



**stlc45xx**

**Maemo Summit 2008, Berlin**

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# What is stlc45xx?

- mac80211 driver for stlc4550 and stlc4560
  - N800 has stlc4550 and N810 has stlc4560
- GPLv2
- needs stlc45xx-cal, binary-only user space tool for calibration data
  - run once after module has loaded

# What is mac80211?

- the chosen WLAN stack in Linux
- introduced in Linux 2.6.22
- in very active development, various drivers using it
- various companies contributing to mac80211:
  - Intel
  - Atheros
  - and now Nokia

# Why?

- pressure from the community
- very difficult to update the kernel
- excellent bug reports from the community, but frustration because no access to the code
- mac80211 development started

# History

- Nokia approached ST NXP Wireless with the idea of an Open Source driver
- ST NXP published the documentation:
  - <http://wireless.kernel.org/en/developers/Documentation/specs>
- driver implemented based on the information published
- would not have been possible without support from ST NXP Wireless

# stlc45xx status

- alpha stage
- ~3 kLOC
- rudimentary Power Save Mode
- using kernel from linux-omap tree (2.6.27-rc6-omap1)
  - currently only for hard core developers
- 1.2 GB of data transferred upstream and downstream at ~5.5 Mbit/s

# stlc45xx status (cont.)

- major features missing:
  - proper PSM support
  - WMM (QoS)
  - hardware crypto
  - Ad-Hoc mode
  - RTS/CTS



# Future of stlc45xx

- run as a community project, with contributions also from outside Nokia
- implement all features
- garage project has been set up

# Future of stlc45xx (cont.)

- get the driver into Linux kernel mainline
  - step 1: start development in garage
  - step 2: push it to wireless-testing tree
  - step 3: try to get it to mainline
  - kernel update easier

# Goals

- good quality driver
- enable community contributions
- make it easier to debug IOP problems
- new features, for example mesh networking support

# garage project

- <http://stlc45xx.garage.maemo.org/>
- stlc45xx-devel mailing list
- releases distribution
- bug tracking (bugzilla?)
- news
- git tree will be set up somewhere

# wireless-compat

- mac80211 is ported to 2.6.21 kernel in the wireless-compat package
- in principle it should be possible to use stlc45xx with diablo kernel
- hopefully community can work on this task

# The end

## Comments?