

Broadcom WiFi/Bluetooth [Guide]

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toleda

Moderator

Joined: May 20, 2010

Messages: 22,904

Motherboard: Asus Maximus VII Impact

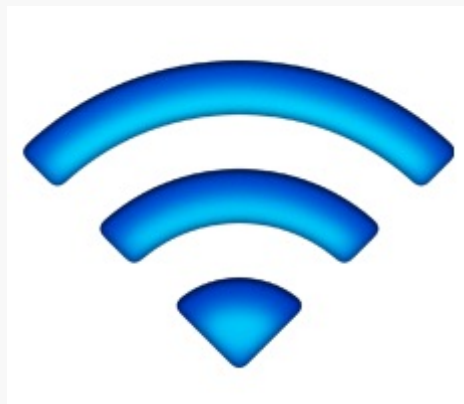
CPU: Core i7-4770K

Graphics: HD7750 + HD4600

Mac: Classic Mac: Mobile Phone: 

Jan 7, 2018 at 12:31 AM

#1



Broadcom WiFi/Bluetooth [Guide]

WiFi and Bluetooth working out of box on macOS with Apple branded Broadcom BCM94360. Enables half mini and M.2 BCM94352 on High Sierra with methods described below. Credit: RehabMan, Sherlock

This thread does not support:

- macOS/Continuity
- Atheros/Qualcomm WiFi/Bluetooth

Change Log

v1.0 - 1/5/2018: 10.13/Broadcom WiFi/Bluetooth support

Previous thread: [\[Guide\] Airport - PCIe Half Mini v2](#)/Deprecated

Broadcom WiFi + BT

- PCIe/x1: BCM94360CD - native WiFi/ac and BT4LE
- PCIe/x1: BCM9331CD - native WiFi and BT4LE
- M.2: BCM943602BAED/DW1830 - native WiFi/ac and BT4LE
 - Laptop issues/solutions, see jaymonkey/Post #138
- M.2: BCM94352Z/AzureWave AW-CE162NF/DW1560 - supports WiFi/ac and BT4LE
- M.2: BCM94350ZAE/DW1820A - native WiFi/ac and BT4LE

- Half mini: BCM94360HMB/AzureWave AW-CB160H - native WiFi/ac and BT4LE
- Half mini: BCM94352 HMB/AzureWave AW-CE123H - supports WiFi/ac and BT4LE
- Half mini: BCM943224 HMB - native WiFi and BT3

Requirements

- macOS 10.9 or newer
- Supported Broadcom WiFi
- Clover v4305 or newer
 - All installed patches must be updated to **Clover Broadcom Patches**, below

Broadcom WiFi/Bluetooth Repo

[wireless_broadcom](#)

Clover Broadcom Patches/Download (View Raw)

[config-bcm94352-130.plist.zip](#)

I. Broadcom WiFi/BT Installation/macOS 10.13+

WiFi Injection Methods (select one method, remove before installing a different method)

1. kext enabler, FakePCIID/RehabMan
 - All supported Broadcom WiFi cards/AirPortBrcm4360.kext
 - README: [RehabMan/OS-X-Fake-PCI-ID](#)
 - Download: [RehabMan / OS-X-Fake-PCI-ID](#)
 - Install with kext installer to ~/Library/Extension:
 - FakePCIID.kext
 - FakePCIID_Broadcom_WiFi.kext
 - Install latest versions as available
 - Download config-bcm94352-1x0.plist.zip (above)
 - use AirPort.Brcm4360 patches (10.12)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.12+-BCM94352-fvco-darkvoid
 - 10.13/10.12 only
 - 10.11/10.10/10.9 patches - see **VII. Previous macOS Support**
2. ssdt, 94352, see [wireless_broadcom/ssdt_arpt](#)
 - 10.13/Handoff not working with AirPort.BrcmNIC-MFG.kext
 - BCM94352 supported/AirPortBrcmNIC-MFG.kext

- Verify IOReg/RP0x (wifi device name)
- Select ssdt_arpt-rp0x-bcm4352
- Download: select View Raw
- Install to EFI/CLOVER/ACPI/patched/
- Download config-bcm94352-1x0.plist.zip (above)
- Paste patch to
config.plist/KernelAndKextPatches/KextsToPatch
 - 10.13-BCM94352-fvco-darkvoid-Sherlocks
 - 10.13 only
 - 10.12/10.11/10.10/10.9 patches - see **VII.**

