openwrt / **openwrt**   Public

<> Code   ⊙ Issues **2.3k**   ⇄ Pull requests **545**   ▷ Actions   ⊞ Projects **2**   ⚠ Security   ⬠

New issue

Jump to bottom

qualcommax: ipq807x: add support for Linksys MX4300 (LN1301) #16070

⇄ Open   **testuser7** wants to merge 8 commits into `openwrt:main` from `testuser7:mx4300` ⧉

| Conversation **10** | Commits **8** | Checks **20** | Files changed **11** |

testuser7 commented on Aug 4 • edited ▾   `Contributor`

Hardware specification:

SoC: Qualcomm IPQ8174
Flash: 1GB (Micron MT29F8G08ABBCAH4 or AMD/Spansion S34MS08G2)
RAM: 2GB (2x Kingston B5116ECMDXGJD or ESMT M15T2G16128A DDR3L)
Ethernet: 4x 10/100/1000Mbps (Qualcomm QCA8075)
WiFi1: 5GHz ax 2x2 (Qualcomm QCN5054 + Skyworks SKY85755-11) - channels 36-64 (low band)
WiFi2: 2.4GHz ax 2x2 (Qualcomm QCN5024 + Skyworks SKY85340-11)
WiFi3: 5GHz ax 4x4 (Qualcomm QCN5054 + Skyworks SKY85755-11) - channels 100-177 (high band)
LED: 1x RGB status (NXP PCA9633)
USB: 1x USB 3.0
Button: WPS, Reset

Flash instructions:

1. Manually upgrade firmware using openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin image.
   More details can be found here: https://support.linksys.com/kb/article/6564-en/
   After first boot check actual partition:

   ○ `fw_printenv -n boot_part`

   and install firmware on second partition using command in case of 2:

   ○ `mtd -r -e kernel -n write openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin kernel`

and in case of 1:

- ```
  mtd -r -e alt_kernel -n write openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin
  alt_kernel
  ```

2. Installation using serial connection from OEM firmware (default login: root, password: admin):

- ```
  fw_printenv -n boot_part
  ```

In case of 2:

- ```
  flash_erase /dev/mtd21 0 0
  ```
- ```
  nandwrite -p /dev/mtd21 openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin
  ```

or in case of 1:

- ```
  flash_erase /dev/mtd23 0 0
  ```
- ```
  nandwrite -p /dev/mtd23 openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin
  ```

After first boot install firmware on second partition:

- ```
  mtd -r -e kernel -n write openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin
  kernel
  ```

or:

- ```
  mtd -r -e alt_kernel -n write openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin
  alt_kernel
  ```

3. Installation from initramfs image using USB drive:
   Put the initramfs image on the USB drive:

- ```
  dd bs=1M if=openwrt-qualcommax-ipq807x-linksys_mx4300-initramfs-uImage.itb of=/dev/sdX
  ```

Stop u-boot and run:

- ```
  usb start && usbboot $loadaddr 0 && bootm $loadaddr
  ```

Write firmware to the flash from initramfs:

- ```
  mtd -e kernel -n write openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin kernel
  ```

and:

- ```
  mtd -r -e alt_kernel -n write openwrt-qualcommax-ipq807x-linksys_mx4300-squashfs-factory.bin
  alt_kernel
  ```

4. Back to the OEM firmware:

- ```
  mtd -e kernel -n write FW_MX4300_1.0.4.215382_prod.img kernel
  ```

and:

- ```
  mtd -r -e alt_kernel -n write FW_MX4300_1.0.4.215382_prod.img alt_kernel
  ```

5. USB recovery:
   Put the initramfs image on the USB:

- ```
  dd bs=1M if=openwrt-qualcommax-ipq807x-linksys_mx4300-initramfs-uImage.itb of=/dev/sdX
  ```

   Set u-boot env:

- ```
  fw_setenv bootusb 'usb start && usbboot $loadaddr 0 && bootm $loadaddr'
  ```

- ```
  fw_setenv bootcmd 'run bootusb; if test $auto_recovery = no; then bootipq; elif test
  $boot_part = 1; then run bootpart1; else run bootpart2; fi'
  ```

👍 8   🎉 5   ❤️ 10   🚀 7

🏷️ 🖼️ **github-actions** (bot) added kernel **core packages** target/qualcommax labels on Aug 4

---

asd333111 commented on Aug 4 • edited ▾

The stock firmware doesn't use the app2_data and app2 partitions. I have tested this myself by wiping both partitions. I think we should figure out how to use these two partitions effectively (about 500MB in total). app2 is empty.
app2_data contains an unused UBI.

```
ubireader_display_info app2_data
UBI File
--------------------
        Min I/O: 4096
        LEB Size: 253952
        PEB Size: 262144
        Total Block Count: 343
        Data Block Count: 241
        Layout Block Count: 2
        Internal Volume Block Count: 0
        Unknown Block Count: 100
        First UBI PEB Number: 1071

        Image: 1047401851
        --------------------
                Image Sequence Num: 1047401851
                Volume Name:kernel
                Volume Name:ubi_rootfs
                PEB Range: 0 - 342

                Volume: kernel
                --------------------
                        Vol ID: 0
```

```
                    Name: kernel
                    Block Count: 16

                    Volume Record
                    ---------------------
                            alignment: 1
                            crc: '0x69f200d5'
                            data_pad: 0
                            errors: ''
                            flags: 0
                            name: 'kernel'
                            name_len: 6
                            padding:
'\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00'
                            rec_index: 0
                            reserved_pebs: 42
                            upd_marker: 0
                            vol_type: 'dynamic'


            Volume: ubi_rootfs
            ---------------------
                    Vol ID: 1
                    Name: ubi_rootfs
                    Block Count: 225

                    Volume Record
                    ---------------------
                            alignment: 1
                            crc: '0x387a730f'
                            data_pad: 0
                            errors: ''
                            flags: 'autoresize'
                            name: 'ubi_rootfs'
                            name_len: 10
                            padding:
'\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00'
                            rec_index: 1
                            reserved_pebs: 225
                            upd_marker: 0
                            vol_type: 'dynamic'
```

