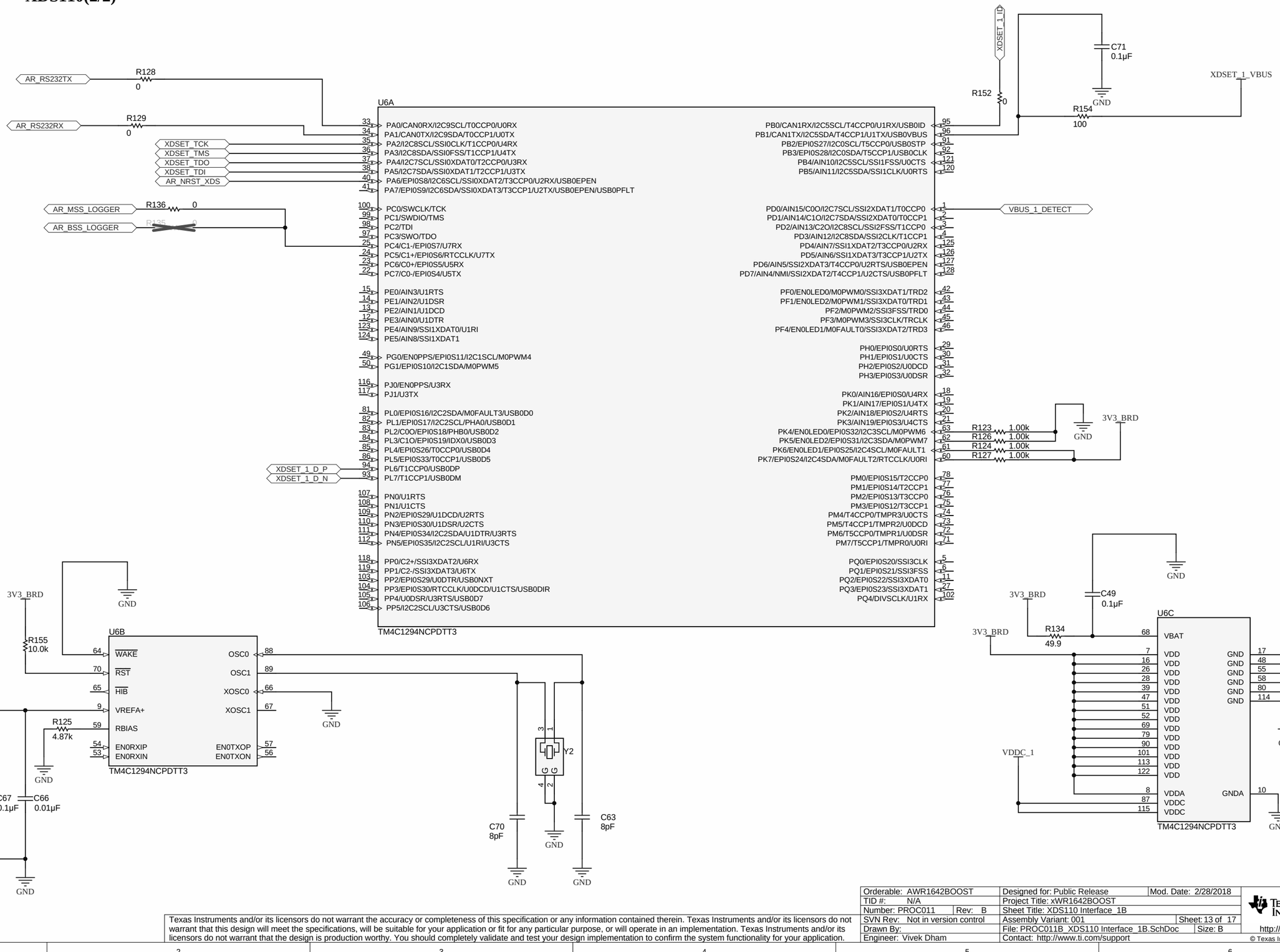
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST		Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A		Project Title: xWR1642BOOST	
Number: PROC011	Rev: B	Sheet Title: XDS110 Interface_1A	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 12 of 17
Drawn By:		File: PROC011B_XDS110 Interface_1A.SchDoc	Size: B
Engineer: Vivek Dham		Contact: http://www.ti.com/support	

Texas Instruments
http://www.ti.com

© Texas Instruments 2018

XDS110(2/2)



