

Section Manager
Darrell Davis, KT4WX

**Assistant Section
Manager Executive**
Ben Henley, KI4IGX

**Assistant Section
Manager Administrative**
Randy Payne, K4EZM

**Assistant Section Manager
Legal Affairs**
Biff Craine, K4LAW

**Assistant Section Manager
SM Emeritus & Tampa Bay Area**
Dee Turner, N4GD

**Assistant Section Manager
PIC/ACC Assistant**
Steve Muller, KM4VRK

Affiliated Club Coordinator
Mike Douglas, W4MDD

Public Information Coordinator
Rich Kennedy, N4ESS

Section Emergency Coordinator
Ben Henley, KI4IGX

Section Traffic Manager
Doug Williams, N2DW

Section Youth Coordinator
Christine Duez KK4KJN

Technical Coordinator
Dave Birnbaum, K2LYV

**Assistant Section Manager
Publications**
Jim Weslager, K3WR

SECTION MANAGERS MUSINGS

BY DARRELL DAVIS, KT4WX

ARRL WEST CENTRAL FLORIDA SECTION MANAGER

Welcome to the July issue of the WCF PRESSER. I hope all of you had a great Independence Day on Saturday. It is hard to believe that we have entered the fifth month of dealing with this COVID-19 situation. I am sure that everyone, myself included, are wondering if life will ever return back to the way it was before March of this year? Only time will definitely answer that question. Many amateur radio clubs continue to meet via teleconferencing technology or radio nets as either their meeting locations are simply not available or their members are not comfortable meeting in person. Some smaller groups have had limited gatherings. As many of you are still isolated, consider getting on the radio and being radio active. Consider



passing the time with starting and or finishing that amateur radio related project. Most of all remember to socialize with those in your social circles, as you may be an encouragement to someone who really needs it.

Even ARRL Field Day was quite different with the majority of Field Day stations operating from home with or without emergency power. Field Day was quite busy and perhaps even more stations were on the air, as many clubs were doing individual operations from multiple home stations. I even managed to get some Field Day contacts from home, when normally doing the WCF

Continued on page 2

Section Field Day Caravan prevents me from doing so, as I am out visiting Field Day stations. I did receive all total 21 radiograms from the various Field Day operations here in the West Central Florida Section, so many thanks to all who send radiograms. If you took any pictures of your Field Day operations, do not forget to send pictures in to our newsletter editor Jim Weslager K3WR, our Assistant Section Manager for Publications via email at weslager@gmail.com. The pictures we receive will be used for our Field Day montage to come out in the August or September WCF PRESSER.

Please continue to keep your eyes on the latest Tropical Weather Outlook for the Tropical Atlantic and Caribbean issued by the National Hurricane Center. If we were to get a storm, we still do not know how the COVID-19 situation will impact ARES, ACS, or CERT operations in many places, but you still need to be prepared if for nothing else than your own sake. I just finished finally cutting, pre-drilling OSB panels and installing Tap-Con bolts around the windows of our house, so I can board up our windows in about 45 minutes, so our place is better prepared. Be sure to have your hurricane supplies ready and now is the time to top off any supplies.

Last of all, as it is the middle of summer, be very careful if you are working outside, not to get overheated. I almost got overheated on several occasions last month, and it happened very quickly. Try to work more when it is cooler, take frequent breaks, and stay hydrated.

Everyone take care and talk to you all next time.

NEW EMERGENCY COORDINATOR APPOINTMENT ANNOUNCED

Ed Skalecki NI4MX, the ARRL Emergency Coordinator for Manatee County ARES, decided to step down as ARRL Emergency Coordinator on Thursday June 18, 2020. Skalecki had served as ARRL Emergency Coordinator for Manatee County ARES since 2009.

Steve Park W4OEP, an ARRL Official Emergency Station, has been appointed as the new ARRL Emergency Coordinator for Manatee County ARES on Thursday June 18, 2020.



Darrell Davis KT4WX, Section Manager for the ARRL West Central Florida Section, had the following comment on the change of ARRL Emergency Coordinators in Manatee County, "I am extending my sincere thanks to Ed for his over 10 years of service as ARRL Emergency Coordinator and wishing him success in his future endeavors. Steve will make a fine successor to Ed as ARRL Emergency Coordinator and brings his technical expertise and emergency communications experience. He is always looking for ways to combine his enthusiasm for the amateur radio satellite service with emergency communications and ARES in particular."

Steve Park W4OEP was first licensed in 1974 as WN9OEP in Peoria, IL and upgraded to the FCC Extra Class license in 1977 while attending the University of Illinois (W9YH) and for a number of years held

the callsign WB9OEP. Park's amateur radio experience includes HF and VHF Contesting, chasing DX, amateur satellites, Air Force MARS, and emergency communications.

Park has served as a long-time AMSAT Area Coordinator (now called AMSAT Ambassadors.) and his particular interests today are in all-mode DXing, homebrew antenna designs, mentoring, and emergency communications and how the Amateur Radio Service can best serve within the

Incident Command Structure.

Park in his professional career of over 35 years worked as an Electrical Engineer in RF and Microwave product design. As long time Floridians, he and his wife returned to the Tampa Bay area after retiring from Raytheon Missile Systems Co in 2016.

