ABSTRACT

Some instance in other countries are developing satellite constellation for certain needs. One of the satellite type that can be used is micro satellite as receiver, storage and satellite data sender. Satellite constellation technology needs more than one satellite for get and sending data. Satellite constellation technology is placing some satellite on certain orbit to communicate each other. In the satellite communication need additional block that's called Inter Satellite links (ISL).

Previous studies have designed circular polarized S-band antennas for inter-satellite link communication, but the HPBW parameters generated when the antenna is attached to the satellite prototype are not met at ≥ 90 °. So in this study designed antenna that can produce HPBW ≥ 90 ° when attached to prototype satellite by adding Electromagnetic Band Gap (EBG). Electromagnetic Band Gap can suppress the surface current, increase radiation efficiency, and widen the bandwidth. So the HPBW antenna is not significantly affected by satellite prototype.

The antenna generated from this study has a HPBW of 91 ° when attached to a satellite prototype.

Keyword : *Micro Satellite, Inter-Satellite Link (ISL), Electromagnetic Band Gap (EBG).*