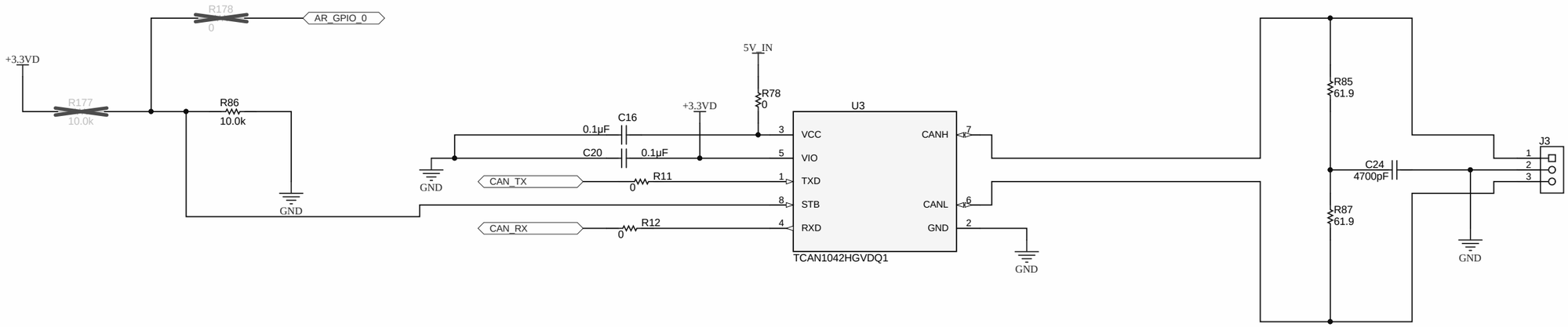
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST		Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A		Project Title: xWR1642BOOST	
Number: PROC011	Rev: B	Sheet Title: XDS110 Interface_1B	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 13 of 17
Drawn By:		File: PROC011B_XDS110 Interface_1B.SchDoc	Size: B
Engineer: Vivek Dham		Contact: http://www.ti.com/support	

