



Volume XXVI, Issue 7

September 2019

Editor: Thomas Price; KC2PSC

June 13, 2019 Board Meeting

No meeting minutes were provided to the editor for publication

June 13, 2019 General Meeting

No meeting minutes were provided to the editor for publication.

This article was originally published in the March 2018 GSBARC Compass

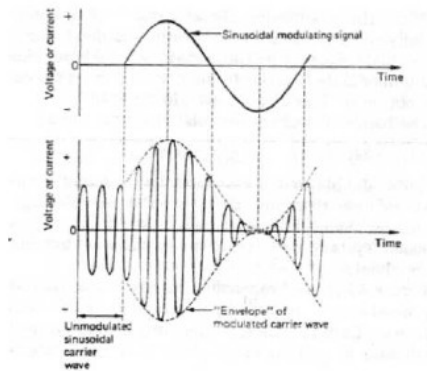
In the Classroom with AB2ZI

Making Sense of Fourier

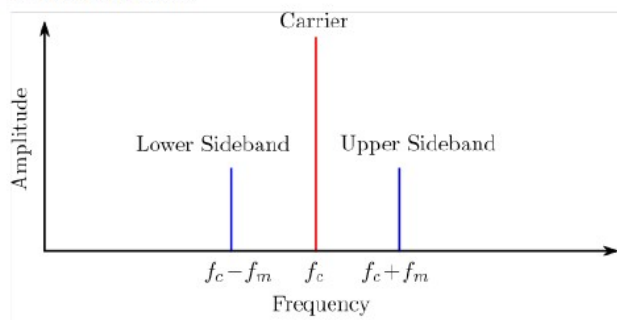
By Kevin, AB2ZI



One of the more confusing things many of us face when learning about radio waves and modulation is trying to visualize what those signals look like when they are transmitted. This is especially true when we see the illustration of a carrier being modulated by an audio tone and its resulting envelope is illustrated as a sine wave superimposed on the top and bottom of the carrier:



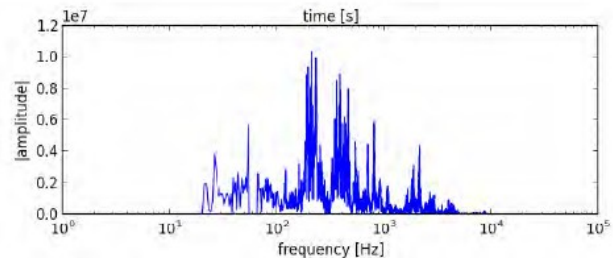
We are told that the top part of the envelope is the upper side band and the bottom half is the lower side band. Then we are shown the carrier and side bands in the frequency domain like this:



The concept that is hard for many to grasp is that a complex waveform, such as speech, is made up of many individual sine waves of different frequency and amplitude all of which combine to form those complex waveforms.



The human voice in the frequency domain looks like this:



It can be difficult for us to picture these discrete frequencies in our mind since we are not accustomed to thinking of our voices as originating from a musical device—our voice box—but we can picture it quite easily if we use something analogous that we can picture, for example a piano. We are all familiar with the piano, at least in that we know there are a bunch of white and black keys that strike strings with hammers to produce notes. Playing more than 1 note at a time (typically at least 3) we can form musical chords which sound fuller when played together than the individual notes played separately. This is what is known as a Fourier series. When we see a spectrum analyzer output of a waveform like a human voice (or musical instrument, digital transmission, etc.) we are seeing a graphical representation of those individual sine waves and their magnitudes—how much or how little—they contribute. More high frequency contributors will have a higher pitched sound overall and vice versa.

Fourier analysis is one of the topics we cover in the Amateur Extra class. If you are interested in learning about Fourier come on down or check out this play list on the education [YouTube channel here](#). 🎧

September Club Meeting
September 12, 2019
7:30 PM
Huntington Senior Citizen Center

This will be the first fall club meeting.

