design has the smallest size with a footprint area of 216 mm^2 which is suitable for various UWB devices application.

IV. Conclusions

The UWB antenna design, which has a simple design and small size, has been presented. The small antenna with a dimension of 27×8×1.6 mm is suitable for various UWB communication devices. The antenna with tapered transformer and tapered side feeding point has been studied and discussed where it can improve the antenna bandwidth proper for the UWB system. The antenna has a bandwidth of 4.4–10.8 GHz and radiates the stable omnidirectional radiation pattern on UWB band. The research has met the main target where the antenna size is smaller than the latest literature, meets the UWB bandwidth, and has a stable radiation pattern. This antenna design can be developed in the future to get the lowest bandwidth according to FCC requirements on 3.1–10.8 GHz.

Acknowledgment

We thank Politeknik Negeri Padang, Ministry of Research, Technology and Higher Education of Indonesia that sponsoring this study through Applied Research Grant, contract No: 058/PL9.1/PP/2018.

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