Gunn Diode Oscillator Minutes

David Headland

2003-10-30 14:00

Attendance

- Fourth year students
  - DP Headland
  - AJ Nelms
  - RE Irwin
  - R Wan
  - JM Higginbotham
  - MP Gaskill
- UMIST staff
  - WS Truscott
  - R Sloan

Approvals

- The minutes from the previous meeting were approved.

Presentation to e2v

- Possible Questions for e2v technologies:
  - InP vs GaAs — Are any InP diodes available?
  - Can we have any Gunn diodes for testing?
  - Ask about resonant caps.
  - Comments on the waveguide vs. planar approach.
  - Discuss heat dissipation problems.
  - Solicit any general practical advice.
  - Informally ask about our presentation technique to improve upon it for the formal presentation later on.
  - What tests would they make on a project such as this, and do they have any test equipment we could use to help us.
  - Would e2v be able to machine waveguides, and if so what information would they require from us.
  - Do e2v have any good device models they use during their own development.
- Suggestions for the summary slide:
  - One diode oscillator should be complete this calendar year.
  - Then we will progress to low-frequency power combining.
  - Work will then start towards high frequency power combining.
- Facilities at e2v Technology
  - WS Truscott has not checked.
  - He suspects that projectors and a computer will be available.
  - A copy of the slides should be printed for group members and e2v staff: 10 copies in total should suffice.
  - A copy of the time plan should also be included for e2v staff.
- Travel arrangements
  - Minibus will be hired.
  - AJ Nelms and DP Headland will be insured to drive.

- Lunch will be provided.
- The presentation style was discussed.
  - Each person should present their own introduction.
  - Two people should share the main body of the presentation.
  - All should participate in questions.

Administration

- The following stationery items have been purchased for use by the project group:
  - Stapler.
  - Staples.
  - Hole punch.

Microwave risk assessment

- The microwave risk assessment was signed by all.
- Access to the lab will be provided once everyone has a copy of the assessment.
- A waveguide oscillator is set up and working in the lab.
- The safety sign was agreed upon as “Non-ionising radiation”.
- The sign should only be put up when there is a risk.

Waveguides

- Fin line slots were discussed.
- The theory of waveguides was discussed.
- One important consideration is that the waveguide wavelength λ_g is larger than the free-space wavelength, λ.

Applications

- The two main applications for W-band radio are:
  - Car radar.
  - The intelligent shell.

Proposed actions

All	Meet tomorrow at 9:00 in A19 to finalise the presentation.
DP Headland	Check the location of e2v Technologies.

Next meeting

Time	Tuesday, 4 November 2003, 09:00
Place	UMIST to head to Lincoln

Meeting adjourned, 17:01.