Building a home guifi.net connection with the University using qMbp: the power of wireless

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November 2012
First step: register in guifi.net
Inspecting the home roof
Taking home measurements

- Address: 02:CA:FF:EE:BA:BE
- ESSID: qMp-C6
- Frequency: 5.7 GHz
- Protocol: 802.11a/n
- Qlevel: 63
- Quality: 63/100  Signal level=-65 dBm  Noise level=-92 dBm

Good quality with a node located at the University! (C6 building)
Deciding the home place for the mast

There are already many antennas on the roof...

View from the lift tower: the university should be somewhere behind those buildings ...
Cheking for line of sight view

Link length: 3.36 km
Line of sight not very clear

Zoom view from C6 building

Zoom view from home
First attempt: nanostation-rocket with qMp

C6 building

home

Bandwidth: 1.13 Mbit/s
Second attempt: nanobridge-rocket with qMp

<table>
<thead>
<tr>
<th>Tools</th>
<th>Nodes found in the network</th>
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<tbody>
<tr>
<td></td>
<td>BCNgrVia204B-97</td>
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<td>qmpff</td>
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Specify Custom ip: [ ]

Bandwidth: 0.04 Mbit/s!!
Third attempt: nanobridge-nanobridge with qMp

Bandwidth: 1.17 Mbit/s
Fourth attempt: nanobridge-nanobridge with AirOS, qMp in attached devices

C6 building

AirOS

home

And...

AirOS

qMp
Home Internet connection test of fourth attempt: nanobridge-nanobridge with AirOS, qMp in attached devices

Using the ADSL line (supposed to be 6 Mbps)

Bandwidth (download): 0.99 Mbit/s

Using the wireless link

Bandwidth (download): 45.33 Mbit/s !
Conclusions

- You can have good wireless links in metropolitan areas with inexpensive devices (tens of Mbps, ~60 euros each device).
- Distances of several kms.
- Not necessary to have a very good and clear line of sight.
- Some devices, e.g. the nanobridge of Ubiquiti, require the proprietary drivers: current drivers in openwrt can have low performance in these devices.