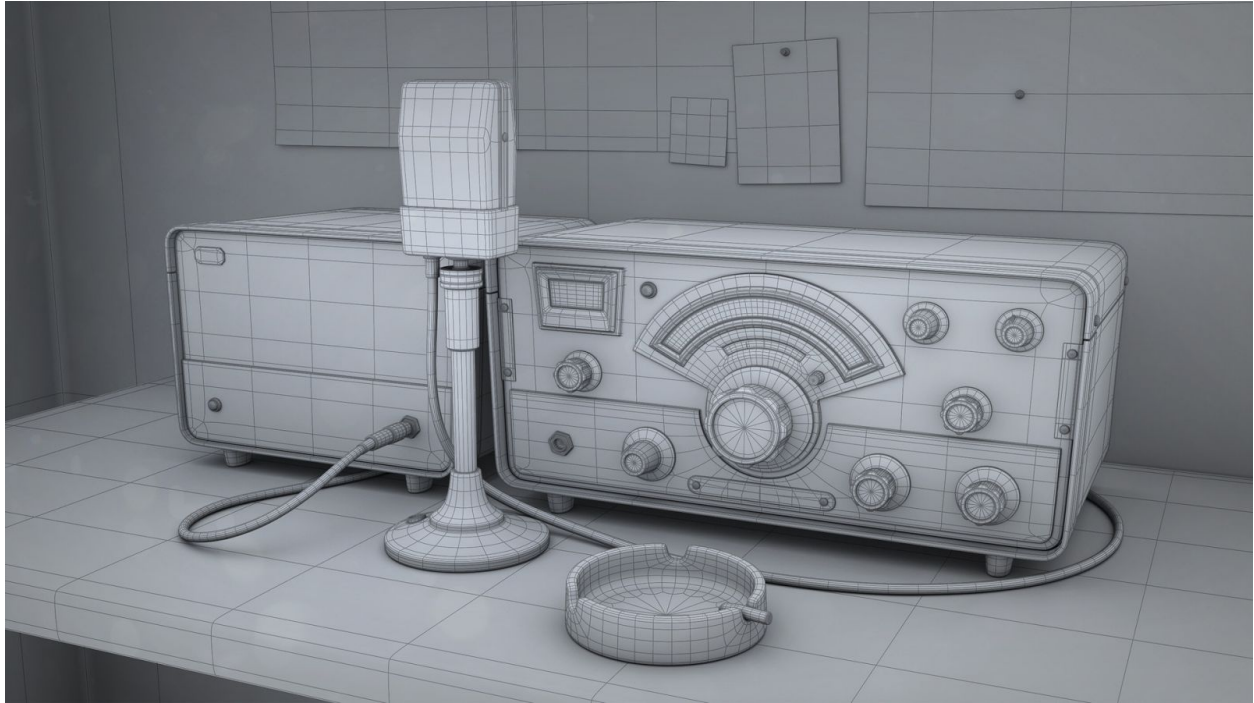


Lewisville Amateur Radio Association

LARA NEWSLETTER Volume 3, Issue 1, January 19, 2018



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W5LVC UPCOMING EVENTS

Business Meeting

Saturday, Jan 20th 2018, 8:00 AM at
Lewisville Central Fire Station
188 N. Valley Pkwy.



Winter Field Day

Saturday & Sunday, Jan. 27 & 28

Weekly Nets

Information and Help Net

Wednesday, 7:00 PM on 145.170 (PL 110.9, -.600) repeater General & Extra Study Net
Saturday, 7:30 PM on 145.170 (PL 110.9, -.600) repeater

Saturday Breakfast (except 3rd Saturday)

First Watch
2201 Justin Rd. Flower Mound
(SW corner of Morris and Justin Rd. (407))

Association Contact Information:

Mailing address: P.O. Box 292282
Lewisville, TX 75029
Email address: W5LVC.Club@gmail.com

Check us out:

Facebook [facebook.com/w5lvc/](https://www.facebook.com/w5lvc/)
Twitter @W5LVCCLUB

2017 Officers & Support

OFFICERS

President

Len Shipp 01/01/17 - 01/06/18

Vacant at Present

Vice President

Jim Lavin K5VZ 214-629-2327

Secretary

Tim Monk WZ5TM 972-436-4866

Treasurer

Ron Ford K5OMH 972-742-7839

Technical Director

Jim Horton WB8YWA 972-523-8467

Operations Director

Mike Reitz W5EVT 214-535-1368

Appointee's

VEC Coordinator

Steve Kline W5JK 972-679-6288

Public Information Officer

Newsletter Editor

Ron Bath KG5VIS 817.980.3165

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Association membership is open to all persons interested in amateur radio. Join at any meeting, by mail or online through our website. Annual dues are \$25 individual, \$30 family.

