OUR 26TH YEAR!

EPARA BEACON

VOL. 6, NUMBER 10 THE OFFICIAL NEWSLETTER OF THE EASTERN PENNSYLVANIA AMATEUR RADIO ASSOCIATION OCTOBER 2022

NEXT CLUB MEETING: OCTOBER 13TH

Monroe County Public Safety Center, 100 Gypsum Rd Stroudsburg, PA 18360

Welcome to the EPARA Beacon! This newsletter is published monthly and is the official newsletter of the Eastern Pennsylvania Amateur Radio Association. EPARA has served the amateur radio community in the Pocono Mountains for over 25 years. We have been an ARRL affiliated club since 1995. We offer opportunities for learning and the advancement of skills in the radio art for hams and non-hams alike. EPARA supports Monroe County ARES/RACES in their mission of providing emergency communications for served agencies in Monroe County. Feel free to join us at one of our meetings or operating events during the year. The club meets on the second Thursday of every month, at the Monroe County 911 Emergency Control Center. The business meeting starts at 7:30 P.M. Anyone interested is invited to participate in our meetings and activities.

ZOOM Meeting Info: Meetings begin at 7:30PM!

https://us02web.zoom.us/j/85463346031?pwd=bU1KcVZoaVZiVEUvdjRsUXlNNHZkZz09

Meeting ID: 854 6334 6031 Password: 244632

From The President

The 2022 HamFest was a great success! The new location worked much better with more room to grow and it is easier to run the event. I want to thank all of you who helped get this off the ground, most of all we all should thank Walt W3FNZ for all the work he put into organizing and prompting our HamFest.

On October 2nd MC-ARES will be running its Simulated Emergency Test so be aware of some em-comm traffic on the WX3OES and WA3MDP repeaters during the drill. Monroe County ARES has been making some great strides in becoming a relevant resource for the county during an emergency. If you would like to be a part of ARES contact Charlie KB3JUF.

So its fall and we are winding down for the holidays and we are holding our last VE session for the year on October 28th At our next meeting we will present the 2023 budget for membership approval as well as discussing the radio room HF rig replacement.

That's all for now, see you at our meeting on October 13th.

Chris, 73!
AJ3C

CONTACT INFORMATION

President Chris Saunders AJ3C: aj3c@gmx.com	Vice President Bill Carpenter AB3ME: bill47@ptd.net
Secretary Kevin Forest W3KCF: w3kcf@outlook.com	Treasurer Scott Phelan KC3IAO: kc3iao@hobbyguild.com
Member at Large Eric Weis N3SWR: n3swr@ptd.net	ARES EC Charles Borger KB3JUF KB3JUF@gmail.com

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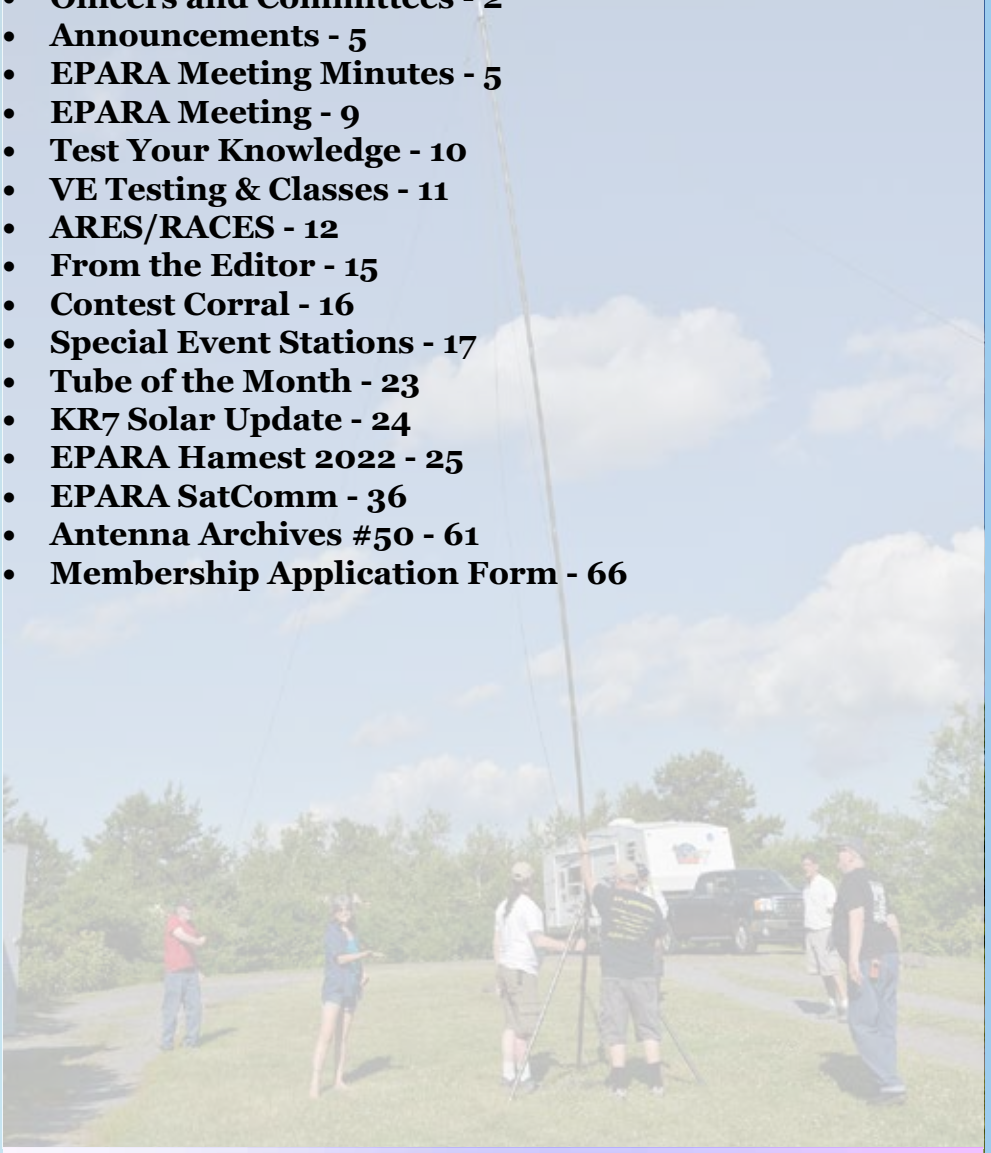
What's INSIDE this ISSUE



EPARA Net list

Monroe county ARES-RACES – Sunday's 8:30 PM, 146.865 MHz, PL -100 Hz

The Monday Night Pimple Hill repeater 8:30 PM (Repeater freq = 447.275 with a - 5MHz offset) DMR TECH Net on TG314273* Time Slot 2

SPARK Information/Swap Net – Tuesday's 8:30 PM, 147.045 MHz, PL 131.8 Hz

The Wednesday Night EPARA Hot Spot DMR Rag Chew net at 8:30 PM, TG 3149822* Time Slot 2 (N3IS Talk Group)

EPARA Tech Net – Friday's 8:30 PM, 147.045 MHz, PL +131.8 Hz

*TG = Talk Group

Announcements
AND UPCOMING EVENTS

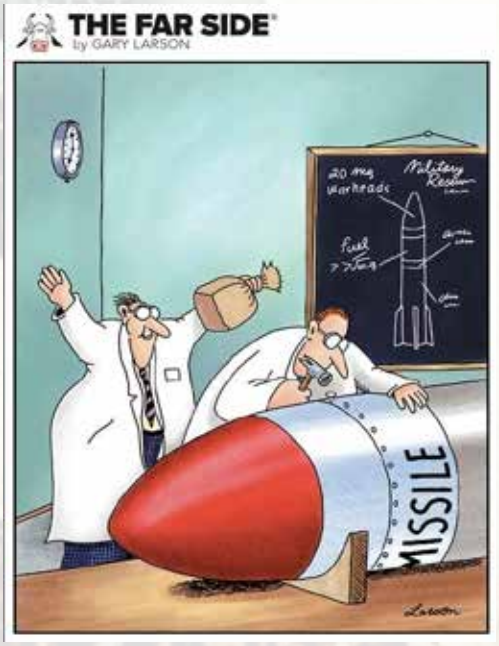
EPARA Club Dues
Club dues were due January 1st and are temporarily extended due to COVID reasons. For those that missed the chance to stay current, there are two (2) methods available to pay to help make this easy for all. Contact Scott KC3IAO via his email: KC3IAO@hobbyguild.com and you can send him a check or pay via PayPal.

ARES/RACES
There is an official S.E.T planned for Sunday, October 2nd. Contact Charlie KB3JUF for further info if needed.

Veteran's Day Parade
EPARA is looking to participate in the parade on November 6th. For those that are interested, please contact Chris AJ3C or Ruth Anne W9FBO for more information.

Shack Photos for our Facebook page
We are looking for shack photos from members to post on our Facebook group page, so those that are interested please send them to Bob W3BMM and they will get posted!

Pennsylvania QSO Party
The 66th PA QSO party - Bill AB3ME has invited those that are interested to his home to join in the festivities. Thank you again Bill !!



Rule #1 of Amateur Radio, it is a hobby, unless you figured out a way to fashion a living out of it.
Rule #2 of Amateur Radio, life is not a hobby and typically carries heavy responsibilities of everything that is not a hobby.
Rule #3 of Amateur Radio, never give up a LIFE event for a Ham event. You may make some great memories at the Ham event, but the guilt you may carry missing a LIFE event can be a terribly heavy millstone.
Rule #4 of Amateur Radio, as technology moves forward, so does Ham Radio - do what makes you happiest, experiment with other elements of Ham Radio as LIFE allows.
Rule #5 of Amateur Radio, it is only Ham Radio, when confused always refer to Rule #1 through #4.

EPARA GENERAL MEMBERSHIP MEETING AGENDA

EPARA Membership Meeting Minutes
September 8th *2022*
General Membership Meeting 7:30Pm

Open meeting:

Meeting called to order at 7:30 pm on September 8th 2022 by Chris AJ3C
Declaration of Quorum.
Total attending **21**. Present at 911 Center **18**. Present on Zoom **3**. Visitors present **2**

Pledge of Allegiance / Moment of silence:

Membership Meeting – Minutes Aug 11th, 2022
Secretary - Kevin W3KCF:

Meeting minutes for Aug 11th 2022 were posted on the EPARA website. Chris – AJ3C asked members if they had seen and read the minutes from our previous meeting. He then asked if there were any questions or objections to the minutes as they were presented. With no objections, Chris asked for a motion to accept the minutes as presented:

Motion to accept minutes as read: By AL – KB3OVB 2nd by Bob – W3BMM Motion Passed

Treasurers report:

Treasurers report: For Sept 2022 EPARA Club Meeting. By Scott Phelan, KC3IAO

Bank Account Statement Opening Balance 7/31/22 statement.): $3,649.81

Income: $44.00 (50/50)
Expenses: None

$0.14 Bank Interest.

Closing Balance: $3693.98

Our PayPal Account: 7/31/22 statement.

Income: $35.00 (Dues)
Fees: $1.68

Balance: $447.58

Motion to accept by Charlie – KB3JUF Seconded by Dan – KC3JCE Motion Passed

Correspondence:
None

EPARA GENERAL MEMBERSHIP MEETING AGENDA

Reports of officers and committee's:

Bill AB3ME – Program Committee

Bill stated there would be no presentations tonight after the meeting and there are no other presentations scheduled at this time.

Chris -AJ3C stated that those interested in giving a presentation, please contact him or Bill – AB3ME.

Charlie KB3JUF – ARES/RACES:

Charlie reiterated that all involved in ARES need to be motivated. Make sure you attend our meetings on the 4th Friday of the month and keep your Task Books up to date. Complete any and all training required and stay enthused. Charlie also stated, please check in on the Sunday Night ARES Net.

MCARES is going to hold a staged emergency On October 2nd starting at 1300 and ending at 1600. We will be deploying 5 teams to the following locations;

Chris - AJ3C and Kevin – W3KCF will be located at the 911 CTR in the radio room
Ruth Ann -W9FB0 and Julia – KC3TOF will be located at the Red Cross Chapter House
Charlie – KB3JUF and Dan – KC3JCE will be located at Stroudsburg High School
Len – KC3OND and Martin KC3TOE will be located at Middle Smithfield Community Center
John – K3WH and Bill N3HBY will be located at ESU

Ruth Ann, W9FBO – PIO:

Grant Request:

Deadline for grant request is October 1st 2022. Ruth Ann has been working with Chris on the grant submission to fund a new emergency communications trailer. She said they have requested our EIN number and they would like a copy of the clubs Mission Statement. Ruth Ann then asked Len, if he could reach out to the Red Cross and ask them to write a letter of support. Len asked her if she could supply some information pertaining to the grant so he could better present the information to them. Chris then mentioned asking Mary Ellen from Monroe County to do the same. We are applying for the grant through the Amateur Radio Digital Communication Group. (ARDC)

Bill Carpenter offered to assist with this effort.

