

# Submission Format for Proceedings (Title in 18-point Times font)

J. Clerk Maxwell, Michael Faraday, and André M. Ampère (List authors on this line using 12 pt Times font - use a second line if necessary)

Radio and Wireless Research, City, State/Region, Mail/Zip Code, Country (authors affiliation(s) listed here in 12 point Times font - use a second line if necessary)

**Abstract**— This document gives formatting instructions for authors preparing papers for publication in the RWS using LaTeX. The authors must follow the instructions given in the document for the papers to be published. You can use this document as both an instruction set and as a template into which you can type your own text. Please try to keep the length of your abstract to 100 words or less. After the abstract, you should list a few key words from the IEEE approved "Index Terms" LIST that describe your paper. The index terms are used by automated IEEE search engines to quickly locate your paper. Typically, you should list about 5 to 7 key words, in alphabetical order. An example is shown next.

**Index Terms**—Ceramics, coaxial resonators, delay filters, delay-lines, power amplifiers.

## I. INTRODUCTION

This document is a LaTeX template for publication in RWS. You may want to read through this entire document before you start creating your paper! The following information is intended to help you prepare the Final Manuscript for submission to the Proceedings CD. (Many authors submit the same paper for the initial as well as the final submission. This is a common practice; see item 5 below.)

Authors should remember that:

- 1) Deadlines are *absolute*, don't even ask!
- 2) Papers may not exceed **four** pages, including all figures, tables, references, etc. Additionally, there is a 1MB size limit on the final .pdf version.
- 3) RWS requires the final manuscript submission to be in .pdf format only and that the file is verified for IEEE Xplore compatibility using PDFeXpress.
- 4) Both color and black and white reproductions of the final version need to be verified for correct appearance.
- 5) Many submitters with previous conference experience realize that, if their submission is accepted, they will be required to submit a version of their Final Paper to be published in the Conference Proceedings. As the Proceedings paper will be similar in length to the Summary, many contributors opt to prepare their Summary in the format required for the final manuscript. This template contains the instructions for the proper preparation of such a document.

- 6) Although not required, you are encouraged to employ this format. This document is being made available as a template for your convenience. If you elect not to use this template, please remember that you must still adhere to the general guidelines outlined in the "Author Guidelines", but not limited to, font size, margin size, page limits, file size, etc.

## II. OVERVIEW OF THE PROCEEDINGS FORMAT

We are requesting that you follow these guidelines as closely as possible so that the Proceedings have a professional look with standard IEEE formatting. An easy way to comply with the RWS paper formatting requirements is to use this document as a template and simply type your text into it.

For the Title use 18-point Times (Roman) font. Its paragraph description should be set so that the line spacing is single with 6-point spacing before and 6-point spacing after. The font description for the Author List and Authors' Affiliation(s) should be 12-point Times. The paragraph descriptions should be set so that the line spacing is single with 6-point spacings before and after. Use an additional line spacing of 12 points before the beginning of the double column section, as shown above.

## III. DETAILED TEXT FORMATTING

Using 8.5 x 11-inch (US letter size) paper, the top margin is 0.75 inches and the bottom margin is 1.125 inches, and the left and right margins are 0.75 inches. Except for Title, Authors and Affiliations, use a double column format. The column width is 3.375 inches and the column spacing (gutter) is 0.25 inch.

Each major section begins with a Heading in 10 point Times font centered within the column and numbered using Roman numerals (except for ACKNOWLEDGEMENT and REFERENCES), followed by a period, a single space, and the title using an initial capital letter for each word. The remaining letters are in SMALL CAPITALS. The paragraph description of the section heading line should be set for 18 points before, 6 points after, and the line spacing should be set to exactly 12 points.

