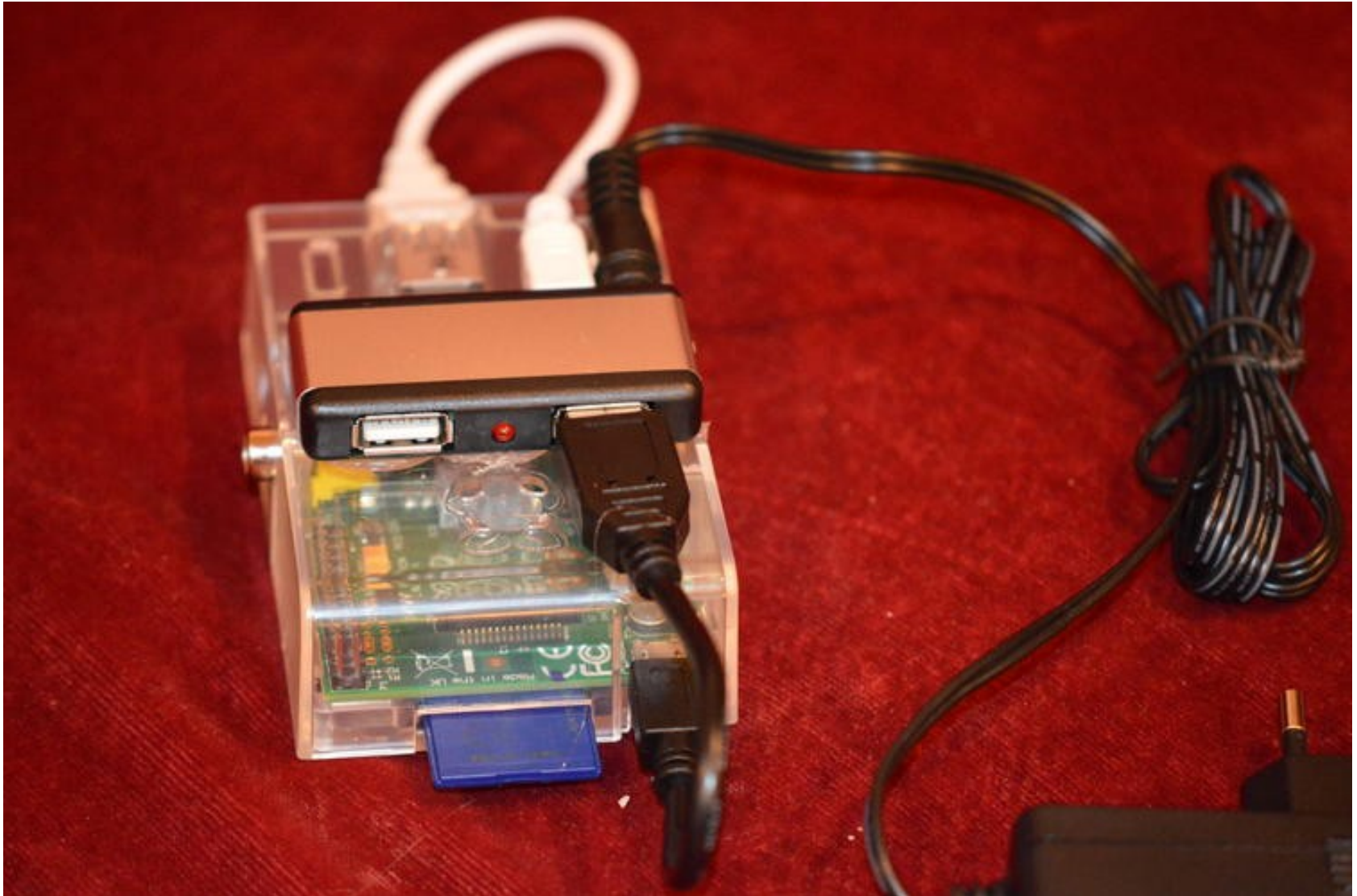


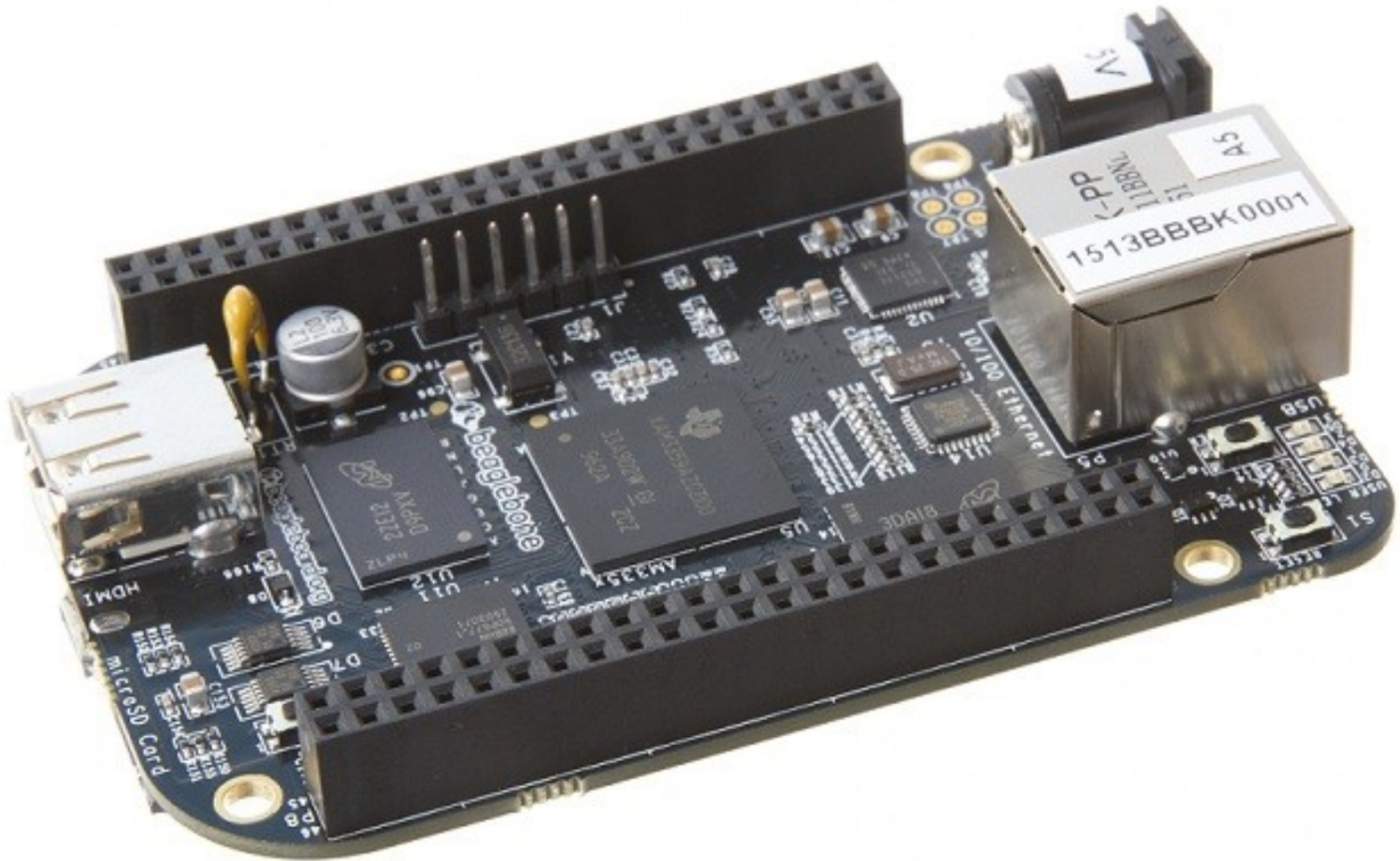
# Power Efficiency

Bifrost Workshop 2014  
Robert Olsson/Björn Pehrson