Ruth Ann then asked, what is the possibility of the club participating in the Veteran's Day Parade. Chris said he thought it was a good idea and said we already have magnetic signs for the vehicle, we just need someone to volunteer their truck. The parade is being held on the 6th of November at 1300. Chris said the club would participate. Ruth Ann said we have to have everything prepared to apply, by the end of October.

Chris AJ3C -- Instruction and Training:

Nothing to report. Possibly put off until spring due to Chris's work schedule.

Chris AJ3C – Website:

Will be doing a revamp of the website in the near future.

EPARA GENERAL MEMBERSHIP MEETING AGENDA

Bob W3BMM – Social Media:

Bob said, "**please like the site"**. Chris said, as always, share material with Bob for the club's various social media accounts.

He mentioned that the ARRL has very good material on their Facebook account.

Many very good channels for every kind of radio interest -- DMR, Wingroup, EME, etc.

Al, KB3OVB: Membership:

AL said we are currently at 68 members

Eric N3SWR – Newsletter:

Eric said all's well with the newsletter. Keep sharing content with him.

Sat-Com / EME Group:

Bob – W3BMM: Satellite communication works very well during weekdays even without Arrow antenna. Best in the very early hours and very late at night. Weekends have too much traffic. Chris said we'd like to try another attempt at EME in November. The antenna and all the equipment is coming together.

Slow Scan TV:

Alex and Chris spoke to the ease and viability of these radio transmissions. Alex said he would be happy to show others how to do this.

Old business:

Hamfest 2022: Planning and assignment:

This year's Hamfest will be held on September 18th at the Moose Lodge.

Moose Lodge 705 Stokes Mill Rd, East Stroudsburg, PA 18301

Walt said Everything is on track. We are getting this facility for free. We need to ensure the generous donors of this facility are happy with our event and our presence. Kevin is bringing the hot dog cooker and John is bringing the grill. Bill and Scott are working the front gate. Al will be doing the 50/50 and Dan and Charlie are directing traffic. Gene - KJI will donate grand prize. Dunkin Donuts has made a donation. Awaiting response to $125 requested donation from Weis Markets and BJ's Club. Chris said we will have 500 tickets printed up at West End Printer.

Kevin – W3KCF, RuthAnn – W9FBO and John – K3WH have volunteered to manage the food and beverage booth. Scott will withdraw the change we need for the ticket sales and food booth.

Any other old business:

2020 Audit:

Scott said the 2020 audit is complete

EPARA GENERAL MEMBERSHIP MEETING AGENDA

Replacement HF rig for the radio room:

The Kenwood Radio works great for SSB and CW but is not working for digital modes. It will not support the ARES digital em-comm requirements. The radio needs to be updated to a more modern rig. Possibly the Yaesu 991A ? Cost of a new one is approximately $1230 and around $900 for a used one. We will put $1500 in the budget for this purchase.

New business:

EPARA 2023 Budget:

Chris – AJ3C made a motion to reschedule the budget until the October meeting after we've had a chance to review the income received from the HamFest.

Motion to accept by Chris – AJ3C Seconded by John – AA2CQ Motion Passed

Any Other New Business

Votes / New members: Scott and Jeff – KC3OYI
Vote was unanimous - approved.

Announcements: None

Any Additional Announcements

Tonight's 50/50 Raffle: $70.00. Won by Chris -AJ3C (Donated back to club)

Adjournment…

Meeting was adjourned at 2030:

Motion to close by Charlie – KB3JUF 2nd by Martin -KC3TOE Motion Passed.

Secretary
Kevin Forrest
W3KCF

EPARA MEETING

Before touch screen technology, there was touch cabinet technology.

TEST YOUR KNOWLEDGE!

Which describes a Pi-L-network used for matching a vacuum tube final amplifier to a 50 ohm unbalanced output?

A. A Phase Inverter Load network
B. A Pi-network with an additional series inductor on the output
C. A network with only three discrete parts
D. A matching network in which all components are isolated from ground

Last month's answer was, B. One time constant. When a voltage is applied to a capacitor it takes some amount of time for the voltage to increase. After about 5 time constant periods the capacitor voltage will have very nearly reached the value E. Because the rate of charge is exponential, in each successive time constant period Vc rises to 63.2% of the difference in voltage between its present value.

DMR
DIGITAL MOBILE RADIO

The EPARA HOT SPOT Wednesday night DMR rag chew is here!

Wednesday evenings at 8:30 PM local, 0:30 UTC!

Tune your DMR radios to Talk Group 3149822 TS2 to join the

N3IS EPARA Hot Spot rag chew DMR net.

Listen to the Tech Net Friday nights on the 147.045 repeater to learn more about joining this net and for upcoming ZOOM meetings announcements to learn more about programing your radios and hot spots!

VE Testing & Classes

Anyone looking to take an exam is encouraged to contact Chris AJ3C to preregister at least one (1) week in advance of the test date. If you have any questions or to register, Chris can be reached via email AJ3C@GMX.COM. VE sessions are being held the 4th Friday of each month at 6pm at the Monroe County 911 training center. Seating is limited for the time being so we can follow the health guidelines set forth by the county and state.

VE sessions are back - contact Chris AJ3C for further information!

AMATEUR RADIO CLASSES

ARES/RACES meetings are now being held on the fourth Friday of each month at 7PM. The meetings are once again being held at the 911 call center. These meetings will serve as training sessions covering several aspects of amateur radio emergency communications. We will start with traffic handling and the use of Radiograms and the ICS 213 general message form. Future sessions will cover the use of several ICS forms and the setup and use of digital communication modes including Winlink, Packet Radio, APRS, and the FLDIGI software program. Meeting are open to all, you do not need to be an ARES/RACES team member to attend.

Want to Put Your Ham Radio Skills to Good Use? Get Involved in

EmComm!

One of the missions of the Amateur Radio Service is for amateur radio operators to provide public service and emergency communications (EmComm) when needed. We act as a voluntary noncommercial communication service and pitch in to help our communities and first responders.

So, what organizations are out there for community-minded amateur radio operators and what can we do to help?

Join In

One good entry point into public service and emergency communications is to join SkyWarn, a volunteer program run by the National Weather Service (NWS) with more than 290,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the NWS.

Not all of these weather spotters are amateur radio operators, but many are. Amateur radio communications can report severe weather in real time. When severe weather is imminent, SkyWarn spotters are deployed to the areas where severe weather is expected. A net is activated on a local repeater and SkyWarn spotters who are Hams check into that net. The net control advises the spotters when they might expect to see severe weather, and the spotters report conditions such as horizontal winds, large hail, rotating clouds, and even tornadoes.

To become a SkyWarn spotter, you must attend a class that teaches you the basics of severe weather, how to identify potentially severe weather features, and how to report them. The classes are free and typically last about two hours. Check your local NWS website for class schedules.

ARES/RACES/CERT

Another way Hams can become involved in public service and emergency communication is to join an ARES or RACES group. Technically, these are two separate services—the Amateur Radio Emergency Service (ARES) is run by the ARRL, while the Radio Amateur Civil Emergency Service (RACES) is a function of the Federal Emergency Management Agency (FEMA). Amateur radio operators who typically take part in one also take part in the other.

To participate in RACES, you'll need to take some self-study FEMA courses in emergency preparedness and emergency-response protocols. Classes may or may not be required to participate in ARES. These requirements are set by each individual ARES group. To get involved with either ARES or RACES, ask your local club members when they meet. You can also contact the Section Manager or Emergency Coordinator for your ARRL section. To contact them, click here and find the section that you live in.

Amateur radio operators belonging to ARES (and its predecessor, the Amateur Radio Emergency Corps) have responded to local and regional disasters since the 1930s, including the 9/11 attacks, and Hurricane Katrina and Hurricane Michael, among others.

The Community Emergency Response Team (CERT) program trains volunteers—both Hams and non-hams—how to be prepared for disasters that may impact their area. They provide basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. CERT offers a nationwide approach to volunteer training and organization that first responders can rely on during disaster situations, allowing them to focus on more complex tasks.

What Gear Do You Need?

For most local needs, a 5-watt VHF/UHF handheld transceiver is sufficient for utilizing local repeaters to relay messages and report on conditions as they exist. Replacing the radio's stock antenna with a higher gain antenna or connecting it to a magnetic mount on a vehicle will increase range significantly.

Even better is a VHF/UHF mobile radio installed in your vehicle with 25 or more watts output and a good mobile antenna. In the event the repeater loses power, you can talk over a considerably larger area in simplex mode with the extra power and a good mobile antenna.

If you work with an ARES or RACES group, you may be asked to act as a county control station. In this capacity, you'd need both HF and VHF transceivers in a fixed location, such as your house, with a good antenna system and emergency power capabilities like a generator or batteries. This allows you to make contacts within your state and throughout the U.S.

Helping Hams

Ham radio can play a key role in emergency situations. Here are a few examples:

- Ham radio connected firefighters and police departments, Red Cross workers, and other emergency personnel during the 2003 blackout that affected the northeast United States.
- In 2017, fifty amateur radio operators were dispatched to Puerto Rico to provide communications services in the wake of Hurricane Maria.
- Amateur radio operators provided communications in the aftermath of the Boston Marathon bombing when cellphone systems became overloaded.

- During Hurricane Katrina, more than one thousand ARES volunteers assisted in the aftermath and provided communications for the American Red Cross.
- During the devastating Oklahoma tornado outbreak that began in May 1999, amateur radio operators—giving timely ground-truth reports of severe weather—played a critical role in the warning and decision-making processes at the NWS Weather Forecast Office in Norman, Oklahoma.

Credit: https://www.onallbands.com/want-to-put-your-ham-radio-skills-to-good-use-get-involved-in-emcomm/

From the Editor

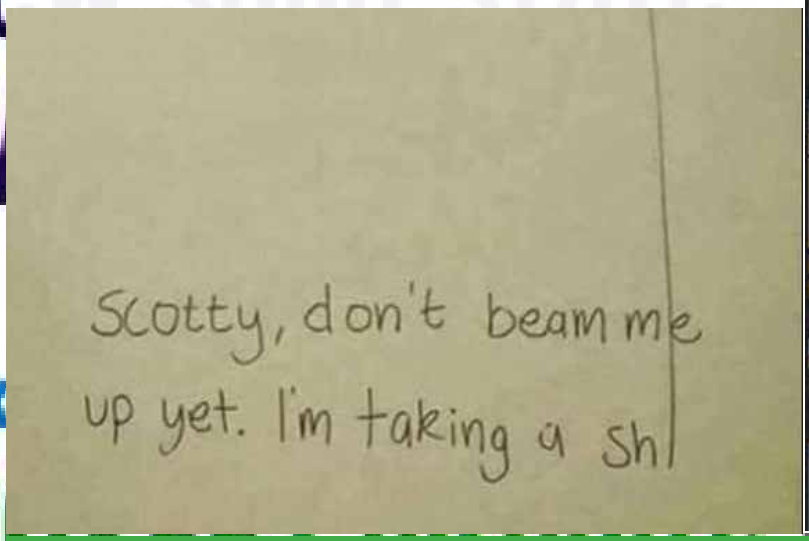
Eric, N3SWR

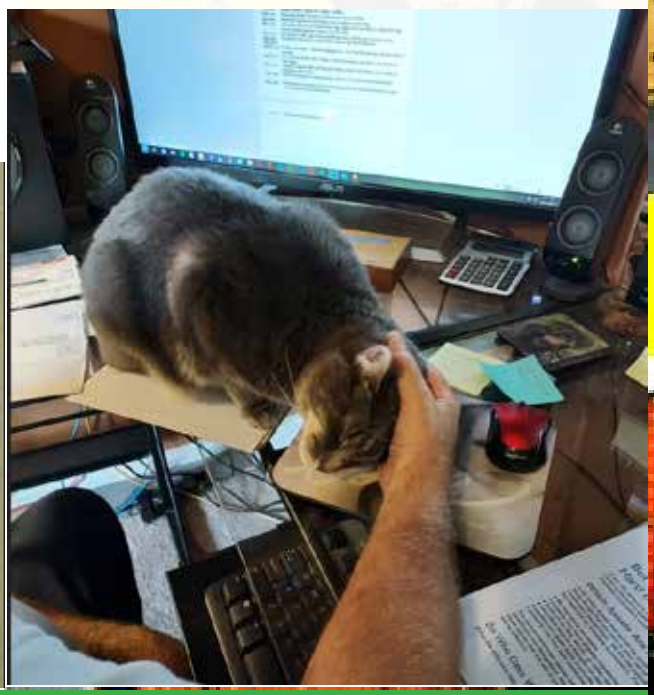
For all you Trekkie's out there, sorry, I couldn't resist :)

The hamfest was a success in my eyes and I had a bunch of laughs along the way. It was nice seeing so unfamiliar faces throughout the day too. Hats off to all that helped out and made this event come through!