TABLE I  
SUMMARY OF TYPOGRAPHICAL SETTINGS

Section	Font Specifics (Times Roman unless specified)			Paragraph Description				
	style	size	special	spacing (in points) line	before	after	alignment	indent (in inches)
Title	plain	18	none	single	6	6	centered	none
Author List	plain	12	none	single	6	6	centered	none
Affiliations	plain	12	none	single	6	6	centered	none
Abstract	bold	9	none	exactly 10	0	0	justified	0.125 1st line
Index Terms	bold	9	none	exactly 10	0	0	justified	0.125 1st line
Headings	plain	10	small caps	exactly 12	18	6	centered	none
Subheadings	italic	10	none	exactly 12	6	6	left	none
Body Paragraphs	plain	10	none	exactly 12	0	0	justified	0.125 1st line
Equations	Symbol font for special characters			single	6	6	centered	none
Figures	6 to 9 point sans serif (Helvetica)			single	0	0	centered	none
Figure Captions	plain	9	none	10	0	0	justified	none, tab at 0.5
References	plain	9	none	10	0	0	justified	0.25 hanging

For the body of your paper, use 10-point Times font and set your line spacing at "exactly 12 points" with 0 points before and after. Indent each paragraph by 0.125 inches.

Further details are provided in the remainder of this paper for specific situations.

#### A. Major Subsections

As shown, denote subsections with left justified 10-point Times Italic. Order them with capitalized alphabetic characters (A, B, ...). Follow the letter designation with a period, a single space, and then the subsection title capitalizing the first letter of each word. The paragraph description of the subsection heading is set to "exactly 12-point" line spacing with 6 points before and after.

#### B. Equations

Equations should be centered in the column and numbered sequentially. Place the equation number to the right of the equation within a parenthesis, with right justification within its column. An example would be

$$\oint_C \mathbf{E} \cdot d\mathbf{L} = -\frac{\partial}{\partial t} \int \int \mathbf{B} \cdot d\mathbf{S} \quad (1)$$

or

$$\nabla \times \mathbf{H} = \mathbf{J} + \frac{\partial \mathbf{D}}{\partial t}. \quad (2)$$

Note that a period is used to properly punctuate the previous sentence. It is placed at the end of the second equation. *Make sure that any subscripts in your equations are legible and are not too small to read!* When referring to an equation, use the number within parenthesis. For example, you would usually refer to the second equation as (2) rather than equation (2). The paragraph description of

the line containing the equation should be set for 6 points before and 6 points after. The paragraph spacing will need to be set to "single" rather than "exactly 12 point" so that the height will autoscale to fit the equation.

#### IV. FIGURES

Figures should utilize as much of the column width as possible in order to maximize legibility. Use a sans serif font, such as Helvetica or Arial. Helvetica and Arial are larger and much easier to read than Times. Using 6- to 9-point Helvetica usually results in a legible figure. *Do not use any font smaller than 6-point!* It must be legible. When referring to a figure, use the abbreviation Fig. followed by its number. Place figure captions directly below each figure. Note that figure captions are always (left and right) justified, rather than centered, even if they are less than a single full line in length. See the captions for Fig. 1 and Fig. 2.

Notice that prior to the graph, a single 12-point line is used to separate the preceding text from the graph. The equivalent of a blank line should exist between the bottom of the graph (the x-axis caption) and the figure caption. (In this particular case, there was no need to add a blank line between the x-axis label and the figure caption, because there was already adequate spacing provided by the image border.) After the figure caption, there should be a single 12-point blank line before the text resumes.

More flexibility is obtained in inserting figures if you can place them exactly where you would like them to be on a page. Do not lump all figures at the end of the paper!

If you decide to use color traces in your graphical data, *be absolutely certain* that there is no ambiguity about your

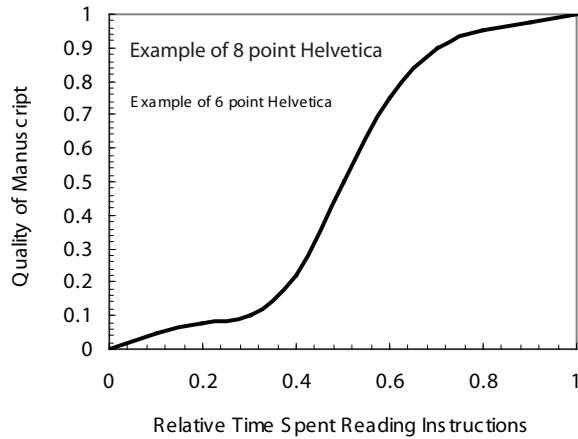


Fig. 1. Estimated relationship between the time an author spends reading these instructions and the quality of the author's Proceedings article.

graphical information when printed on a B&W printer.

