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In Search of Accurate and Consistent Terminology

Gary Breed
Editorial Director

Engineers strive for precise, repeatable results in the design and manufacture of electronic equipment. Unfortunately, there are still some troublesome areas in the presentation of engineering information in publications. Our staff constantly wrestles with the problem of exactly what abbreviations, acronyms and annotations are the best. Here are a few examples:

Loss as a negative number—One of our avid readers will be very unhappy with this issue, since it contains several violations of his pet peeve, which is labeling graphs with negative numbers for loss. Loss is already negative by definition, so we should either use positive numbers (absolute value) or, if we prefer to visualize loss as a negative number, we should label the graphs "Reflection Magnitude" or "Frequency Response." We don't use the negative numbers in a text description—the meaning of "20 dB loss" is perfectly clear—so why is it different in a graph? There must be some deep psychological reason, or maybe it's just a habit that got started years ago and no one bothered to change it...I don't know!

Use of undefined acronyms—This is a tough call for anyone editing or writing for a professional journal. Which acronyms are so common that we can assume the readers know them? Some technical papers define every acronym and reading them is like slogging through a swamp. We try to make it easier by using terms like AC, DC and RMS without further definition. But it's hard to decide whether to define acronyms for current technologies like GPS, CDMA or GSM and organizations and agencies like NASA, DARPA or IEEE. Short of providing an acronym dictionary, I suppose the best rule is to err on the side of too much information. Of course, we should always define acronyms that are duplicated elsewhere—such as NSF, which could be the National Science Foundation or NSF International (formerly the National Sanitation Foundation).

Inconsistent abbreviations—Is "A" or "amps" the appropriate abbreviation for amperes? Is "A" just used with numbers and "amps" acceptable in a text or verbal description, since it has such a long history of use? The

same applies to seconds, which can appear as "s" or "sec" in various writings. In digital technology, this is extremely important, since "s" might also refer to samples, as in the doubly-confusing Msps or Gsps (mega- or gigasamples per second).

Capitalization—This is a really big issue from an editor's point of view. Some foreign languages capitalize all nouns, and this habit has found its way into English, especially in marketing departments. We get many press releases with all important words capitalized, like, "...applications include Military, Commercial and Medical Test & Measurement." We try to correct all of these, but this usage is so pervasive that we occasionally look right past those capital letters and let them get into print, mainly in our new product section!

Another aspect of capitalization is in abbreviations and acronyms. We often defer to the *IEEE Standard Dictionary of Electrical and Electronic Terms*, but even that esteemed text is full of inconsistencies. (Its editors must be even more frustrated than we are!) Our older edition says to use lower case "ac" and "dc" and capitalized "RF" and "RMS." However, the current IEEE style guidelines show capitalized AC and DC. Other well-known reference books have them all lower case. Our own rule is to capitalize all acronyms, including AC and DC, because we think that is the least likely to be misunderstood.

Finally, we all need to be careful with capitalization of abbreviations. For example, we use "s" for seconds, since "S" is the abbreviation for siemens, the unit of conductance formerly known as mho.

Common usage that is illogical or inconsistent—In the inconsistent realm, we often see different terms used by our colleagues who speak British English rather than the American version that has evolved on this side of the Atlantic. One of the most common is the use of "capacity" instead of "capacitance." I prefer the latter, since we really want a figure of merit rather than a measure of quantity. I'm sure the definition of a Farad can ultimately be defined in terms of the number of electrons, but that's a real stretch for me!

Of course, all this concern for precise usage should result in action. We constantly struggle to find the right way to express technical terminology with the greatest clarity, so we don't expect perfection from anyone else. However, simply remembering to think about these things as you put ideas into words will help a lot!

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