

Gunn Diode Oscillator Minutes

David Headland

2004-03-11 10:00

Attendance

- Fourth year students:
 - AJ Nelms.
 - JM Higginbotham.
 - R Wan.
 - DP Headland.
 - MP Gaskill.
 - RE Irwin.

Approvals

- One typo in the minutes from the previous meeting was corrected.
- The rest of the minutes were approved.

Power Supply

- Work carried out last Thursday was discussed.
- The power supply should be tested under load if possible.
- Current measurement has been implemented in software.

-
- Problems have been experienced in coding a ramp.
 - Current ramp time is less than $1 \mu s$.
 - Low ohmic resistors need to be specified and purchased.

Simulation

- Previous model has been found to be unsuitable.
- A new model has been started.
- Current model simulates in about 1 hour.
- Simulations are being left to run overnight.
- The results produced are more useful.
- A likely resonant frequency has been found.
- Radial line transformer simulation take approximate 30 minutes.
- Good results have been obtained with a single disc.
- Work will start on >1 disc.
- The model is being built up in steps to help understanding.
- It may be worth looking into simulation on Eric if this is possible.

Manufacture

- Last week, MP Gaskill spoke direct with Bernard from e2v.
- The design is almost complete.
- They are waiting on a tool from Switzerland.
- P Norton has passed on relevant dimensions for the housing.
- Bernard and P Norton suggested a visit to e2v to help with the design and manufacture of the multiple device oscillator.
- Drawings should be sent before Easter.
- A visit could be arranged after the Easter holidays.

Finances

- Costs have been split up.
- A copy of the schedule has been handed out.
- This should be filled in and handed in to MP Gaskill next week.
- In the facilities section, roughly break down resources used.

Final report

- Single diode design section complete.
- Multiple diode design section is generally changes.
- It may be suitable to merge these sections into one.
- Something should be put in the report about trying to find alternative manufacturing facilities.

Demonstration

- An ideal list of resources for the demonstration was compiled:
 - Computer, including:
 - * HFSS.
 - * LCD panel.
 - * Network connection.
 - Computer, including:
 - * ISA8 slot for the DAQ card.
 - * LCD panel.
 - Oscillators for demonstration:
 - * Single device.
 - * Multiple device.
 - * Commercial devices.
 - * PSU.

-
- * Biasing circuitry.
 - * Attenuator.
 - * Mixer.
 - * Spare Gunn diodes.
 - Large scale Gunn diode model.
 - A laminated copy of the paper by H Barth.
 - Records:
 - * Minutes.
 - * Agendas.
 - * Plans.
 - * Log books.
 - Name badges.
 - Poster.

Miscellaneous

- An Accenture presentation is scheduled for Tuesday next week. It has been suggested that we all attend.

Proposed actions

REI, JMH	Continue simulation.
AJN, REI, DPH	Take measurements for the PSU case.
All:	Fill out the financial schedule form.
DP Headland	Mail AJ Nelms for circuit diagrams.
MP Gaskill	Work on documentation for the final report.
DPH, AJN	Work on developing the PSU hardware.
R Wan	Work on the PSU software.
RE Irwin	Talk to WS Truscott regarding device problems.
DP Headland	Find out if the attenuator flanges are here.
RE Irwin	Look into the teamwork award.

Next meeting

Time Thursday 18 March 2004, 10:00.

Place D2c coffee room.

Meeting adjourned, 11:17.