Groups IO

Please join the Clubs Yahoo group. Not a member already send an e-mail to the following address:

larkfieldarc+subscribe@groups.io

Join our facebook group

<http://www.facebook.com/Larkfieldarc>

ARES/RACES NET

Sunday 0900 New York State RACES 3993.5 LSB
Monday 1900 Huntington - 147.210
Monday 1930 Smithtown - 145.430
Monday 1930 Southampton - 147.195
Monday 2000 Nassau County ARES RACES - 443.525
Monday 2000 Easthampton - 145.270
Monday 2015 Babylon - 146.685
Monday 2030 Brookhaven - 145.210
Monday 2100 Suffolk County RACES - 145.330

Huntington ARES/RACES

<http://www.huntingtonnyaresraces.org>

The Larkfield Amateur Radio Club

Affiliated with American Radio Relay League

Officers (one year terms)

President

Vice President Neil Harris KC2TAF (2019)

Secretary:

Treasurer: Rich Florio W2TMA (2019)

General Directors (two year terms)

Donald Clarke AB2BN (2019-2020)

Art Van Nostrand KD2NJM(2019-2020)

Matt Lazarus N2RBP(2019-2020)

Peter Deluca AA2VG(2019)

Roger Rapp W2GLE (2019)

WA2PNU Station Trustee Jonathan Schwartz KC2PBE

WR2ABA Station Trustee Jonathan Schwartz KC2PBE

W2LRC Station Trustee Jonathan Schwartz KC2PBE

Members of the Larkfield Amateur Radio Club are invited to use the

W2RGM Dix Hills Repeater System:

2 meters

147.075 MHz out/147.675 MHz in

4z/136.5 Hz PL

The Larkfield Amateur Radio Club wishes to thank Bruno KC2ESI, Jack K2JX, Joe N2QPD, Bob AC2AZ, Thomas KC2PSC, and Pat WB2CMF for their dedication and efforts in maintaining the Club's repeaters and our packet and APRS stations. Their collective efforts and donations of equipment along with the overview of Bob AC2AZ and Peter AA2VG have kept us "on the air". Still to go, another 440 MHz repeater and adding IRLP or Echolink to one of our repeaters. We need volunteers for this new work.

General Meetings 7:30 PM

September 12, 2019 October 10, 2019

November 14, 2019

Board Meetings 7:00 PM

September 12, 2019 October 10, 2019

November 14, 2019

GOOD AND WELFARE

Attention members: Our Good and Welfare Chairperson is Helene Lazarus (XYL of Arnie N2PLS (SK)). Please inform her (499-2837) of news about club members so she may make submissions to this publication.

70 centimeters
448.500 MHz out/ 443.500 in
2a/114.8 Hz PL

THE LARKFIELD AMATEUR RADIO CLUB OPERATES:

WR2ABA HUNTINGTON REPEATER

2 meters

147.210 MHz out/147.810 MHz in

4z/136.5 Hz PL

W2LRC HAUPPAUGE REPEATER

2 meters

145.430 MHz out/144.830 MHz in

4z/136.5 Hz PL

W2LRC HUNTINGTON APRS

2 meters

144.390 MHz In/Out

USA EASTNET FLEXNET NETWORK

2 meters

WA2PNU (0-15) Nodes 145.070 MHz

WA2PNU (-4) Node 145.070 MHz (BBS)

<p align="center"><u>2019 DUES SCHEDULE</u> Regular Membership: \$35.00 Members Age 65 or older: \$25.00 Members Age 17 or less: \$25.00 Disabled Members: \$25.00 Living Outside Club's Operating Sphere: \$15.00</p> <p><u>Add \$10.00 if you want QSX via U.S. Mail</u></p>	<p align="center">Pay by PayPal at larkfield.org</p> <p align="center">Make your check payable to: LARC</p> <p align="center">And Mail to: Larkfield Amateur Radio Club Inc. PO Box 1450 Huntington, NY 11743</p>
<p align="center">VE SESSION SATURDAY October 12th HUNTINGTON TOWN HALL 100 MAIN ST., ROOM 114 WALK-Ins WELCOME</p> <p>Team Liaison is Rich W2TMA. Fee is \$15. All elements will be offered and exams start at 9:00AM. You must have 2 forms of ID, one of which includes a photo. If upgrading, bring an original and a copy of your license and an original of any CSCEs.</p>	<p>The next Executive Board and General meetings will be on Thursday, September 12th at 7PM and 7:30PM, respectively.</p> <p>You can submit articles or photos for publication by e-mail at: larkfieldqsx@gmail.com</p>

Larkfield Amateur Radio Club, Inc.
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