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Hardware

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Installation instructions

Preparation

Current EA8500 stock firmware (since 1.1.4 or 1.1.5, depending on if your Router is a US or an international version) does not allow to flash 3rd party software any more. If even the 'previous' firmware is too new (try 'return to previous version?'), the first step is to downgrade to stock firmware, e. g. 1.1.3.166845. An extremely helpful page containing links to 1.1.3 and 1.1.4 versions of EA8500 stock firmware and checksums is this: <https://www.linksys.com/us/support-article?articleNum=208639> (checked on 06/02/2019)

MRJCD has put together a very good, and detailed, [how-to flash](#) from newer, locked-out, stock builds to dd-wrt using the serial port on the EA8500. Many newer units had their serial header pins removed, so you either need to find a [Molex KK 5ckt header](#) and solder it on.

[Read this about using a usb-to-ttl adapter so you don't get weird characters from putty](#)

Upload via Web UI

Reset the router first (press the reset button until it reboots). Ignore the warning of 'no internet access' being available and go to manual setup. Read the README on <http://www.desipro.de/ddwrt/K3-AC-IPQ806X/>.

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Upload the Kong Build EA8500-factory-to-ddwrt.img for a US router or EA8500WW-factory-to-ddwrt.img for an international one available there. When the installation is complete (a ?Reboot? button appears on the UI), reset the router again. It will boot into dd-wrt, afterwards. You have reached your destination. Note: the BS factory-to-ddwrt build I tried did not boot. After some time, the boot loader switched back to the 1.1.3 stock firmware flashed on preparation. The reaction on the dd-wrt forum was, that BS factory-to-ddwrt builds never seem to have worked.

Configuration

Do not forget to set the WiFi Regulatory Domain to the country you are operating the router in (check ?Advanced Settings?). You may want to follow the recommendations for the WiFi settings here: [QCA wireless settings](#)

Forum Thread

[DD-WRT Forum discussing thread](#)

Builds

Builds can be found here: [Where can I download firmware?](#) (linksys-ea8500 folder).

Boot Info

This router's flash has dual system design.

ubootenv get boot_part to know which partition is the currently active boot partition; use ubootenv set boot_part 1 or 2 to active the partition as a boot partition.

boot log r30082

```
[ 0.000000] Booting Linux on physical CPU 0x0
[ 0.000000] Linux version 3.18.36 (root@seg-desktop) (gcc version 5.2.0 (OpenWrt GCC 5.2.0 r47
[ 0.000000] CPU: ARMv7 Processor [512f04d0] revision 0 (ARMv7), cr=10c5787d
[ 0.000000] CPU: PIPT / VIPT nonaliasing data cache, PIPT instruction cache
[ 0.000000] Machine model: Linksys EA8500 WiFi Router
[ 0.000000] Ignoring memory range 0x41500000 - 0x42000000
[ 0.000000] Memory policy: Data cache writealloc
[ 0.000000] On node 0 totalpages: 122880
[ 0.000000] free_area_init_node: node 0, pgdat c0716840, node_mem_map ddc39000
[ 0.000000] Normal zone: 960 pages used for memmap
[ 0.000000] Normal zone: 0 pages reserved
[ 0.000000] Normal zone: 122880 pages, LIFO batch:31
[ 0.000000] PERCPU: Embedded 9 pages/cpu @ddc13000 s7552 r8192 d21120 u36864
[ 0.000000] pcpu-alloc: s7552 r8192 d21120 u36864 alloc=9*4096
[ 0.000000] pcpu-alloc: [0] 0 [0] 1
[ 0.000000] Built 1 zonelists in Zone order, mobility grouping on. Total pages: 121920
```