GOVERNOR RON DESANTIS PROCLAIMS AMATEUR RADIO WEEK IN FLORIDA

On Monday June 22, 2020, Florida Governor Ron Desantis signed a proclamation declaring the week of June 22-28, 2020 to be Amateur Radio Week in the State of Florida.

Governor Desantis recognized in his proclamation that amateur radio provides communications to emergency managers during and after disasters, amateur radio provides services to emergency response organizations, and that amateur radio operators provide service as SKYWARN spotters for the National Weather Service. Governor Desantis also recognized the longevity of amateur radio and that it provides "...a bridge between people, societies, and countries by creating friendships and sharing ideas..." The declaration recognized ARRL Field Day that will take place on Saturday June 27, 2020 and Sunday June 28, 2020.

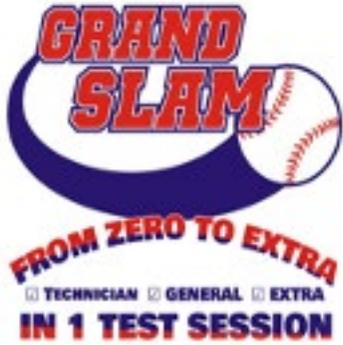


For a PDF copy of the proclamation you may view it at http://arllwcf.org/download/wcfpresser/Florida_Amateur-Radio-Week_2020.pdf.

FROM ZERO TO EXTRA

By Chris Bloxsom, AA4CB
Public Information Officer

June 13th 2020 – (DADE CITY, FL) New extra class Amateur Radio Operator will be on the air shortly. He passed his test. All of them!



With all the restrictions in place on social gatherings and the Corona-19 virus a major concern Amateur radio has been affected great-

ly. No hamfests and very few test sessions are taking place, in person, for people to get their license or upgrade the one that they currently have. That did not stop Cyrus Bufkin from Tampa FL. He heard that there was going to be a hamfest and test session at the Dade City Masonic Lodge. He drove up there with a dream and \$15 in hand to take an exam. I greeted him at the door and asked him if he was here to take a test. His response was “Yes sir, all 3 of them..”. My eyes went wide. OK all 3 it is. We can do this.

Cyrus came prepared with everything that he needed to take the exams. He filled out his paperwork and was given the element 2 exam, the Technician class test. He passed with flying colors, only 1 wrong. Next on to the General exam. BOOM!! 100% !!. So now the final test. Element 4 the Amateur Extra class. I saw a little sweat on his forehead, but he completed it in less than average time. Cyrus hit it out of the ballpark!! In all the

years I have been participating at ARRL VE sessions, many people walk in and take all three exams. The majority do not get that last one. This is the second time I have had the honor of seeing it done all the way.

All the volunteer examiners from the East Pasco Amateur Radio Society were amazed. They gave Cyrus a round of applause and murmured ‘grand slam’. Excitement filled the room. I spoke with him after the session was over. He seems very interested in working with SDR radios. His background is in computer science and history of computers. Cyrus mentioned that his grandfather and grandmother were both licensed. W5DWK and WN5FKY. Unfortunately, both are not active in the hobby anymore. He remembers that he used to sit with his grandfather and listen to him talk on his radio.



Darrell Davis KT4WX, was facilitating the ARRL table at the Dade City hamfest. He was excited to see someone pass all 3 exams.

Cyrus has found that amateur radio can be combined with some of his other hobbies and interests. He is looking



forward to learning more about his new hobby. He likes to build and has been to a couple of maker events. Makers have a lot in common with ham radio operators. They both like to build stuff. It could be an antenna or a small computer. With the ham radio license makers can create an assortment of stuff that they can operate on a lot of the ham radio frequencies.



Chris Bloxsom AA4CE
Email - aa4cb@arri.org
Twitter @aa4cb
Licensed since 1988
Webmaster for EPARS,
GCARC, and Pasco Co. ARE!
ARRL Life member & VE
Public information Officer



COMING HAMFESTS IN THE SECTION

AUGUST 22

TARCFEST SUMMER 2020

TARC Clubhouse,
7801 N. 22nd Street
Tampa, FL



NOVEMBER 14

SPARCFEST 2020

Freedom Lake Park,
9990 46th Street North
Pinellas Park, FL , FL 33782



TAMPA BAY HAMFEST FRIDAY 12/11/20 & SATURDAY 12/12/20

Coming
up on



Friday December 11, 2020 and Saturday
December 12, 2020 is the 45th Annual
Tampa Bay Hamfest and 20th Annual

ARRL West Central Florida Section Convention. The Hamfest will take place at the Florida Strawberry Festival Grounds Expo Center In Plant City. Please mark your calendar for this event as this is our annual ARRL West Central Florida Section Convention.

If there are any changes as to whether the Tampa Bay Hamfest will be held or not held due to the COVID-19 situation, by the Florida Gulf Coast Amateur Radio Council, the organizer of the Tampa Bay Hamfest, a WCF SECTION PRESS RELEASE will be issued to announce any changes.

Please make plans to attend and support the largest hamfest in the ARRL West Central Florida Section.

For the latest information about the Tampa Bay Hamfest you may go their website at <http://www.fgcarc.org>.