Previous macOS Support

3. kext, AirportBrcmFixup.kext/lvs1974
 - All supported Broadcom WiFi cards/AirPortBrcmNIC.kext
 - README/Download: [AirportBrcmFixup](#)
 - Lilu.kext README: [GitHub - vit9696/Lilu](#)
 - Lilu.kext Download: [Releases · vit9696/Lilu](#)
 - Install to EFI/CLOVER/kexts/Other/
 - AirportBrcmFixup.kext
 - Lilu.kext
 - Install latest versions as available
 - Non native/inject Brcm device_id (one method)
 - config.plist/Devices/FakeID/WIFI/0x43a014e4

Bluetooth Injection Method (10.13/10.12 /10.11 - all versions, 10.10/10.9 - see **VII. Previous macOS Support**)

1. kext enabler, Brcm.../RehabMan
 1. All supported Broadcom WiFi cards
 2. Correctly configured USB, see [\[Guide\] Creating a Custom SSDT for USBInjectAll.kext](#)
 3. README: [RehabMan/OS-X-BrcmPatchRAM](#)
 4. Download: [RehabMan / OS-X-BrcmPatchRAM](#)
 5. Install to EFI/CLOVER/kexts/Other or kext installer to /System/Library/Extensions:
 - BrcmFirmwareRepo.kext
 - BrcmPatchRAM2.kext
 - Install latest versions as available

II. Additional Capabilities- Handoff, "Airport Extreme," Country Code, Whitelist

Spoiler: Capabilities

Handoff (10.13/10.12/10.11 - all versions, 10.10 - see **VII. Previous macOS Support**)

1. Requires AirPortBrcm4360, AirPortBrcmNIC or AirPortBrcmNIC-MFG/WiFiE
2. Patches/Credit: lisai9093, #346 [Airport - PCIe Half Mini](#)
 - Binary patch: IOBluetoothFamily
 - Find: 48 85 FF 74 47 48 8B 07
 - Replace: 41 BE 0F 00 00 00 EB 44
3. Installation
 - FakePCIID_Broadcom_WiFi.kext - working
 - Download config-bcm94352-1x0.plist.zip (above)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.11+-BT4LE-Handoff-Hotspot-lisai9093
 - Clover/kext patch - **10.13/not working**
 - Download config-bcm94352-1x0.plist.zip (above)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.11+-BT4LE-Handoff-Hotspot-lisai9093
 - AirportBrcmFixup.kext/native - working
 - com.apple.driver.AirPort.BrcmNIC

"Airport Extreme" (10.13/10.12/10.11/10.10 - all versions)

1. Requires AirPortBrcm4360, AirPortBrcmNIC or AirPortBrcmNIC-MFG/WiFi (non Apple branded, cosmetic)
2. Patches/Credit: Credit: Skvo, Post #135, [Airport - PCIe Half Mini](#)
 - Binary patch: AirPortBrcm4360
 - Find: 6B 10 00 00 75 0D
 - Replace: 6B 10 00 00 90 90
3. Installation (one method only)
 - FakePCIID_Broadcom_WiFi.kext/native
 - Clover/kext patch
 - Download config-bcm94352-1x0.plist.zip (above)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.10+-BCM94352-Airport-Extreme-skvo
 - AirportBrcmFixup.kext/native

ROW/WiFi Country Code(10.13/10.12/10.11/10.10 - all versions)