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```
[ 0.000000] Kernel command line: console=ttyMSM0,115200n8 rootfstype=squashfs noinitrd console
[ 0.000000] PID hash table entries: 2048 (order: 1, 8192 bytes)
[ 0.000000] Dentry cache hash table entries: 65536 (order: 6, 262144 bytes)
[ 0.000000] Inode-cache hash table entries: 32768 (order: 5, 131072 bytes)
[ 0.000000] Memory: 481272K/491520K available (3822K kernel code, 282K rwdata, 1104K rodata, 1
[ 0.000000] Virtual kernel memory layout:
[ 0.000000]     vector : 0xffff0000 - 0xffff1000    ( 4 kB)
[ 0.000000]     fixmap : 0xffc00000 - 0xffe00000    (2048 kB)
[ 0.000000]     vmalloc : 0xde800000 - 0xff000000    ( 520 MB)
[ 0.000000]     lowmem  : 0xc0000000 - 0xde000000    ( 480 MB)
[ 0.000000]     pkmap   : 0xbfe00000 - 0xc0000000    ( 2 MB)
[ 0.000000]     modules : 0xbf000000 - 0xbfe00000    ( 14 MB)
[ 0.000000]     .text : 0xc0208000 - 0xc06d7e4c    (4928 kB)
[ 0.000000]     .init : 0xc06d8000 - 0xc0706000    ( 184 kB)
[ 0.000000]     .data : 0xc0706000 - 0xc074ca44    ( 283 kB)
[ 0.000000]     .bss : 0xc074ca44 - 0xc07b1bc4    ( 405 kB)
[ 0.000000] Preemptible hierarchical RCU implementation.
[ 0.000000]   RCU restricting CPUs from NR_CPUS=4 to nr_cpu_ids=2.
[ 0.000000] RCU: Adjusting geometry for rcu_fanout_leaf=16, nr_cpu_ids=2
[ 0.000000] NR_IRQS:16 nr_irqs:16 16
[ 0.000013] sched_clock: 32 bits at 6MHz, resolution 160ns, wraps every 687194767200ns
[ 0.000028] Switching to timer-based delay loop, resolution 160ns
[ 0.000437] Calibrating delay loop (skipped), value calculated using timer frequency.. 12.50 B
[ 0.000461] pid_max: default: 32768 minimum: 301
[ 0.000707] Mount-cache hash table entries: 1024 (order: 0, 4096 bytes)
[ 0.000724] Mountpoint-cache hash table entries: 1024 (order: 0, 4096 bytes)
[ 0.001372] CPU: Testing write buffer coherency: ok
[ 0.001637] CPU0: thread -1, cpu 0, socket 0, mpidr 80000000
[ 0.002139] Setting up static identity map for 0x422131d8 - 0x42213230
[ 0.063436] CPU1: Booted secondary processor
[ 0.063570] CPU1: thread -1, cpu 1, socket 0, mpidr 80000001
[ 0.063681] Brought up 2 CPUs
[ 0.063704] SMP: Total of 2 processors activated (25.00 BogomIPS).
[ 0.063715] CPU: All CPU(s) started in SVC mode.
[ 0.078756] VFP support v0.3: implementor 51 architecture 0 part 4d variant 2 rev 0
[ 0.079304] pinctrl core: initialized pinctrl subsystem
[ 0.079746] regulator-dummy: no parameters
[ 0.089802] NET: Registered protocol family 16
[ 0.090132] DMA: preallocated 256 KiB pool for atomic coherent allocations
[ 0.113850] cpuidle: using governor ladder
[ 0.144867] cpuidle: using governor menu
[ 0.164518] qcom_rpm 108000.rpm: RPM firmware 1.0.126