CONTESTING - A NEWER COMPETITOR'S PERSPECTIVE

by Dawn Drury K2WLS

I am a youngster in the world of contesting. I have been participating since 2017, my first dabble in the contesting world was DX contest in July of 2017, Lee KX4TT sat me down in front of a IC-7600 and gave me the bare bone basics of what I needed to know about the rig. Was on the air for about 2 hours and I was HOOKED! I will be honest; I don't know but a thimble full about amateur radio. When I sit down to operate, most times it is in a group effort and someone else has taken care of rig set up. I really need to learn that one of these years ha-ha!



In 2018 I participated in group efforts with my club – NAQP, FD and FQP. I had lots of fun my voice brings all the OM to me, I become the pile up. What is that you ask – well that is when multiple stations are calling you all at the same time and you have to listen intently, pick out the call signs you can hear and just work through the pile. I rarely have to 'search and pounce' (S&P) to rack up my QSO count.

In 2019 my Elmer, 1 of 3 that mentor me, informed me that I was going to do FQP as a single operator. I look at him like he was crazy, I just shrugged and was like yeah sure whatever you say. April rolled around and I packed my snacks and went to the QTH of Biff KLAW & Becky W4BKY and sat for 10 hours calling CQ Florida QSO Party, I never moved off of my frequency and made 500-600 contacts in the first day of the 2-day contest.

At the conclusion of the contest, I knew that I was going to be awarded Top Florida YL as there is not many ladies that contest, amateur radio for whatever reason is still very much dominated by men. What I did not know until February 2020 that I also took Top Florida SSB, that honor had never been awarded at the same time by the Top YL.

April 2020 rolled around and I was again at the home of K4LAW & W4BKY getting ready to defend my efforts of the previous year; I can say that I had more QSO's from than the year before and thus improved my score, it will be February 2021 when I found out what awards I may have captured.

Having a very knowledgeable Elmer or three is key to becoming a better contester and operator all the way around. I learn something new every contest, I listen to myself and others so learn how to improve my exchanges, rate and my listen skills. One day I hope to mimic the contesting skills of one of my Elmers, Lu W4LT!

What draws me to contesting is the fast pace. I like the challenge of seeing how many contacts I get per hour, per contest and beat my previous efforts. Contesting helps me improve my skills at a NCO and passing traffic in an emergency situation.

Even if you don't think it's your thing, try it at least once, you never know the contest bug may bite you!

73,
Dawn, K2WLS

SECTION NET INFORMATION

Here is a list of the current Section Nets that are in operation: Please feel free to check in and participate on these nets as you are able to do so.

DAY / NET	NET	NET TIME	SYSTEM/FREQ	NET MANAGER
Daily	Eagle Net (West Central Florida Section NTS Net)	2030 hours	NI4CE Repeater System	Dave Rockwell W4PXE
Monday	West Central Florida Section ARES and Information Net	1930 hours	NI4CE Repeater System	J.C. Rivero K4RTC
Thursday	West Central Florida Section Technical Net	2100 hours	NI4CE Repeater System	Burt Wizeman K4SRQ
Saturday	West Central Florida Section ARES and Information Net	0730 hours	3940 KHz	Randy Payne K4EZM

The Section ARES Information Net on 3940 KHz will start at either 0730 or immediately following the Florida Phone Traffic Net whichever is later.

For more information on the NI4CE Repeater System, including frequencies and a coverage map go to <http://www.ni4ce.org> or visit their Facebook page at <https://www.facebook.com/ni4ce>.

The ARRL West Central Florida Section wishes to thank the West Central Florida Group Inc. for the use of the NI4CE Repeater System for the Section Nets that are on VHF and UHF.



SECTION TRAFFIC MANAGERS REPORT

by Doug Williams N2DW

Section Traffic Manager, ARRL West Central Florida Section

West Central Florida STM Reports

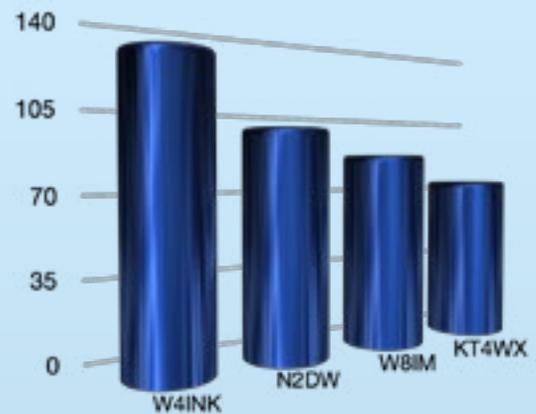
May 2020

Station Activity Reports (SAR)



Call Sign	Originate	Receive	Sent	Delivered	Total
W4INK	0	11	24	0	25
N2DW	5	7	8	0	20
W8IM	1	4	11	1	17
KM4BRQ	0	4	2	2	8
KT4WX	0	0	4	0	4

Public Service Honor Roll



Call Sign	Total
W4INK	127
N2DW	98
W8IM	87
KT4WX	74

West Central Net Activity Reports

Net Name	Sessions	Stations	Traffic	Minutes	Manager
EAGLE NET	31	1429	36	974	W4PXE
SPARC	37	678	37	1251	KN4LUZ
SRQUARES	4	62	3	61	KB2ICN
SARASOTA ERC	4	85	3	69	KB2ICN

YAESU FTM 300D REVIEW

By Chris Bloxson, AA4CB
Public Information Officer

The wait is over! The much-anticipated new Dual band mobile radio from Yaesu is here. As early as June 5th hams



around the United States started to receive their new Yaesu FTM 300 DR. This radio is the newest addition to the line of C4FM/ System Fusion radios out there. There are 3 models that are C4FM capable. The FTM400, FTM 100, and now the FTM300. Unfortunately,



we just heard that the FTM100 has been discontinued. This new model is NOT a replacement for the FTM100.