So I sit here trying to type and the cat insists to stopping the progress for some serious attention. The whole situation at times is funny and no wonder I don't get things done as planned :)

Cheers for now! Eric
N3SWR





"Before you criticize someone, you should walk a mile in their shoes. That way when you criticize them, you are a mile away from them and you have their shoes."
—Jack Handey

Topics of Interest

Have an idea you would like to share with your fellow hams? Interested in one of the new exotic digital modes and would like to get others interested in it too? Found a blog somewhere that you think others would find interesting? Members are encouraged to submit items of interest for publication. Submitted articles (are suggested) to be no more than a page or two in length and may be edited for content and grammar. The EPARA officers and newsletter editor reserve the right to determine which items will be included in The Beacon. The deadline for publication is the 15th of the month. The publication date will be at the end of each month. Copyrights are the property of their respective owners and their use is strictly non-profit/educational and intended to foster the spirit of amateur radio.

If you've taken pictures at an event and would like to submit them for possible inclusion in the newsletter, forward them to the newsletter editor. Please send action shots, if possible. Faces are often preferable over the backs of heads. Many hams may be way too overweight, so please consider using a wide-angled lens.

Disclaimer

The Beacon is not representative of the views or opinions of the whole organization, and such views and opinions expressed herein are of the individual author(s).

Contest Corral

October 2022

Check for updates and a downloadable PDF version online at **www.arrl.org/contest-calendar**.
Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish				Bands	Contest Name	Mode	Exchange	Sponsor's Website
Date	Time	Date	Time					
1	0600	2	0559	3.5-28	Worked All Provinces of China DX Contest	CW	RS(T), Chinese province or serial	www.mulandxc.com
1	0600	2	0600	1.8-28	Oceania DX Contest, Phone	Ph	RS, serial	www.oceaniadxcontest.com
1	1200	2	1159	1.8-28	Russian WW Digital Contest	Dg	RST(Q), oblast code or serial	www.rdrclub.ru
1	1400	2	1400	See rules	IARU Region 1 UHF Microwaves Contest	CW,Ph,Dg	RS(T), serial, 6-char grid square	www.iaru-r1.org
1	1600	2	1100	3.5,7	International HELL-Contest	Hell	RST, serial	www.darc.de
1	1600	2	2200	1.8-28	California QSO Party	CW,Ph	Serial, CA county or SPC	www.cqp.org/Rules.html
1	1800	2	1800	No WARC	SKCC QSO Party	CW	RST, SPC, name, 4-char grid square	www.skccgroup.com
2	0600	2	0900	3.5	UBA ON Contest, SSB	Ph	RS, serial, ON section (if ON)	www.uba.be
2	0600	2	1800	3.5-28	RSGB DX Contest	CW,Ph	RS(T), serial	www.rsgbcc.org
2	2200	2	2359	3.5-14	Peanut Power QRP Sprint	CW,Ph	RS(T), SPC, peanut no. or power	www.nogaqrp.org
3	1900	3	2030	3.5	RSGB 80-Meter Autumn Series, CW	CW	RST, serial	www.rsgbcc.org/hf
4	0100	4	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
5	1900	5	2300	432	432 MHz Fall Sprint	CW,Ph,Dg	4-char grid square	svhfs.org
5	2000	5	2100	3.5	UKEICC 80-Meter Contest	Ph	6-char grid square	www.ukeicc.com
6	1700	6	1900	3.5	SARL 80-Meter QSO Party	Ph	RS, serial, grid square or QTH	www.sarl.org.za
6	1700	6	2100	28	NRAU 10-Meter Activity Contest	CW,Ph,Dg	RS(T), 6-char grid square	nrrlcontest.no
6	1900	6	2100	1.8-28,50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
8	0000	9	1559	3.5-28	Makrothen RTTY Contest	Dg	4-char grid square	www.pi259.org
8	0000	8	2359	1.8-28	QRP ARCI Fall QSO Party	CW	RST, SPC, mbr or power	qrparci.org
8	0300	9	2100	1.8-28, V/U	Nevada QSO Party	CW,Ph,Dg	RS(T), NV county or ARRL/RAC section	nvqso.com
8	0600	9	0600	1.8-28	Oceania DX Contest, CW	CW	RST, serial	www.oceaniadxcontest.com
8	0800	8	1400	902 and above	Microwave Fall Sprint	CW,Ph,Dg	6-char grid square	svhfs.org
8	1200	9	1200	3.5-28	Scandinavian Activity Contest, SSB	Ph	RST, serial	www.sactest.net
8	1200	9	2359	1.8-28,50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
8	1500	9	0500	1.8-28	Arizona QSO Party	CW,Ph	RS(T), AZ county, or SPC	www.azqp.org
8	1600	9	2200	No WARC	Pennsylvania QSO Party	CW,Ph	Serial, PA county, or ARRL/RAC section	paqso.org
8	1800	9	1800	1.8-28, 50,144	South Dakota QSO Party	CW,Ph,Dg	RS(T), SD county, or SPC	www.sdqsoparty.com
8	2000	9	2000	1.8	PODXS 070 Club 160-Meter Great Pumpkin Sprint	Dg	RST, SPC	www.podxs070.com
9	0600	9	0900	3.5	UBA ON Contest, CW	CW	RST, serial, ON section (if ON)	www.uba.be
10	0000	10	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW,Ph	RST, SPC, mbr or power	www.4sqrp.com
10	0001	10	2359	28	10-10 International 10-10 Day Sprint	CW,Ph,Dg	Name, mbr or "0," SPC	www.ten-ten.org
12	0030	12	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
12	1900	12	2030	3.5	RSGB 80-Meter Autumn Series, Data	Dg	RST, serial	www.rsgbcc.org/hf
15	0000	16	2359	50-1296	ARRL EME Contest	CW,Ph,Dg	Signal report	www.arrl.org/eme-contest
15	0000	16	2359	3.5-28	JARTS WW RTTY Contest	Dg	RST, age of operator	jarts.jp/rules2022.html
15	0001	16	2359	28	10-10 International Fall Contest, CW	CW	Name, mbr or "0," SPC	www.ten-ten.org
15	1400	16	0200	No WARC	New York QSO Party	CW,Ph,Dg	RS(T), NY county or SPC	www.nyqp.org
15	1500	16	1459	3.5-28	Worked All Germany Contest	CW,Ph	RS(T), DOK or "NM" or serial	www.darc.de
15	2000	15	2359	1.8-7.21, 28,50	Feld Hell Sprint	Dg	RST, mbr, SPC, grid square	sites.google.com/site/feldhellclub/
15	2130	15	2230	7	Argentina National 7 MHz Contest	Ph	RS, 2-digit year first licensed	www.lu4aa.org
16	0000	16	0200	14,21	Asia-Pacific Fall Sprint, CW	CW	RST, serial	jsfc.org
16	0700	16	1000	144	UBA ON Contest, 2 Meters	CW,Ph	RS(T), serial, ON section (if ON)	www.uba.be
16	1700	17	0100	1.8-28, 50,144	Illinois QSO Party	CW,Ph,Dg	RS(T), IL county or SPC	w9awe.org/ilqp
16	1900	16	2030	3.5	RSGB RoLo CW	CW	RST, previous 6-char grid square recd	www.rsgbcc.org/hf
16	2300	17	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
17	1300	21	2359	No WARC	ARRL School Club Roundup	CW,Ph,Dg	RS(T), class (I/C/S), SPC	www.arrl.org/school-club-roundup
17	1900	17	2030	3.5-14	RSGB FT4 Contest	FT4	4-char grid square	www.rsgbcc.org/hf
20	1900	20	2000	3.5-14	NTC QSO Party	CW	NTC member: RST, mbr; non-member: RST, "NM," less than 25 WPM	qsl.net/ntc/party.html
21	1700	23	0100	1.8-28, V/U	Telephone Pioneers QSO Party	CW,Ph,Dg	Chapter nr or RS(T), name	www.tpqso.com
22	0000	23	2359	1.8-28	YBDXPI FT8 Contest	FT8	4-char grid square	contest.ybdxpi.net/rules
22	1200	23	1200	3.5-28	UK/EI DX Contest, SSB	Ph	RS, serial, district code, or serial	www.ukeicc.com/dx-contest-rules.php
22	1400	24	0200	No WARC	YLRL DX/NA YL Anniversary Contest	CW,Ph,Dg	Serial, RS(T), ARRL section or PC	ylrl.net/contests
22	1500	23	1500	1.8	Stew Perry Topband Challenge	CW	4-char grid square	www.kkn.net/stew
23	0000	23	0400	3.5-14	North American SSB Sprint Contest	Ph	Other's call, your call, serial, name, SPC	ssbsprint.com/rules
23	1300	26	0700	1.8-28, 50,144	Classic Exchange, CW	CW	Name, RST, SPC, radio model	www.classicexchange.org
26	0000	26	0200	1.8-28,50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
26	2000	26	2100	3.5	UKEICC 80-Meter Contest	CW	6-char grid square	www.ukeicc.com
27	1900	27	2030	3.5	RSGB 80-Meter Autumn Series, SSB	Ph	RS, serial	www.rsgbcc.org/hf
28	1600	28	2359	3.5-14,21	Zombie Shuffle	CW	RS(T), SPC, Zombie nr or area code, name	www.zianet.com/qrp
29	0000	30	2359	1.8-28	CQ Worldwide DX Contest, SSB	Ph	RS, CQ Zone	www.cqww.com

There are a number of weekly contests not included in the table above. For more info, visit: **www.qrpfoxhunt.org**, **www.ncccsprint.com**, and **www.cwops.org**.
All dates and times refer to UTC and may be different from calendar dates in North America. Contests are not conducted on the 60-, 30-, 17-, or 12-meter bands. *Mbr* = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state. Listings in blue indicate contests sponsored by ARRL or *NCJ*. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. *Data for Contest Corral is maintained on the WA7BNM Contest Calendar at* **www.contestcalendar.com** *and is extracted for publication in QST 2 months prior to the month of the contest. ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service.*

Amateur Radio Special Event Stations!

09/16/2022 | Project Big E

Sep 16-Oct 2, 1000Z-2200Z, N1E, West Springfield, MA. Hampden County Radio Association. 7.050 7.195 14.050 14.285; digital, HF and VHF; additional bands and modes possible. QSL. Larry Kranson, W1AST, 100 Kenmore Dr, Longmeadow, MA 01106-2759. Amateur exhibit will be staffed daily from 10 AM-10 PM ET. September 16-October 2, 2022 –– N1E, W. Springfield, MA. The Big E, "New England's Great State Fair" with over 1.6 million visitors. Will host a live, on-site ARISS contact sometime during the operating event. QSL with self-sticking SASE please. www.nediv.arrl.org/ProjectBigE

09/25/2022 | 242 Anniversary Muster at Sycamore Shoals on the Watauga River and march to Kings Mountain

Sep 25-Oct 7, 1700Z-1700Z, WR4CC, Elizabethton, TN. Carter County Amateur Radio Association. 3.900 7.075 14.290 21.350. QSL. Larry Davis, KM4RWO, 172 Carl Taylor Dr., Elizabethton, TN 37643. To help celebrate the gathering and march of men from the frontier that helped win The American Revolution. The march to Kings Mountain was 242 years ago in the year 1780. wr4cc.org

09/30/2022 | Smoky Mountain Amateur Radio Club 75th Anniversary

Sep 30-Oct 2, 0000Z-0000Z, W4OLB, Maryville, TN. Smoky Mountain Amateur Radio Club. 7.220MHz SSB 7.050MHz CW 14.250MHz SSB 14.090MHz CW. QSL. Paul Galentine, 103 Hatcher Ln., Maryville, TN 37803. W4OLB.org

09/30/2022 | Toccoa-Currahee Military Weekend

Sep 30-Oct 2, 1600Z-1400Z, W4T, Toccoa, GA. Currahee Military Museum. 1.945 3.885 7.270. QSL. Garret Scott, 10236 Birch Hill Lane, Knoxville, TN 37932. Military Weekend commemorating the training of WWII Airborne Troops at Camp Toccoa, Georgia. Parachute Infantry Regiments of the 101st and 82nd Airborne Divisions, and others, trained at Camp Toccoa, notably including the 506st PIR "Easy Company". All operations will be from original WWII radio equipment, including an SCR-177B/BC-191/BC-312, SCR-284/BC-654, SCR-694/BC-1306, SCR-536/BC-611, and SCR-511/BC745. AM and CW modes will be utilized. Radio operations will be conducted from living history encampments at the Toccoa Museum, Toccoa Courthouse, Camp Toccoa, and Currahee Mountain. WWII veterans are expected to participate in this event. w8bug.com/w4t

10/01/2022 | 150th Anniversary: Lighting of Bodie Island Lighthouse

Oct 1, 1300Z-1900Z, W4PCN, Nags Head, NC. Outer Banks Repeater Association. 7.265 14.265. Certificate & QSL. OBRA SE Station Carl Hacker, WC5WM, P.O. 1085, Nags Head, NC 27959. SASE please www.obraobx.com

10/01/2022 | 50th Anniversary South-East CT Community Center of the Blind Pumpkin Festival

Oct 1, 1400Z-2300Z, NA1KW, Waterford, CT. North American Kilowatt Club. 7.240 14.240 18.140 14.040. QSL. Chuck Doolittle, , 2600 Davis St, Hannibal, MO 63401. In honoring the 50th anniversary of the South East Connecticut Community Center of the Blind, we salute the many contributions that the blind and disabled have made to the radio art, and recognize the joy and enrichment they have found through the amateur radio service. Thank you for taking part in this important celebration. Please QSL for a special commemorative card. https://www.na1kw.com

10/01/2022 | Gist Settlement Commemorative Special Event

Oct 1, 1000Z-1600Z, K8HO, New Vienna, OH. Highland Amateur Radio Association. 7.225 14.275. QSL. Highland Amateur Radio Association, 21 Highland Drive, Hillsboro, OH 45133. QSY +/- 3khz. for QRM highlandara@gmail.com

10/01/2022 | Netherland Inn Harvest Celebration

Oct 1-Oct 2, 1300Z-1700Z, N4I, Kingsport, TN. Kingsport Amateur Radio Club. 7.185 7.250 14.250 14.320. Certificate. Ricky Johnson, WB4RLJ, 713

Amateur Radio Special Event Stations!

