ethertronics
shaping antenna technology™

CALAMP

LMU3000
1st Evaluation

San Diego Design Center (SDC)

<January 4,2011>

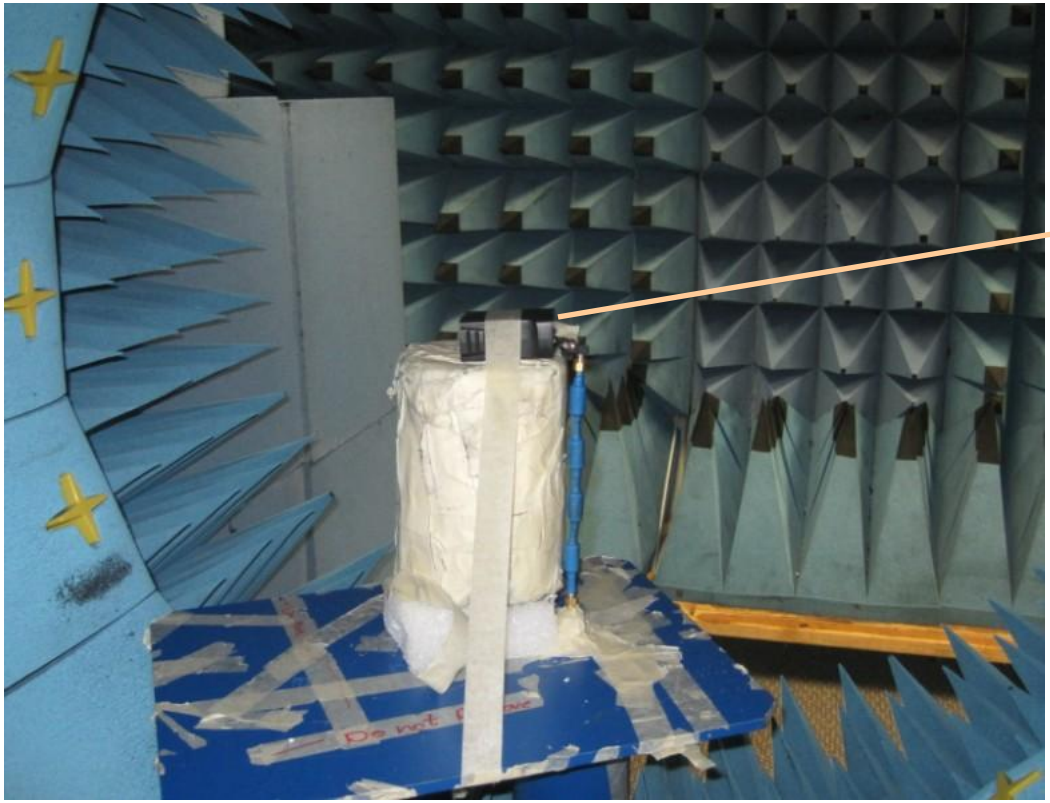
Revision History

Revision	Date	Description of changes
Rev. A	04-Jan-2011	1st Evaluation

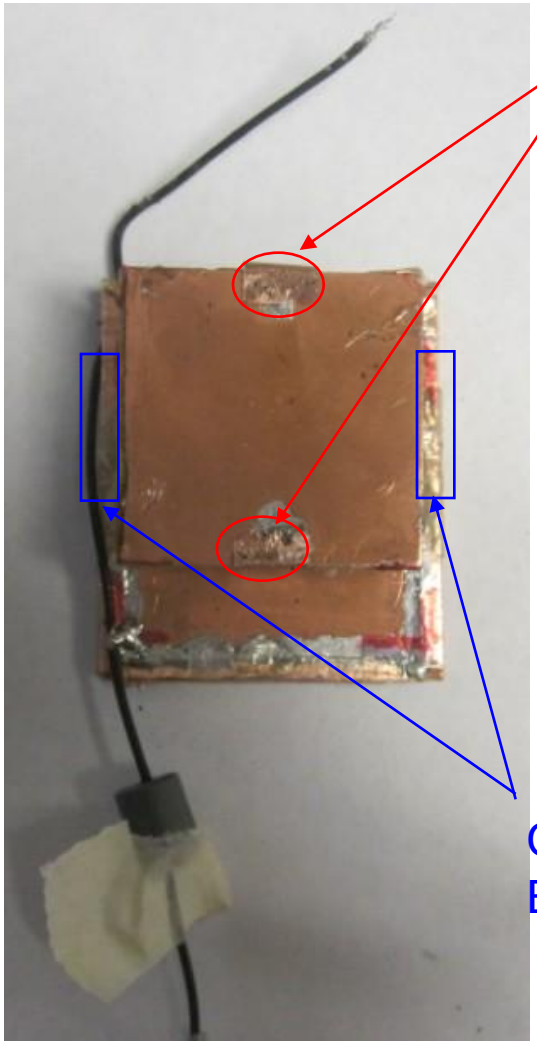
Summary

- Received 2D drawing and a plastic housing from Calamp.
- Created a mockup according to the 2D drawing.