Here is a common example of what can go wrong with the numbering and sizing of axis titles on a graph. In this case, the graph was initially pasted at a much larger size than the column width, and then reduced to fit:

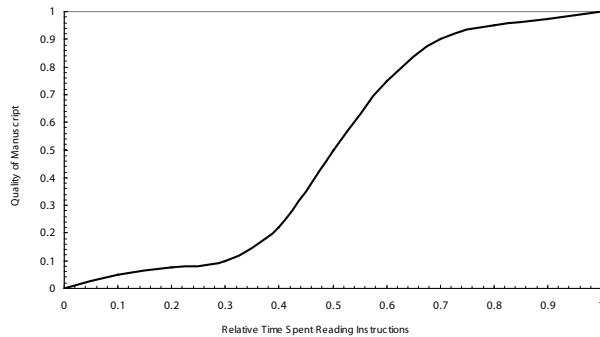


Fig. 2. Example of an improperly titled figure. The numerics and the labels on the axes are illegible. This may cause a submission to be rejected. Don't let this happen to you!

Table I also serves as an illustration of one of the rare instances when the double column format requirement can be violated. Certain figures and tables will require the full-page width to display. It is usually best to place these figures and tables at the top or bottom, rather than in the middle of a page. Tables should be entered within a single column if this can be done cleanly, without the entry becoming too crowded.

## V. CITING PREVIOUS WORK

When referencing a journal article [1], a conference digest article [2] or a book [3], place the reference numbers within square brackets. To simultaneously cite these references [1]-[3] use the format just demonstrated. The

reference list is the last section and references are listed in the order cited. Use 9 point Times. The paragraph description is set for a line spacing of exactly 10 points with 0 point spacing before and after. A 0.25 inch hanging indentation should be specified.

Generally speaking, references should be very detailed. For journal articles, list all authors by initials and last name, the title of the paper in quotations (capitalizing only the first letter of the first word, unless it would be capitalized in a sentence, *e.g.*, a proper noun), the journal name in italics, the volume number, the issue number, the page numbers, and the date. Use the examples provided [1]-[3] as a guide.

## VI. CREATION OF THE PDF FILE

Beginning in 2004, the IEEE has mandated that all published papers comply with certain IEEE conference standards for electronic searchability. Please note that a detailed checklist is available on the submission site to help guide authors through the task of converting their Word documents into PDFs. Going forward, this will ensure compatibility with the new search requirements for the IEEE Xplore database.

Therefore, we are asking all authors to submit Portable Document Format (PDF). All authors must follow the simple and specific guidelines posted on the submission site. Failure to follow this guideline may jeopardize the acceptance of a paper. As always, with a conversion to PDF, authors should *very carefully* check a printed copy. Some conversion problems that have been known to occur are:

- 1) Arrows in a drawing may become slightly disconnected from their stems, and/or shifted in position.
- 2) Check all special symbols and equations, especially right-hand brackets.
- 3) Don't expect the two bottom lines of a double column to line-up exactly with each other. Use

```
\vfill
```

```
\pagebreak
```

command in appropriate location to balance the last page if necessary.

Authors should perform a careful check to catch minor nuisances and resolve any problems encountered.

## VII. CONCLUSION

Although reading these instructions may have been an unpleasant experience, following them will improve the quality of your paper and the appearance of the Proceedings. Table I summarizes much of the detail provided and illustrates one of the rare instances where the double column format can be violated. If you have comments, suggestions, or are willing to volunteer your time to improve these instructions, please contact one of the Steering Committee members.

#### ACKNOWLEDGMENT

The authors wish to acknowledge the assistance and support of the IEEE Book and Information Services and the IMS2004 Publication Committee.

#### REFERENCES

- [1] W. H. Cantrell, "Tuning analysis for the high-Q class-E power amplifier," *IEEE Trans. Microwave Theory Tech.*, vol. 48, no. 12, pp. 2397–2402, Dec. 2000.
- [2] W. H. Cantrell and W. A. Davis, "Amplitude modulator utilizing a high-Q class-E DC-DC converter," in *2003 IEEE MTT-S Int. Microwave Symp. Dig.*, vol. 3, June 2003, pp. 1721–1724.
- [3] H. L. Krauss, C. W. Bostian, and F. H. Raab, *Solid State Radio Engineering*. New York: J. Wiley & Sons, 1980.