

# Gunn Diode Oscillator Minutes

David Headland

2003-12-02 10:00

## Attendance

- Fourth year students
  - DP Headland
  - RE Irwin
  - R Wan
  - JM Higginbotham
  - MP Gaskill

## Approvals

- The minutes from the previous meeting were approved.

## Interim report

- Diagram crediting was discussed.
  - Copied diagrams should have references cited as if for text.
- The time plan was discussed.
  - The latest PDF copy is missing labels.
  - DP Headland will correct this.

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- Sections can be submitted by any means.
  - Email submission is preferred.
  - The bias choke was discussed.
    - Dimensions depends on the waveguide.
    - Dimensions are critical to oscillation frequency.
    - Smaller dimensions generally lead to higher frequencies.
    - The official name for the reports will be “radial line transformer”.
  - Chapters should run on from each other in the report rather than having blank leading balance pages.
  - A basic overview should be given in introductory sections.
  - Details should not be given in introductory sections, but future sections should be referred to. Please mark references both within and external to the report so they then can be correctly added into the L<sup>A</sup>T<sub>E</sub>X document.

## Report proof reading

- After compilation and typesetting, the document will be placed on the web site.
- The URL will be distributed for proof reading.
- This will help people with quota-based mail systems.

## Waveguide design

- A diagram was shown to WS Truscott.
- A time for a meeting was arranged between MP Gaskill and WS Truscott.
- Simplifications to the diagram will be suggested.

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## Attenuator

- RE Irwin will contact e2v to request an attenuator.
- Required attenuators are:
  - W-band.
  - 10 dB and 20 dB attenuation.
  - Suitable for their waveguide flange (R Wan has the official name for this, if required).
- Any other unused equipment they think would be useful will be gratefully received.

## Report reorganisation

- The two first testing sections are mainly duplicated of each other.
- The second section will be removed and combined with the first.
- The remaining testing section will be used as a plan for future tests.
- AJ Nelms will take on the testing reporting.
- DP Headland will concentrate on other sections and compilation.
- Testing reporting should go into quite a bit of detail.
- Assume knowledge of the equipment, but not of the project.
- Future tests should include:
  - Spectrum analysis.
  - Phase noise.
  - Testing for the fundamental frequency.
  - Power measurements (power meter and attenuator).
- We should find out what a vector network analyser is for.
- Tests described above should be made on the single device oscillator.
- Tests can be extended for the four-device power combining oscillator.

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## Laptop loan

- RE Irwin requires a laptop to use over the weekend for the project report.
- R Wan offered to loan an iBook.
- The offer was accepted.

## Formal presentation

- Some section can be kept:
  - Introduction
  - Waveguide vs. planar.
- Most should be re-written.
- Some members could work on this whilst the report is being compiled.
- Exact details will be decided upon at a later date.

## Proposed actions

All	Continue work on the interim report.
DP Headland	Produce a PDF version of the time plan with labels.
RE Irwin	Write to e2v requesting an attenuator and more diodes.
R Wan	Lend laptop to RE Irwin.
DP Headland	Adjust interim report task split to account for recent changes.
AJN, DPH	Continue testing in detail, obtain power readings and look for RF power at the fundamental frequency.

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## Next meeting

Time Thursday 4 December 2003, 14:00.

Place D floor coffee room.

Meeting adjourned, 11:05.