The box on the FTM 300 sells itself. Just by reading all the information on it, you can

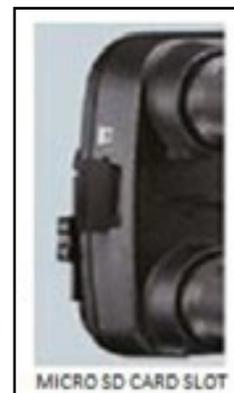
see what Yaesu has packed into this little radio.

What comes inside the box?

- DTMF microphone SSM-85D
- DC FUSED power cable
- Control cable short
- Control cable 10ft
- Bracket for the control head
- Bracket for the body
- Extra fuses
- Operating Manual
- *USB Cable



When I have everything out of the box and set on the table, I see that the control head is a bit smaller than the FTM400. This new model does not have a touch screen display. All the functions can be controlled by the buttons on either side of the color LCD screen. On the left side of the head unit you have an SD card slot. With an SD card inserted you can now backup all your settings in the radio. It also can save any pictures that you might



send or receive in C4FM. This radio will let you record voice to the SD card for playback at a later time.

On the right side, of the control head, you have the port for adding an external GPS. Just below that is the “USB”, well we will call it USB, but it is really a proprietary Yaesu connector, meaning you will not find this cable in any Walmart. You will need to use the Yaesu cable that comes with the radio.

The back of the control head there is a screw port to mount the display to a brack-



et. You can find a large selection of mounts from 3rd party vendors such as <https://www.rammount.com/>.

There is a jack for the 8-pin cable that will connect the head to the main unit. If you want to put the head on the radio you



use the short cable. If you want to remote mount the head, in your vehicle, then you use the long 10-foot cable. Both cables are included in the box. Last item on the rear of the control head is a small switch that will allow you to preform firmware updates.

The back of the radio looks pretty much

like every other high-power dual band radio that is out on the market. It has a SO-239 for antenna, a small cooling fan and DC power cord with T style connector style plug. There is a 10-pin socket on the back of the radio. This can be used to hook up the radio to a Yaesu HRI-200. This will make the radio into a node to work on Wires-X network.

You can also use this 10-pin port to interface to an Allstar or echolink node. The radio has 2 speaker ports. You can set this up with a separate speaker for VHF and



UHF or set it so both bands come out of 1 speaker. This feature was not available in the FTM 100/400.

On the front of the transceiver you have a jack for the control head, microphone, and another Yaesu USB data jack. Having a jack



DATA jack

- Connect MH-85A11U optional microphone with snapshot camera.
*It is not possible to output the receive audio from the MH-85A11U speaker.
- Connect SCU-41 charging cable to charge the SSM-BT10 Bluetooth® headset .
- When updating the firmware (Sub), connect to the PC with the included USB cable.

EXT GPS jack

Plug in a cable to connect with external GPS devices. The communication baud rate is fixed at 9600bps.

for a microphone on both the body and the head unit can come in very handy. No more having to run a cable extension down threw



the molding and under the carpet of your vehicle.

I currently have a FTM 400 mounted under my car seat and the head unit suction cupped to the windshield. It only has the one mic jack on the main body. By mounting the radio this way, it required a homemade extension cable for the microphone. The FTM 300 has 2 spots you can plug a microphone in.

The mobile mounting bracket is unique. It is a slide bracket. You screw the bracket to where you want the radio and then you can slide the radio into the bracket and lock it in place. This leaves you with many options of mounting as the faceplate can be set to the radio with the speaker side up or down. No more having to fuss with the typical 4mm screws into the body of the radio. It can easily be removed when you want. Slide the radio out, unhook the speaker, coax and



power and you are done.

A new design on the Yaesu micro-

phone. This one feels tougher than the ones that came with the FTM 100/400. It is definitely built for bigger hands. I used to pick up the older model and always end up tapping the side PTT button accidentally.

In typical Yaesu Fusion fashion when you power up the radio for the first time it asks you for your callsign. Use the knobs to select the letters and numbers then hit enter. The radio restarts and displays your call. No having to get a digital ID number or registering your callsign on a network.

Memory channels. Between both VFO A and B you have over 1000 channels that you can store information in. You can store all your frequencies, PL tones, offsets and save it to a memory channel. With the FTM 300 you can even store the mode that you want to the memory channel. Channels can be grouped together. You can group all your VHF frequencies to the VHF group, all your UHF to the UHF group. You can even store them by what band. By band I mean you can group all your AIR band freq together. This radio does have a wide receiving range.