[ 0.164580] qcom_rpm 108000.rpm: failed to mark ack irq as wakeup
[ 0.164638] qcom_rpm 108000.rpm: failed to mark wakeup irq as wakeup
[ 0.208938] smb208-s1a: 1050 <--> 1150 mV
[ 0.209261] smb208-s1b: 1050 <--> 1150 mV
[ 0.209568] smb208-s2a: 800 <--> 1250 mV
[ 0.209895] smb208-s2b: 800 <--> 1250 mV
[ 0.210386] pps_core: LinuxPPS API ver. 1 registered
[ 0.210399] pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giometti <giometti@lin
[ 0.210438] PTP clock support registered
[ 0.211591] pcie_init: pcie_init: unable to create IPC log context for pcie0-short
[ 0.211607] pcie_init: pcie_init: unable to create IPC log context for pcie0-long
[ 0.211617] pcie_init: pcie_init: unable to create IPC log context for pcie1-short
[ 0.211627] pcie_init: pcie_init: unable to create IPC log context for pcie1-long
[ 0.212038] Switched to clocksource dg_timer
[ 0.213480] NET: Registered protocol family 2
[ 0.214159] TCP established hash table entries: 4096 (order: 2, 16384 bytes)
[ 0.214195] TCP bind hash table entries: 4096 (order: 3, 32768 bytes)
[ 0.214248] TCP: Hash tables configured (established 4096 bind 4096)
[ 0.214295] TCP: reno registered
[ 0.214316] UDP hash table entries: 256 (order: 1, 8192 bytes)
```

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[ 0.214337] UDP-Lite hash table entries: 256 (order: 1, 8192 bytes)
[ 0.214581] NET: Registered protocol family 1
[ 0.214643] PCI: CLS 0 bytes, default 64
[ 0.215771] futex hash table entries: 512 (order: 3, 32768 bytes)
[ 0.216748] squashfs: version 3.0 (2006/03/15) Phillip Lougher
[ 0.216790] msgmni has been set to 939
[ 0.219364] io scheduler noop registered
[ 0.219387] io scheduler deadline registered (default)
[ 0.220805] lb500000.pci supply vdda not found, using dummy regulator
[ 0.220885] lb500000.pci supply vdda_phy not found, using dummy regulator
[ 0.220955] lb500000.pci supply vdda_refclk not found, using dummy regulator
[ 0.250862] qcom-pcie lb500000.pci: PCI host bridge to bus 0000:00
[ 0.250886] pci_bus 0000:00: root bus resource [io 0xfe00000-0xfffff] (bus address [0x1fc0000
[ 0.250904] pci_bus 0000:00: root bus resource [mem 0x08000000-0x0fdfffff]
[ 0.250923] pci_bus 0000:00: root bus resource [bus 00-ff]
[ 0.250972] pci 0000:00:00.0: [17cb:0101] type 01 class 0x060400
[ 0.251120] pci 0000:00:00.0: supports D1
[ 0.251135] pci 0000:00:00.0: PME# supported from D0 D1 D3hot
[ 0.251465] PCI: bus0: Fast back to back transfers disabled
[ 0.251816] pci 0000:01:00.0: [168c:0040] type 00 class 0x028000
[ 0.252018] pci 0000:01:00.0: reg 0x10: [mem 0x00000000-0x001fffff 64bit]
[ 0.253055] pci 0000:01:00.0: PME# supported from D0 D3hot D3cold
[ 0.253498] PCI: bus1: Fast back to back transfers disabled