This edition of our clubs newsletter is being designed, written and distributed by Ron Bath, KG5VIS. He was appointed to the post of Editor of the LARA Newsletter by our former editor Ron Ford, KF5OMH, with the concurrence of our officers.

Editor's News

Ron Bath - KG5VIS

I wish to extend a very large expression of our appreciation for our former editor Ron Ford's diligence, creativity and service in providing us with an outstanding newsletter over the years.

You will notice a new style and content with this and following monthly newsletters. Please keep in mind that this is your newsletter. I would like to hear from you with your comments and suggestions for future articles and photo ops. I have started a new section, LARA-bay, with this month's issue featuring a "For Sale" and "Wanted" page. Ones surplus radios, parts, tools etc. may be just what another club member needs and is looking for. The "Wanted" page items listing may help you find that elusive and hard to come by item you need to fill that empty spot in your radio shack. You may send a "For Sale" or "Wanted" posting to aro.KG5VIS@gmail.com. Just follow the example on page number 23 of the Newsletter.

Stay Tuned... Our new website is under construction and will be launched shortly after close of our meeting, Saturday January 20th, 2018. **Urgent** - We need your latest or favorite photograph in .jpg format made as an attachment to an Email and sent to Ron at aro.KG5VIS@gmail.com just as soon as possible. If you don't have a picture to send us, please email Ron and he will take your picture at no cost to you. You are listed on the club members page with your picture, name and call letters. We wish to have your real likeness and not the grey shadow placeholder that is listed for you now.

Winter Field Day

L.A.R.A. will again be participating in Winter Field Day on January 27th.&28th. Operation will begin on Saturday at 1300 hrs. and end on Sunday at 1300 hrs. (24hrs.). We will be located at Connor Pavilion at Lake Park on Lake Lewisville. Set up will begin after breakfast on Saturday

at 10:00am. Mike encourages anyone wanting to participate and practice your emergency response skills to come out, set up your station and enjoy a fun event.
Contact Mike W5EVT with any questions.

Officers Meeting Minutes
January 6, 2018

Recorded by: Ron KF5OMH

Officers Present

Jim Lavin, K5VZ, Vice President
Ron Ford, KF5OMH, Treasurer
Jim Horton, WB8YWA, Technical Director
Mike Reitz, W5EVT, Operations Director

Members Present

Ron Bath, KG5VIS, PIO
Steve Kline, W5JK, VEC
Dale Chatham, W5WNI

Guest Present

Dan Howard, KESCIR

Vice Present Jim Lavin, K5VZ called the meeting order at 0910 hrs.

The purpose of the meeting was to discuss several items of importance to the association.

Since the president has submitted his resignation the officers need to formally accept or reject the resignation. A unanimous decision to accept was presented. Jim Lavin, K5VZ stated that he, as vice president, will assume the duties of the president. It was a unanimous decision of the officers that Jim continue in this position until new officers are elected in April. The by-laws require a special election to fill the vacant position but since it would take a minimum of two months to conduct an election it was felt that this would be the most expeditious method to handle the situation. This will be presented to the membership at the January meeting.

Discussion was held pertaining to the club's web site. It currently is hosted on an individual's business server but the site is not current. Several individuals offered to maintain the site if they were provided access. In order for others to have access, the site needs to be moved from the private server to a commercial location. Dale W5WNI volunteered that he would provide server space but that would just move the site from one private server to another. Ron KG5VIS will discuss with Jim further and explore using Go-Daddy who currently provides our domain name service.

The officers have been testing the HamClubOnline Club Management System. Ron KF5OMH asked if there were any issues with the system. None were presented so Ron will prepare a Newsletter article and presentation to the membership at January meeting.

Ron KG5VIS offered to chair the nominating committee for the upcoming April election of officers. Jim K5VZ accepted his offer and appointed him the committee chair.

Mike W5EVT presented an update on upcoming club activities:

Tail Gate Swap Meet is next Saturday, 1/13, at Vista Ridge Park. Use of the parking lot has been cleared with the Park Ranger.