1. Requires AirPortBrcm4360, AirPortBrcmNIC or AirPortBrcmNIC-MFG/WiFi (4 cases, only one applies)
 - Native: US/FCC (Hex: 55 53)
 - If not US/FCC, see Sebinouse, see #2 below
 - Special case/#a, see jaymonkey, Post #2084 [\[Guide\] Airport - PCIe Half Mini v2](#), (UK: solves wake from sleep WiFi performance issue)
 - Special case/XT, see Skvo/Post #837/[\[Guide\] Airport - PCIe Half Mini v2](#)
2. Patches/Credit: Sebinouse, Post #1159/[\[Guide\] Airport - PCIe Half Mini v2](#)
 - Binary patch: AirPortBrcm4360 (one patch only)
 - Find: 41 83 FC FF 74 2C 48
 - Replace: 66 C7 06 55 53 EB 2B (55 53 - US)
 - Replace: 66 C7 06 xx xx EB 2B (xx xx - your CC)
 - Replace: 66 C7 06 23 61 EB 2B (#a, special case)
 - Find: 58 54 00 2B 18 2C 21 00 20 (XT/ROW, special case)
 - Replace: 58 54 00 0A 36 1C 47 00 0A
 - Valid AirPortBrcm4360 CCs:
 - AE AF AR AT AU AZ BD BE BG BN BR BT BY CA CH CL CN CO CR CY CZ DE DK DO EC EE EG ES FI FR GB GR GT GU HK HN HR HU ID IE IL IN IS IT JM JO JP KH KR KZ LA LI LK LT LU LV MA MM MN MO MT MV MX MY NI NL NO NP NZ PA PE PH PK PL PR PT PY RO RS RU SA SE SG SI SK SV TH TR TT TW UA US UY VE VI VN ZA
 - Convert CC to Hexadecimal - [ASCII to Hex](#)(i.e., US > 55 53)
3. Installation
 - FakePCIID_Broadcom_WiFi.kext
 - Download config-bcm94352-1x0.plist.zip (above)
 - use AirPort.Brcm4360 patches (10.12)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.10-10.11-BCM94352-5GHz-US-FCC-darkvoid
 - 10.12 US/FCC native, no patch required
 - edit BCM943xx/US-FCC for CC (above)
 - 10.11+-BCM94352-CC=#a-Ramalama

- 10.11+-BCM94352-CC=XT-Skvo
- Clover/kext patch (not tested)
 - Download config-bcm94352-1x0.plist.zip (above)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.13-BCM94352-CC-Sebinouse-(edit 55 53 to CC)-PMheart
 - 10.13 US/FCC native, no patch
 - edit BCM943xx/US-FCC for CC (above)
 - 10.13-BCM94352-CC=#a-Ramalama
 - 10.13-BCM94352-CC=XT-Skvo
- AirportBrcmFixup.kext
 - config.plist/Boot/Arguments/Boot-arg "brcmfx-country=CC"

WiFi Whitelist (10.13/10.12/10.11/10.10 - all versions)

1. Requires AirPortBrcm4360, AirPortBrcmNIC or AirPortBrcmNIC-MFG/WiFi
 - Skvo, Post #115/[Airport - PCIe Half Mini](#)
 - Whitelist
 - MacBookAir5,2/BCM94331xx (0x4331)
 - iMac14,3/BCM943224xx (0x4353)
2. Patch/Disable Whitelist/Credit: RehabMan, Post #1722/[\[Guide\] Airport - PCIe Half Mini v2](#)
 - Binary patch: AirPortBrcm4360
 - Find: 31 DB 4C 3B 65 D8 75 12
 - Replace: 31 DB FF C3 90 90 90 90
3. Installation
 - FakePCIID_Broadcom_WiFi.kext
 - Download config-bcm94352-1x0.plist.zip (above)
 - use AirPort.Brcm4360 patches (10.12)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.11+-Disable-Whitelist-check-RehabMan
 - Clover patch (not tested)
 - Download config-bcm94352-1x0.plist.zip (above)
 - Paste patch to config.plist/KernelAndKextPatches/KextsToPatch
 - 10.13-Disable-Whitelist-check-RehabMan
 - AirportBrcmFixup.kext/native

III. Tools - Mount EFI, IOReg, MaciASL, Xcode

Spoiler: Tools

1. [Community Software](#)/EFI Mounter v3
2. [IORegistryExplorer v2.1.zip](#)(select View Raw, double click)
3. [DPCIManager](#) (select View Raw, double click)
4. [RehabMan/OS-X-MaciASL](#)
5. Property List Editors
 - [Xcode on the Mac App Store](#)
 - Property List Editor, PlistEdit Pro, etc.
 - TextEdit, TextWrangler (last resort)