testuser7 force-pushed the `mx4300` branch from `b5d2f03` to `4402bfc` 2 months ago   Compare

testuser7 mentioned this pull request on Aug 12

qualcommax: ipq807x: Add ability to perform upgrade on current partition for MX4200/MX5300/MX8500 #14720

⬚ Open

feiyax reviewed on Aug 22

View reviewed changes

package/system/mtd/src/linksys_bootcount.c	↕ Show resolved

feiyax reviewed on Aug 22

View reviewed changes

target/linux/qualcommax/ipq807x/base-files/etc/board.d/02_network	↕ Show resolved
target/linux/qualcommax/patches-6.6/0911-arm64-cmdline-replacement.patch	↕ Show resolved

testuser7 force-pushed the `mx4300` branch 2 times, most recently from `bca3640` to `e6c020b`   Compare
2 months ago

✓ **OpenWRT-fanboy** approved these changes on Aug 29

View reviewed changes

✓ **cybrnook** approved these changes on Aug 30

View reviewed changes

> **cybrnook** left a comment   Contributor
>
> Compiles against master fine and has been running smooth for a week so far.

✓ **se6ast** approved these changes on Aug 30

View reviewed changes

✓ frozen-icecube approved these changes on Aug 31

    View reviewed changes

🖼️ **frozen-icecube** left a comment • edited ▾

Looks fine.

Have been running stable except i see this error in the kernel log:

ath11k c000000.wifi: failed to flush transmit queue, data pkts pending 1

But seems this might be resolved with the nss patches. This is a known upstream issue with as per this :
[#15929](#15929)

✓ **se6ast** approved these changes on Aug 31

    View reviewed changes

✓ **hsnoil** approved these changes on Sep 2

    View reviewed changes

✓ **NTheZone** approved these changes on Sep 2

    View reviewed changes

🖼️ **NTheZone** left a comment

Done. Approved!

👍 4

✓ **ghoffman9** approved these changes last month

    View reviewed changes

✓ **gdlesage** approved these changes last month

    View reviewed changes

✓ **neheb** approved these changes last month

View reviewed changes

kristskrilovs approved these changes 3 weeks ago

View reviewed changes

rkboni commented 3 weeks ago • edited ▾

@testuser7 thanks for this work, I'm glad to have the MX4300 supported... would breaking out the MX4200 / generic `mtd` changes into their own PRs help get this reviewed/merged by the powers that be? Esp. having heard the forum feedback (particularly from @robimarko), maybe worth doing, and leaving this as just the core MX4300 commit to get core devs 👀 easier?

gtxaspec approved these changes 3 weeks ago

View reviewed changes

testuser7 force-pushed the `mx4300` branch 2 times, most recently from `b3aac58` to `f2cbc93`   Compare last week

Prof256 approved these changes last week

View reviewed changes

Prof256 left a comment

Working with no issue for 7 days.

1997cui approved these changes last week

View reviewed changes

nshestiuk approved these changes 5 days ago

View reviewed changes

testuser7 added 2 commits 5 days ago

⊶   qualcommax: ipq807x: remove unnecessary bootargs-append for MX4200   ...   dad3db7

⊸ qualcommax: ipq807x: create generic Linksys MX4x00 dts   …   231ec05

testuser7 and others added 6 commits 5 days ago

⊸ qualcommax: ipq807x: define configuration for Linksys MX4x00 devices   …   fc42c07

⊸ qualcommax: ipq807x: fix mac setup for Linksys MX4200v2   …   fdc6698

⊸ mtd: fix resetbc on nand w/ min I/O size > 2048   …   1619f68

⊸ qualcommax: add kernel cmdline replacement hack   …   6f1f13d

⊸ mtd: check the return value of malloc and pread   …   7a68206

⊸ qualcommax: ipq807x: add support for Linksys MX4300 (LN1301)   …   cb57737

testuser7 force-pushed the mx4300 branch from f2cbc93 to cb57737 5 days ago   Compare

Reviewers

feiyax   💬

frozen-icecube   ✓

NTheZone   ✓

neheb   ✓

1997cui   ✓

gtxaspec   ✓

nshestiuk   ✓

gdlesage   ✓

cybrnook   ✓

ghoffman9   ✓

se6ast   ✓

Prof256   ✓

kristskrilovs   ✓

hsnoil   ✓

OpenWRT-fanboy   ✓

At least 6 approving reviews are required to merge this pull request.

Assignees

No one assigned

Labels

core packages   kernel   target/qualcommax

Projects

None yet

Milestone

No milestone

Development

Successfully merging this pull request may close these issues.

18 participants