Broadcom 440X Fast Ethernet Controller User Diagnostics User's Guide

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Introduction

This document provides information on the b44udiag.exe diagnostic program for the Broadcom 440X Fast Ethernet Controller. When the b44udiag.exe program is started, a series of tests are executed on the 440X Fast Ethernet controller. If a test fails, the b44diag program displays an error and exits to DOS.

The following options are available:

-l <file>	Log data to file
-c <num>	Specify the card to be tested
-I <num>	Iteration number
-t <id>	Disable tests
-T <id>	Enable tests
-r <num>	Input radix
-lbm	Option to specify the number of packets in the MAC Loopback test
-lbp	Option to specify the number of packets in the PHY Loopback test
-lbh	Option to specify the number of packets in the 100BT External Loopback test
-lbt	Option to specify the number of packets in the 10BT External Loopback test

 Example:

> b44udiag -l test.log -c 1 -I 2 -t A3 -lbm 3000 -lbp 3000 -lbh 3000 -lbt 3000

Prerequisites

OS: DOS 6.22

Software: b44udiag.exe

Diagnostic Tests

There are three groups of tests, and each group has some sub-tests.

Group A

A1. [Indirect Control Register Test](#)

A2. [Direct Control Register Test](#)

A3. [Interrupt Test](#)

A4. [Built-in Self Test](#)

Group B

B1. [LEDs Test](#)

B2. [EEPROM Test](#)

B3. [MII Test](#)

B4. [Link Status Test](#)

Group C

C1. [MAC Loopback Test](#)

C2. [PHY Loopback Test](#)

C3. [External Loopback Test 100BT](#)

C4. [External Loopback Test 10BT](#)

Test Descriptions

A1. Indirect Control Register Test

Command: regtest -i

Function: Each register that is specified in the configuration contents read only bit and read/write bit defines. The test writing 0 and 1 by using the indirect addressing method into the test bits ensures that the read only bits are not changed, and read/write bits are changed accordingly.

Default: Enabled

A2. Direct Control Register Test

Command: regtest

Function: Each register that is specified in the configuration contents read only bit and read/write bit defines. The test writing 0 and 1 into the test bits ensures that the read only bits are not changed, and read/write bits are changed accordingly.

Default: Enabled

A3. Interrupt Test

Command: intrtest

Function: Verifies the interrupt functionality by enabling interrupt, and waits for an interrupt to occur. It waits for 500 ms and reports an error if it cannot generate interrupts.

Default: Enabled

A4. Built-In Self Test

Command: bist

Function: Runs the Built-in Self test.

Default: Enabled

B1. LED Test

Command: ledtest

Function: Tests forcing of the link state for each link speed/duplex.

Default: Enabled

B2. EEPROM Test

Command: setest

Function: Reads the Serial Prom and verifies the integrity by checking CRC.

Default: Enabled

B3. MII Test

Command: miitest

Function: Each register that is specified in the configuration contents read only bit and read/write bit defines. The test writing 0 and 1 into the test bits ensures that the read only bits value are not changed, and read/write bits are changed accordingly.

Default: Enabled

B4. Link Status Test

Command: linkstatus

Function: Reports the current link status.

Default: Enabled

C1. MAC Loopback Test

Command: lbtest -m

Function: Transmits a 2000 or specified by -lbm option of 1514-byte packets with incrementing data pattern, and checks tx and rx flags and data integrity.

Default: Enabled

C2. PHY Loopback Test

Command: lbtest -p

Function: This test is same as the MAC Loopback Test, except that the data is routed back via physical layer device.

Default: Enabled

C3. External Loopback Test 100BT

Command: lbtest -e

Function: This test is same as the MAC Loopback Test, except that the data is routed back via a loopback device

Default: Disabled

C4. External Loopback Test 10BT

Command: lbtest -a

Function: This test is same as the [MAC Loopback Test](), except that the data is routed back via loopback device.

Default: Disabled

By default, all tests except C3 and C4 are covered unless disabled by the user.

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