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1.0 Introduction

This document provides a brief overview of Zarlink Semiconductor's ZL50110/11/14 and ZL50115/16/17/18/19/20 Circuit Emulation Service over Packets (CESoP) Processor Evaluation Board, referred to as the ZLE50111. The ZLE50111 application board description outlines the features and uses of the ZLE50111 as well as the contents of the ZLE50111 kit supplied.

2.0 Features

The ZLE50111, shown in Figure 1 below, is an evaluation and demonstration platform for the ZL50110/11/14 and ZL50115/16/17/18/19/20 CESoP processor families, collectively referred to as ZL5011x. It may be used to evaluate the performance of the ZL5011x using on-board test capabilities or external test equipment, such as a T1/E1 tester. The ZLE50111 may also be used to interface to a existing product or network to monitor the actual performance of the ZL5011x in a typical application. The ZLE50111 may be used simply to provide pre-configured demonstrations of the capability of the ZL5011x. Features of the ZLE50111 include:

- Dual Gigabit Ethernet, Triple Fast Ethernet or Single Gigabit and Single Fast Ethernet packet interface
- T1/E1/T3/E3 or H-MVIP/H.110 backplane TDM interface
- Embedded Planet CPU card with Motorola PowerQUICC II processor running VxWorks
- Demonstrates Zarlink's Circuit Emulation Timing (CET) algorithms for clock recovery over a packet network