Winter Field Day is January 27 & 28. Conner Pavilion has been reserved and we've received permission to operate for the entire 24 hr. period. Ron to check with LFD to see if we can use the Mobile Command apparatus.

Meeting adjourned at 0940

LARA Meeting Minutes, December 16, 2017

Vice President Jim Lavin, K5VZ, called the meeting to order at 8:04 AM with the reciting of the United States Pledge of Allegiance.

Officers in Attendance:

- Vice President: Jim Lavin, K5VZ
- Secretary: Tim Monk, WZ5TM
- Treasurer: Ron Ford, KF5OMH
- Technical Officer: Jim Horton, WB8YWA
- Operations Officer: Mike Reitz, W5EVT
- VE Coordinator: Steve Kline, W5JK

Attendance:

- Members:
- Lee Norup, K5WXR
- Walter Logan, AG5CF
- Ron Bath, KG5VIS
- Clark Highsmith, K5LGX
- Benjamin Highsmith, KG5NIN
- Ron Swain, WR5VIV
- Rick Alverson, W5RPA
- Larry Wilson, WW5LS

Meeting Minutes from Last Meeting

The November 2017 meeting minutes were printed in the December 2017 newsletter. A motion to approve the November 2017 was made.

- Motioned by: Ron Ford, KF5OMH
- Seconded by: Jim Horton, WB6YWA
- Approved by the Members

Treasurer's Report

Ron Ford, KF5OMH, presented the Treasurer's Financial Report as of December 13, 2017.

- Checking Beginning Balance: \$2,464.42
- Checking Ending Balance: \$2,464.42
- Savings Beginning Balance: \$31.66
- Savings Ending Balance: \$31.66
- Club Assets Balance: \$3,404.60
- LARA NET VALUE \$5,900.68

Motion to approve Treasurer's Financial Report as presented.

- Motioned by: Mike Reitz, W5EVT

- Seconded by: Ron Swain, WR5VIV
- Approved by the Members

Technical Report

- Jim Horton, WB8YWA,, presented the Technical Report.
- The 145.17 Repeater is operating properly.
- The 222 Repeater is down for good.
- The club voted 'NO' to spending \$2,000 - \$3,000 on the 1.25 Meter (222 MHz) repeater.
- Motion to approve Technical Report as presented.
 - Motioned by: Clark Highsmith, K5LGX
 - Seconded by: Tim Monk, W Motion to approve Treasurer's Financial Report as presented.
 - Approved by the Members

Operations Report

- Mike Reitz, presented the Operations Report.
- The Christmas Party was a success. 28 Adults and 2 Children attended and a good time was had by
- all.
- Winter Field Day will be on January 27 and 28, 2018. It will be held at Conner Pavilion in Lake Park.
- More information at the January 2018 Meeting.
- Motion to approve Operations Report as presented.
 - Motioned by: Ron Ford, KF5OMH
 - Seconded by: Jim Horton, WB8YWA
 - Approved by the Members

Old Business

- Maker Project from November meeting.
- A motion was made to close it out.
- Motioned by: Ron Ford, KF5OMH
- Seconded by: Lee Norup, K5WXR
- Approved by the Members
- Amateur Radios in Schools, Mike Reitz, W5EVT, will research this topic after the Holidays.
- 222 MHz Repeater. It was moved to 'Table' releasing this repeater pair until after the March 2018,
 - Motioned by: Ron Ford, KF5OMH
 - Seconded by: Jim Lavin, W5VZ
 - Approved by the Membership with a vote of 8 for and 5 against

Communications with Santa

Thanks to Ron Bath, KG5VIS, as Santa and Ron Ford, KF5OMH, as Net Control. There was an issue with Wal-Mart about setting up on their property. Possible use of Dairy Queen for the second night. The first night had 9 kids making contact with Santa!

Tailgate Swap meet will be on Saturday, January 13, 2018 at Vista Ridge Athletic Fields parking lot. It will be from 10AM until 1PM.

The **Denton County Maker Faire** will be on Saturday, February 24, 2018 at the Denton Civic Center.

DCARA has been nice enough to allow us to use the 145.170 repeater as our club repeater and for our NETs. It is moved to make a one-time donation of \$150 to DCARA to thank them for this service.

- Motioned by: Ron Ford, KF5OMH
- Seconded by: Jim Horton, WB8YWA
- Approved by the Membership

We need to come up with a schedule of Classes for 2018. This would include license classes as well as possible topical classes.