[ 0.253518] pci_bus 0000:01: busn_res: [bus 01-ff] end is updated to 01
[ 0.253671] pci 0000:00:00.0: BAR 8: assigned [mem 0x08000000-0x081fffff]
[ 0.253694] pci 0000:01:00.0: BAR 0: assigned [mem 0x08000000-0x081fffff 64bit]
[ 0.253805] pci 0000:00:00.0: PCI bridge to [bus 01]
[ 0.253825] pci 0000:00:00.0: bridge window [mem 0x08000000-0x081fffff]
[ 0.254262] aer 0000:00:00.0:pcie02: service driver aer loaded
[ 0.254605] lb700000.pci supply vdda not found, using dummy regulator
[ 0.254690] lb700000.pci supply vdda_phy not found, using dummy regulator
[ 0.254768] lb700000.pci supply vdda_refclk not found, using dummy regulator
[ 0.284243] qcom-pcie lb700000.pci: PCI host bridge to bus 0001:00
[ 0.284262] pci_bus 0001:00: root bus resource [io 0x31e10000-0xfffff] (bus address [0x63c000
[ 0.284277] pci_bus 0001:00: root bus resource [mem 0x2e000000-0x31dfffff]
[ 0.284302] pci_bus 0001:00: root bus resource [bus 00-ff]
[ 0.284345] pci 0001:00:00.0: [17cb:0101] type 01 class 0x060400
[ 0.284465] pci 0001:00:00.0: supports D1
[ 0.284478] pci 0001:00:00.0: PME# supported from D0 D1 D3hot
[ 0.284788] PCI: bus0: Fast back to back transfers disabled
[ 0.285130] pci 0001:01:00.0: [168c:0040] type 00 class 0x028000
[ 0.285327] pci 0001:01:00.0: reg 0x10: [mem 0x00000000-0x001fffff 64bit]
[ 0.286266] pci 0001:01:00.0: PME# supported from D0 D3hot D3cold
[ 0.286696] PCI: bus1: Fast back to back transfers disabled
[ 0.286714] pci_bus 0001:01: busn_res: [bus 01-ff] end is updated to 01
[ 0.286931] pci 0001:00:00.0: BAR 8: assigned [mem 0x2e000000-0x2e1fffff]
[ 0.286951] pci 0001:01:00.0: BAR 0: assigned [mem 0x2e000000-0x2e1fffff 64bit]
[ 0.287057] pci 0001:00:00.0: PCI bridge to [bus 01]
[ 0.287075] pci 0001:00:00.0: bridge window [mem 0x2e000000-0x2e1fffff]
[ 0.287468] aer 0001:00:00.0:pcie02: service driver aer loaded
[ 0.287807] lb900000.pci supply vdda not found, using dummy regulator
[ 0.287885] lb900000.pci supply vdda_phy not found, using dummy regulator
[ 0.287956] lb900000.pci supply vdda_refclk not found, using dummy regulator
[ 0.418962] qcom-pcie lb900000.pci: link initialization failed
[ 0.421079] qcom-pcie lb900000.pci: PCI host bridge to bus 0002:00
[ 0.421098] pci_bus 0002:00: root bus resource [io 0x35e20000-0xfffff] (bus address [0x6bc000
[ 0.421114] pci_bus 0002:00: root bus resource [mem 0x32000000-0x35dfffff]
[ 0.421131] pci_bus 0002:00: root bus resource [bus 00-ff]
[ 0.421181] PCI: bus0: Fast back to back transfers enabled
[ 0.423893] gsbi 16300000.gsbi: GSBI port protocol: 6 crci: 0
[ 0.425237] Serial: 8250/16550 driver, 2 ports, IRQ sharing disabled
[ 0.426268] msm_serial 16340000.serial: msm_serial: detected port #0
```

