

## The American Radio Relay League

The American Radio Relay League, Inc., is a noncommercial association of radio amateurs, organized for the promotion of interest in Amateur Radio communication and experimentation, for the establishment of networks to provide communications in the event of disasters or other emergencies, for the advancement of the radio art and of the public welfare, for the representation of the radio amateur in legislative matters, and for the maintenance of fraternalism and a high standard of conduct.



ARRL is an incorporated association without capital stock chartered under the laws of the state of Connecticut, and is an exempt organization under Section 501(c)(3) of the Internal Revenue Code of 1986. Its affairs are governed by a Board of Directors, whose voting members are elected every three years by the general membership. The officers are elected or appointed by the Directors. The League is noncommercial, and no one who could gain financially from the shaping of its affairs is eligible for membership on its Board.

"Of, by, and for the radio amateur," ARRL numbers within its ranks the vast majority of active amateurs in the nation and has a proud history of achievement as the standard-bearer in amateur affairs.

A *bona fide* interest in Amateur Radio is the only essential qualification of membership; an Amateur Radio license is not a prerequisite, although full voting membership is granted only to licensed amateurs in the US.

Membership inquiries and general correspondence should be addressed to the administrative headquarters:

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### Officers

**President:** Rick Roderick, K5UR  
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The purpose of *QEX* is to:

- 1) provide a medium for the exchange of ideas and information among Amateur Radio experimenters,
- 2) document advanced technical work in the Amateur Radio field, and
- 3) support efforts to advance the state of the Amateur Radio art.

All correspondence concerning *QEX* should be addressed to the American Radio Relay League, 225 Main St., Newington, CT 06111 USA. Envelopes containing manuscripts and letters for publication in *QEX* should be marked Editor, *QEX*.

Both theoretical and practical technical articles are welcomed. Manuscripts should be submitted in word-processor format, if possible. We can redraw any figures as long as their content is clear. Photos should be glossy, color or black-and-white prints of at least the size they are to appear in *QEX* or high-resolution digital images (300 dots per inch or higher at the printed size). Further information for authors can be found on the Web at [www.arrl.org/qex/](http://www.arrl.org/qex/) or by e-mail to [qex@arrl.org](mailto:qex@arrl.org).

Any opinions expressed in *QEX* are those of the authors, not necessarily those of the Editor or the League. While we strive to ensure all material is technically correct, authors are expected to defend their own assertions. Products mentioned are included for your information only; no endorsement is implied. Readers are cautioned to verify the availability of products before sending money to vendors.

Kazimierz "Kai" Siwiak, KE4PT

## Perspectives

### Like a Science Fiction Movie – a Year On

It has been more than a year since we quoted actor Robert De Niro, "*Kind of like a science fiction movie, but it's real.*" After more than two years we still awaken to an eerily different world, one where things are still in a fog, still unsettled and still unnatural. Words like *social distancing*, *masks*, *lock-down* and *stay-at-home* are now solidly locked into our vocabulary, joined now with *Zoom*, *jab* and *vaccination*. These words and phrases speak to the promise of ending the pandemic. We have all the necessary tools, if only we would follow the science.

Ham club meetings are still held online or over ham FM repeaters. By their very nature, ham radio *operations* are distancing events, and have been for more than a century. As such they remain "pandemic proof." Slowly the camaraderie of face-to-face interaction is returning. It's also a good time for our members to catch up on and enjoy the mental stimulation of *QEX* and other ARRL publications. Stay safe!

### In This Issue

- James Kretzschmar, AE7AX, controls a 16x2 LCD display with a TI microcontroller.
- Andrew Anderson, WQ1S/NK3CV, uses the 30 THz band as a communications medium.
- George Steber, WB9LVI, describes his SSB receiver based on the Silicon Labs Si4732-A10 IC.
- Tom Alldread, VA7TA, describes a tweezers probe for measuring SMD components.
- Eric Nichols, KL7AJ, in his Essay Series, describes maximum power transfer.
- Larry Lamano, WAØQZY, builds a pulse generator for making TDR measurements.

### Writing for *QEX*

Please continue to send in full-length *QEX* articles, or share a **Technical Note** of several hundred words in length plus a figure or two. *QEX* is edited by Kazimierz "Kai" Siwiak, KE4PT, ([ksiwia@arrl.org](mailto:ksiwia@arrl.org)) and is published bimonthly. *QEX* is a forum for the free exchange of ideas among communications experimenters. All members can access digital editions of all four ARRL magazines: *QST*, *On the Air*, *QEX*, and *NCJ* as a member benefit. The *QEX* printed edition is available at an annual subscription rate (6 issues per year) for members and non-members, see [www.arrl.org/qex](http://www.arrl.org/qex).

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Very kindest regards,  
Kazimierz "Kai" Siwiak, KE4PT  
*QEX* Editor