



B57UDIAG

# Diagnostic Users Guide

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## 1. Introduction

This document provides information on how to use the b57udiag DOS program on the Broadcom BCM57xx family of Gigabit Ethernet adapters.

The b57udiag program can be controlled by commands entered from the DOS prompt or a user command mode. When the b57udiag program is started without parameters, a number of diagnostic tests are executed. To enter the user command mode, use the `-cmd` parameter. DOS commands, described in the following sections, are entered at the DOS command line and executed without entering the user command mode.

When the user command mode is entered information for all devices in the system is displayed. The following excerpt provides an example of three devices in the system:

```
C Brd:Rv Bus/Dev PCI Spd Base IRQ EEP MAC Fmw Configuration
- - - - -
0 5703:A3 03:09:0 32 33 D580 11 128K 00101801026C 5703-c2.33 Mr,auto
1 5703:A3 03:0A:0 32 33 D990 5 128K 00101801026C 5703-c2.33 Mp,auto
2 5703:A3 05:05:0 32 33 E400 10 128K 00101801026C 5703-c2.33 Mb,auto

0:>setwol -e all

0:>device
C Brd:Rv Bus/Dev PCI Spd Base IRQ EEP MAC Fmw Configuration
- - - - -
0 5703:A3 03:09:0 32 33 D580 11 128K 00101801026C 5703-c2.33 WMp,auto
1 5703:A3 03:0A:0 32 33 D990 5 128K 00101801026C 5703-c2.33 WMp,auto
2 5703:A3 05:05:0 32 33 E400 10 128K 00101801026C 5703-c2.33 WMp,auto
```

In the example above, the Configuration column indicates the protocol used as the boot agent. The following protocols are supported.

- PXE: indicated by 'p'
- RPL: indicated by 'r'
- BOOTP: indicated by 'b'

## 2. Prerequisites

**OS:** DOS 6.22

**Software:** b57udiag.exe.

**Input File List:** The following files should be found in the same location of the b57diag.

ee57xyyy.yy (TX & RX CPUs Firmware file, xx chip type, yy version number)

eeeprom.bin (Serial EEPROM/FLASH config input file)

cpu.bin, cpu05.bin, cpu14a.bin, cpu14b.bin or cpusj.bin (CPU Instruction test)

cpudiag.bin or cpudg05.bin (CPU Accessing test)

flshdiag.bin, flashdg05.bin flashdg 14a.bin, flashdg 14b.bin, flashdgsj.bin,  
flahdg5x.bin

ump14a.bin or ump14b.bin

config.sys

himem.sys

### 3. Functions List

#### **Functions:**      **cmd:**

##### User Command Mode commands

upgfrm	Upgrade PXE or Boot Code from a file
dir	Display file directory in NVRAM
setwol	Enable/Disable WOL
setpxe	Enable/Disable PXE
setasf	Enable/Disable ASF
setmba	Enable Multiple Boot Agent
setipmi	Enable/Disable IPMI
nictest	Run a set of Ethernet Adapter Tests
exit	Exit from command mode
device	Show or switch device
version	Display program version
help	Display available commands
dos	Transfer to DOS prompt
reset	Reset chip
cls	Clear screen
asfprg	Program ASF firmware into NVRAM (3 bin files format)
pasf	Program ASF firmware into NVRAM (1 bin files format)
iscsiprg	Upgrade iSCSI Code from a file

##### Dos Prompt commands

-c <num>	Specify adapter to be test and/or modify
-cmd	Enter user command mode
-w <value>	Enable/Disable (value = 1/0) WOL in manufacture mode
-asf <value>	Enable/Disable (value = 1/0) ASF in manufacture mode
-mba <value>	Option to enable/disable MBA protocol 0. Disable      1. Enable
-mbap <value>	Option to select MBA protocol 0. PXE          1. RPL          2. BOOTP
-mbas <value>	Option to select MBA speed 0. auto        1. 10HD        2. 10FD 3. 100HD      4. 100FD      6. 1000FD (fiber)
-firm <file>	The feature is used to execute a field upgrade of bootcode firmware. The bootcode firmware is programmed into a/the device/s of a system if there is a match of the PCI DID, VID, SDID & SVID of firmware and device.
-firmall <file>	Update devices NVRAM based on <file> image match to HW The feature is used to execute a field upgrade of entire NVRAM image. The new NVRAM image is programmed into a/the device/s of a system if there is a match of the PCI DID, VID, SDID & SVID