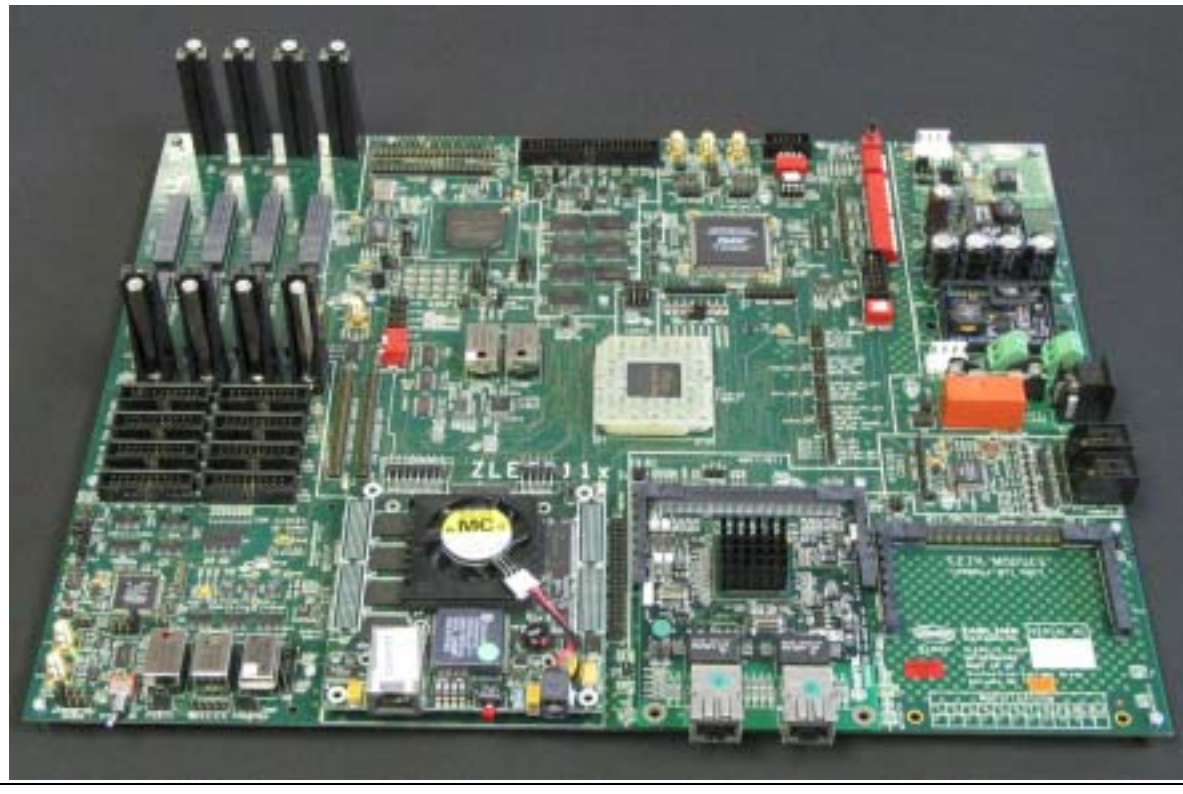

Figure 1 - ZLE50111 Motherboard

- Flexible master clock options including on-board DPLL, ZL5011x internal DPLL, ZL5011x CET or external clock source
- Management Station software point-and-click GUI to configure entire board and connections
- Pre-configured demonstrations for audio call, full 128 or 1024 channel capacity and dynamic channel allocation

3.0 Description

The ZLE50111 is a self contained evaluation environment that allows for complete test coverage of the ZL5011x, including such features as on-board PRBS generation and BERT detection. Additionally, the ZLE50111 provides standard interfaces for off-board connections to external PDH and Ethernet test equipment. On the packet interface, the ZLE50111 provides dual Gigabit (copper) RJ-45 connectors. Under software control this interface may also operate as dual Fast Ethernet ports. The ZLE50111 supports one Gigabit and one Fast Ethernet port for the ZL50115/16/17/18/19/20. The ZLE50111 supports one Gigabit port for the ZL50115/16/17, which may be configured for either Gigabit or Fast Ethernet operation. On the TDM interface the ZLE50111 has an on-board high capacity digital switch, Zarlink's MT90869. Additionally, it is equipped with a T1/E1 Framer (Zarlink's MT9072) and LIU module that provides either quad E1 ports with BNC connectors or octal T1 ports with RJ-48c connectors. The ZLE50111 also has two jacks for handsets that provide audio to the ZL5011x through an on-board dual CODEC. There are an ample amount of jumpers and headers that allow for signal probing and off-board connections. The on-board master clock source may be either Zarlink's MT90401 digital PLL which is on the motherboard, the ZL5011x's own internal DPLL, or the ZL5011x's internal DCO generating a packet network recovered clock. The ZLE50111 is capable of demonstrating Zarlink's Circuit Emulation Timing (CET) algorithms for clock recovery over a packet network.