- Design GSM antenna with cable on the plastic housing.
- Currently the antenna is placed on the out side of the housing for easy antenna development.
- Data Taken:
  - Return Loss
  - Efficiency

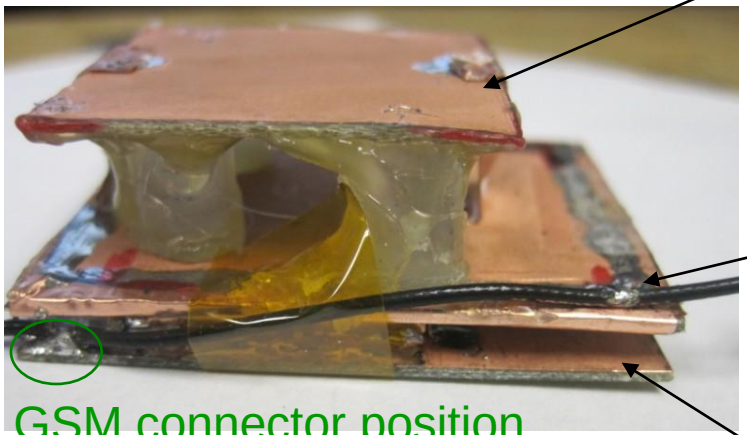
Test Condition



Test Configuration



Ground Position between
Top and Middle board



GSM connector position

Top (GPS) board
(31.8mm*31.8mm)

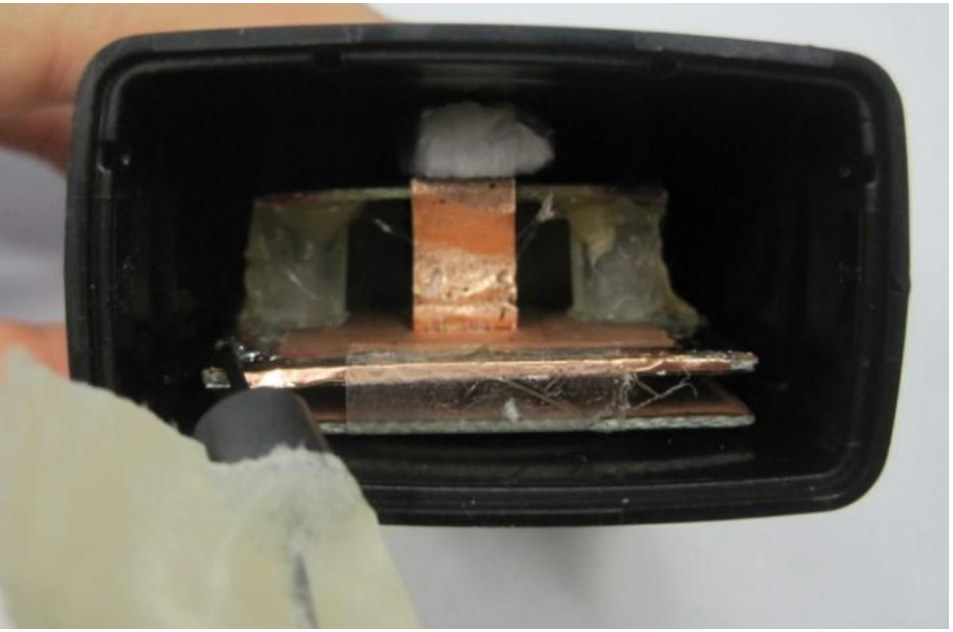
Middle board
(44.45mm*38.10mm)