It was moved to dissolve the current junk boxes by giving away everything in them at the January 13, 2018 Tailgate Swap Meet.

- Motioned by: Jim Horton, WB8YWA
- Seconded by: Ron Bath, KG5VIS
- Approved by the Membership

New Business

Elections are coming up in April 2018. We need an Election Committee to run the Elections. We need an Election Committee Chairman and at least one other member. We need candidates in March, the election in April, and new officers take office May 1, 2018.

Jim Horton, WB8YWA, will remain as Technical Officer through the remainder of his term.

Motion to return, sell or give 2 Comet CX333 antennas for the ex-222MHz repeaters to the Repeater Committee.

- Motioned by: Lee Norup, K5WXR
- Seconded by: Ron Ford, KF5OMH
- Approved by the Membership

Presentation

There was no presentation this month.

Motion to adjourn the meeting at 9:25AM.

- Motioned by: Jim Horton, WB8YWA
- Seconded by: Mike Reitz, W5EVT
- Approved by the Members

Hereby submitted:

- Tim Monk, WZ5TM, Secretary
- January 16, 2018

Denton City Ordinance - Use of Wireless Communication Devices While Driving

By: Ron KF5OMH

There has been some confusion about the interpretation of the Denton City Ordinance regarding “Wireless Communication Devices” while driving. The media and recent city flyers have misinterpreted the ordinance to a degree and caused concern by Amateur Radio Operators. The actual language of the ordinance is explicitly clear that we as FCC Licensed are exempt or “does not apply”.

The city ordinance as published in section 18-38 Paragraph (f)(4), clearly states the following:

(f) This section does not apply to an operator of a vehicle using a wireless communication device:

- (1) For initiating or terminating a telephone call while the vehicle is stopped; or
- (2) For initiating or terminating navigation with mapping software or a global positioning system, while the vehicle is stopped; or
- (3) By an operator of an authorized emergency vehicle using a wireless communication device while acting in an official capacity; or
- (4) By an operator who is licensed by the Federal Communications Commission operating a radio frequency device other than a wireless communication device.

The entire ordinance can be viewed at:

https://library.municode.com/tx/denton/codes/code_of_ordinances?nodeId=SPACOR_CH18MOVETR_ARTIOPVE_DIV1GE_S18-38USWICODEWHOPVE

HamClubOnline

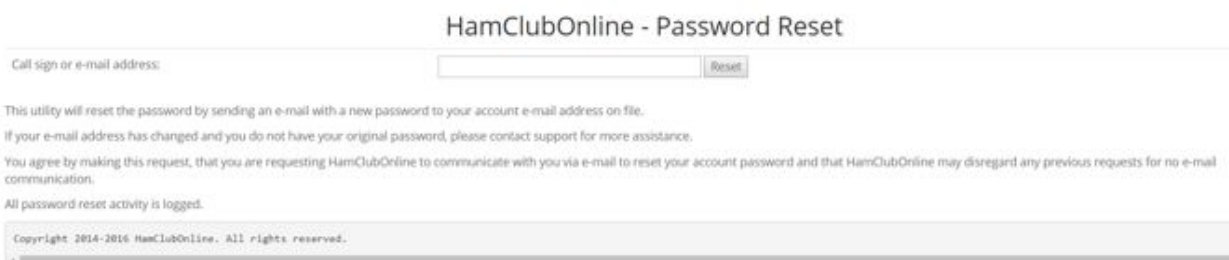
By: Ron KF5OMH

The officers of the association have been reviewing an online system for managing the affairs of the association. It is felt that this system has almost everything we need plus a few items that are over and above our basic needs. All members now have access to the system by following the steps outlined below.

1. Enter URL hamclubonline.com
2. On home page (shown below) upper right corner enter your call sign and click “Forgot Password”



3. When the following page displays enter your email address and click “Reset”.
4. A temporary password will be sent to your email address.
5. When you receive the password return to the home page above, enter your call sign and temporary password and click “Login”.