I find the grouping of channels very useful especially if you travel daily. I can keep the Tampa area repeaters in one group and the east coast repeaters in another. You can even have the radio scan just that group of channels. Of course, you can scan all the memory channels. You have the option to set a memory channel to "skip" over it if desired.

The FTM 300 has built in Bluetooth



functionality. Hands free operation is possible using the optional Bluetooth headset. Yaesu part# SSM-DT10. This makes for safe hands-free operation.

It has a band scope. you can go to a frequency and press the scope button and see what other signals are nearby the frequency you are on. Scope is adjustable in different ranges.

The FTM 300 will also cross-band-repeat. The radio will only cross-band-repeat out on FM. It will not do C4FM



in and C4FM out. You can however come in on C4FM or analog FM and it will transmit on the other band as FM.

The last feature of this radio I will mention is FULL DUPLEX operation!! This should make the satellite operators happy. Full duplex radios are hard to come by. There is a couple of HT's on the market that will do this. Most of the good radios that can operate in full duplex mode are discontinued and you have to search the used



The author making contacts via satellite in a Walmart parking lot in EL98. 4 watts and a Yagi

market for them on places like eBay or QTH.com.

Full duplex also allows you to monitor the quality of your own signal in real time, which can help you adjust your antenna to compensate for polarity shift fading. There are plenty of people who have made satellite contacts using half-duplex with a single dual-band transceiver. I do it with my FTM400 or FT2 and the arrow Yagi antenna.

FULL duplex operation will only work in FM mode. You can not full duplex in the same band. For more info on amateur radio satellite operations go to <https://www.amsat.org/>



Okay, okay....one more thing about the FTM 300. It has dual vo-coders. What that means is you can now have both VFO A and B set to digital. For example, you can set the top VFO to the 146.880

Digital repeater and the bottom VFO to the 443.600 digital repeater in DN mode. So far only the FT2 and FT3 handhelds were able to do this. This is as long as you are not running APRS on the bottom VFO. Yes, there is APRS in the FTM 300.

Well you have just read all about the radio. I went over most of the new features that it has. Now I am going to talk about the couple things that I did not like.

The display size - I have been spoiled for the last 4 years with the large color touchscreen display of the FTM 400.

The steps. I would have like to have seen the steps go down to 1 kHz tuning. The smallest step is 5 kHz in FM mode. This would help out on working the FM satellites. I guess it will just take a little bit of learning to get everything running the way

I like it. It does make a good addition to my shack.

FYI. The East Pasco Amateur Radio Society has been running a wires-x node con-



nected to both of their repeaters. 146.880 in Dade City and the 443.600 on top of St. Leo University. If you are in range, please feel free to use it. The Wires-X room is on 24-7. The room # is 21425. feel free to change the room if you want. We will be linking it to a YSF reflector soon and allowing DMR and D-Star access as well.



Specifications

● General

Frequency Range	: TX 144 - 148 MHz or 144 - 146 MHz 430 - 450 MHz or 430 - 440 MHz (Depends on the transceiver version)
	: RX 108 - 137 MHz (AIR Band) 137 - 174 MHz (144 MHz HAM / VHF Band) 174 - 400 MHz (GEN) 400 - 480 MHz (430 MHz HAM / UHF Band) 480 - 999.99 MHz (GEN) (USA Cellular Blocked)
Channel Steps	: 5 / 6.25 / 8.33 / 10 / 12.5 / 15 / 20 / 25 / 50 / 100 kHz (8.33 kHz: only for Air band)
Mode of Emission	: F1D, F2D, F3E, F7W
Frequency Stability	: ± 2.5 ppm (-4 °F to +140 °F [-20 °C to +60 °C])
Antenna Impedance	: 50 Ω
Supply Voltage	: Nominal 13.8 V DC, negative ground
Current Consumption	: 0.5 A (Receive) 11 A (50 W TX, 144 MHz) 11 A (50 W TX, 430 MHz)
Operating Temp Range	: -4 °F to +140 °F (-20 °C to +60 °C)
Case Size (W x H x D)	: Radio unit 5.47" x 1.66" x 5.2" (139 x 42 x 132 mm) Controller 5.47" x 2.08" x 0.7" (139 x 53 x 18 mm)
Weight (approx.)	: 2.43 lbs (1.1 kg)

● Transmitter

RF Power Output	: 50 W / 25 W / 5 W
Modulation Type	: F1D, F2D, F3E: Variable Reactance Modulation F7W: 4FSK (C4FM)
Maximum Deviation	: ± 5 kHz
Spurious Emission	: At least 60 dB below
Microphone Impedance	: 2 kΩ
DATA Jack Impedance	: 10 kΩ