of firmware and device. Media Manufact Region and Media VPD Block in NVRAM will be preserved. If the Advance Firmware, such as ASF and IPMI, is present, the Configuration Block of the firmware will also be preserved. Three addition command line parameters, “-updateasfcfg”, “-updatesecfg”, “-updateiscsicfg” and “-sil”, can be used along with “-firmall” command.

-updateasfcfg	Update the advance firmware configuration block of NVRAM with that of the NVRAM image provided by “-firmall” command. When “-updateasfcfg” command line parameter is entered before “-firmall” command, the Advance Firmware Configuration Block of the NVRAM will not be preserved. It will get updated by the input file of “-firmall” command. The “-firmall” command is described above.
-updatesecfg	Update the Media Manufact Region and Media VPD Block, of NVRAM with that of the NVRAM image provided by “-firmall” command. When “-updatesecfg” command line parameter is entered before “-firmall” command, the Meida Manufact Region and Media VPD Block of the NVRAM will not be preserved. They will get updated by the input file of “-firmall” command. The “-firmall” command is described above.
-updateiscsicfg	Update the ISCSI firmware configuration block of NVRAM with that of the NVRAM image provided by “-firmall” command. When “-updateiscsicfg” command line parameter is entered before “-firmall” command, the ISCSI Firmware Configuration Block of the NVRAM will not be preserved. It will get updated by the input file of “-firmall” command. The “-firmall” command is described above.
-ver	Version of the current software/eprom.bin
-pxe <file>	Programming PXE firmware from file
-elog <file>	Produces a log file with only error information
-pipmi <file>	Programming IPMI firmware from <file>
-ipmi <value>	Enable/Disable (value=0/1) IPMI in manufacture mode
-uipmi <file>	Upgrading IPMI firmware from file if IPMI firmware is originally loaded.
-dir	Display file directory in NVRAM
-pump1 <file>	Programming UMP firmware from file
-uump <file>	Upgrading IPMI firmware from file if UMP firmware is originally loaded.
-u <value>	Enable/Disable (value = 1/0) UMP in manufacture mode.
-piscsi	Option to program iSCSI code into the NVRAM
-piscsicfg	Option to force program iSCSI CFG code into NVRAM It should be used along with -piscsi.
-piscsiprg	Option to force program iSCSI PRG code into NVRAM It should be used along with -piscsi.
-disableeswitch	Disable the E-Switch on the device that support eswitch, such as 5756. Without this option, PHY loopback test, external loopback test (pkttest -e), and carrier test are performed on both laptop mode



and docking mode. With this option, above tests are performed on the default port.

-help

Display commands help

## 4. Functions Description

### 4.1 c

**cmd:** -c

**Description:** Specify adapter to be tested and/or modified.

**Syntax:** [-]c devnum

devnum : Device number. It can be one or more devices in the list. Use 'all' for all devices.

The syntax for devnum is as followed:

<d [,d]... | all>

Where d is the device number 0 to number of devices – 1. For example, if you have three devices in the system, the valid device number is 0, 1, or 2.

**Example:**

*From DOS prompt:*

```
C:\>b57udiag -c 0           ; test device 0
C:\>b57udiag all           ; test all devices found in the system
```

### 4.2 cmd

**cmd:** -cmd

**Description:** Enter command mode

**Syntax:** [-]cmd

**Example:**

*From DOS prompt:*

```
C:\>b57udiag -cmd
```

### 4.3 w

**cmd:** -w <value>

**Description:** enable/disable WOL (value = 1/0)

**Syntax:** [-]w <value> -c <devnum>

devnum : Device number. It can be one or more devices in the list. Use 'all' for all devices.