6. You'll then arrive at a page where you'll assign a permanent password.
7. Once you assign and verify your permanent password you'll be taken to the following page.
8. Members will only see the column entitled **Member Functions**
 - a. At this point in time only the following items have been populated:
 - i. Manage Your Club Profile
 - ii. Club Roster
 - iii. Club Calendar (only a few items at this time)

- iv. Send Message to Club Management
 - v. View/Update Your Skills
 - b. Any other menu selections in blue are functional but have not had the database for LARA established.
9. Officers will see the **Member Functions** column and **Level 2 Management Functions**. The Management functions allow officers to update and utilize the functions in this column.
- a. At this point the following items are functional:
 - i. Add Person(s) to Club
 - ii. Manage Roster (officers will see the full Roster using this selection – Members will only see the basic info under the Member Functions) Click on each of them to see the difference.
 - iii. Manage Calendar & Attendance (only a few items in there at this time)
 - iv. Manage Member Skills
 - v. Manage Club Assets
 - vi. Manage Items for Sale
 - vii. Club Self-Check
 - viii. Membership Reporting
 - ix. Skills Reporting
 - x. Financial Reporting (have not completely populated the database – have some learning to do there)
 - xi. Send Club Communication/Mass E-mail

10. The **Level 3 Configuration Functions** are administrative level functions that set the controls for the various elements in the database. Currently only one individual is set up as an administrator until we have a good handle on the system.

At the January meeting we'll have a short demonstration on the system along with a question and answer session. Use of the system will then be put to a vote of the membership in attendance.

Information and Tips on making it a QSO and not just a contact

By Jim Horton WB8YWA

QSO - Can you communicate with ... direct (*or by relay*)?

Contact – Usually exchange of Call, RST (signal report) and QTH (location).

To some conversation comes easy to others not. Hoping I can share some information that will help you into having a meaningful contact and who knows, maybe a new ham radio friend.

For new hams it can be somewhat nerve racking to make that first contact. Reason can be many;

- What do I say?
- How do I get into the conversation?
- After I do what do I say next?
- Will they be friendly or make me feel unwanted?
- It is so much easier to just listen to others carry on the QSO then talking yourself, but ham radio is for both to have that QSO.

For the ham that has been around for a while it can be the same, but does not have to be for either. First let's think about what we are going to talk about. You will find it very hard to carry on a QSO if it is one sided. You can control this by having some things to chat about beforehand. You can have index cards with thought put on paper with topics like;

- Name and QTH
- What rig and antenna are you using.
- When you got your license.
- What got you into ham radio and topics like that?
- As you think of other ideas put them down on paper for next time.

To make it much more interesting and to get them to tell you about themselves. You start by asking them these same questions. By making yourself interested in them they become interested in you.

For me it is harder to have a QSO on the repeater than on HF. I bet there are hams that think it is harder on HF.

Repeaters -

- They live in same area, not much to say here.

- Are having the same weather.
- Need to chat about things that are common to both of you.
- But by talking about what radio, antenna, how it is install and what your other interest are brings up a lot of conversation.

HF -

- They do not live in your area so opens up a lot to talk about.
- Weather can be a huge difference between the two QTH's.
- Their station and antennas are usually a lot more than a mobile rig and car antenna.
- Working or retired.

Good tip on HF and can be used when home on FM is bringing up their QRZ.COM page. Not all but most have a blog of themselves and their station that can open up a lot of dialog between the two stations.

There are some that are on the air that are just hard to get into a QSO with, may be cliquish or just don't like to meet others. Listen for a while and you can usually tell what they will be like. Remember most like to talk about themselves and what they have accomplish so ask them questions. Then remember to tell them about yours.

Some common simple rules;

FM Repeater – break in by stating your call right after the repeater beeps. Wait until they acknowledge you and then take your turn in the rotation. A lot of times when the stations run out of conversation between them there is a large period of silence and is a good time to jump into the QSO and bring in a new topic.

If no one is talking and you would like to talk to someone, just key up the repeater and state your call and that you are listening. That is like calling CQ.

HF – Depends;

- QSO in progress, I wait until QSO is ending, then call station I want to chat with.
- Net, I wait until net control ask for check ins. This will be a short contact and you need to understand what the net is about and how others are checking into it so you can follow in the same manner.
- To call CQ, find a clear frequency. Ask if this frequency is being used and give your call sign. Do this at least twice. Sometimes you cannot hear both stations. Then call CQ CQ CQ from 'your call' two or three times, stop and listen, if nothing heard call again three times and listen.
- When you get that contact, remember to fall back on que cards, QRZ website and enjoy making a new friend.
- Do not forget to make schedules with ham friends that have move away, like Bob K5DCZ in Canon City, CO.

Whatever method of mode, plan ahead, have information to help you carry on a great QSO, be polite and have fun making friends all other this world.