IV. Problem Reporting - Post to this thread with requested information attached

Spoiler: Reporting

1. Description of WiFi/Bluetooth problem
2. OS X version/motherboard model/BIOS version/processor/graphics
3. Procedure/Guide used
4. Copy of IOReg - IOReg_v2.1/File/Save a Copy As..., verify file (**III. Tools** 2.)
5. Screenshots
 - DPCIManager/Status (**III. Tools** 3.)
 - System Information/Hardware/Network/WiFi
 - System Information/Hardware/Bluetooth
 - System Information/Hardware/USB (Select Bluetooth device)
6. Clover (if installed)
 - EFI/CLOVER/config.plist
 - DPCIManager/Misc/Boot Log
 - EFI/CLOVER/ACPI/Patched/dsdt.aml (if WiFi edited)
 - EFI/CLOVER/ACPI/Patched/ssdt.aml (if WiFi edited)
7. Put all files in a folder, compress and attach post on this thread

V. Requirements - macOS, native IO80211Family, Intel motherboards, SIP

Spoiler: Specifics

1. macOS

1. 10.13+, see 4. **SIP/1.**
2. 10.12+, see 4. **SIP/1.**
3. 10.11+, see 4. **SIP/1.**
4. 10.10+, see 4. **SIP/2.**
5. 10.9+
6. 10.8.5+

2. Native IO80211Family.kext

1. Remove any airport kext enabler
2. Remove/Disable Clover Airport patches
 - config.plist/ACPI/DSDT/Fixes/FixAirport_4000/ set NO
 - config.plist/Devices/FakeID/Wifi/?, set 0x0

3. Intel Motherboards

1. Desktop 300/200/100/9/8/7/6 Series
2. Workstation X299/X99/X79

4. SIP (required to install/edit kexts and rebuild cache with unsigned kexts)

1. System Integrity Protection (SIP)
2. 10.13/10.12/10.11:
 - CLOVER/config.plist/RtVariables/
 - CsrActiveConfig/0x3 or 0x67
3. 10.10:
 - Clover/config.plist/Boot/
 - Arguments/kext-dev-mode=1

VI. Broadcom - WiFi and Bluetooth, PCIe, M.2 and Half Mini

Spoiler: Broadcom

Details - macOS/Native

- BCM94360CD, 2.4/5 GHz, ac+abgn, 3 Stream, 1300 Mbs + BT4LE (PCIe x1, not half mini)
- BCM94331CD - 2.4/5 GHz, abgn, 3 stream, 450 Mbs + BT4LE (PCIe x1, not half mini)
- BCM943224 HMB, 2.4/5 GHz abgn, 2 Stream, 300 Mbs + BT3

Broadcom Device_IDs (Vendor_ID: 14e4)

1. Supported Device_ID (native)
 - 0x43ba- BCM943602BAED - 2.4/5 GHz, ac+abgn, 3 Stream, 1300 Mbs + BT4LE
 - 0x43a3 - BCM94350ZAE - 2.4/5 GHz, ac+abgn, 2 Stream, 867 Mbs + BT4LE

- 0x43a0 - BCM94360CD, 2.4/5 GHz, ac+abgn, 3 Stream, 1300 Mbs + BT4LE
 - 0x4353 - BCM943224 HMB, 2.4/5 GHz abgn, 2 Stream, 300 Mbs + BT3
 - 10.10+/Whitelist
 - 0x4353 - BCM943224 HMS, 2.4/5 GHz abgn, 2 Stream, 300 Mbs
 - 10.10+/Whitelist
 - 0x4331 - BCM94331CD - 2.4/5 GHz, abgn, 3 stream, 450 Mbs + BT4LE
 - 10.10+/Whitelist
2. Supported Device_IDs (injection required)
- 0x43b1 - BCM94352 HMB/Z, 2.4/5 GHz, ac+abgn, 2 stream, 867 Mbs + BT4LE
 - 0x4357 - BCM943225 HMB, 2.4 GHz, bgn, 2 stream, 100 Mbs + BT3
3. Unsupported Device_ID
- 0x4359 - BCM943228 HMB, 2.4/5 GHz, abgn, 2 stream, 300 Mbs + BT4

VII. Previous macOS Support -

10.12/10.11/10.10/10.9

Spoiler: Previous

WiFi/94352 (10.12/10.11/10.10/10.9 - all version)