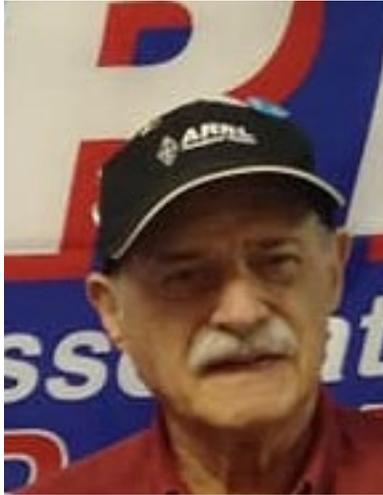


Chris Bloxson AA4CB
 Email - aa4cb@arrl.org
 Twitter @aa4cb
 Licensed since 1988
 Webmaster for EPARS,
 GCARC, and Pasco Co. ARES.
 ARRL Life member & VE
 Public information Officer

TARC REMOTE STATION

by David Birnbaum, K2LYV
Technical Coordinator - ARRL
West Central Florida Section

Because of Covid-19 restrictions and concern for member safety, the Tampa Amateur Radio Club decided to operate a much more limited Field Day setup than we usually do. The club had recently purchased a Flex 6400 radio and after some discussion the Board decided to set up the Flex as a remotely controlled station that members could access from their homes.

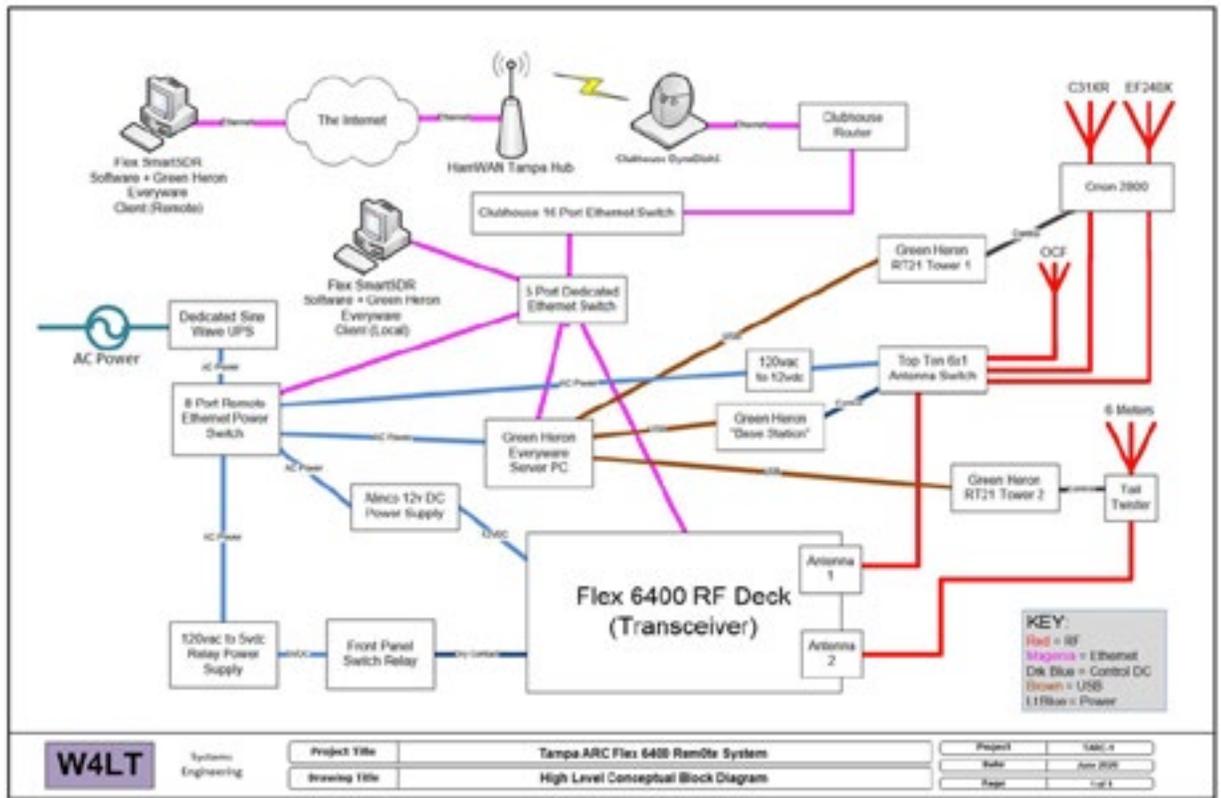


We thought that if we could get the system up and running for FD, it would provide a good test of how well the system worked. The intention is to make the system

available to all club members, this was a good way to “beta test” the system.

Lu Romero, W4LT, designed a system architecture that enabled maximal remote control of the radio, and several of us pitched in to help install and test the system. Figure 1 shows a block diagram of the system and Fig. 2 is a photo of the system. Art Gibson, KA4WNZ, designed and built the shelf that holds many of the components. The power to the individual components comes from the AC mains through a UPS (which allows for controlled shutdown in case of power failure). The power for each of the individual elements of the station is through an Ethernet addressable switch. We set up the network at the clubhouse to allow remote users to address the switch.