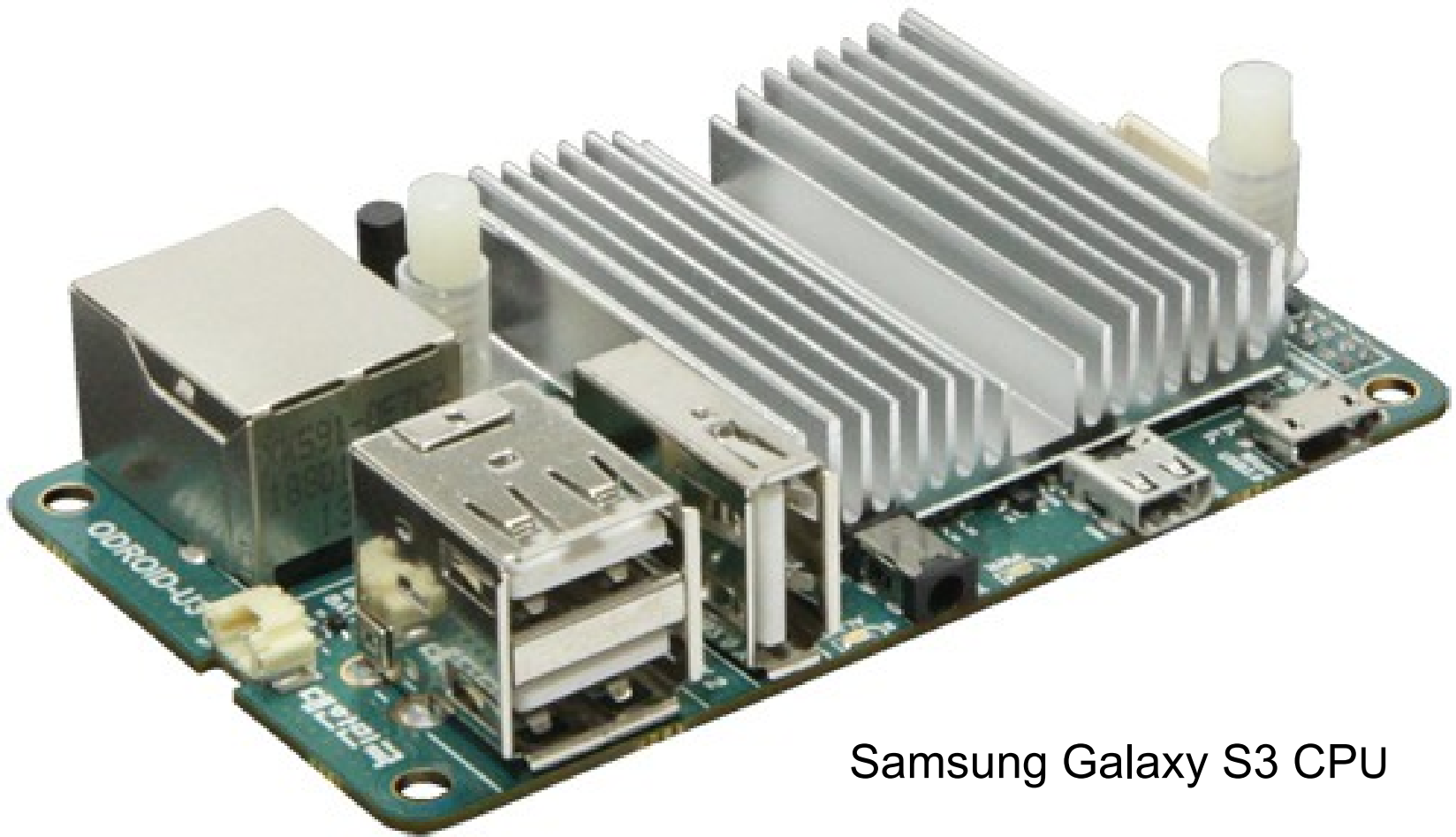
# RPI & USB hub unit



# Beaglebone Black, TI SoC



# Odroid 1.7 GHz 4 cores



Samsung Galaxy S3 CPU

# power efficiency benchmarking proposal

Server performance. The general clause:  
 $\text{Mb}(\text{Class}, \text{TCPX}) / \text{Watt}$

