Table of Contents

Texas Instruments
66AK2H12
Multi-Core DSP+ARM KeyStone II System-on-Chip (SoC)

Partial Circuit Analysis
Some of the information in this report may be covered by patents, mask and/or copyright protection. This report should not be taken as an inducement to infringe on these rights.

© Chipworks Inc. 2015 all rights reserved. Chipworks and the Chipworks logo are registered trademarks of Chipworks Inc.

This report is provided exclusively for the use of the purchasing organization. It can be freely copied and distributed within the purchasing organization, conditional upon the accompanying Chipworks accreditation remaining attached.

Distribution of the entire report outside of the purchasing organization is strictly forbidden. The use of portions of the document for the support of the purchasing organization’s corporate interest (e.g., licensing or marketing activities) is permitted, as defined by the fair use provisions of the copyright act. Accreditation to Chipworks must be attached to any portion of the reproduced information.

CAR-1506-202
28949KCZM

Revision 1.0  Published: June 18, 2015
Overview

Introduction

Brief Design Overview

Component Descriptions

Device Summary

References

Figures

To view, please click on the appropriate bookmark in the panel on the left.

- 0.1.1 Package Markings
- 0.1.2 Package X-Ray
- 0.1.3 Die Markings
- 0.2.1 Die Photograph
- 0.2.2 Annotated Die Photograph
- 0.2.3 PLL Architecture (Rotated 90° Clockwise)

Schematics

- 1.0.0 PLL Core (Open Loop)
- 2.0.0 Clock Input Buffers
  - 2.1.0 Flywheel Buffer
- 3.0.0 Phase Frequency Detector
  - 3.1.0 Flywheel Buffer
- 4.0.0 Low Gain Charge Pump
  - 4.1.0 Amplifier
  - 4.2.0 Charge Pump Cell (4x)
  - 4.3.0 Charge Pump Cell (8x)
- 5.0.0 High Gain Charge Pump
6.0.0 Loop Filter and PLL Self-Bias Generator
6.1.0 Voltage Regulator
6.2.0 PMOS Decoupling Capacitors
6.3.0 NMOS Decoupling Capacitors
6.4.0 Amplifier

7.0.0 Current Controlled Ring Oscillator
7.1.0 Oscillator Output Buffer
7.2.0 Unused Components
7.3.0 Oscillator Power Decoupling
7.4.0 Oscillator Cell
7.4.1 Oscillator Load

8.0.0 Frequency Divider
8.1.0 Flywheel Buffer
8.2.0 Unused Components

9.0.0 Lock Detector
9.1.0 8-Input AND
9.2.0 Clock Divider
9.3.0 8-Bit Ripple Counter

10.0.0 Control Buffers

11.0.0 Voltage Regulator
11.1.0 Reference Filter

12.0.0 Voltage Regulator
12.1.0 Reference Filter

13.0.0 Voltage Regulator
13.1.0 Reference Filter

14.0.0 Analog Test Access
14.1.0 Test Decoder
14.2.0 Test Access Switches
Texas Instruments 66AK2H12
Multi-Core DSP+ARM KeyStone II SoC
Partial Circuit Analysis

15.0.0 Unused Components

16.0.0 External (Non-PLL) Components

Cell Library

About Chipworks
About Chipworks

Patent and Technology Partner to the World's Most Successful Companies

For over 20 years, Chipworks has been a trusted patent and technology partner to the world's largest and most successful companies. Business leaders rely on us to help them identify and fully leverage their most valuable patents and provide crucial analysis of high-revenue products in the most competitive, fastest changing technology markets.

By combining deep patent and market knowledge with an unmatched ability to analyze the broadest range of technology products we are able to provide the most insightful Patent Intelligence and Competitive Technical Intelligence services in the industry.

Contact Chipworks

To find out more information about this report, or any other reports in our library, please contact Chipworks at 1-613-829-0414.

Chipworks
1891 Robertson Road, Suite 500
Ottawa, Ontario  K2H 5B7
Canada
T 1-613-829-0414
F 1-613-829-0515
Web site: www.chipworks.com
Email: info@chipworks.com
Please send any feedback to feedback@chipworks.com