Bottom (GSM) board
(44.45mm*38.10mm)

Ground Position between
Bottom and Middle board

Test Configuration

PCB and Housing Assembly



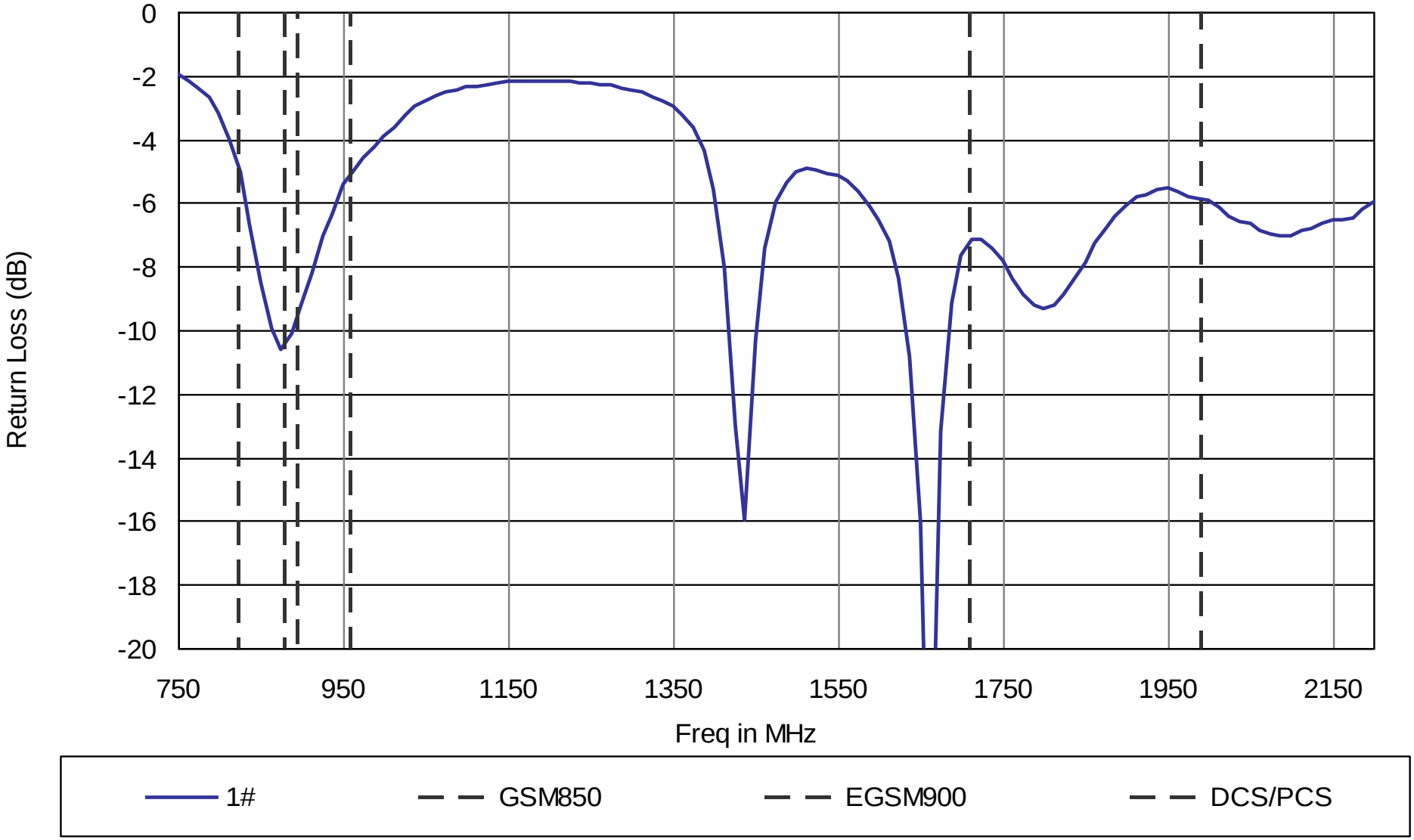
Test Antenna

Cable through out here

Plastic housing received from Calamp

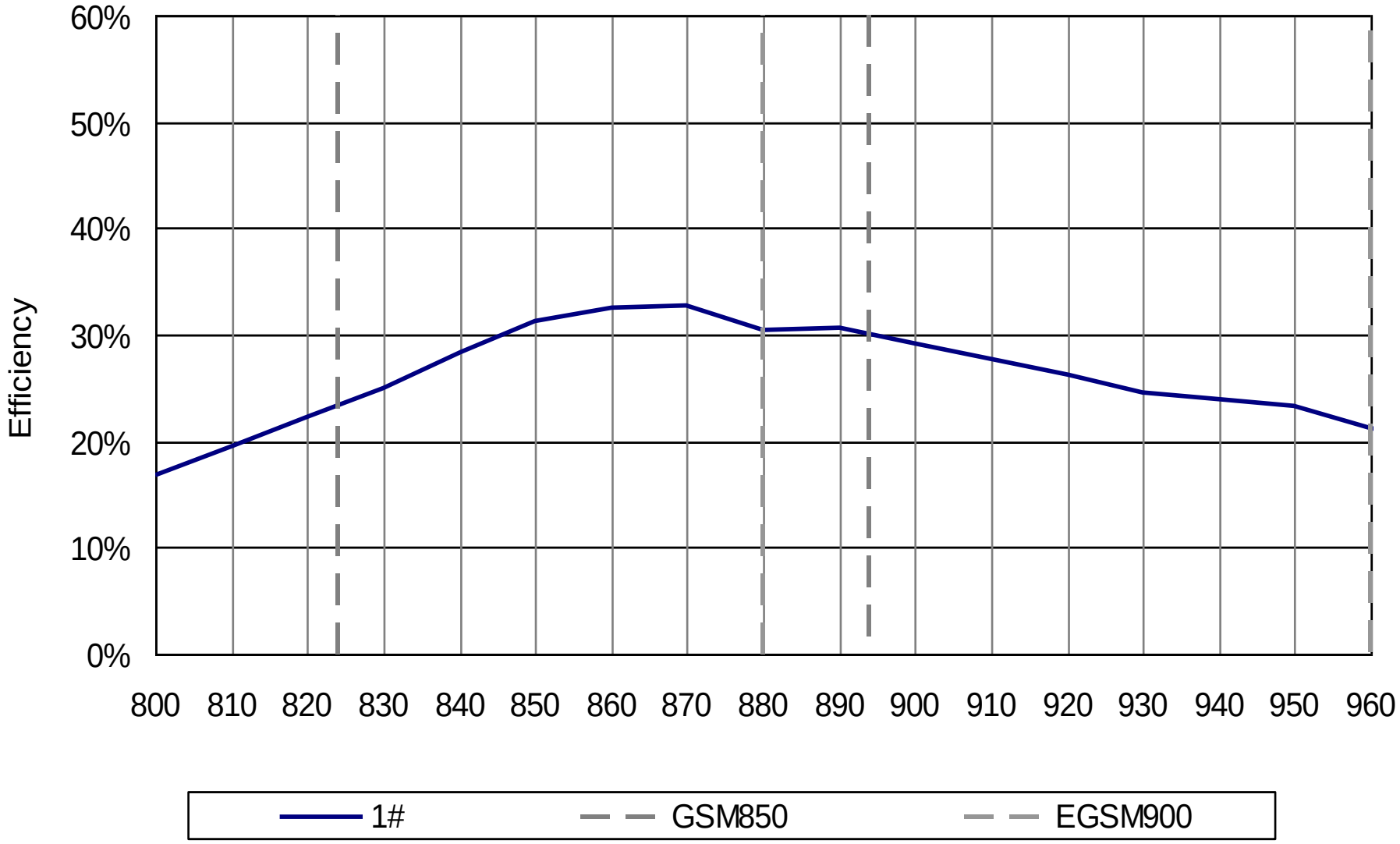
Return Loss