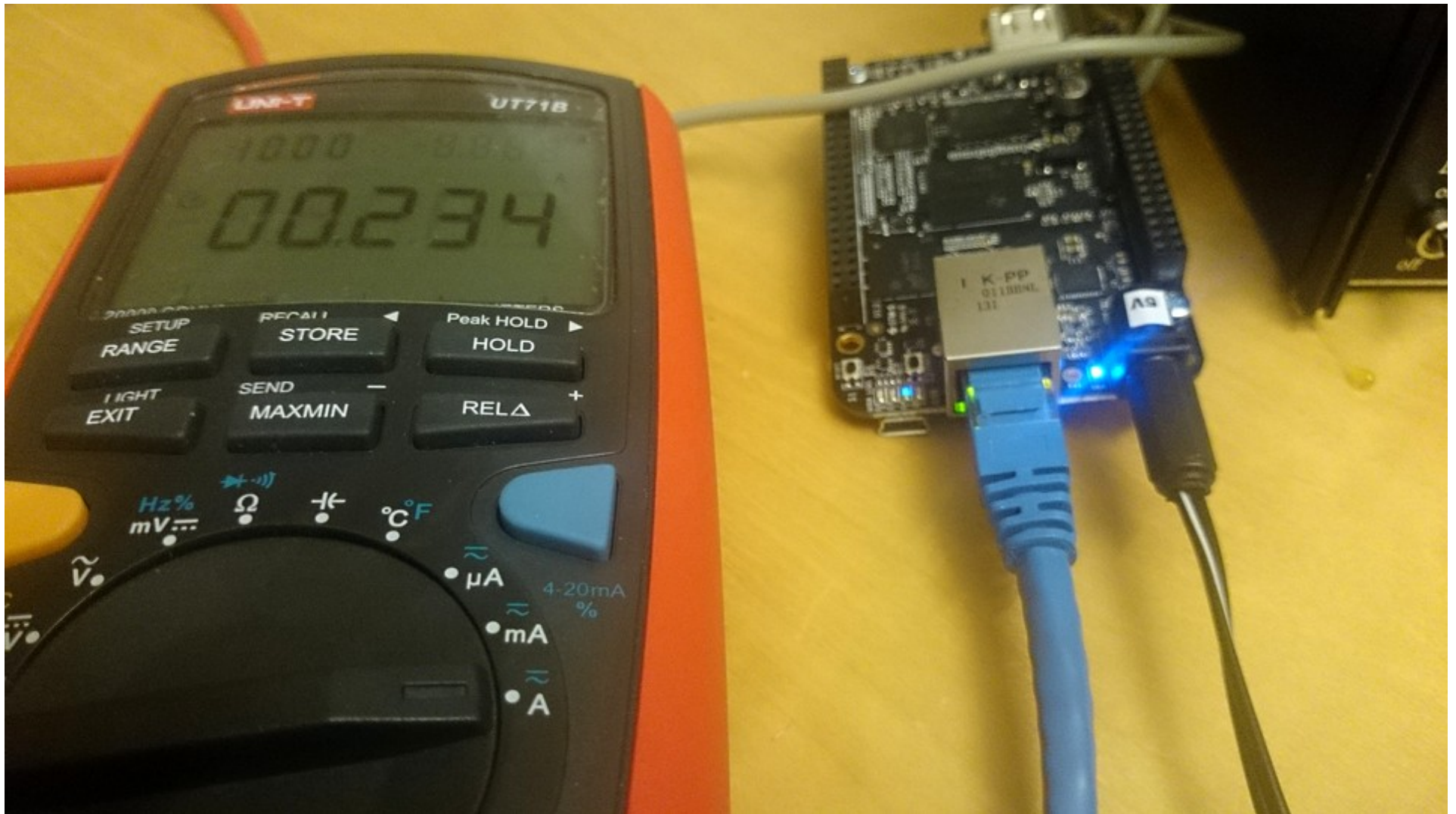
Number of Mbit/s per Watt for fixed number of  
TCP flows, 1 , 10, 100, 1000 etc

Example:

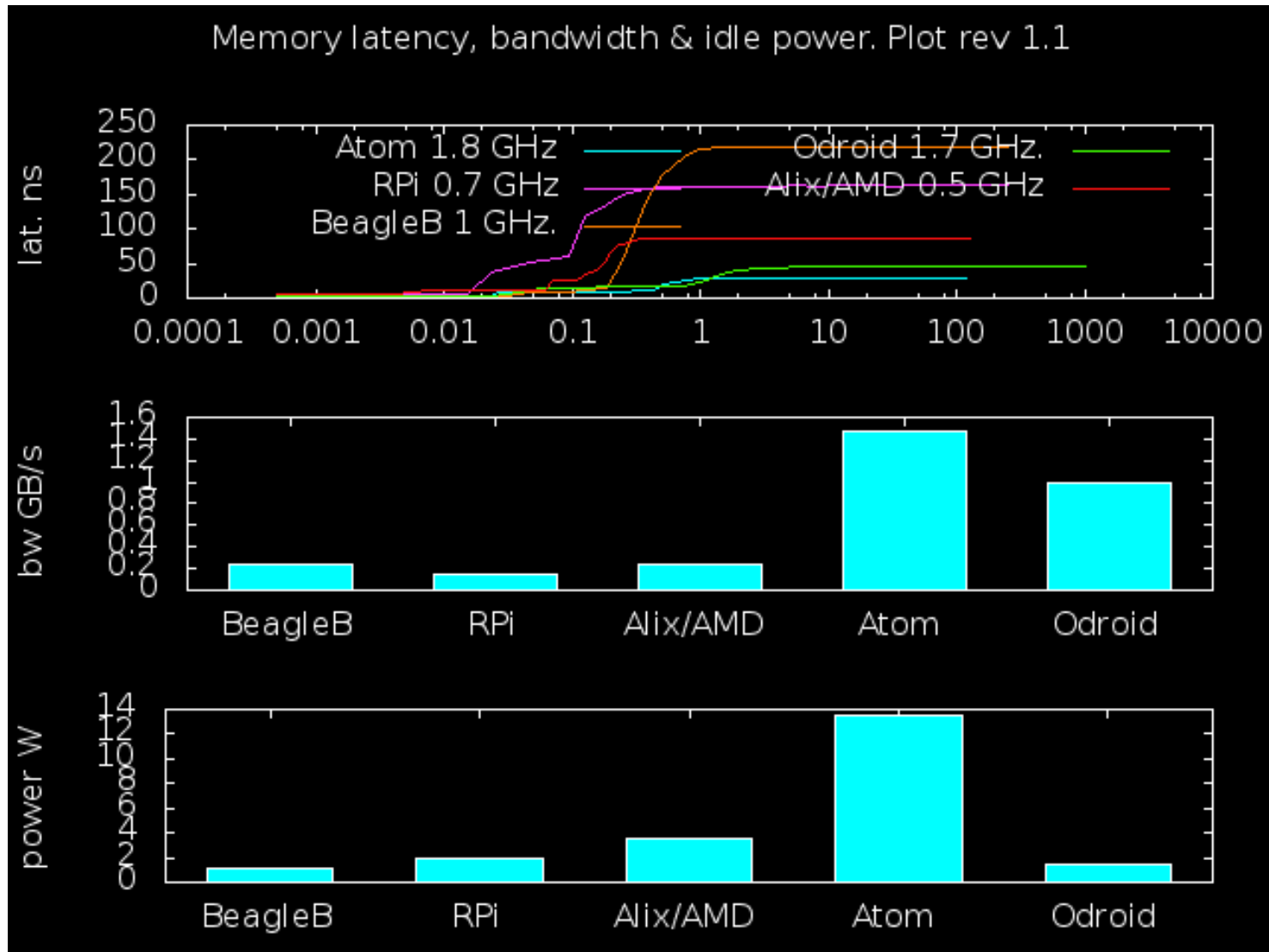
$\text{MB}(100, \text{TCP}10) = 20$

Iperf is a usable tool. Server side runs on DUT.