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```
[ 0.426365] msm_serial 16340000.serial: uartclk = 1843200
[ 0.426421] 16340000.serial: ttyMSM0 at MMIO 0x16340000 (irq = 184, base_baud = 115200) is a
[ 0.426478] msm_serial: console setup on port #0
[ 1.153373] console [ttyMSM0] enabled
[ 1.158150] msm_serial: driver initialized
[ 1.164979] nand: device found, Manufacturer ID: 0x01, Chip ID: 0xal
[ 1.165420] nand: AMD/Spansion S34MS01G2
[ 1.171929] nand: 128MiB, SLC, page size: 2048, OOB size: 64
[ 1.175911] Scanning device for bad blocks
[ 1.587202] random: nonblocking pool is initialized
[ 1.890159] 19 ofpart partitions found on MTD device qcom-nandc
[ 1.890188] Creating 19 MTD partitions on "qcom-nandc":
[ 1.894970] 0x000000000000-0x000000040000 : "SBL1"
[ 1.901018] 0x000000040000-0x000000180000 : "MIBIB"
[ 1.905803] 0x000000180000-0x0000002c0000 : "SBL2"
[ 1.910519] 0x0000002c0000-0x000000540000 : "SBL3"
[ 1.915456] 0x000000540000-0x000000660000 : "DDRCONFIG"
[ 1.920162] 0x000000660000-0x000000780000 : "SSD"
[ 1.925327] 0x000000780000-0x000000a00000 : "TZ"
[ 1.930144] 0x000000a00000-0x000000c80000 : "RPM"
[ 1.934907] 0x000000c80000-0x000000dc0000 : "art"
[ 1.939445] 0x000000dc0000-0x000000ec0000 : "APPSBL"
[ 1.944186] 0x000000ec0000-0x000000f00000 : "u_env"
[ 1.949186] 0x000000f00000-0x000000f40000 : "s_env"
[ 1.953858] 0x000000f40000-0x000000f80000 : "devinfo"
[ 1.958596] 0x000000f80000-0x000003780000 : "linux"
[ 1.963936] 0x000001280000-0x000003780000 : "rootfs"
[ 1.968565] mtd: partition "rootfs" set to be root filesystem
[ 1.973000] 0x000003780000-0x000005f40000 : "linux2"
[ 1.979412] 0x000003a80000-0x000005f40000 : "rootfs2"
[ 1.984535] 0x000005f40000-0x000005f80000 : "nvram"
[ 1.989356] 0x000005f80000-0x000008000000 : "dwr"
[ 1.995443] IMQ: autocreate imq0 NS c0746d00
[ 1.998654] IMQ: autocreate imq1 NS c0746d00
[ 2.002709] IMQ driver loaded successfully. (numdevs = 16, numqueues = 1)
[ 2.006947] Hooking IMQ after NAT on PREROUTING.
[ 2.013788] Hooking IMQ before NAT on POSTROUTING.
[ 2.018720] libphy: Fixed MDIO Bus: probed
[ 2.023595] libphy: GPIO Bitbanged MDIO: probed
[ 2.048226] switch0: Atheros AR8337 rev. 2 switch registered on gpio-0
[ 2.262049] tun: Universal TUN/TAP device driver, 1.6
[ 2.262074] tun: (C) 1999-2004 Max Krasnyansky <maxk@qualcomm.com>
[ 2.267649] stmmac - user ID: 0x10, Synopsys ID: 0x37
[ 2.272151] Ring mode enabled
[ 2.277379] DMA HW capability register supported
[ 2.280224] Enhanced/Alternate descriptors
[ 2.284996] Enabled extended descriptors
[ 2.288989] RX Checksum Offload Engine supported (type 2)
[ 2.293232] TX Checksum insertion supported
[ 2.298537] Wake-Up On Lan supported
[ 2.303122] Enable RX Mitigation via HW Watchdog Timer
[ 2.307792] stmmac - user ID: 0x10, Synopsys ID: 0x37
[ 2.311558] Ring mode enabled
[ 2.316864] DMA HW capability register supported
[ 2.319718] Enhanced/Alternate descriptors
[ 2.324492] Enabled extended descriptors
[ 2.328484] RX Checksum Offload Engine supported (type 2)