A Green Heron Everywhere controller is used to control both the rotator for one



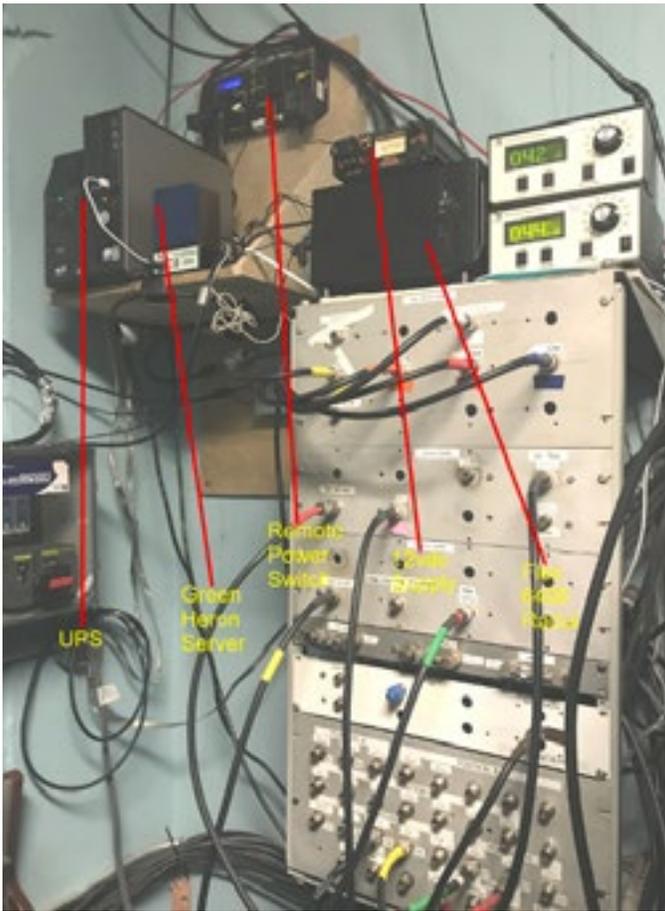


Figure 2 -- Photograph of the Flex system at the TARC clubhouse

of our towers (we expect to extend this to more than one tower) and a 6-way antenna switch. For the initial setup we connected the 5 antennas associated with the rear, 120 foot, tower which gave us beams for 20, 15, and 10 as well as a 2 element 40M beam. The fifth antenna was an 80M sloper attached to the tower. The sixth position of the switch is connected to a dummy load.

The Flex requires the same 12V power as most ham rigs and for remote operation a small 5V supply replaces the function of the front panel on/off switch (the only control on the front panel). A dedicated computer using a small fanless Intel Atom based sys-

tem running Win10 completes the system. This Flex client computer is used for maintenance of the system and can be addressed remotely to allow control operators to perform most maintenance tasks and can be used to reset the system remotely.

Users of the system installed a copy of the GHE client software on their individual home computers. This program allows the user to select any of the six antennas and control the rotor on the tower. The UI for the software includes a graphic display of a world map centered on Tampa. Overlaid on the map is a triangular icon that indicates the rough beamwidth of the antenna. This lets users point the antenna at whichever country or region they would like to contact by simply clicking and dragging the triangle overlay until it points towards the desired geographic region.

The final piece of software is called SmartSDR which is provided for free by Flex Radio and is installed on each user's computer. First a bit about the Flex radio. The Flex is a full SDR radio. That means that all of the processing is done by hardware in the box, which includes fast ADCs, FPGAs and DSP CPUs. The software on the user computer sends commands to the box to program the hardware in the box to provide the full range of operating functions that one would use. This includes, for example, a variety of very high performance filters (enabled by the fast hardware) as well as methods for decoding for many different modulation schemes. The communication between the user software and the Flex is via an Ethernet connection which can either

be from any computer in the clubhouse or any computer on the internet with the right privileges.

Figure 3 is a screenshot of SmartSDR running on my home computer and connected to the TARC site. I've marked a few features to give you a feeling for the UI that

common on ham rigs. On the left side of the window is a set of controls for the radio marked "D." They include controls for tuning, power control and an audio equalizer that is not shown in the picture. The highlighted region marked C is a "slice" which is the current tuning of the receiv-