1. 10.12 - fvco
 1. Credit: the-darkvoid #1, [\[FIX\] macOS Sierra DP1 BCM94532Z WiFi](#)
 2. Binary patch: AirPortBrcm4360
 - Find: 81 F9 52 AA 00 00 75 29
 - Replace: 81 F9 52 AA 00 00 66 90
 3. Installation
 - Clover/kext patchDownload (View Raw):
 - config-bcm94352-1x0.plist.zip (above)
 - Paste patch to
config.plist/KernelAndKextPatches/KextsToPatch
 - 10.12-BCM94352-fvco-darkvoid
2. 10.11/10.10 - 5 GHz
 1. Credit: the-darkvoid #973, [\[Guide\] Airport - PCIe Half Mini v2](#)
 2. Binary patch: AirPortBrcm4360
 - Find: 41 83 FC FF 74 2C 48
 - Replace: 66 C7 06 55 53 EB 2B
 3. Installation
 - Clover/kext patchDownload (View Raw):

- config-bcm94352-1x0.plist.zip (above)
- Paste patch to
config.plist/KernelAndKextPatches/KextsToPatch
 - 10.10-10.11-BCM94352-5GHz-US-FCC-darkvoid

3. 10.9 - 5 GHz

- Credit: Skvo #246, [\[Guide\] Airport - PCIe Half Mini v2](#)
- Binary patch: AirPortBrcm4360
 - Find: 01 58 54
 - Replace: 01 58 58
- Installation
 - Clover/kext patchDownload (View Raw):
 - config-bcm94352-1x0.plist.zip (above)
 - Paste patch to
config.plist/KernelAndKextPatches/KextsToPatch
 - 10.9-BCM94352-5 GHz - Skvo

BT (10.10/10.9 - all versions)

1. kext enabler, BrcmPatchRAM/darkvoid
2. [Releases · robvanoostenrijk/BrcmPatchRAM · GitHub](#)
 - BrcmPatchRAM.kext
3. Installation (1 or 2, not both)
 - Clover/EFI/CLOVER/kexts/10.10 (or 10.9)
 - /System/Library/Extensions

BT Handoff (10.10 - all versions)

1. [Wi-Fi, Bluetooth, AirDrop, Handoff and Instant Hotspot](#)
2. Patch/Credit: Dotkterdok
 1. 10.10.2 and newer: Handoff (working)/Hotspot (not tested)
 1. Binary patch: IOBluetoothFamily
 - Find: 48 85 C0 74 5C 0F B7 48
 - Replace: 41 BE 0F 00 00 00 EB 59
 2. 10.10 and 10.10.1, Handoff (working)/Hotspot
 1. Binary patch: IOBluetoothFamily
 - Find: 8B 87 8C 01 00 00
 - Replace: B8 0F 00 00 00 90
3. Installation
 1. Clover/kext patch
 1. Download (View Raw): config-bcm94352-1x0.plist.zip (above)
 2. Paste patch to
config.plist/KernelAndKextPatches/KextsToPatch

- 10.10-10.10.1-BT4LE-Handoff-Hotspot-Dokterdok
- 10.10.2+-BT4LE-Handoff-Hotspot-Dokterdok

VIII. Installed WiFi/BT? - Vendor ID, Product IDs

Spoiler: Installed?

1. Determine WiFi Card Device_ID

- Download, install and run DPCIManager (**III. Tools 3.**)
- Find Vendor-ID 14E4 (Broadcom) in DPCIManager/PCI
- Note Device_ID and verify with supported Device_IDs above.
- Example: Vendor/Device ID is 14E4/4357 > BCM943225

2. Determine WiFi Card/Bluetooth ProductID/VendorID

- System Information/Hardware/USB
- Select ".. Bluetooth..."/BCM207020A
- ProductID/Convert hex to decimal/Ex. 0x217d = decimal 8573
- VendorID/Convert hex to decimal/Ex. 0x0a5c = decimal 2652 (Broadcom)

Credit

THE KiNG <http://www.projectosx.com/forum/index.php?showtopic=1416>

Andy Vandijck <http://www.insanelymac.com/forum/index.php?showtopic=234570>

Skvo [Broadcom BCM94352HMB - the new flagship of kombomoduley supporting 802.11ac \(41855\) | AppleLife](#)

Skvo, #758/[\[Guide\] Airport - PCIe Half Mini v2](#)

the-darkvoid [\[FIX\] macOS Sierra DP1 BCM94532Z WiFi](#)

lisai9093, #346 [Airport - PCIe Half Mini](#)

Sherlocks, #297, [\[pre-release\] macOS High Sierra](#)

RehabMan, #90