Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Denying Unmanned Aerial Vehicle Invasion using High Power Electromagnetic Waves[1] JING-SHYANG YEN, Department of Electronic Engineering, National Taipei University of Technology, Taiwan, XUAN-DE HUANG, CHIA-WEI LIN, Department of Mechanical Engineering, National Taipei University of Technology, Taiwan, KAVIYA ARANGANADIN, Department of Electrical and Biomedical Engineering, Hanyang University, Korea, JWO-SHIUN SUN, Department of Electronic Engineering, National Taipei University of Technology, Taiwan, HUA-YI HSU, Department of Mechanical Engineering, National Taipei University of Technology, Taiwan, CHII-RUEY LIN, of Mechanical Engineering, Minghsin University of Science and Technology, Taiwan, MING-CHIEH LIN, Department of Electrical and Biomedical Engineering, Hanyang University, Korea — A unmanned aerial vehicle (UAV) or simply a drone has no onboard human pilot. In recent years, UAVs are well developed and made commercially available. Several countries have operational, domestic UAVs, and many more have imported drones or have development programs under way. Airport control or public security might be endangered by intended invasion or accidental activities. A UAV might be used to carry aircraft ordnance such as missiles and is used for drone strikes. These drones are usually under real-time human control, with varying levels of autonomy, speeds, and payloads. Thus, denying this type of invasion is not a trivial task. In this work, electromagnetic effects on a UAV are studied using a 3-D conformal finite-difference time-domain simulation in order to find some solutions to mitigating a UAV invasion. The 3-D model of a commercially available drone has been built and investigated.

[1]Work supported by NTUT and MUST in Taiwan, and HYU in Korea.

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Date submitted: 03 Jul 2019 Electronic form version 1.4