Holston St, Kingsport, TN 37660. www.w4trc.org

10/01/2022 | Spoon River Valley Scenic Drive

Oct 1-Oct 9, 0900Z-1700Z, W9S, K9S, N9S, Lewistown, IL. Peoria Area Amateur Radio Club . 146.520 14.340. QSL. Peoria Area Amateur Radio Club, PO Box 3508, Peoria, IL 61615-3508. 1st and 2nd weekends of October, 2022 9a to 5p on Saturday and Sunday. w9uvi@ARRL.net or www.w9uvi.org

10/01/2022 | Vint Hill Farms Station 80th Anniversary

Oct 1-Oct 2, 0800Z-1700Z, K4V, Warrenton, VA. Fauquier Amateur Radio Association. 7.270 14.270 28.270 14.035. QSL. John Phillips, 4320 S STARCREST DR, Warrenton, VA 20187. Also 7.035, 28.035 CW, SSB, no digital. In conjunction with Cold War Museum; celebration of this US Army signals intelligence and electronic warfare facility operation during WWII. w4va.org

10/01/2022 | WWV 103rd Anniversary SES

Oct 1-Oct 2, 0000Z-2359Z, WW0WWV, Fort Collins, CO. WWV Amateur Radio Club. 14.280. Certificate & QSL. WWV Amateur Radio Club, P.O. Box 273226, Fort Collins, CO 80527. Clean sweep certificates available for stations contacting SES operators in each of the 6 active time zones. Note date change. The WWV ARC will be on the air with amateur stations across the country to help celebrate and recognize the WWV 103rd Anniversary. For more information visit wwvarc.org/103rdAnniversary

10/02/2022 | Fort Massac Encampment

Oct 2-Oct 16, 0000Z-0000Z, K9E, Metropolis, IL. Massac County Amateur Radio Club . 7.175 7.250 14.225 14.250. QSL. K9E, P.O Box 5, Metropolis, IL 62960. https://w9due.org

10/02/2022 | National Royal Rangers Week

Oct 2-Oct 8, 1800Z-2200Z, KD9FDH, Madison, IN. Royal Rangers Amateur Radio Club. 28.435. Certificate & QSL. Jerry Barnes, 601 Spring Street, Madison, IN 47250. Station will be calling CQ RR Week. Beautiful electronic certificate for confirmed QSO and QSL card exchange with SASE. Further info Jerry Barnes, KA9PIJ@arrl.net. See us on Facebook KD9FDH Royal Rangers Amateur Radio Club and on QRZ. wjbarnes@cinergymetro.net

10/05/2022 | Come and Get Wyoming

Oct 5-Oct 16, 0000Z-2359Z, W7Y, Cheyenne, WY. Shy-Wy Amateur Radio Club. 14.320. Certificate & QSL. Shy-Wy ARC, P.O. Box 22483, Cheyenne, WY 82003. Shy-Wy ARC will be hosting "Come and Get Wyoming" in conjunction with the 2022 ARRL Rocky Mountain Division Convention. We will be on as many bands and modes as we can during the event. Digital, SSB, CW, Satellites, SSTV, etc. Check the scheduler on our website for who will be on when. Fill out your WAS card with as many WY contacts as you can. https://shywyarc.net/wp/comeandgetwyoming

10/07/2022 | 242nd Anniversary of the Battle of Kings Mountain, South Carolina

Oct 7-Oct 8, 1200Z-2359Z, NA4CC, Blacksburg, SC. Cleveland County Amateur Radio Service. 7.260 14.260. QSL. CCARS, P.O. Box 864, Shelby, NC 28150. Event will take place at the Kings Mountain National Military Park. Please include SASE. www.ccarsnc.org

10/07/2022 | W4MLB 57th Ham Fest

Oct 7-Oct 8, 1316Z-0911Z, W4MLB, Melbourne, FL. Platinum Coast Amateur Radio Society. 14.250 14.300 14.275 14.280. QSL. PCARS, P.O. Box 1004, Melbourne, FL 32902-1004. https://pcars.org/wp/melbourne-hamfest

10/08/2022 | 125th Anniversary of MIDTEL (Middleburgh Telephone Company)

Oct 8-Oct 14, 0000Z-0000Z, W2M, Middleburgh, NY. Schoharie County Amateur Radio Association. 7.040 7.275 14.040 14.275. QSL. Matt KD2TBS, PO Box 667, Middleburgh, NY 12122. Established in 1897, MIDTEL (The Middleburgh Telephone Company) celebrates 125 years of service in 2022, one of the oldest of NY's 40 independent telephone

Amateur Radio Special Event Stations!

companies. The company currently serves over 7,000 customers throughout Schoharie County (home of Howe Caverns, Vroman's Nose, and the Blenheim Covered Bridge) and beyond. MIDTEL now provides long distance telephone, cable television, and fiber-to-the-home internet service. Op times and bands at scara.shacknet.us/. Contact Matt KD2TBS at kd2tbs@arrl.net, 518-519-0743, or Hamshack Hotline #14863. www.schoharieamateurradio.org, kd2tbs@arrl.net or scara.shacknet.us

10/08/2022 | Get Your Park ON! Celebrating Earth Science Week

Oct 8-Oct 16, 0000Z-1259Z, K5G and more, Various towns. US Affiliate (KFF) of Worldwide Flora and Fauna. All bands, all modes. Certificate. See QRZ for, each individual 1X1, call. Call signs currently participating: N2G, K5G, N6G, K7G, and N9G. See website details and compete list of 1X1 call signs. QSL information for each call will be on www.qrz.com. www.wwff.us

10/08/2022 | Gulf Coast Amateur Radio Hamfest

Oct 8, 0600Z-1200Z, WA4GDN, Port Richey, FL. Gulf Coast Amateur Radio Club. 14.275 7.275 28.375. QSL. Dennis Hammond, 8732 Congress St, Port Richey, FL 34668. gulfcoastarc.com

10/08/2022 | Jubilee 2022 - Cub Scouts, Scouts USA & Venturers outdoor event

Oct 8, 1400Z-2300Z, KN0BSA, Ashland, NE. Mid-America Radio Scouting Group. 7.282 & up 14.090 & up FT8 local VHF. QSL. Jeff Beiermann, 5015 Burt St, Omaha, NE 68132. From Eugene T. Mahoney State Park. If you have time, please stop by and talk with Cubs, Scouts, Boy Scouts, Venturers and adults at this hands-on station. If you were ever a Scout, share your Scouting experience. If you were not a Scout, questions like rank, favorite scouting activity or how they are enjoying the Jubilee will help keep the conversation going. Tnx & 73. wb0m@arrl.net

10/08/2022 | Little David Special Event Station

Oct 8, 1300Z-1800Z, W4D, Moncks Corner, SC. Trident Amateur Radio Club. 7.262 14.262. QSL. QSL Manager/W4D, PO Box 60732, North Charleston, SC 29419. https://www.tridenthams.org/w4d-ses

10/08/2022 | Suffolk County Radio Club 75th Anniversary

Oct 8, 1500Z-2359Z, W2DQ, Shoreham, NY. Suffolk County Radio Club. 14.240 7.256 21.295 28.350. Certificate. Suffolk county radio club, PO Box 302, Medford, NY 11763. Operating from the historic Wardenclyffe, home of Nikola Tesla's last remaining laboratory in the United States. Details available on club website. suffolkcountyradioclub.com

10/08/2022 | US Navy Birthday 10/13/1775 Commemoration

Oct 8, 1600Z-2300Z, NI6IW, San Diego, CA. USS Midway (CV-41) Museum. 14.320 7.250 14.070 PSK31 START on various PAPA repeater. QSL. USS Midway Museum COMEDTRA, 910 N Harbor Drive, San Diego, CA 92101. www.qrz.com/db/ni6iw

10/09/2022 | Blue Ridge Bonanza

Oct 9, 1300Z-2100Z, W4CA, Roanoke, VA. Roanoke Valley Amateur Radio Club. 14.265 7.265. QSL. Roanoke Valley ARC, P.O. Box 2002, Roanoke, VA 24009. Multiple stations/frequencies on 20 and 40 meters. Contact as many stations along the Blue Ridge Parkway during the event. https://blueridgebonanza.info

10/09/2022 | Fire Prevention Week Special Event

Oct 9-Oct 16, 0400Z-0359Z, KF2IRE, East Hanover, NJ. Siemens Fire Safety USA Amateur Radio Club. 3.800 7.175 14.225 21.250. Certificate & QSL. Steve Masticola, Siemens Fire Safety USA, 8 Fernwood Road, East Hanover, NJ 07936. Fire Prevention Week Special Event. Stations N0F through N9F, KF2IRE, and VE3FIRE. Midnight Sunday to midnight Saturday station local time. Digital certificate for working any 10 of the 12 stations. Watch for spots. hamfire.com

10/09/2022 | Illinois QSO Party Special Event

Amateur Radio Special Event Stations!

Oct 9-Oct 23, 0000Z-2359Z, W9Y, Elmhurst, IL. York Radio Club. 7.050 7.250 14.205 14.250. QSL. Gehl Entwhistle, 370 N West Ave, Elmhurst, IL 60126. www.yorkradioclub.com

10/13/2022 | U.S. Navy Birthday Commemoration

Oct 13, 1600Z-2130Z, W5KID, Baton Rouge, LA. Baton Rouge Amateur Radio Club. 7.040 7.250 14.040 14.250. QSL. USS KIDD Amateur Radio Club, 305 S. River Road, Baton Rouge, LA 70802. Operation aboard the USS KIDD (DD-661). WW II Fletcher class destroyer. www.qrz.com/db/w5kid

10/15/2022 | Don Carter State Park POTA Support Your Parks Autumn Event

Oct 15-Oct 16, 1300Z-2300Z, W4T, Gainesville, GA. Lanierland ARC/ Hall County ARES. 7.225 + or - 14.225 + or - . QSL. W4T Lanierland ARC/Hall ARES, P.O. Box 2182, Gainesville, GA 30503. SASE Please. On October 15 beginning at 9:00 AM the Lanierland Amateur Radio Club and Hall County ARES will be co-hosting a Special Event Station W4T (Whiskey Four Tango) at Don Carter State Park at Pavillion #4 located at 5000 N Browning Bridge Rd, Gainesville, GA 30506 (Just off Clarks Bridge Road SR 284). If you don't have a GA State Parks Pass there is $5 parking fee to enter the park. This Special Event coincides with POTA (Parks On The Air) Support Your Parks Autumn Event. This should be a fun event for all with a chance to learn more about amateur radio and get a chance to see and operate different radios set up for the Special Event and the POTA Support Your Parks Event. Everyone is invited to attend and participate. So come on out and enjoy the camaraderie and fellowship and do a little HF operating. If you want to bring any amateur gear you might have to sell bring it along. You may also bring your HF radio and/or antenna to set up and operate. See how much fun Parks On The Air is to operate. Jimmy Harris, KN4NZK will be preparing some of his "World Famous Barbeque" (For a Modest Price) at lunch time (Noon Until 1 PM). Those operators that operate the W4T Special Event Station and make at least 10 contacts will receive a nice certificate suitable for framing. All amateurs who contact W4T during this event will receive a QSL by sending a QSL and SASE to: W4T, P.O. Box 2182, Gainesville, GA 30503. Come on out and enjoy a great time. For additional information contact one of the following: Jimmy Harris, KN4NZK jimmys@charter.net; Tony Constabile, KB2DPY kb2dpy@gmail.com; Billy Fallin, KN4ZFB billy.fallin@comcast.net; Terry Jones, W4TL w4tl@arrl.net https://www.lanierlandarc.org/p/2022-pota-meet-up.html

10/15/2022 | Lester Dent - Doc Savage Special Event

Oct 15-Oct 16, 1500Z-2359Z, W0D, Macon, MO. Macon County Amateur Radio Club. 7.040 7.270 14.040 14.270. Certificate. Macon County ARC, P.O. Box 13, Macon, MO 63552. www.maconcountymissouriarc.org

10/15/2022 | Troop 104 Jamboree on the Air

Oct 15-Oct 16, 1300Z-0200Z, W2S, Wayne, NJ. Wayne Radio Amateur Emergency Team. 7.185 14.280 147.450. Certificate & QSL. Jim Sadur, 5 Packanack Lake Rd, Wayne, NJ 07470. JOTA event celebrating the 80th anniversary of Scout USA Troop 104, Packanack Lake, NJ WRAET.COM

10/15/2022 | Western Mass Council BSA JOTA/ JOTI

Oct 15, 1300Z-1900Z, W1M, Russell, MA. Western Mass Council Scouts BSA. 7.190 10.115 14.060 14.290. QSL. tom barker, 329 faraway road, Whitefield, NH 03598. Will operate on Brandmeister talk group 907. QSL available for SASE with current first class postage attached.