Electronic Certificates: An Inexpensive Way to Showcase Your Achievements

Clark Highsmith, K5LG

Earning paper certificates has long been a way for ham radio enthusiasts to confirm and display their achievements. However, gaining possession of certificates sometimes involves more work than making the actual contacts. Barriers include filling out forms, monetary expense, and lengthy waits for postal delivery. This is still the norm for most long-term awards.

The situation is different for many special event stations and casual contests, such as state QSO parties. Organizers are taking advantage of the internet to provide electronic certificates. This means that securing a certificate of your achievement might be as easy as providing your call sign and printing the resulting custom-generated PDF file. Here are two events from 2017 in which you might have participated and have a certificate waiting for you to download.

Skywarn™ Recognition Day

The 2017 Skywarn™ Recognition Day took place on December 2, 2017. During the event, amateur radio operators visited National Weather Services and activated over 80 special event call signs, the majority of which had WX prefixes. A web page allows anyone to create a participation certificate by providing a call sign and number of stations contacted. As such, it operates on the honor system. The site may be accessed here:

<http://www.wrh.noaa.gov/mtr/hamradio/certificate/certificate.php>

SKYWARN Recognition Day Participation Certificate

19th SKYWARN Recognition Day

Thank you for participating in the 2017 edition of SKYWARN Recognition Day.

By completing the form below you will be given a participation certificate in PDF format.

Which level of Certificate do you want?

Cumlae What's your Call Sign? Submit

Scoring:
 For every W6 station worked, give yourself one point.
 If you happen to work W6W give yourself a bonus point.

Total Points Certificate Earned

- 1-3 Cumlae Certificate
- 4-15 Working Cumlae Certificate
- 16-25 Cumulative Certificate
- 26-30 Lightning Certificate
- 31-35 Special Thunderstorm Certificate
- 36-40 Wildlife Certificate
- 41-45 Whole State Certificate
- 46-49 Blizzards Certificate
- 50-55 Hot Spots Certificate
- 56-60 Flash Flood Certificate
- 61-65 F1 Tornado Certificate
- 66-70 F2 Tornado Certificate
- 71-75 F3 Tornado Certificate
- 76-79 Category 1 Hurricane Certificate
- 80+ Category 2 Hurricane Certificate

RAC Canada 150 Award

If you spent any time on the HF bands in 2017, you probably logged one or more of the special event stations celebrating Canada's 150th birthday. A website was established to explain the event and provide a way for amateurs to confirm contacts. Near the bottom of the page is an input box where you may enter your callsign and view confirmed contacts. If you have confirmed contacts with a minimum of four stations, a button will appear allowing you to generate a certificate. The site may be accessed here:

<http://wp.rac.ca/rac150/>



1867	Nova Scotia	VE1RAC	✓
1867	New Brunswick	VE9RAC	✓
1867	Quebec	VA2RAC	✗
1867	Ontario	VA3RAC	✓
1870	North West Territories	VE8RAC	✗
1870	Manitoba	VE4RAC	✓
1871	British Columbia	VE7RAC	✓
1873	Prince Edward Island	VY2RAC	✗
1898	Yukon	VY1RAC	✗
1905	Alberta	VE6RAC	✓
1905	Saskatchewan	VE5RAC	✓
1949	Newfoundland and Labrador	VO1RAC	✗
1949	Newfoundland and Labrador	VO2RAC	✗
1999	Nunavut	VY0RAC	✗

[Award Download](#)

Automation in the Modern Shack

By Dale Chatham, WA5WNI

The cost of computing power has been declining since the first computer. Today, it is possible to have a quad core computer operating at 1.2GHz for \$35.00 or less. In addition, with the advent of modern microcontrollers, data acquisition and control has a similar cost.