**Example:*****From DOS prompt:***

```
C:\>b57udiag -w 1 -c 0
```

**4.4 asf**

**cmd:** -asf <value>

**Description:** enable/disable ASF (value = 1/0)

**Syntax:** [-]w <value> -c <devnum>

devnum : Device number. It can be one or more devices in the list. Use 'all' for all devices.

**Example:*****From DOS prompt:***

```
C:\>b57udiag -asf 1 -c 0
```

**4.5 mba**

**cmd:** -mba <value> (value = 0 for Disable, 1 for Enable)

**Description:** enable/disable Multiple Boot Agent

**Syntax:** [-]mba <value> -c <devnum>

**Example:*****From DOS prompt:***

```
C:\>b57udiag -mba 1 -c 0
```

**4.6 mbap**

**cmd:** -mbap <value> (value = 0 for PXE, 1 for RPL, 2 for BOOTP)

**Description:** Set MBA Protocol

**Syntax:** [-]mbap <value> -c <devnum>

**Example:**

```
C:\>b57udiag -mbap 0 -c 0
```

Set PXE for device 0

## 4.7 mbas

**cmd:** -mbas <value> (value = 0 for auto, 1 for 10HD, 2 for 10FD, 3 for 100HD, 4 for 100FD, 6 for 1000FD – fiber only)

**Description:** Set PXE speed.

**Syntax:** [-]mbas -c <devnum>

### Example:

```
C:\>b57udiag -mbas 0 -c 0
```

Set PXE speed to auto for device 0

## 4.8 firm

**cmd:** -firm <file name>

**Description:** The feature is used to execute a field upgrade of bootcode firmware. The bootcode firmware is programmed into a/the device/s of a system if there is a match of the PCI DID, VID, SDID & SVID of firmware and device.

**Syntax:** [-]firm -c <devnum>

### Example:

```
C:\>b57udiag -firm ee5704c2.24 -c 0
```

Upgrade eeprom.bin on device 0

## 4.9 firmall

**cmd:** -firmall <file>

**Description:** Update devices eeprom based on <file> image match. Only MAC addr will be preserved

**Syntax:** [-]firmall <file>

**Example:**

```
C:\>b57udiag -c 0 -firmall eeprom.bin
```

Upgrade eeprom on device 0, if device ID embedded in eeprom.bin matches with device 0

## 4.10 updateasfcfg

**cmd:** - updateasfcfg

**Description:** Update the advance firmware configuration block of NVRAM with that of the NVRAM image provided by “-firmall” command. When “-updateasfcfg” command line parameter is entered before “-firmall” command, the Advance Firmware Configuration Block of the NVRAM will not be preserved. It will get updated by the input file of “-firmall” command. The “-firmall” command is described above.

**Syntax:** [-]updateasfcfg

**Example:**

```
C:\>b57udiag -c 0 -firmall eeprom.bin -updateasfcfg
```

Upgrade eeprom on device 0, if device ID embedded in eeprom.bin matches with device 0. ASF Configuration block will be update according to the eeprom.bin.

## 4.11 updatesecfg

**cmd:** - updatesecfg

**Description:** Update the Media Manufact Region and Media VPD Block, of NVRAM with that of the NVRAM image provided by “-firmall” command. When “-updatesecfg” command line parameter is entered before “-firmall” command, the Meida Manufact Region and Media VPD Block of the NVRAM will not be preserved. They will get updated by the input file of “-firmall” command. The “-firmall” command is described above.

**Syntax:** [-]updatesecfg

**Example:**

```
C:\>b57udiag -c 0 -firmall eeprom.bin -updatesecfg
```

Upgrade eeprom on device 0, if device ID embedded in eeprom.bin matches with device 0. The Media Manufact Region block will be update according to the eeprom.bin.

## 4.12 updateiscsicfg

**cmd:** -updateiscsicfg

**Description:** Update the ISCSI firmware configuration block of NVRAM with that of the NVRAM image provided by “-firmall” command. When “-updateiscsicfg” command line parameter is entered before “-firmall” command, the ISCSI Firmware Configuration Block of the NVRAM will not be preserved. It will get updated by the input file of “-firmall” command. The “-firmall” command is described above.