10/15/2022 | Yorktown Surrender Day Event

Oct 15, 1400Z-2000Z, K4RC, Yorktown, VA. Williamsburg Area Amateur Radio Club. 7.265 14.265. Certificate & QSL. For Certiciate send QSO info to qslmgn@k4rc.net., For QSL: QSL Manager, K4RC, P.O. Box 1470, Williamsburg, VA 23187. Celebrating the 241st anniversary of the British surrender to the joint American and French forces in Yorktown, VA. This ended the American Revolutionary War on October 19, 1781. For QSL send QSO info and SASE to QSL Manager,

Amateur Radio Special Event Stations!

WAARC, PO Box 1470, Williamsburg, VA 23187. For Certificate send QSO info to qslmgr@k4rc.net. You must contact Jamestown, Williamsburg, and Yorktown Special Event Stations for certificate. You don't need to make contacts in the same calendar year. info@k4rc.net or k4rc.net

10/21/2022 | Elmer Tribute Special Event

Oct 21-Oct 24, 0000Z-0000Z, KB1FGC, Prospect, CT. KB1FGC. 3.540 7.040 14.040 21.040. Certificate. Richard Guerrera, 19 Terry Rd, Prospect, CT 06712. Total Operators: KB1FGC WG3F KC1KUG W0FJ W1FMX K1ARR KE0LUA AB10 N1AOB https://www.qsl.net/kb1fgc

10/21/2022 | Scout Fest 2022 GSMC

Oct 21-Oct 23, 0200Z-1800Z, W4LSM/K4S, Maryville, TN. Great Smoky Mountain Council BSA / Smoky Mountain Amateur Radio Club . 14.285 7.210 . QSL. Paul Galentine/ScoutFest, 103 Hatcher Ln, Maryville, TN 37803. ScoutFest is held every 4 years. This year it will be held at Remote Area Medical airfield in Blaine Tn. For a QSL Card please send a self address stamped envelope to Paul Galentine 103 Hatcher Ln. Maryville TN 37803 USA. please include ScoutFest 2022 on your envelope. www.W4OLB.ORG

10/22/2022 | Knock Out Cancer

Oct 22-Oct 23, 1500Z-0300Z, K0C, Starkville, MS. Radio Amateur Cancer Survivors. 14.259 7.259 14.074 7.074. Certificate. Caleb Rich, 1384 Louisville St Lot 10, Starkville, MS 39759. The first annual Relay for Life of Amateur Radio virtual event to promote cancer awareness around the globe through amateur radio. Bringing together amateur radio operators who are cancer survivors, cancer caregivers, or may have lost someone to cancer. Together we will Celebrate! Remember! and Fight Back! with our fellow hams around the world. Certificate will be available for $10 donation to Relay for Life of Amateur Radio https://secure.acsevents.org/site/STR?pg=entry&fr_id=103335

10/27/2022 | Nevada Wing Conference & Change of Command

Oct 27-Oct 31, 0000Z-2359Z, N7N, Las Vegas, NV. Friends of Nevada Wing. 7.200 14.250 146.52;General portion of the bands; SSB and FT8 on HF; VHF on FM.. QSL. Bill Aceves, N6YEL, 23612 Glenmoor Dr., Parker, CO 80138-3112. To recieve a QSL card, send your card and a SASE to N6YEL by 31 December 2022.

10/29/2022 | Acadiana Amateur Radio Association, Inc. Celebrates 70 Years as ARRL Affiliation

Oct 29, 1330Z-2300Z, W5DDL, Broussard, LA. Acadiana Amateur Radio Association, Inc.. 7.265 14.265 21.265. Certificate. Chris Ancelet, N5MCY, 143 Breezeway Ct., Egan, LA 70531. Event will be held in St. Julien Park www.w5ddl.org

10/29/2022 | Spruce Goose 75th Anniversary of Flight

Oct 29-Nov 6, 1700Z-2359Z, W6HA/W6HA/7, Torrance, CA. Hughes and McMinnville Amateur Radio Clubs. SSB: 3.833 7.233 14.233 21.333 28.333; CW: 3.533 7.033 14.033 21.033 28.033; 445.620 PL 127.3; 146.52 on 146.550. QSL. Brian Johnson, AB6UI, 5207 Lillian St, Torrance, CA 90503. Wednesday, November 2, 2022 is the 75th Anniversary of the Flight of the Hughes Aircraft Company's Hercules H-4 Flying Boat aka The Spruce Goose. W6HA stations will be near Culver City and/or Long Beach Harbor where the craft was built, assembled and flown. W6HA/7 stations will be near McMinnville, Oregon were the aircraft is now displayed in the Evergreen Aviation and Aerospace Museum. W6HA near Culver City/Long Beach, CA; W6HA/7 near McMinnville, OR. www.w6ha.org

10/30/2022 | 47th Anniversary, Sinking of the Edmund Fitzgerald

Oct 30-Nov 13, 0000Z-2359Z, W8F, Livonia, MI. Livonia Amateur Radio Club. 14.260 14.040 7.260 7.040. Certificate. Mike Rudzki N8MR, 14071 Fairway St., Livonia, MI 48154. Sat. Nov. 5, 1600-2030 UTC, W8F will operate from Dossin Great Lakes Museum, Detroit MI, and POTA K-1487. https://livoniaarc.com

Amateur Radio Special Event Stations!

10/30/2022 | 84th Anniversary of the War of the World Broadcast

Oct 30, 1600Z-2100Z, W0W, Princeton Junction, NJ. Delaware Valley Radio Association. 14.255 MHz 7.225 MHz. QSL. Delaware Valley Radio Association, P.O. Box 7024, Trenton, NJ 08628. webmaster@w2zq.com

10/31/2022 | Boo To You

Oct 31-Nov 1, 0000Z-0400Z, KC5BOO, Cleburne, TX. Club KC5NX. 14.278 14.074. QSL. Judy Cox, 3701 Park Rd 21, Cleburne, TX 76033. On Halloween come say boo to me and I'll say boo to you! https://kc5nx.com

10/31/2022 | BOO!

Oct 31, 2100Z-2359Z, WA4TRS, Fairview, NC. The Road Show Amateur Radio Club, Inc.. 14.275. Certificate & QSL. The Road Show Amateur Radio Club, Inc., 57 Echo Lake Drive, Fairview, NC 28730. 3rd annual BOO Event! Live A Live Event from the Graveyard on Bald Mountain! BOO! wa4trs.org

10/31/2022 | Halloween Special Event

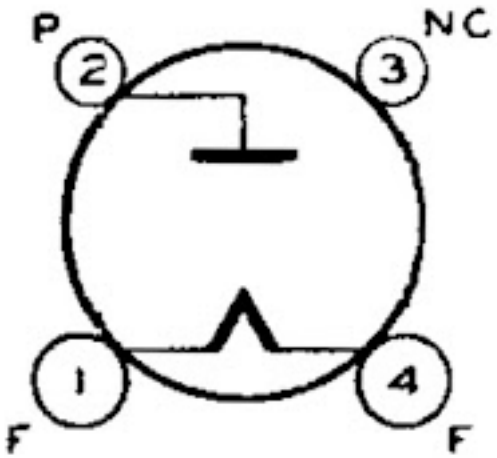
Oct 31, 1500Z-2100Z, W0YFZ, Anoka, MN. Anoka County Radio Club. 7.255 14.255. QSL. ACRC, PO Box 982, Anoka, MN 55303. www.anokaradio.org

10/31/2022 | WØO Halloween FunXpedition

Oct 31-Nov 1, 1900Z-0300Z, W0O, Frankenstein, MO. Mid-MO Amateur Radio Club. 3.538 3.980 14.038 14.340. QSL. See QRZ, for QSL, , information. Operating from Frankenstein, MO, the only known Frankenstein in the USA. QSL information via QRZ. COM. www.qrz.com/db/w0o

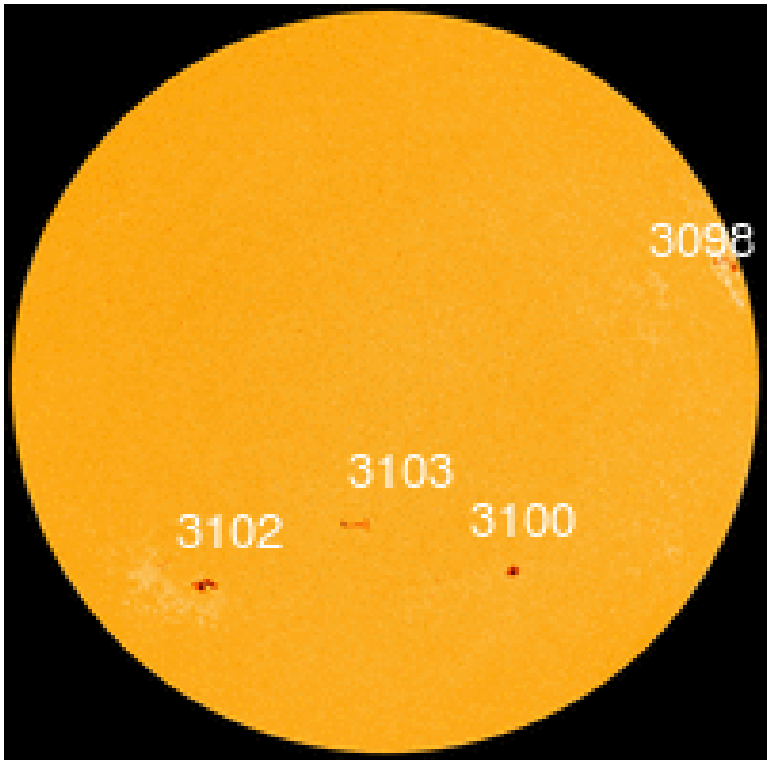
81 rectifier

The 81 is a half wave rectifier tube. This means it only contains a single diode. For full wave rectification two of them are needed, or even 4 for a full wave bridge arrangement. The 81 is a very early rectifier tube. It is the successor of the UX-216 which was only briefly made. It was introduced as the UX-281 (or CX-381 by Cunningham). It is a directly heated rectifier with a 7.5V filament which consumes 1.25V. These values are suspiciously identical to those of the 50. So it probably was nothing else but a 50 without control grid. As with other directly heated rectifiers, the internal voltage drop is rather high. Up to 85mA can be drawn from a 81 which doubles to 170mA when two are used for full wave rectification. Refer to the RCA data sheet for all technical details. The 81 is an impressive tube which comes in the same bulb size as the 50. A bridge with 4 of them would be quite a sight. I never used any 81s in an amplifier since my preferred rectifiers are TV dampers. Nonetheless this is a great looking tube, especially in the globe shape.



K7RA Solar Update

Solar activity bounced back this reporting week, September 8-14, when average daily sunspot numbers jumped from 68 to 92.7, and average solar flux from 125.8 to 141.3.



Fewer CMEs and flares were evident, with average planetary A index declining from 24.6 to 10.7, and middle latitude numbers from 17.4 to 10.6.

New sunspot groups appeared, one on September 8, three on September 10, and one more on September 13. Total sunspot area (in millionths of a solar disc) on September 12-14 rose from 370 to 870 to 1240, the highest value in over a month.

The sunspot number was highest on September 10 at 122.

During this week two years ago, there were no sunspots at all, and average daily solar flux was only 69.7, over 56 points lower than this week, demonstrating the continued progress of Solar Cycle 25.

The latest (Thursday) forecast from space weather folks at Offut AirForce Base shows predicted solar flux peaking at 150 on October 9,but with flux over the next few days following this bulletin less optimistic than the numbers in the bulletin preview in Thursday's ARRL Letter.

Predicted flux values on September 16-17 are 140 and 135, then 125 on September 18-19, 120 on September 20-29, 125 on September 30 through October 6, 130 on October 7-8, then 150, 148, 143 and 140 on October 9-12, then 136, 130, 125 and 120 on October 13-16, 125 on October 17-18, and 120 on October 19-26.