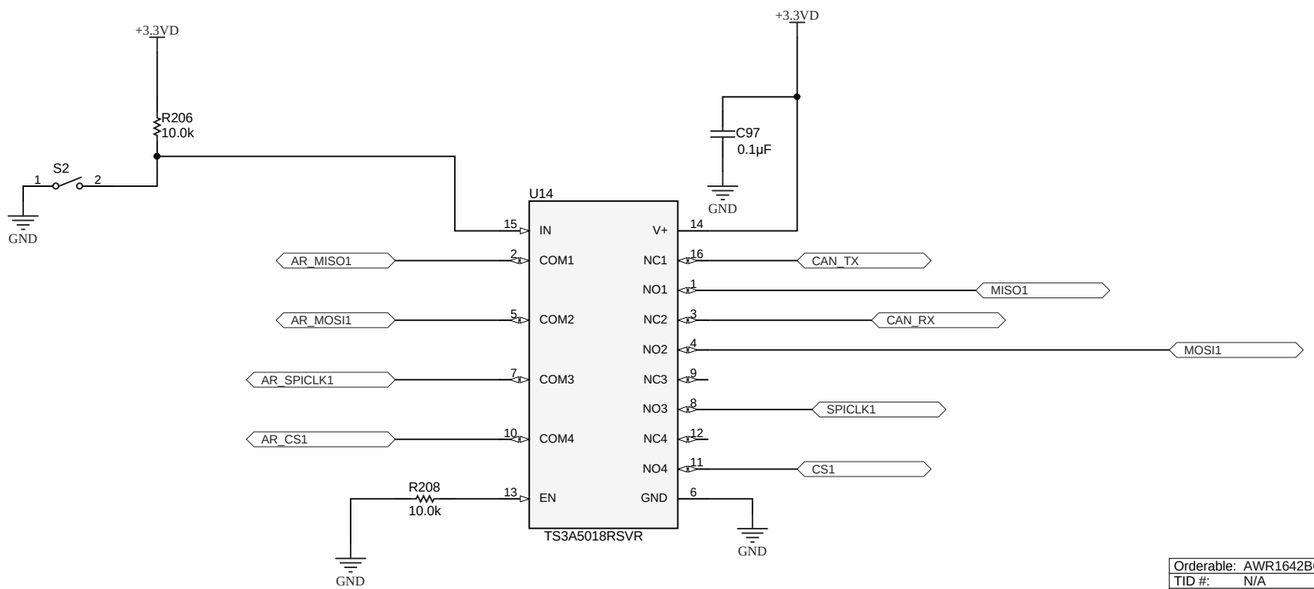
Texas Instruments
http://www.ti.com

© Texas Instruments 2018

CAN INTERFACE



MUX BETWEEN SPI AND CAN INTERFACE



Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

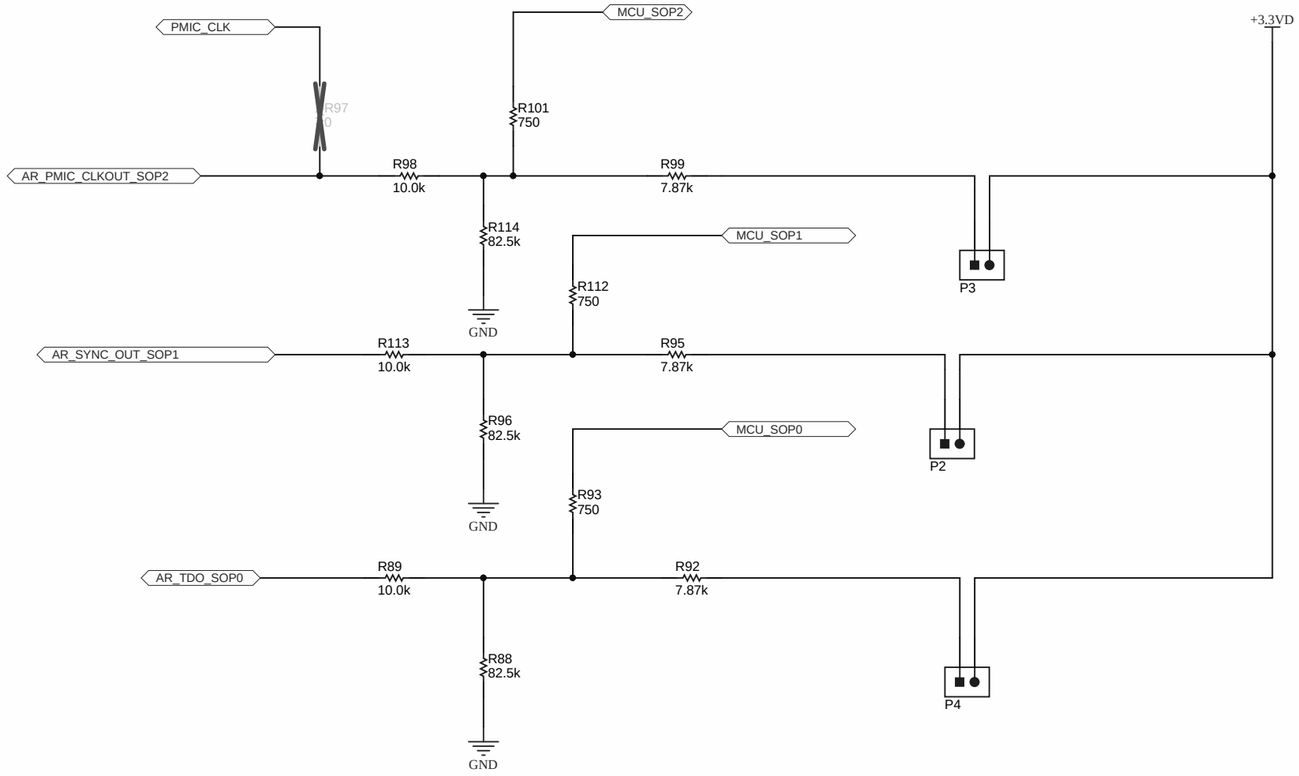
Orderable: AWR1642BOOST		Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A		Project Title: xWR1642BOOST	
Number: PROC011	Rev: B	Sheet Title: CAN Interface	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 14 of 17
Drawn By:		File: PROC011B_CAN Interface.SchDoc	Size: B
Engineer: Vivek Dham		Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

SOP HEADERS

SOP_MODE1	"010"	SCAN/ATPG
SOP_MODE2	"011"	DEV/FLED/ORBIT
SOP_MODE3	"000"	TBD
SOP_MODE4	"001"	FUNC - > DEFAULT VALUE FOR OUTPUTS
SOP_MODE5	"101"	DEV MANAGEMENT -> FOR FLASHING



Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

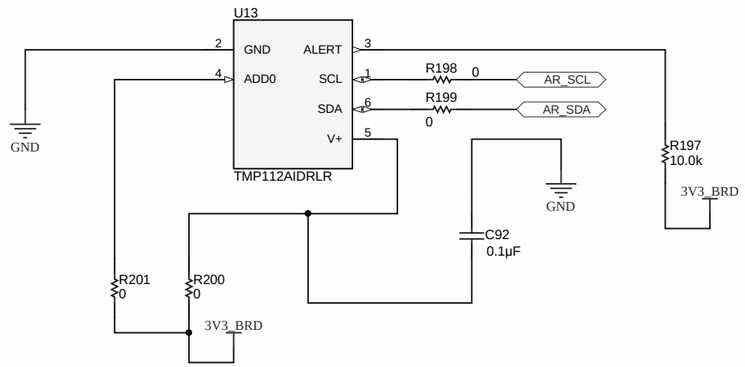
Orderable: AWR1642BOOST		Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A		Project Title: xWR1642BOOST	
Number: PROC011	Rev: B	Sheet Title: SOP selection	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 15 of 17
Drawn By:		File: PROC011B_SOP selection.SchDoc	Size: B
Engineer: Vivek Dham		Contact: http://www.ti.com/support	

Texas Instruments
http://www.ti.com

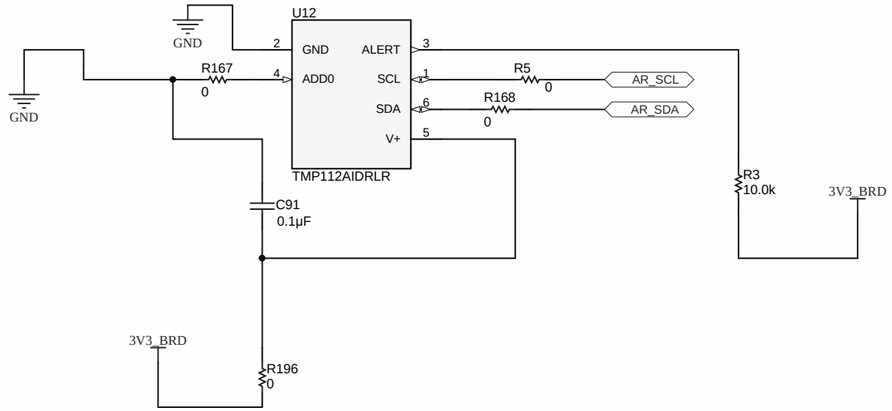
© Texas Instruments 2018

ONBOARD TEMP SENSORS

DEFAULT I2C ADDRESS 0X49
AND MMWAVE DEVICE
TEMP SENSOR AWAY FROM PMIC



DEFAULT I2C ADDRESS 0X48
TEMP SENSOR CLOSE TO PMIC



Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 2/28/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: Tempsensor	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 16 of 17
Drawn By:	File: PROC011B_Tempsensor.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018

FID1

FID2

FID3

FID4

FID5

FID6

FID7

CAUTION HOT SURFACE

PCB
LOGO
Texas Instruments

PCB
LOGO
ESD Susceptible

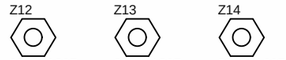
PCB
LOGO
FCC disclaimer

Works With TI LaunchPad Logo
PCB
LOGO
Works With TI LaunchPad Logo

Logo2
PCB
LOGO
WEEE logo

LOGO4

LBL1
PCB Label
Size: 0.65" x 0.20 "



Z21
MECH
969102-0000-DA

Z20
MECH
969102-0000-DA

Z19
MECH
3025010-03

PCB Number: PROC011
PCB Rev: B

Variant/Label Table	
Variant	Label Text
001	AWR1642BOOST
002	IWR1642BOOST

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

ZZ5
Assembly Note
Micro USB cable, Brackets, Screws, Nuts, Jumpers and Bump on need to be place in a plastic bag

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWR1642BOOST	Designed for: Public Release	Mod. Date: 4/12/2018
TID #: N/A	Project Title: xWR1642BOOST	
Number: PROC011 Rev: B	Sheet Title: Hardware	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 17 of 17
Drawn By:	File: PROC011B_Hardware.SchDoc	Size: B
Engineer: Vivek Dham	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
http://www.ti.com

© Texas Instruments 2018