**TEKNOFEST**

**AVIATION, SPACE AND TECHNOLOGY FESTIVAL**

**CHIP DESIGN COMPETITION**

**ANALOG DESIGN CATEGORY**

**DETAIL DESIGN REPORT TEMPLATE**

**TEAM NAME**

**……………………………….**

**PROJECT NAME**

**………………………………**

**APPLICATION ID**

**………………………………**

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### PROJECT CURRENT SITUATION ASSESSMENT (5 POINTS)

{This section provides summary information about the activities carried out within the scope of the project. The evaluation of the Preliminary Design Report is made. Describes any changes made after the preliminary design and why the changes were made.}

### PROJECT DETAIL DESIGN AND TEST RESULTS (60 POINTS)

#### System Architecture (10 points)

{In this section, the high-level block diagram of the final design of the project is given and the compatibility of the design system with the y exploration specification is mentioned. In the top-level block scheme; The signals and power input-outputs of the circuits, and the connections between the sub-blocks should be clearly drawn.}

#### Design Detail

{The DTR report is expected to present schematic-level results. The results of the series and after are expected at the final presentation.

The pins of the blocks should be named as follows:

1. Band gap reference circuit: vdd, vss, vref, iout
2. Opamp circuit: vdd, vss, ibias, inp, inm, outp, outm
3. Filter chip circuit: vdd, vss, inp, inm, outp, outm

Transistors must have a maximum finger width (max finger width, w).}

##### Band Gap Reference Voltage Circuit (15 points)

{Describes why the topology **of the final bandwidth reference voltage circuit** was chosen and how it works. If the topology targeted in the SCTR is changed, the reason is indicated.

Detailed schematic drawings of the reference circuit are provided.

It refers to how the requirements specified in the specification are met and the techniques/optimizations made in the circuit for the "Performance Criteria".

The schematic level performance of the circuit is demonstrated by the simulation results and verified to meet the requirements in the specification.}

##### Operational Amplifier (opamp) Circuit (15 points)

{Describes why the final **opamp** topology was chosen and how it works.

If the topology targeted in the SCTR is changed, the reason is indicated.

Detailed schematic drawings of the opamp circuit are provided.

It refers to how the requirements specified in the specification are met and the techniques/optimizations made in the circuit for the "Performance Criteria".

The schematic level performance of the circuit is demonstrated by the simulation results and verified to meet the requirements in the specification.}

##### Filter Chip (20 points)

{Describes why the final filter topology was chosen and how it works.

If the topology targeted in the SCTR is changed, the reason is indicated.

Detailed schematic drawings of the filter chip are provided. Circuits detailed in the previous sections, such as opamp and reference circuitry, can be used as symbols.

It refers to how the requirements specified in the specification are met and the techniques/optimizations made in the circuit for the "Performance Criteria".

The schematic level performance of the circuit is demonstrated by the simulation results and verified to meet the requirements in the specification.}

### TEST ENVIRONMENT (10 POINTS)

{This section presents test environments (test schematics, test settings, etc.) created for optimization and validation of the designed blocks.}

### CHIP DESIGN FLOW (10 POINTS)

{The chip must be shown on the flowchart which programs are used in the design flow. It should be mentioned what the programs used in the stream are used for. In the design process, the problems encountered both software and design and how these problems are solved should be mentioned. If there are places such as communities and Slack channels that are used throughout the chip design flow, it should be mentioned which of them are utilized and in what direction. It should be briefly mentioned which of the stages in the chip flow are easier and which are more difficult to find, and how much time is spent in which ones.}

### TEAM ORGANIZATION (5 POINTS)

#### Team Organization

{This section provides information about the final team members and, if applicable, the advisor. (First name, surname, school, department, class)}

#### Distribution of Tasks

{This section provides information about the final team organization and details team members' contributions to work completed under the DTR.}

### BUSINESS PLAN AND RISK PLANNING (5 POINTS)

{A work plan was made in the SCR that included the design, laying and testing processes of the project. It is **clearly stated** how much this business plan can be complied with, how the plan is updated as a result of which risks/reasons not foreseen in the SCT and **how much** the work packages are completed. The current business plan is charted. In addition, possible risks are foreseen for incomplete work packages and a risk planning is carried out.}

### REFERENCES (5 PUAN)

{This section should include the resources used in the report.}

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| **NOTE ON REPORT DRAFTS:** |
| **- All reports must be written in accordance with academic report standards.**  **- Information about the contents of the reports is stated above.**  **- All reports should include "Table of Contents" and "References".**  **- Each report must include a cover page.**  **- Reports pages should be numbered consecutively.**  **- Font: Calibri, Point: 11, Line Spacing: 1.15**  **- The report must be no more than 30 pages. If the maximum number of pages is exceeded, a penalty of 5 points per page will be applied.**  **- Graphics and schematics should be added in vector graphics format.**  **- All pictures/tables/graphs should be explained in the text.** |