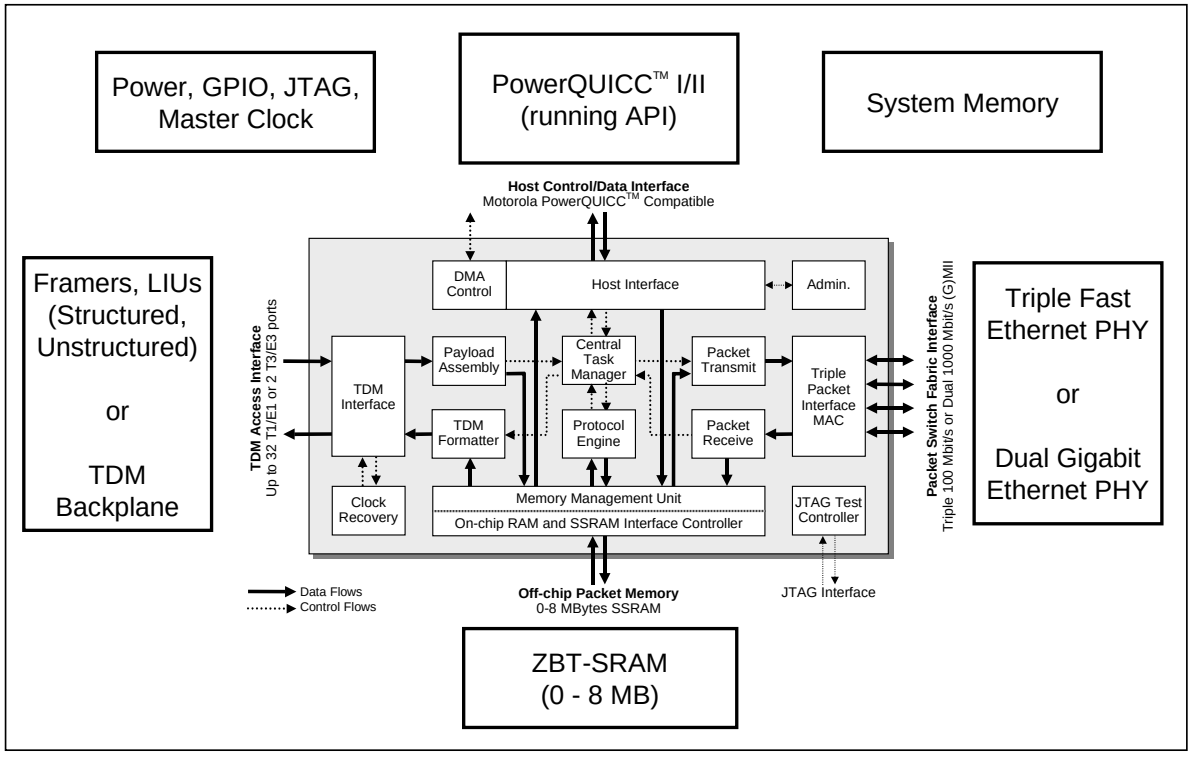

Figure 2 - ZLE50111 Block Diagram

The ZLE50111 is controlled and programmed using Zarlink's ZLS50111 Demonstration Software. This software is split into two parts. The first part is the ZLS50111 Management Station that runs on a standard PC running Windows 95/2000. The ZLS50111 Management Station is a point-and-click GUI that allows full configuration of the ZLE50111.

The second part is the ZLS50111 Embedded Agent, which is stored in flash memory on an Embedded Planet CPU card. The ZLS50111 Embedded Agent receives commands from the ZLS50111 Management Station and executes the appropriate action. Note that the Embedded Plant CPU card contains a Motorola PowerQUICC II processor running VxWorks. The ZLS50111 Demonstration Software programs the ZL5011x by using Zarlink's ZLS50111 API which is RTOS and processor independent.

4.0 Kit Contents

Below is a list of the physical contents of the ZLE50111 kit. Each item is listed, along with the quantity in brackets.

- ZLE50111 CD-ROM with Documentation and Software (1)
- ZLE50111 Application Board Description hard copy printout (1)
- ZLE50111 System Installation Guide hard copy printout (1)
- ZLE50111 Motherboard (1)
- ZLE50111 Dual Gigabit Ethernet (copper) RJ-45 card - already fitted on motherboard (1)
- ZLE50111 Dual Fast Ethernet R3-45 card - already fitted on motherboard (1) [ZL50118/19/20 only]
- ZLE50111 Octal T1/E1 Framer and LIU card (1)
- ZLE50111 Octal T1 RJ-48c expander (1)
- ZLE50111 Quad E1 BNC expander (1)
- ZL50111 CESoP processor - already fitted on motherboard (1)
- Handsets (2)
- Power supply with universal mains input 90-264 Vac, output 60W, 5V (1)
- Power cord for power supply - North American (1)
- Embedded Planet CPU card with Motorola PowerQUICC II processor - already fitted on motherboard (1)
- Serial lead set for Embedded Plant CPU card (1)
- Ethernet cables - straight (3)
- Ethernet cables - crossed (1)
- VxWorks run-time license sticker - applied to motherboard (1)

5.0 Kit Options

In additional to the standard base package that is detailed above, several options are available on the ZLE50111. On the packet interface, support for Triple Fast Ethernet ports using two dual Fast Ethernet modules or support for dual fibre Gigabit Ethernet ports using a dual Gigabit Ethernet SX module. On the TDM interface, support for up to 32 T1 or E1 ports using additional T1/E1 Framer and LIU cards and T1/E1 expansion cables. Dual DS3 or E3 ports are also supported using a DS3/E3 LIU card. A list of the optional components is below.

- ZLE50111 Dual Fast Ethernet RJ-45 card
- ZLE50111 Dual Gigabit Ethernet (fibre 850nm/SX)
- ZLE50111 Octal T1/E1 Framer and LIU card - expand from 8 ports to 32 ports
- ZLE50111 T1/E1 expansion cable - provides access T1/E1 when using more than 8 T1 ports or 4 E1 ports
- ZLE50111 Dual T3/E3 LIU card
- ZLE50111 SRAM card (2 MB) - fitted underneath motherboard

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