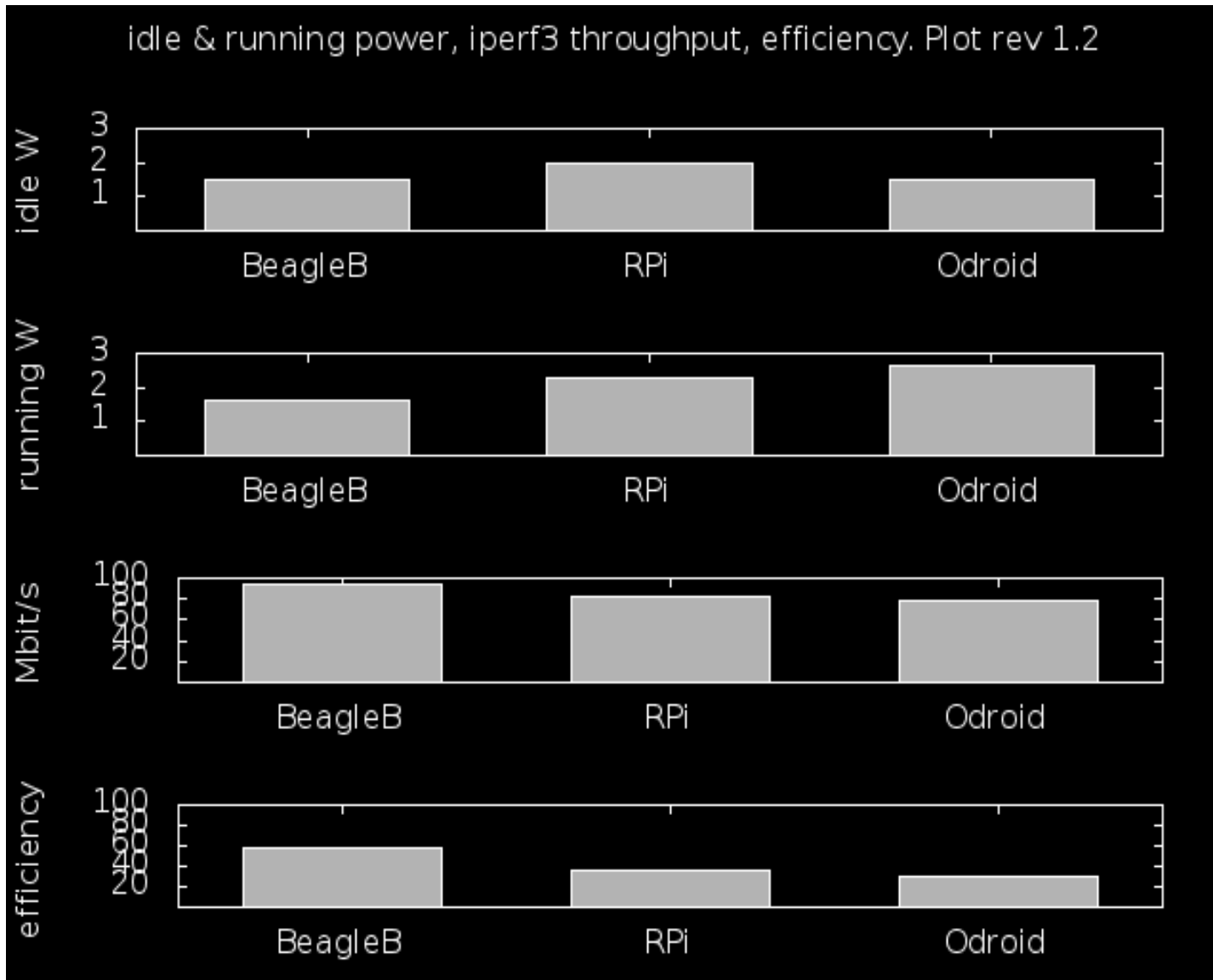
BB Idle power  $5V@0.234A = 1.17W$



# System performance comparison



# Power efficiency/Server TCP





# Power efficiency/Server TCP

Paper propoal

Iperf3

Routing next

GE

Other Servers

# Referenser

Arduino Cookbook (2nd ed,) Michael Margolis,  
<http://shop.oreilly.com/product/0636920030935.do>

<http://makezine.com/2014/03/05/and-the-winner-is-2/>

Lot's of info and project via web.

The One Watt Initiative IEA in 1999