

Collaborative Mesh Networking

Instructor: Rob Faludi
Week 8

Coordination Project

- Presentation of midterm projects for each group

- ...and all groups

Readings

- Startup eyes battery-free wireless sensor nets: <http://eetimes.eu/showArticle.jhtml?articleID=202400294>
- Tinker: A Tool for Designing Data-Centric Sensor Networks, Jeremy Elson, 2006: <http://research.microsoft.com/nec/publications/spot6613-elson.pdf>

Advanced AT Commands

- ATWR: WRite to firmware
- ATRE: Factory settings REset
- ATVR: VeRsion
- ATNI: Node Identifier
- ATND: Node Discover
- ATDN: Destination Node selection
- ATDB: Signal strength in DB (RSSI)
- ATGT: Guard Time
- ATCT: Command mode Timeout
- ATCH: set and read CHannel
- ATBD: set and read BaUd rate
- ATAP: set API mode

Sleeping the XBee

- Why Sleep?
- ATSM
 - 1: pin hibernate, $<10 \mu\text{A}$, 13.2 ms wakeup, uses pin 9
 - 2: pin doze, $<50 \mu\text{A}$, 2 ms wakeup
 - 3: <nothing>
 - 4: cyclic sleep, also $<50 \mu\text{A}$, 2 ms wakeup, module must be idle
 - 5: cyclic sleep with pin wakeup
- ATSP: Sleep Period (* 10 ms)
- ATST: Time before Sleep (* 1 ms)

Readings and Assignments

- Readings

- Zigbee: “Wireless Control that Simply Works”: http://rob.faludi.com/teaching/cmn/readings/Zigbee_Wireless_That_Works-ZMDAmerica.pdf

- <http://en.wikipedia.org/wiki/ZigBee>

- <http://www.zigbee.org/en/index.asp>

- Assignment

- ZigBee project to be announced