User options for analog input:
1. SIG input, AC-coupled:
   a. Default populate option
   b. Balance to (paddle, 050 Ohm)
2. Differential DC-coupled:
   a. Reverse, C3, C5

Priorities for placement:
1. S/E input, AC-coupled:
   a. Remove C3, C5.
   b. Populate C1 = C6 = 0 ohm.
2. Differential DC-coupled:
   a. Default populate option
   b. Populate C1 = C6 = 100 pF.
3. Differential AC-coupled:

Let C32, C30 and C262 share a pad on the common net. Let C36 and C263 share a pad on the common net. Let C5 and C6 share a pad on the common net.

1. Decoupling caps close to IC.
2. J_VA12, J_VA19, J_VD12 close to IC.

The IC pad is the only ground connection for this IC. Ensure the IC pad is the only ground connection through multiple vias to the PCB ground plane.

Priorities for placement:
1. Decoupling caps close to IC.
2. J_VA12, J_VA19, J_VD12 close to IC.

Locate VIN, SE, TMST-, TMST+ at edge opposite FPC connector.

VIN, SE, TMST-, TMST+ at edge opposite FPC connector.

Vin and VIN_2 are share pads on the common net. Let R20 and R21 share a pad on the common net.

R18

Let R18 and R19 share a pad on the common net. Let R20 and R21 share a pad on the common net.

Let C32, C30 and C262 share a pad on the common net. Let C36 and C263 share a pad on the common net. Let C5 and C6 share a pad on the common net.

VIN_DIFF+ to VIN_P net as 50 ohm S/E.

The IC pad is the only ground connection for this IC. Ensure the IC pad is the only ground connection through multiple vias to the PCB ground plane.

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 be fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant the design, fabrication or production quality. You should completely validate and test your design implementation to confirm the system functionality for your application.
This is accounted for in the FPGA code.
As illustrated on the schematic, add short stub traces extending out from the package to aid solderability.

Let C123 and C112 share a pad on the common net. Let C114 and C123 share a pad on the common net.

Polarity inversion on these 2 signals.
3.3V supply to clocks (LMK, LMX) and LEDs

12V main supply, from jack or via FMC connector to regulators
1.9V and 1.2V supply to LM15851 / ADC12JXX00

Add text label: "5V VIA JACK" and "12V VIA FMC, Install R90 for 12V operation"
The uWire interface is configured for 3.3V. In case it is 5V, install R116, R104, R128, R129.

TBD: Add alternate page connections for SPI, JTAG, and data out.
Place at least two of the GND test points in the power section.

Assembly Note

This Assembly Note is for PCB labels only.

1. These assemblies are ESD sensitive, ESD precautions shall be observed.
2. These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.
3. These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

PCB Number: 600847
PCB Rev: A

Legend

Table of Symbols:

- GND: Ground
- Vdd: Power Supply
- C: Capacitor
- R: Resistor
- L: Inductor
- D: Diode
- Q: MOSFET
- U: Op Amp
- S: Switch
- N: Transformer
- K: Connector
- M: Motor
- A: Actuator
- T: Transducer
- X: Sensor
- P: Potentiometer
- W: Transformer
- F: Filter
- B: Battery
- M: Motor
- K: Keypad
- S: Speaker
- D: Display
- L: Lamp

PCB ESD LOGO
ESD Susceptible

PCB Logo
Texas Instruments

PCB Label

PCB Number: 600847
PCB Rev: A

Assembly Note

This Assembly Note is for PCB labels only.

1. These assemblies are ESD sensitive, ESD precautions shall be observed.
2. These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.
3. These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained herein. 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 the design or production of any products arising from this design. You should thoroughly evaluate and test your design implementation to confirm the system functionality for your application.

Texas Instruments and/or its licensors do not warrant the design or production of any products arising from this design. You should thoroughly evaluate and test your design implementation to confirm the system functionality for your application.

ADC12JXXXXEVM_A_7_Hardware.SchDoc
Sheet Title:
Size:
Mod. Date:
File:
Sheet:
http://www.ti.com
Contact:
http://www.ti.com/support
ADC12JXXXXEVM
Project Title:
Designed for:
Internal Use Only
Assembly Variant:
002_ADC12J4000EVM

© Texas Instruments
2014
IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ('TI') reference designs are solely intended to assist designers ("Designer(s)") who are developing systems that incorporate TI products. TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design.

TI's provision of reference designs and any other technical, applications or design advice, quality characterization, reliability data or other information or services does not expand or otherwise alter TI's applicable published warranties or warranty disclaimers for TI products, and no additional obligations or liabilities arise from TI providing such reference designs or other items.

TI reserves the right to make corrections, enhancements, improvements and other changes to its reference designs and other items. Designer understands and agrees that Designer remains responsible for using its independent analysis, evaluation and judgment in designing Designer's systems and products, and has full and exclusive responsibility to assure the safety of its products and compliance of its products (and of all TI products used in or for such Designer's products) with all applicable regulations, laws and other applicable requirements. Designer represents that, with respect to its applications, it has all the necessary expertise to create and implement safeguards that (1) anticipate dangerous consequences of failures, (2) monitor failures and their consequences, and (3) lessen the likelihood of failures that might cause harm and take appropriate actions. Designer agrees that prior to using or distributing any systems that include TI products, Designer will thoroughly test such systems and the functionality of such TI products as used in such systems. Designer may not use any TI products in life-critical medical equipment unless authorized officers of the parties have executed a special contract specifically governing such use. Life-critical medical equipment is medical equipment where failure of such equipment would cause serious bodily injury or death (e.g., life support, pacemakers, defibrillators, heart pumps, neurostimulators, and implantables). Such equipment includes, without limitation, all medical devices identified by the U.S. Food and Drug Administration as Class III devices and equivalent classifications outside the U.S.

Designers are authorized to use, copy and modify any individual TI reference design only in connection with the development of end products that include the TI product(s) identified in that reference design. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT OF TI OR ANY THIRD PARTY IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of the reference design or other items described above may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI REFERENCE DESIGNS AND OTHER ITEMS DESCRIBED ABOVE ARE PROVIDED “AS IS” AND WITH ALL FAULTS. TI DISCLAIMS ALL OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, REGARDING THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, INCLUDING BUT NOT LIMITED TO ACCURACY OR COMPLETENESS, TITLE, ANY EPIDEMIC FAILURE WARRANTY AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY DESIGNERS AGAINST ANY CLAIM, INCLUDING BUT NOT LIMITED TO ANY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON ANY COMBINATION OF PRODUCTS AS DESCRIBED IN A TI REFERENCE DESIGN OR OTHERWISE. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, DIRECT, SPECIAL, COLLATERAL, INDIRECT, PUNITIVE, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES IN CONNECTION WITH OR ARISING OUT OF THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, AND REGARDLESS OF WHETHER TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

TI's standard terms of sale for semiconductor products (http://www.ti.com/sc/docs/stdterms.htm) apply to the sale of packaged integrated circuit products. Additional terms may apply to the use or sale of other types of TI products and services. Designer will fully indemnify TI and its representatives against any damages, costs, losses, and/or liabilities arising out of Designer's non-compliance with the terms and provisions of this Notice.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2016, Texas Instruments Incorporated