**Syntax:** [-]updateiscsicfg

**Example:**

```
C:\>b57udiag -c 0 -firmall eeprom.bin -updateiscsicfg
```

Upgrade eeprom on device 0, if device ID embedded in eeprom.bin matches with device 0. The ISCSI Configuration block will be update according to the eeprom.bin.

## 4.13 ver

**cmd:** -ver

**Description:** Display B57UDIAG version and all devices installed.

**Syntax:** [-]-ver

**Example:**

```
C:\>b57udiag -vev
```

## 4.14 pxe

**cmd:** pxe <file name>

**Description:** Program PXE firmware with <file name> specified.

**Syntax:** [-]pxe <file name>

**Example:**

```
C:\>b57udiag -pxe b57pxe.bin -c 0
```

Program PXE code on device 0

#### 4.15 elog

**cmd:** -elog <file name>

**Description:** Pipe error message to file.

**Syntax:** [-]elog <file name>

**Example:**

```
C:\>b57udiag -elog error.txt
```

All error message is pipe to error.txt file.

#### 4.16 pipmi

**cmd:** -pipmi <file>

**Description:** Program IPMI firmware from <file>.

**Syntax:** [-]pipmi

**Example:**

```
C:\>b57udiag -c 0 -pipmi pt5721c6.09
```

Program IPMI code for 5721 device 0

#### 4.17 ipmi

**cmd:** -c 0 -ipmi <value>

**Description:** Enable/Disable IPMI

**Syntax:** [-]ipmi

**Example:**

```
C:\>b57udiag -ipmi 1
```

Enable IPMI on device 0

## 4.18 help

**cmd:** -help

**Description:** Display commands help.

**Syntax:** [-]help

**Example:**

```
C:\>b57udiag -help
```

Commands help is displayed.

## 4.19 uipmi

**cmd:** -c 0 -uipmi <file>

**Description:** Upgrading IPMI firmware from file if IPMI firmware is originally loaded

**Syntax:** [-]uipmi

**Example:**

```
C:\>b57udiag -uipmi impi.bin
```

## 4.20 dir

**cmd:** -c 0 dir

**Description:** Display file directory in NVRAM

**Syntax:** [-]dir

**Example:**

```
C:\>b57udiag -dir
```

## 4.21 pump1

**cmd:** -pump1 <file>

**Description:** Program UMP firmware from file

**Syntax:** [-]pump1

**Example:**

```
C:\>b57udiag -pump1 ump.bin
```



## 4.22 uump

**cmd:** -pump1 <file>

**Description:** Upgrading UMP firmware from file if UMP firmware is originally loaded

**Syntax:** [-]uump

**Example:**

```
C:\>b57udiag -uump ump.bin
```

## 4.23 u

**cmd:** -u <file>

**Description:** Enable/Disable (value = 1/0) UMP in manufacture mode

**Syntax:** [-]u

**Example:**

```
C:\>b57udiag -u
```

## 4.24 piscsi

**cmd:** -piscsi <file>

**Description:** Program iSCSI firmware from file

**Syntax:** [-]piscsi

**Example:**

```
C:\>b57udiag -c 0 -piscsi iscsi.bin
```

## 4.25 piscsicfg

**cmd:** -piscsicfg

**Description:** Force program iSCSI CFG firmware from file. It should be used along with -piscsi

**Syntax:** [-]piscsicfg

**Example:**

```
C:\>b57udiag -c 0 -piscsi iscsi.bin -piscsicfg
```

## 4.26 piscsiprg

**cmd:** -piscsiprg

**Description:** Force program iSCSI PRG firmware from file. It should be used along with -piscsi

**Syntax:** [-]piscsiprg

**Example:**

```
C:\>b57udiag -c 0 -piscsi iscsi.bin -piscsiprg
```

## 4.27 disableeswitch

**cmd:** -disableeswitch

**Description:** Disable the E-Switch on the device that support eswitch, such as 5756. Without this option, PHY loopback test, external loopback test (pkttest -e), and carrier test are performed on both laptop mode and docking mode. With this option, above tests are performed on the default port..

**Syntax:** [-]disableeswitch

**Example:**

```
C:\>b57udiag -c 0 -disableeswitch
```