[ 2.332718] TX Checksum insertion supported
[ 2.338032] Wake-Up On Lan supported
[ 2.342606] Enable RX Mitigation via HW Watchdog Timer
[ 2.346729] PPP generic driver version 2.4.2
[ 2.351204] PPP BSD Compression module registered
```

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[ 2.355661] PPP Deflate Compression module registered
[ 2.360192] PPP MPPE Compression module registered
[ 2.365293] NET: Registered protocol family 24
[ 2.369929] PPTP driver version 0.8.5
[ 2.374533] i2c /dev entries driver
[ 2.383827] Speed bin: 0
[ 2.383851] PVS bin: 1
[ 2.385839] platform cpufreq-krait.0: Driver cpufreq-krait requests probe deferral
[ 2.389636] L2 @ QSB rate. Forcing new rate.
[ 2.395475] L2 @ 387500 KHz
[ 2.399694] CPU0 @ 800000 KHz
[ 2.402089] CPU1 @ QSB rate. Forcing new rate.
[ 2.405382] CPU1 @ 384000 KHz
[ 2.409858] GACT probability NOT on
[ 2.412683] Mirror/redirect action on
[ 2.415922] Simple TC action Loaded
[ 2.420513] netem: version 1.3
[ 2.423160] u32 classifier
[ 2.426130]     Performance counters on
[ 2.428824]     input device check on
[ 2.432630]     Actions configured
[ 2.436420] Netfilter messages via NETLINK v0.30.
[ 2.439737] nf_conntrack version 0.5.0 (7519 buckets, 30076 max)
[ 2.444869] nf_conntrack_rtsp v0.7 loading
[ 2.451058] xt_time: kernel timezone is -0000
[ 2.454574] ip_set: protocol 6
[ 2.459144] gre: GRE over IPv4 demultiplexor driver
[ 2.462078] nf_nat_rtsp v0.7 loading
[ 2.466722] ip_tables: (C) 2000-2006 Netfilter Core Team
[ 2.470682] TCP: bic registered
[ 2.475783] TCP: cubic registered
[ 2.478575] TCP: westwood registered
[ 2.482048] TCP: highspeed registered
[ 2.485776] TCP: hybla registered
[ 2.489254] TCP: htcp registered
[ 2.492618] TCP: vegas registered
[ 2.495849] TCP: veno registered
[ 2.499064] TCP: scalable registered
[ 2.502427] TCP: lp registered
[ 2.505919] TCP: yeah registered
[ 2.508784] TCP: illinois registered
[ 2.512175] NET: Registered protocol family 17
[ 2.515873] bridge: automatic filtering via arp/ip/ip6tables has been deprecated. Update your
[ 2.520031] Bridge firewalling registered
[ 2.532826] 8021q: 802.1Q VLAN Support v1.8
[ 2.536774] Registering SWP/SWPB emulation handler
[ 2.544203] trying to register driver generic_krait
[ 2.545512] Frequency table not initialized.
[ 2.550388] Frequency table not initialized.
[ 2.554908] Frequency table not initialized.
[ 2.559034] Frequency table not initialized.
[ 2.563369] Frequency table not initialized.
[ 2.568707] Frequency table not initialized.
[ 2.571863] Frequency table not initialized.
[ 2.576126] Frequency table not initialized.
[ 2.580299] Frequency table not initialized.
[ 2.584607] Frequency table not initialized.
[ 2.588822] driver generic_krait up and running
[ 2.593177] searching for nvram
[ 2.597336] nvram size = -1066981562
[ 2.621444] drivers/rtc/hctosys.c: unable to open rtc device (rtc0)
[ 2.629313] UBIFS error (pid 1): ubifs_mount: cannot open "ubi0:rootfs", error -19
```

