



ISAP2020 Student Design Contest

Instructions for final design submission and online competition



Category A. Antenna Design

Goal

To design a character-shaped antenna that satisfies the following specifications.

Specifications

- A part or all of the radiating elements of the designed antenna should be constituted by an English word/acronym (e.g. Antenna, ISAP).
- The word/acronym should have 2 letters and more.
- All the letters should contribute to radiation.
- The design frequency of the antenna is 2402 MHz.
- The antennas size should be within 148 mm by 100 mm, and the antenna thickness should be within 10 mm.
- The antenna is composed of only passive materials. Active components such as amplifiers must not be used.
- A SMA plug-type connector should be attached to the antenna for feeding. The connector is excluded from the antenna size given above.
- Measured or simulated results of the designed antenna must be included in the submitted application form. The document should include the following information:
 - Description of the antenna design
 - Geometry
 - Reflection coefficient
 - Efficiency
 - Gain
 - Current distribution on the character-shaped elements

Instruction for final design submission

- In addition to the above indices, the final design submission requires the following figures:
 - Photographs of fabricated antenna including the front, the top, and the side views with a ruler
 - Measured reflection coefficient (S_{11})
 - Measured gain

Instruction for online competition

- In the online competition, the finalists must have oral presentation.
- All presentations have been allocated a 20-minute time slot including questions and discussion.
- The presentation contents are expected to include following items:
 - Explanation of designed antenna performance (measured S_{11} and measured gain)

- Motivation why you chose the letters and the appearance
- Radiation mechanism of designed antenna (especially, the explanation how each letter contributes to radiation is most important.)
- Point that you worked out the most

Evaluation

- The designed antenna is comprehensively evaluated by following items through the submitted documents and online presentation.
 - Antenna performance (evaluated by measured gain and the appearance)
 - Number of letters that contributes to radiation
 - Quality of the oral presentation and the final submitted document
- According to the above evaluation, the team with the highest score will win the award.