Engineering Standards

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ECE 4805
02/01/23

Engineering Characteristic: Antenna Measurement
Standard: 149-2021 - IEEE Recommended Practice for Antenna Measurements

1. Legitimate SDO: The IEEE (Institute of Electrical and Electronics Engineers) is a well-respected standard development organization. It was created in 1963 and is focused on improving technology for the good of humanity. The IEEE has a huge number of members from all over the world, with a variety of industries and organizations represented, including electrical engineering, computer science, and biomedical engineering. The IEEE is very transparent, impartial, and responsible in how they create their standards, and involves a lot of different people in the process. The IEEE is recognized as a professional and governmental organization, not just a company looking to make money, and their standards are widely used in industries like telecommunications, power electronics, and information technology. Because of all these factors, the IEEE can be considered a legitimate standard development organization.

2. Finding the Standard: I found the standard by searching the IEEE Xplore website. I used the search function and entered "antenna measurement". I filtered the results to only show standards published from 2010 to the present day to find the latest standard available. The search results showed multiple standards related to antennas. After reviewing several descriptions, I selected the IEEE Recommended Practice 149-2021 for Antenna Measurements.

3. Number and Title: 149-2021 - IEEE Recommended Practice for Antenna Measurements

4. Purpose and Use: This standard outlines recommended practices for measuring antenna transmitting and receiving properties, including design of antenna test facilities, instrumentation requirements, and evaluation and operation guidelines for ranges. It is intended to provide individuals and organizations involved in antenna design, manufacture, measurement, and use with guidelines for quality measurements and result interpretation. This standard can serve as a design reference for building and testing our antenna in the project.

5. Target Specification: One requirement from the standard is to ensure the accuracy of the measurement equipment used. A potential target specification for my project could be a measurement accuracy of the position readout to be approximately ± 0.05° to less than ± 0.01° which is achievable using the methods described in this standard in page 52.

6. Finding More Information: I can find more information on the standard and its application by reading the standard itself, as well as related articles and papers on the IEEE website. I could also attend IEEE conferences and workshops or join the IEEE

Antennas and Propagation Society for access to additional resources from experts in the field.

Engineering Characteristic: Antenna Terminology
Standard: 145-2013 - IEEE Standard for Definitions of Terms for Antennas

1. Legitimate SDO: The IEEE (Institute of Electrical and Electronics Engineers) is a well-respected standard development organization. It was created in 1963 and is focused on improving technology for the good of humanity. The IEEE has a huge number of members from all over the world, with a variety of industries and organizations represented, including electrical engineering, computer science, and biomedical engineering. The IEEE is very transparent, impartial, and responsible in how they create their standards, and involves a lot of different people in the process. The IEEE is recognized as a professional and governmental organization, not just a company looking to make money, and their standards are widely used in industries like telecommunications, power electronics, and information technology. Because of all these factors, the IEEE can be considered a legitimate standard development organization.

2. Finding the Standard: I found the standard by searching the IEEE Xplore website. I used the search function and entered "antenna terminology". I filtered the results to only show standards published from 2010 to present day to find the latest standard available. The search results showed multiple standards related to antenna terminology. After reviewing several descriptions, I selected the IEEE Standard 145-2013 for Definitions of Terms for Antennas.

3. Number and Title: 145-2013 - IEEE Standard for Definitions of Terms for Antennas

4. Purpose and Use: This standard establishes definitions for antennas and systems that incorporate an antenna as a component. Its purpose is to provide a set of standard definitions for the community so that when terminology is used, everyone will understand its meaning. This will be useful in my project, as it will ensure that my team uses the correct terminology when referring to antenna parts and features. It will also assist us in our research on antennas.

5. Target Specification: One requirement from the standard is to use standardized terminology when referring to antennas and systems that incorporate antennas. A potential target specification for my project could be to only use terms defined in the IEEE Standard 145-2013 for Definitions of Terms for Antennas when referring to antenna components and systems in all documentation and communication.

6. Finding More Information: Just as with the previous standard I can find more information on the standard and its application by reading the standard itself, as well as related articles and papers on the IEEE website. I could also attend IEEE conferences and workshops or join the IEEE Antennas and Propagation Society for access to additional resources from experts in the field.

References:

145-2013 - IEEE Standard for Definitions of Terms for Antennas. (n.d.). Retrieved February 1, 2023, from https://ieeexplore-ieee-org.ezproxy.lib.vt.edu/document/6758443

149-2021 - IEEE recommended practice for Antenna Measurements. (n.d.). Retrieved February 1, 2023, from https://ieeexplore.ieee.org/document/9714428/