Predicted planetary A index shows moderate levels of geomagnetic activity until October 1-2. The forecast is 15, 18 and 10 on September 16-18, 5 on September 19-23, then 10 on September 24, 14 on September 25-27, 8 on September 28-29, then 22, 50, 30, 20 and 12 on September 30 through October 4, then 15, 12, 10, 8 and 5 on October 5-9, then 10, 8, 5, 15, 20 and 12 on October 10-15, then 5 on October 16-19, then 12 and 10 on October 20-21, and 14 on October 22-24.

The Autumnal Equinox is only a week away!

EPARA 2022 Hamfest


Seagrams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AMATEUR
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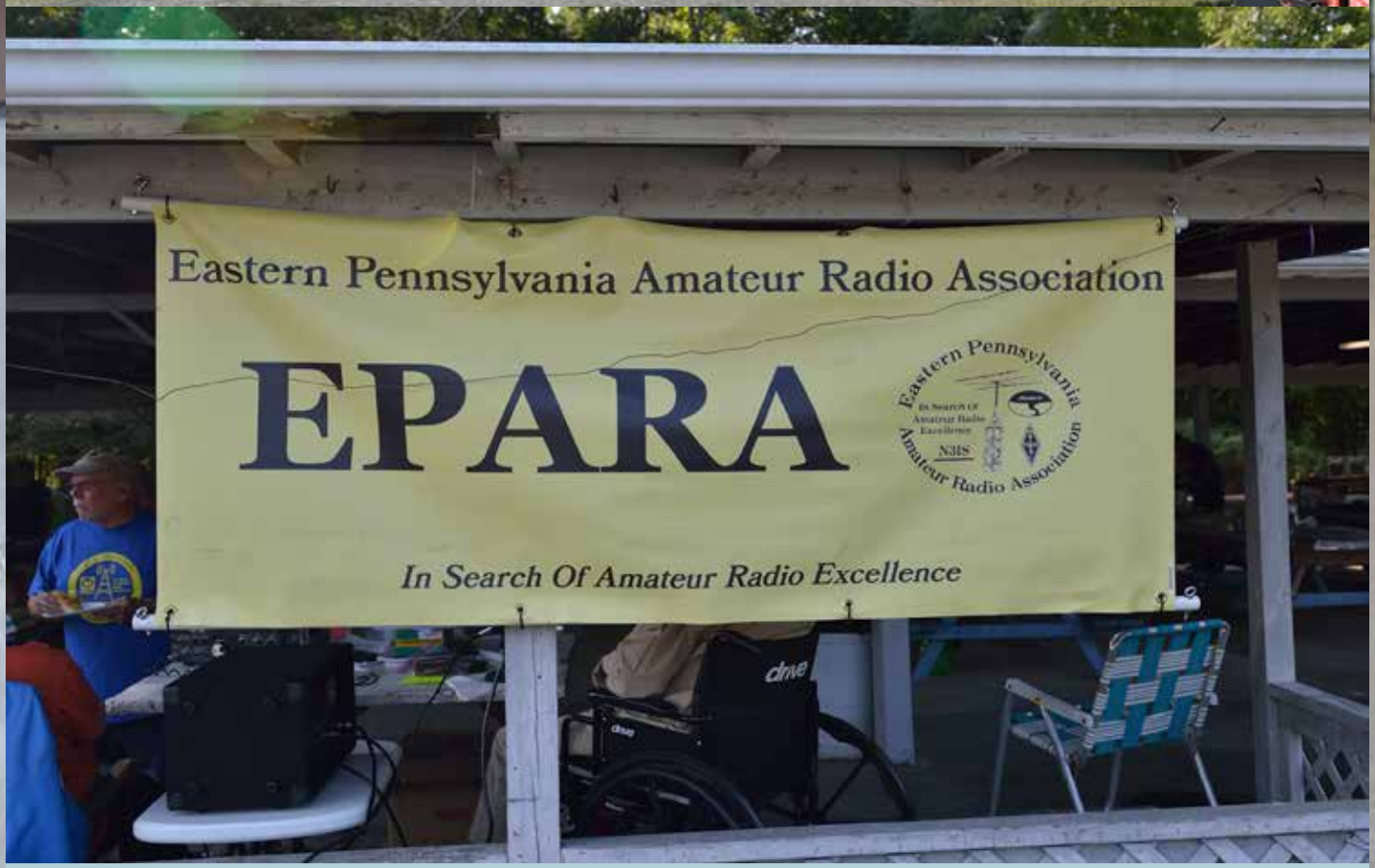
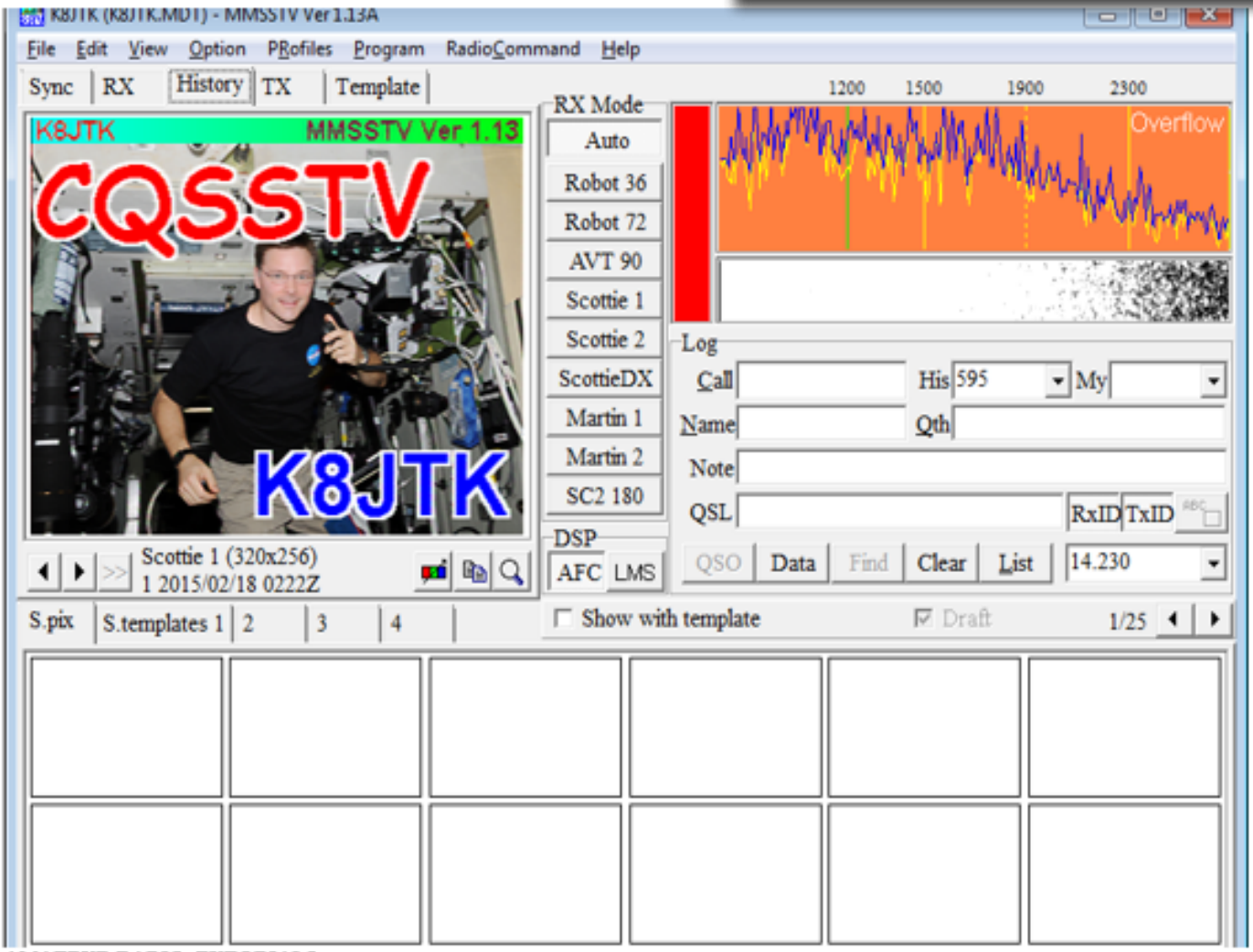
HAM


ROAD KING
RK-S630


Eastern Pennsylvania Amateur Radio Association
EPARA
Eastern Pennsylvania Amateur Radio Association
N3IS
In Search Of Amateur Radio Excellence



AMATEUR RADIO, TUTORIALS

GETTING STARTED WITH MMSSTV

APRIL 16, 2015 JEFFREY KOPCAK

Introduction

This document will demonstrate installation, setup, and basic use of MMSSTV. MMSSTV stands for Makoto Mori (JE3HHT, creator) Slow Scan TV. It has been the defacto standard SSTV application for many years.

This is written with the beginner in mind and many concepts outlined step-by-step. It will provide direction for further experimentation on your own or on the net and direction for troubleshooting. For Signa Link and audio setup, visit the Radio Interface Setup post.
Prepared for The Lake Erie Amateur Radio Association's Digital Net (http://www.leara.org/).

Program versions

Program versions used in this document.

Windows 7 – 64 bit
MMSSTV 1.13A – only available on the Windows platform.

Resources

http://en.wikipedia.org/wiki/Slow-scan_television – Wikipedia, history and current systems.
http://hamsoft.ca/pages/mmsstv.php – MMSSTV homepage, sample audio files (to route through the Windows audio system), and help files.
http://www.wb9kmw.com/WB9KMW/sstv_files/tutorial/SSTV_tutorial.pdf – SSTV for beginners. WB9KMW answered some questions with MMSSTV. I'll plug his introduction. His website has a collection of HF SSTV receivers that can be used to check reception and propagation.

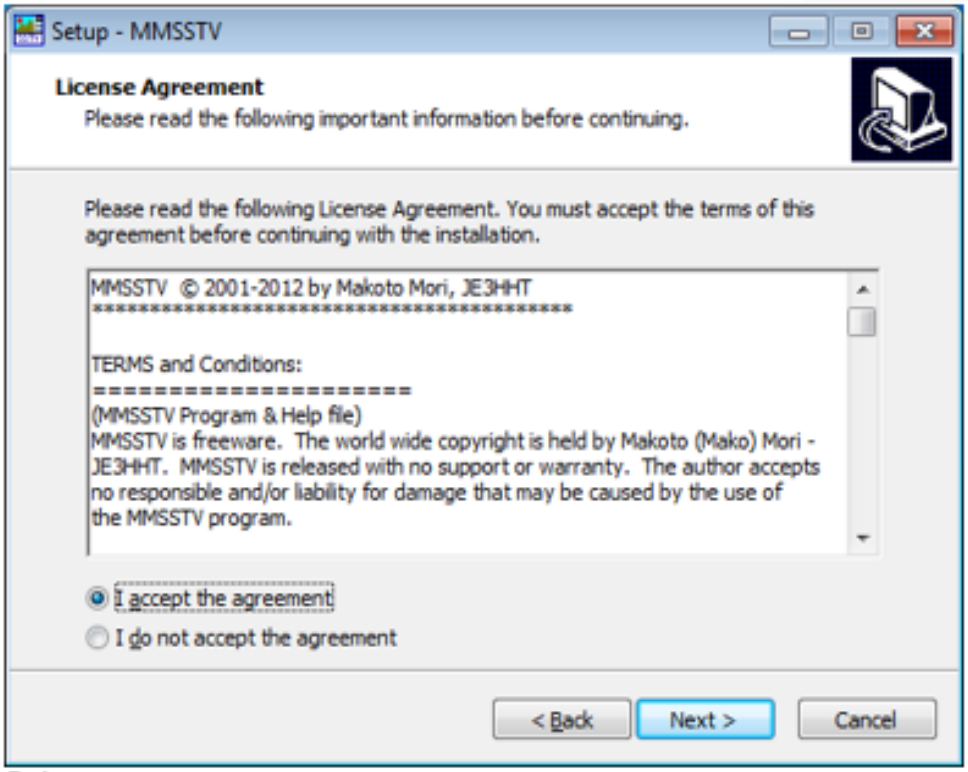
Calibration

Sound card calibration is important in SSTV. See the "Sound card clock calibration" section in the "Radio Interface Setup – For getting started with Ham Radio Sound Card digital modes" document. MMSSTV methods: http://www.wb9kmw.com/WB9KMW/sstv_files/tutorial/That_Pesky_Slant.pdf. I prefer this method: http://www.wb9kmw.com/WB9KMW/sstv_files/tutorial/That_Pesky_Slant_WWV_Alternative.pdf.

