|  |  |  |  |
| --- | --- | --- | --- |
| **Title:** | Design and Implementation of an Embedded System to Observe the Atmospheric Condition using a Helium Balloon | | |
| **Author(s) Name:** | Sadman Shahriar Alam; Akib Jayed Islam; Md. Mahmudul Hasan; Md Mehedi Farhad | | |
| **Contact Email(s):** | sadman.alam@aiub.edu | | |
| **Published Journal Name:** | 2018 International Conference on Innovations in Science, Engineering and Technology (ICISET) | | |
| **Type of Publication:** | International Conference | | |
| **Volume:** |  | Issue |  |
| **Publisher:** | IEEE | | |
| **Publication Date:** | 27 June 2019 | | |
| **ISBN:** | 978-1-5386-8525-9 | | |
| **DOI:** | 10.1109/ICISET.2018.8745598 | | |
| **URL:** | https://ieeexplore.ieee.org/document/8745598 | | |
| **Other Related Info.:** | Page 1-6 | | |
|  | | | |

|  |  |
| --- | --- |
| **Abstract:** |  |
| For conducting any space-related research such as surveillance and communication, launching high power rocket, geographical imaging or even space exploration, it is necessary to know the optimal weather condition at different levels of the atmosphere. One of the most commonly used methods for measuring the atmospheric conditions is using a weather balloon. Of course, this can be done by using modern-day satellite technology. But satellite, for example, provides temperature only on the land surface. As a result, it limits the possibility of providing accurate measurements on temperature profile at different levels of atmosphere or wind speed of the jet stream. An embedded system consists of different sensors is capable of providing profiles of temperature, pressure and relative humidity at different altitude with the help of a helium balloon. In this paper, we have designed and implemented a remotely controlled embedded system. The RF transmitter is linked with the sensors on board of the balloon payload, which sends the measurements back to a ground tracking antenna on a set radio frequency. The display section receives the transmitted data for further processing and acquiring graphical results. In previous research papers on this topic, there was no graphical representation of acquired weather data from the experiment where we have discussed the outcome of the experiment with graphical representation. | |