[What is a Single Board Computer?](#)

We have all been using the term since perhaps the mid 1970s. However, it is probably useful to explicitly state what it is (and perhaps what it is not). A computer is built around a central processing unit. There are a number out there, Intel, AMD, and ARM are the most popular, but there are others. They are programmable, and can perform complex arithmetic and logical functions. However, for the most part, they are intended (and best at) crunching numbers and making decisions. Input/Output (I/O) is usually moving ASCII (character) data around. For instance, a CPU usually has no inherent capability to measure temperature, milliamps, volts or turning lights on and off. I/O pins tend to full words of data and not individually accessible. Single Board Computers (SBCs) tend to have much more memory, measured in gigabytes. As such, they tend to be easier to program and certainly easier to program higher level tasks. SBCs tend to be faster, a gigahertz or more. Examples of SBCs used for shack automation is the Raspberry Pi 3 – Model B. It has a quad core ARM processor running at 1.2GHz, with 1GB of ram. It's "hard drive" is a micro SD card. For I/O, it has four USB ports, an ethernet port, WiFi, Bluetooth, an HDMI port and audio in/out. The cost, sans case is \$35.00. Video touchscreens are available making it possible to create a controller with no keyboard or mouse

with the same functionality. Touchscreen runs from \$45 to \$90. All this about the size of a credit card.

\$10.00 gets you a Raspberry Pi Zero W with WiFi, no ethernet, a single USB port for I/O, a single core 1GHz processor, Low Energy Bluetooth. Size is slightly less than ½ the size of the Pi 3B.

What is a microcontroller?

On the other hand, a microcontroller tends to be manufactured with controlling things in mind. As such, its I/O tend to be single pins and can take on characteristics that are decidedly not character related. Input can be digital (a single 1 or 0) or analog (a range of voltages). Output can be similarly digital, analog, or pulse width modulated (PWM) to control such things as motor speeds or LED brightness. Micro-controllers tend to be long on I/O and short on memory (a few kilobytes or megabytes). As such, programs tend to be short and may be in lower level languages. Examples are the Arduino and PIC chips. PICs are a bit more difficult to use, as they tend to be available only as chips or development kits. However, 8 pins can get you a serious amount of control for less than \$1. The Arduinos tend to be fully configured devices, credit card sized (plus or minus) with many I/O pins. They tend to be a few sizes fits all solution. Cost of the Arduino microcontrollers range from \$10 (less on Amazon) to \$85.

Summary

Microcomputers tend to talk to people, micro-controllers electrical and electronic devices (keeping in mind that such things as a temperature sensor is an electronic device). Human displays are thus easier and more complex with the Raspberry Pi (full blown web pages, touch screen, internet connected) but difficult to do complex non character I/O. The Arduino excels at talking to digital and analog signals as well as controlling on/off, analog devices, motors and LEDs. This is not to say that the Arduino cannot access ethernet or touchscreen devices, but it is much more difficult.

There are also a plethora of directly pluggable devices for both. A complete weather station is easy to put together with the Arduino with serial I/O. If you want to put it on the internet, \$10 will add the Raspberry Pi Zero – W and you get WiFi as a bonus.

With some of the boards available, one can build an antenna analyzer for \$50 or less. An SWR bridge similarly. When used together, you get the best of both world, data acquisition and control as well as an easy user interface to share with the world.

References

<https://www.adafruit.com/>

<https://www.adafruit.com/category/105>

<https://www.adafruit.com/category/813>

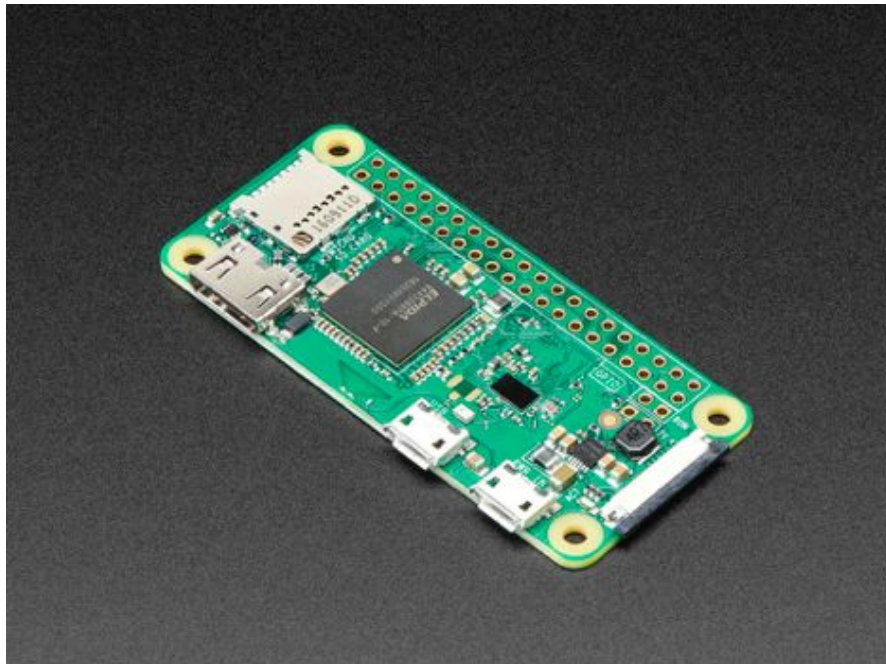
<https://www.adafruit.com/category/17>

Photos:

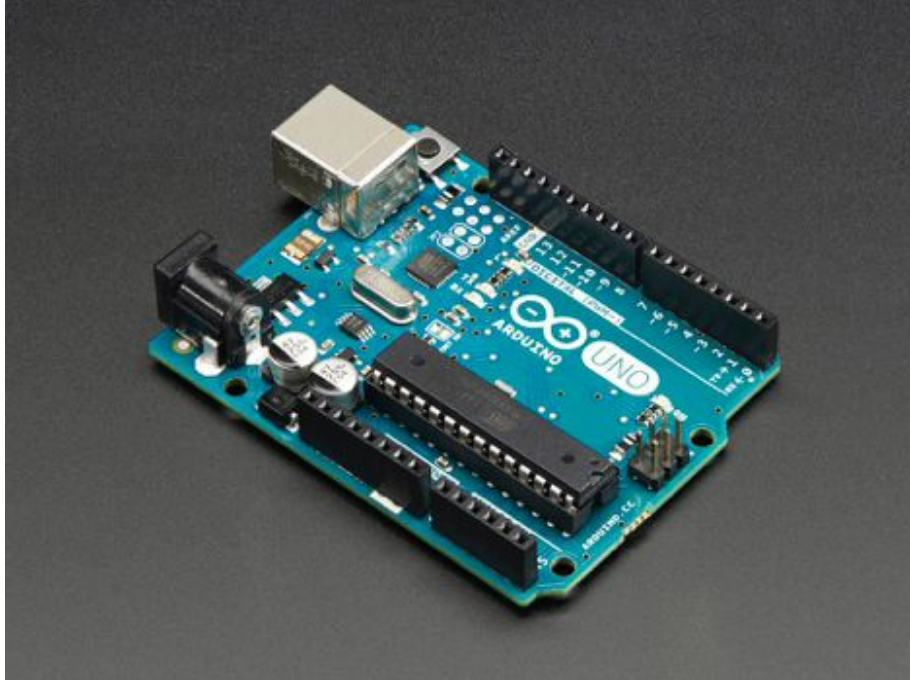
(Close to actual size)



Raspberry Pi 3 – Model B



Raspberry Pi Zero W



Arduino Uno R3

LARA Christmas Party

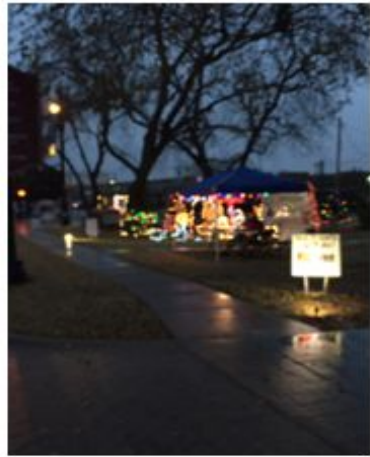
December 9, 2017

Photographs by: Mike Reitz - W5EVT



Santa Net
December 2017

Photographs by: Mike Reitz - W5EVT



LARA-bay

-For Sale-

<u>Call</u>	<u>Item or Service</u>	<u>Price</u>	<u>Contact</u>
KG5VIS	Electronic Megaphone	\$65.00	aro.KG5VIS@gmail.com
*Comments: Like new condition			
KG5VIS	SatAlign Dish Alignment Meter	\$10.00	aro.KG5VIS@gmail.com
KG5VIS	Workman Model 714 P.A. Talk Back & Noise Canceling 10 W Speaker	\$10.00	aro.KG5VIS@gmail.com
KG5VIS	Memory Module (1) Patriot 1 GB PC-2-5300 667 Mh	\$10.00	aro.KG5VIS@gmail.com

-Wanted -

<u>Call</u>	<u>Item or Service</u>	<u>Price Range</u>	<u>Contact</u>
KG5VIS	SWR Meter	\$20.00	aro.KG5VIS@gmail.com

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Please address any comments or suggestions to: aro.KG5VIS@gmail.com