GSM850/900/1800/1900

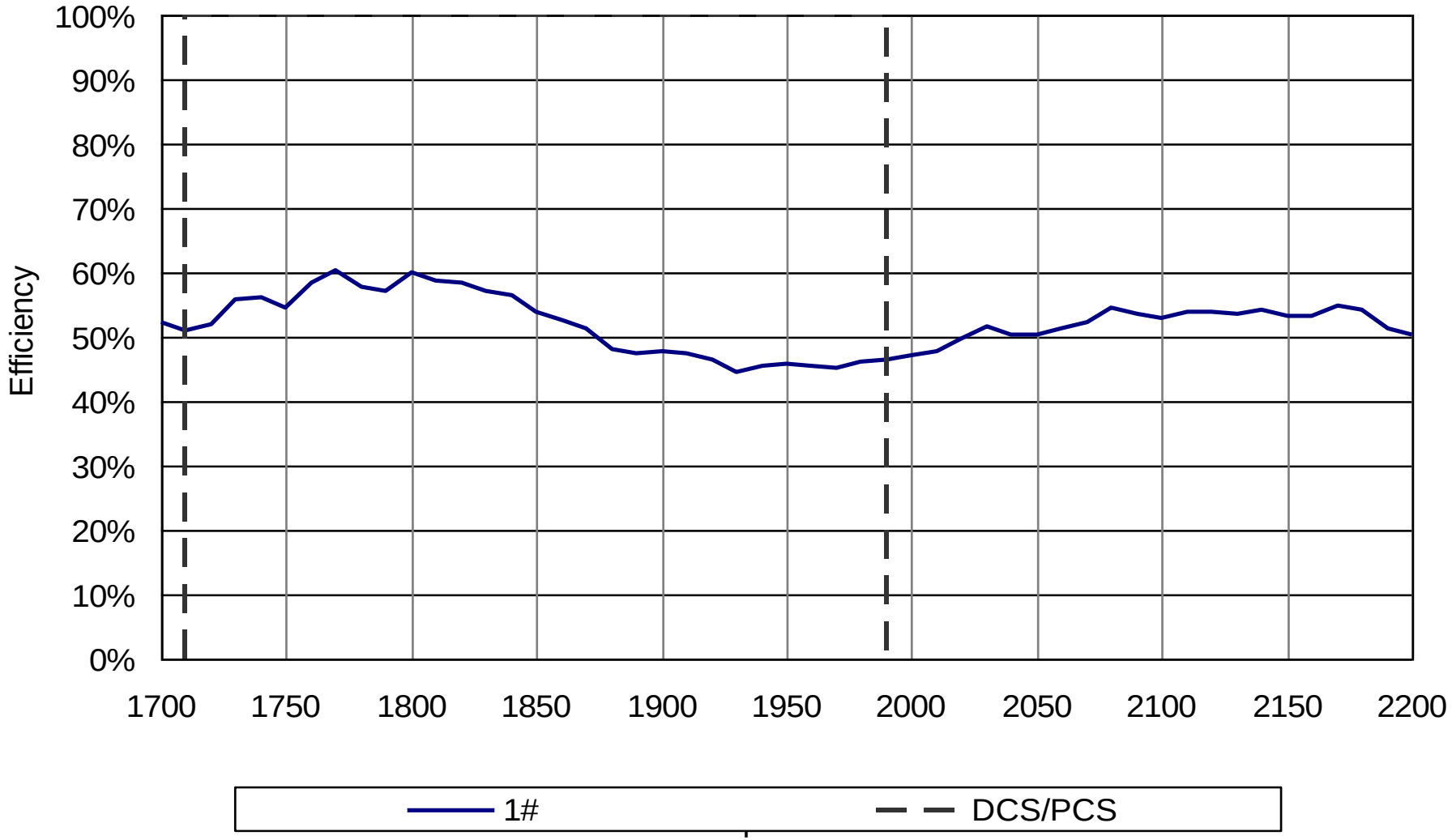


Efficiency

Low Band



High Band



Conclusion and next steps

- The low band bandwidth is a bit narrow due to its short ground size. The average efficiency of Low band is around 30%.
- High band average efficiency is around 50%.
- For better antenna development and production assembly , top and bottom types of housing is recommended.
- ET would need more input from Calamp regarding the mechanical housing design.
- Suggest to modify Calamp’s existing top and bottom types housing for the next antenna design cycle.

Thank You!