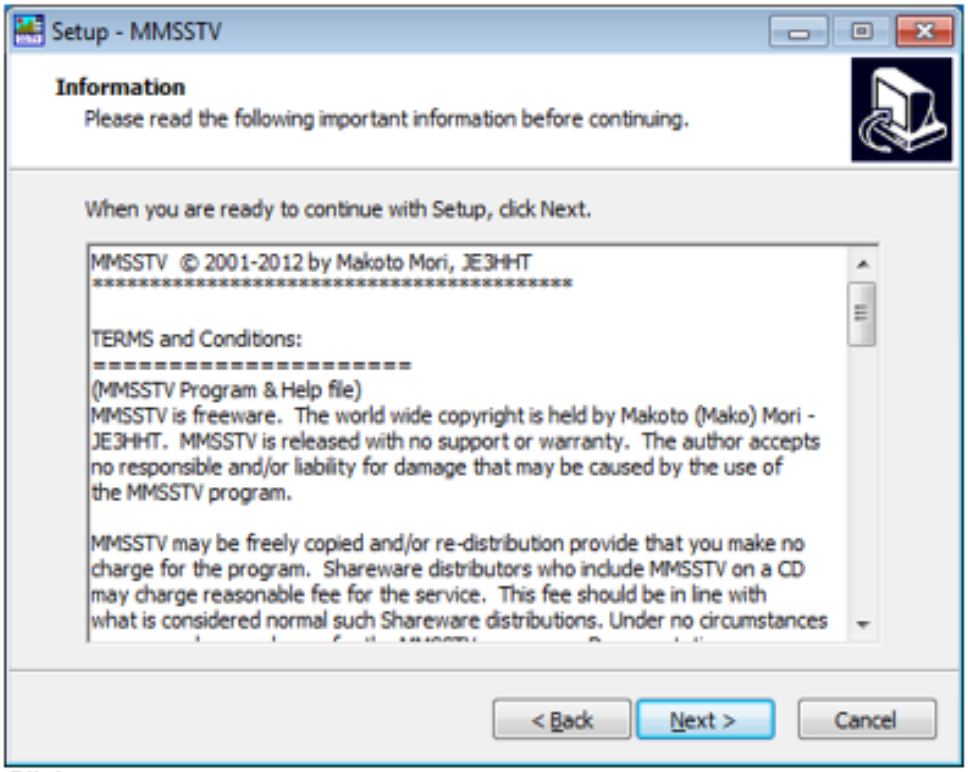
Download and installation

Download MMSSTV (free, Windows only): http://hamsoft.ca/pages/mmsstv.php. Save it in your **Downloads** folder.
You will need the administrator password to install if you are running as a standard user.

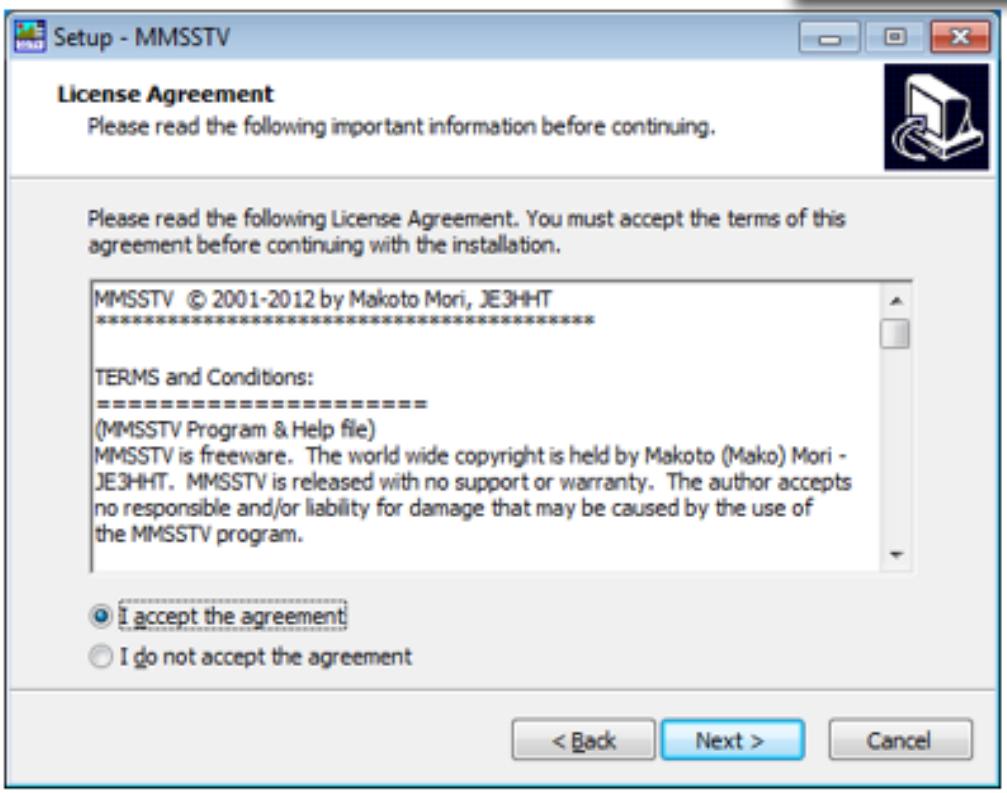
Click **Next**.



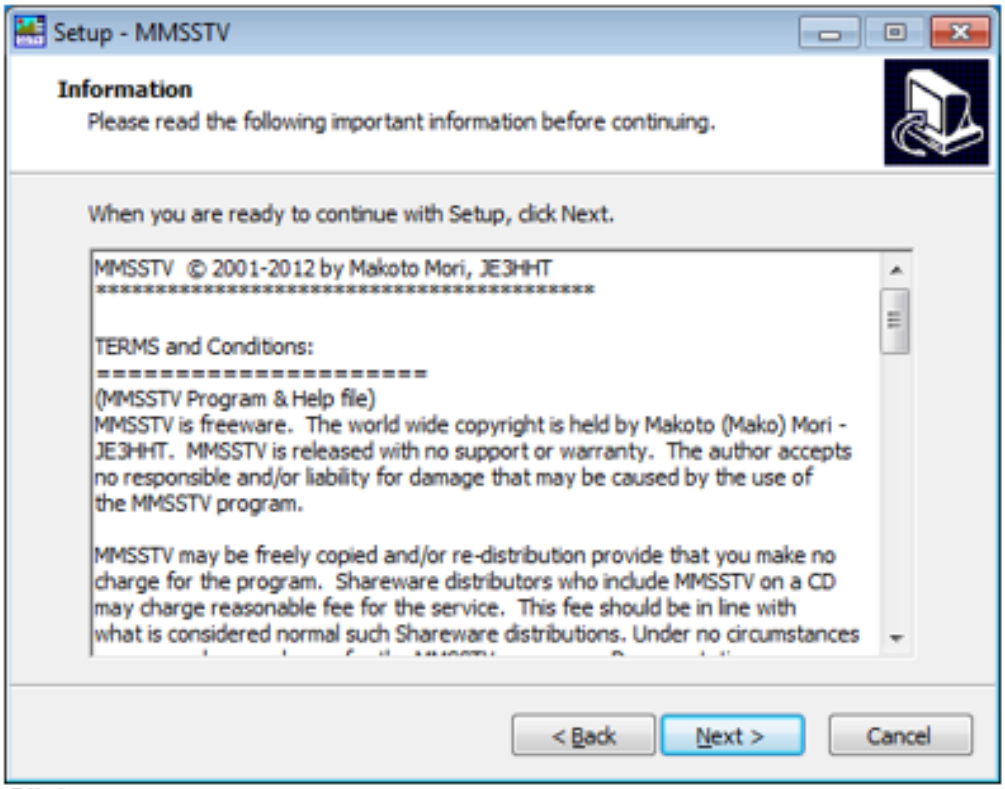
Select **I accept**.
Click **Next**.



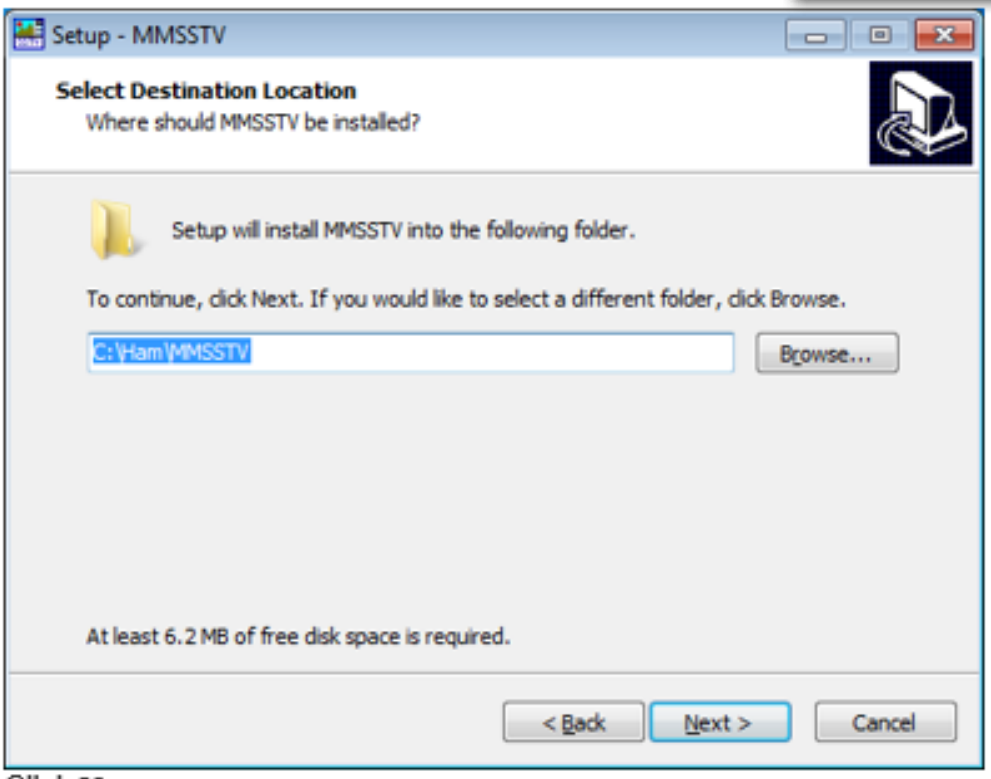
Click **Next**.



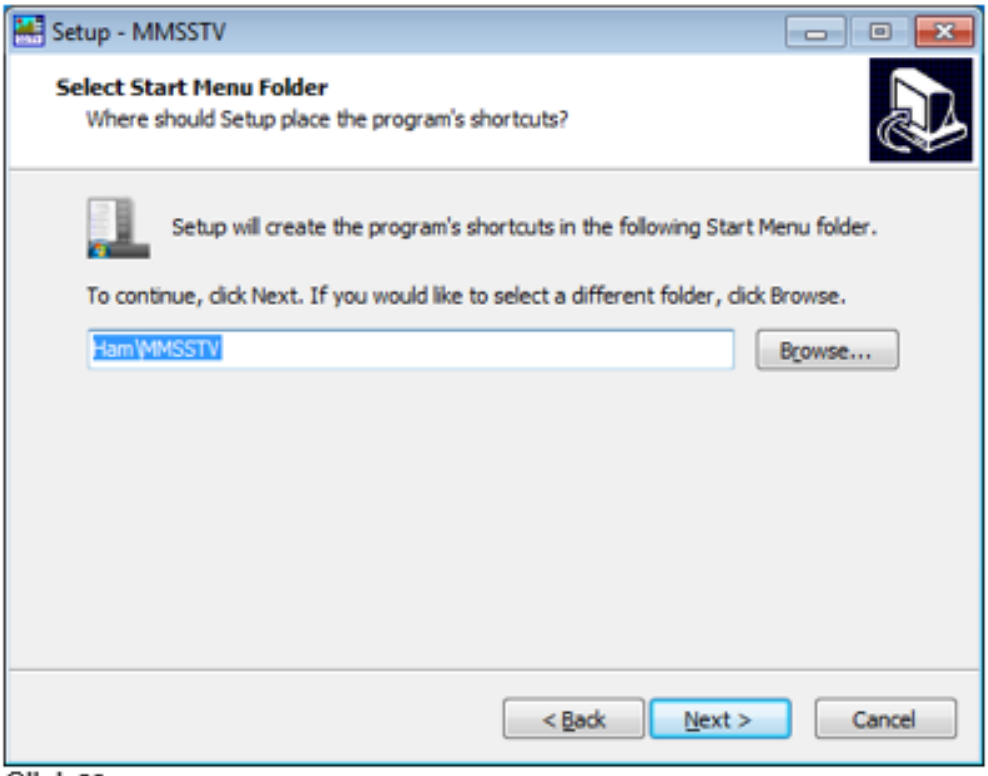
Select **I accept**.
Click **Next**.