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```
[ 2.632043] VFS: Mounted root (squashfs filesystem) readonly on device 31:14.
[ 2.635997] Freeing unused kernel memory: 184K (c06d8000 - c0706000)
[ 5.040792] UBIFS error (pid 737): ubifs_mount: cannot open "ubi0:rootfs_data", error -19
[ 5.767687] Loading modules backported from Linux version wt-2016-05-12-0-g7a54796
[ 5.767716] Backport generated by backports.git backports-20160216-0-ge3c56e4
[ 6.214157] ath10k_pci 0000:01:00.0: enabling device (0140 -> 0142)
[ 6.214728] ath10k_pci 0000:01:00.0: pci irq msi oper_irq_mode 2 irq_mode 0 reset_mode 0
[ 6.344548] ath10k_pci 0000:01:00.0: Direct firmware load for ath10k/pre-cal-pci-0000:01:00.0.
[ 6.344599] ath10k_pci 0000:01:00.0: Falling back to user helper
[ 6.622837] ath10k_pci 0000:01:00.0: qca99x0 hw2.0 target 0x01000000 chip_id 0x003b01ff sub 16
[ 6.622876] ath10k_pci 0000:01:00.0: kconfig debug 1 debugfs 1 tracing 0 dfs 0 testmode 0
[ 6.632916] ath10k_pci 0000:01:00.0: firmware ver 10.4.1.00030-1 api 5 features no-p2p crc32 d
[ 7.556229] ipq806x-gmac-dwmac 37200000.ethernet eth0: Link is Up - 1Gbps/Full - flow control
[ 7.672431] ipq806x-gmac-dwmac 37400000.ethernet eth1: Link is Up - 1Gbps/Full - flow control
[ 8.672423] ath10k_pci 0000:01:00.0: unable to read from the device
[ 8.672449] ath10k_pci 0000:01:00.0: could not execute otp for board id check: -110
[ 8.677492] ath10k_pci 0000:01:00.0: failed to get board id from otp: -110
[ 8.697481] ath10k_pci 0000:01:00.0: failed to fetch board data for bus=pci,vendor=168c,device
[ 8.697654] ath10k_pci 0000:01:00.0: board_file api 1 bmi_id N/A crc32 62700264
[ 10.091984] ath10k_pci 0000:01:00.0: htt-ver 2.2 wmi-op 6 htt-op 4 cal file max-sta 512 raw 0
[ 10.156841] ath: EEPROM regdomain: 0x0
[ 10.156851] ath: EEPROM indicates default country code should be used
[ 10.156858] ath: doing EEPROM country->regdmn map search
[ 10.156869] ath: country maps to regdmn code: 0x3a
[ 10.156877] ath: Country alpha2 being used: US
[ 10.156885] ath: Regpair used: 0x3a
[ 10.168067] ath10k_pci 0001:01:00.0: enabling device (0140 -> 0142)
[ 10.168769] ath10k_pci 0001:01:00.0: pci irq msi oper_irq_mode 2 irq_mode 0 reset_mode 0
[ 10.304348] ath10k_pci 0001:01:00.0: Direct firmware load for ath10k/pre-cal-pci-0001:01:00.0.
[ 10.304387] ath10k_pci 0001:01:00.0: Falling back to user helper
[ 10.315323] ath10k_pci 0001:01:00.0: qca99x0 hw2.0 target 0x01000000 chip_id 0x003b01ff sub 16
[ 10.320108] ath10k_pci 0001:01:00.0: kconfig debug 1 debugfs 1 tracing 0 dfs 0 testmode 0
[ 10.331654] ath10k_pci 0001:01:00.0: firmware ver 10.4.1.00030-1 api 5 features no-p2p crc32 d
[ 12.372412] ath10k_pci 0001:01:00.0: unable to read from the device
[ 12.372440] ath10k_pci 0001:01:00.0: could not execute otp for board id check: -110
[ 12.377482] ath10k_pci 0001:01:00.0: failed to get board id from otp: -110
[ 12.385308] ath10k_pci 0001:01:00.0: failed to fetch board data for bus=pci,vendor=168c,device
[ 12.392137] ath10k_pci 0001:01:00.0: board_file api 1 bmi_id N/A crc32 62700264
[ 13.791163] ath10k_pci 0001:01:00.0: htt-ver 2.2 wmi-op 6 htt-op 4 cal file max-sta 512 raw 0
[ 13.850316] ath: EEPROM regdomain: 0x0
[ 13.850338] ath: EEPROM indicates default country code should be used
[ 13.850355] ath: doing EEPROM country->regdmn map search
[ 13.850376] ath: country maps to regdmn code: 0x3a
[ 13.850392] ath: Country alpha2 being used: US
[ 13.850407] ath: Regpair used: 0x3a
[ 16.011756] device br0 entered promiscuous mode
[ 16.071774] device vlan1 entered promiscuous mode
[ 16.071798] device eth0 entered promiscuous mode
[ 16.107753] device vlan2 entered promiscuous mode
[ 16.111976] br0: port 2(vlan2) entered forwarding state
[ 16.113256] br0: port 2(vlan2) entered forwarding state
[ 16.118207] br0: port 1(vlan1) entered forwarding state
[ 16.123463] br0: port 1(vlan1) entered forwarding state
[ 16.128732] device br0 left promiscuous mode
[ 16.136262] device br0 entered promiscuous mode
[ 16.146292] device br0 left promiscuous mode
[ 18.112399] br0: port 2(vlan2) entered forwarding state
[ 18.122421] br0: port 1(vlan1) entered forwarding state
[ 21.965484] device ath0 entered promiscuous mode
[ 23.986998] br0: port 3(ath0) entered forwarding state
[ 23.987032] br0: port 3(ath0) entered forwarding state
[ 25.486447] device ath1 entered promiscuous mode
```

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[ 25.982376] br0: port 3(ath0) entered forwarding state  
[ 26.224984] br0: port 4(ath1) entered forwarding state  
[ 26.225080] br0: port 4(ath1) entered forwarding state  
[ 28.222405] br0: port 4(ath1) entered forwarding state
```