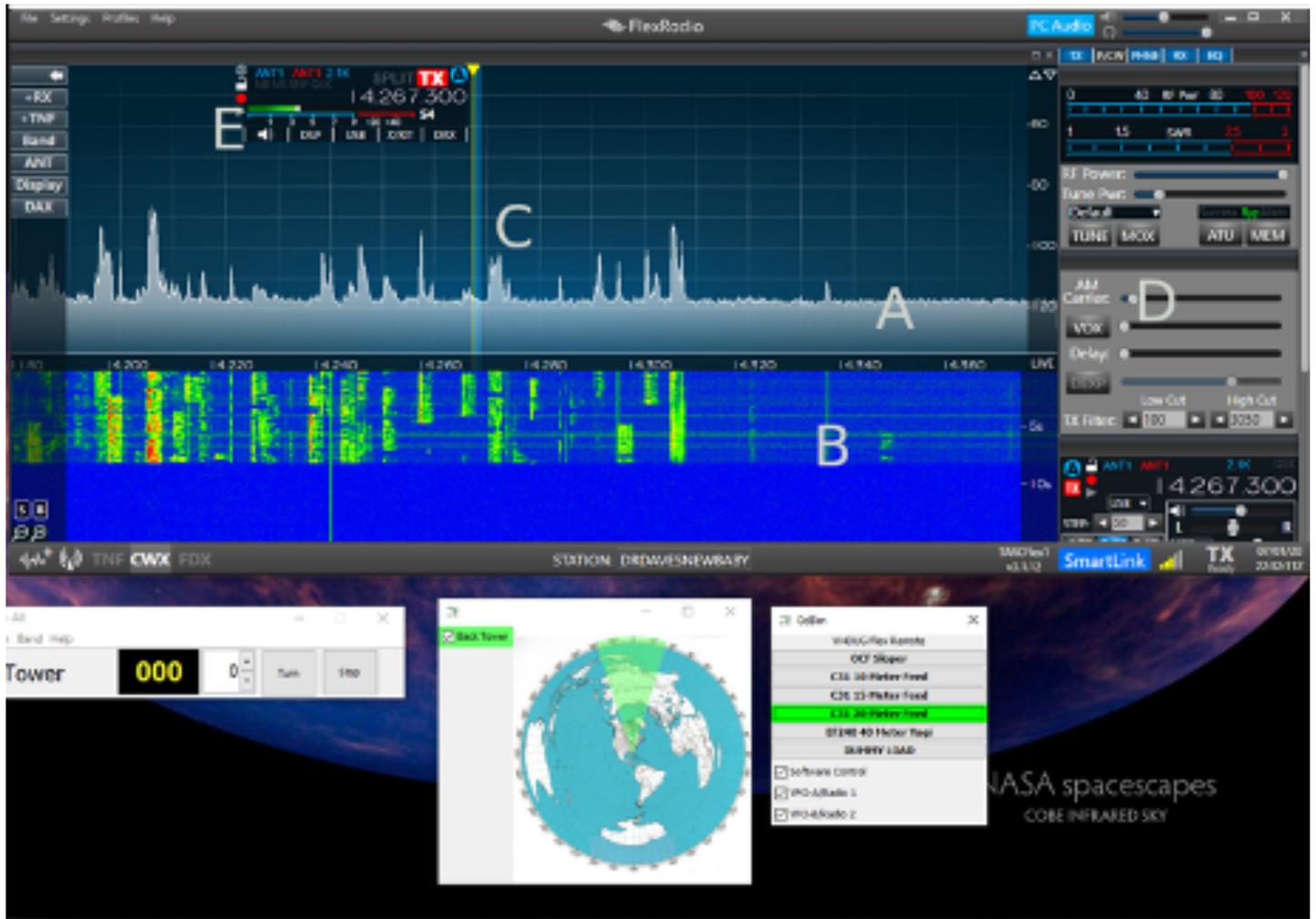


Figure 3 Screenshot of SmartSDR and GHE interfaces

SmartSDR provides. Below the SmartSDR window are the windows for the GHE controller showing the antenna selection and rotor control interfaces. In the SmartSDR window A and B mark the usual spectrum display and waterfall that are becoming

er. The width of the slice is proportional to the filter width in use. The lower edge of the slice, marked with a thin yellow line, shows the actual frequency the rig is tuned

to. Changing frequencies is as simple as clicking on the yellow line and dragging it to the desired frequency. When operating on the lower bands, the yellow line shifts to the right hand of the slice to show lower sideband operation. At the upper left edge of the slice, marked E, is a “flag” that moves with the slice. The flag, which is displayed at the right hand edge of the slice, has buttons to select the mode, display the current frequency and enable the entering the frequency from the keyboard. Several of the buttons on the flag open drop down menus that allow a wide selection of options for operating.

The SmartSDR software programs the hardware in the Flex in response to user selections via the UI on the user computer. The information necessary to generate the UI display on the user’s computer as shown in Figure 3 is generated by the Flex and transmitted via the Ethernet connection. Bidirectional audio data is also transferred between the Flex and the user computer. The audio connection also enables a remote user to run any of the common digital programs, e.g. Fldigi and WSJT-X, on their home computer.

Because of the latency due to the remote connection, VOX operation is tiring and confusing. Those of us who used the rig on FD have constructed a simple foot switch connection via a Serial interface. As we make the rig available to club members we will most likely hold a workshop to help users construct an interface for their home system.

Running CW on the Flex is somewhat more complex than voice because of the

need to provide the connections that would enable paddle operation. Right now we think we will need to have a WinKeyer or equivalent at each end of the connection to enable remote CW with paddles. We anticipate implementing this soon, but we did not try to do it for FD. In the meantime, there are 12 memories to store canned messages, e.g. 5NN TU, and a window that allows typing text that the Flex sends as CW.

The Flex actually implements two independent receivers (but only one transmitter). The receivers can be independently controlled, e.g. one on 20M, and one on 40M. Many of us we have only begun to scratch the surface of what the Flex can do, but we are looking forward to continuing to work with this new technology.

You might ask, “So how well did you guys actually do during FD?” The answer is that the system ran without a hitch for the full 24 hours. Each operator took shifts of 2 or 4 hours. The Flex allowed a second operator to connect to the radio while the first was operating, and then immediately take over when the first operator was done. This allowed for a handoff that was instantaneous. We ended up with 1879 QSOs split between 20M and 40M. This is one of the best totals for phone operation in recent TARC history. A side benefit of the rapid setup is that we now have many operators with some experience with the system who can help new users learn how to use it.