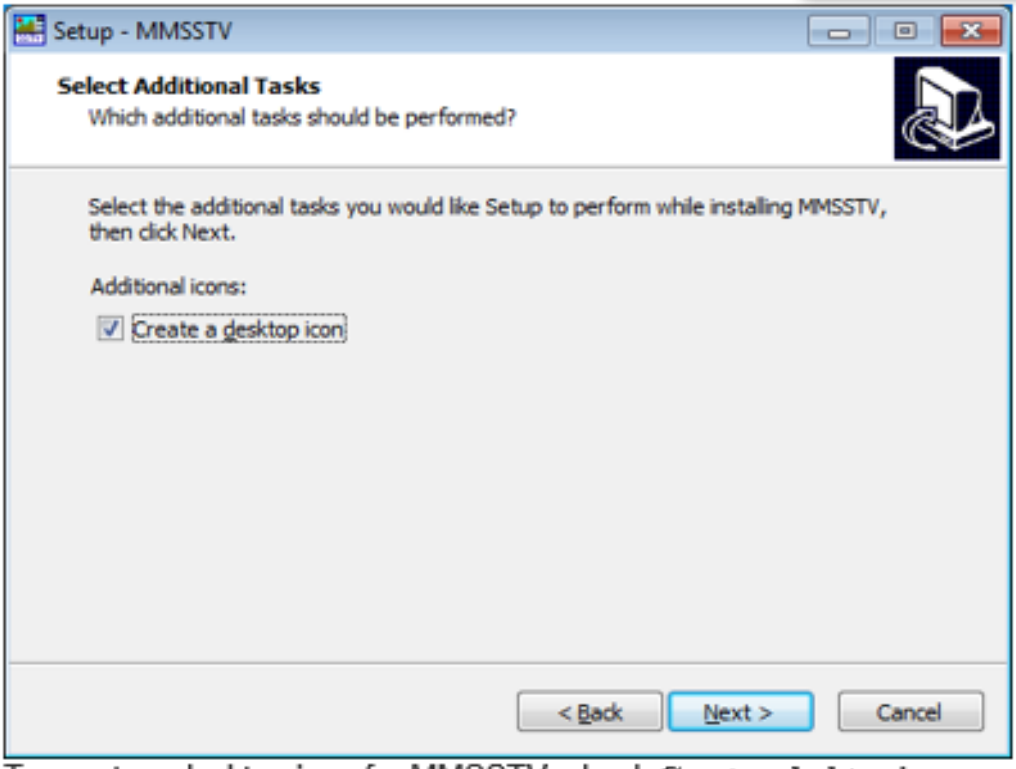
Click **Next**.



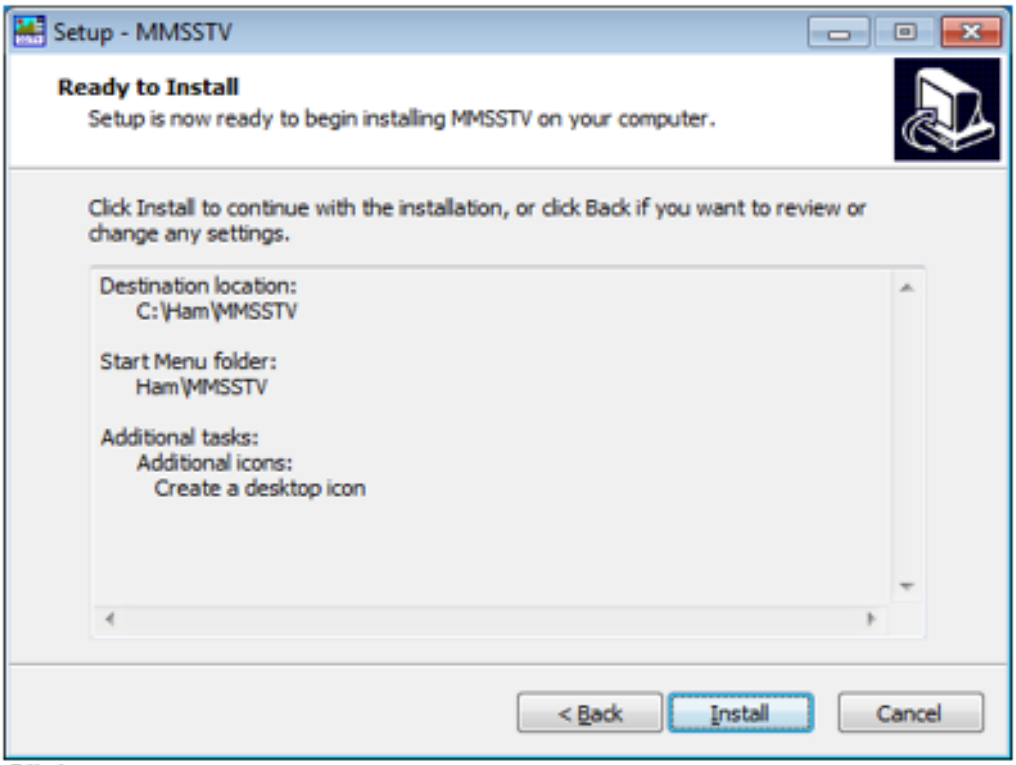
Click **Next**.



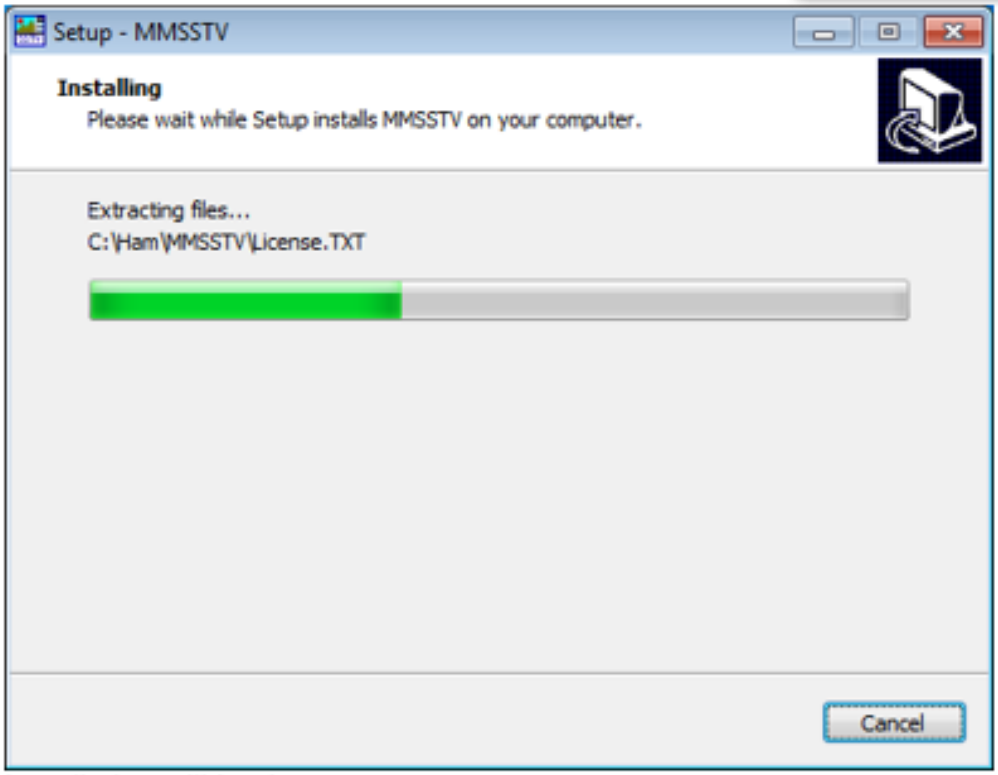
Click **Next**.



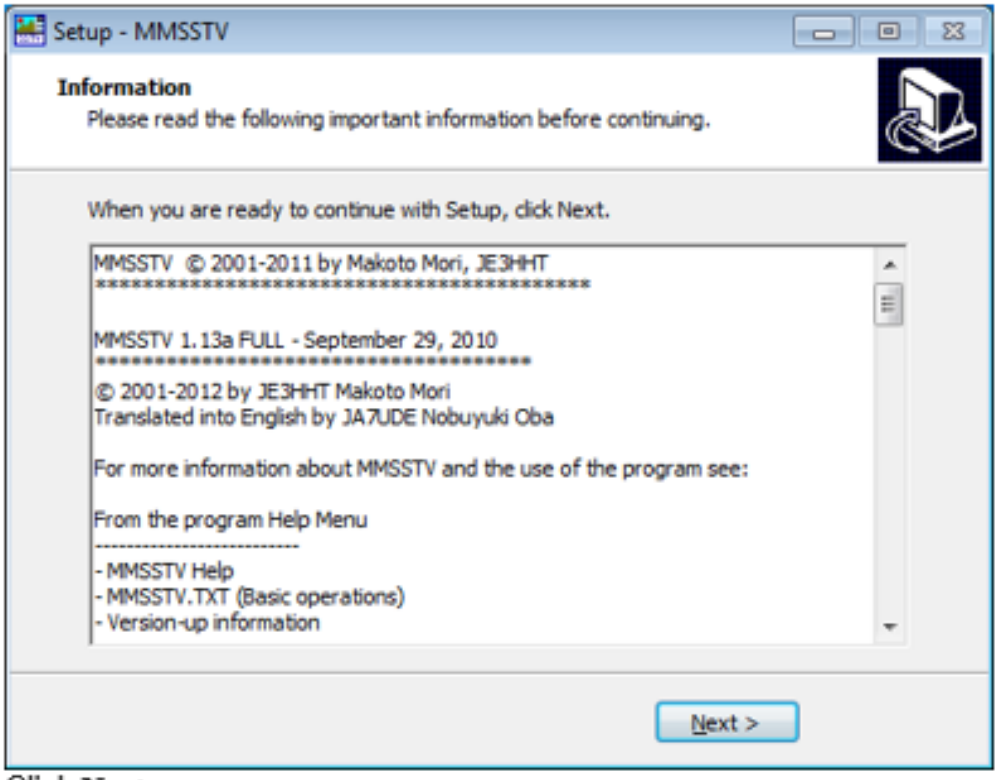
To create a desktop icon for MMSSTV, check **Create a desktop icon**. Click **Next**.



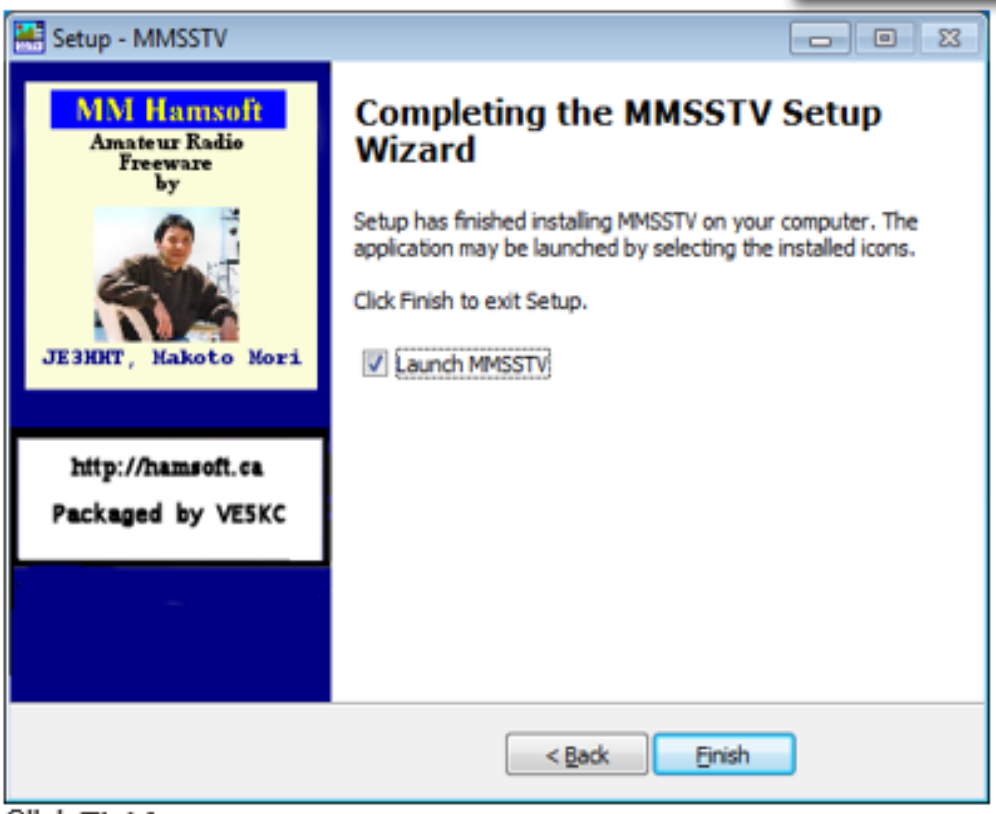
Click **Install**.



Installation will begin.



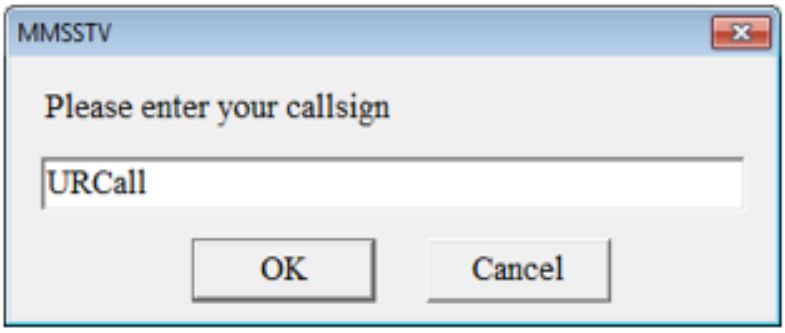
Click **Next**.



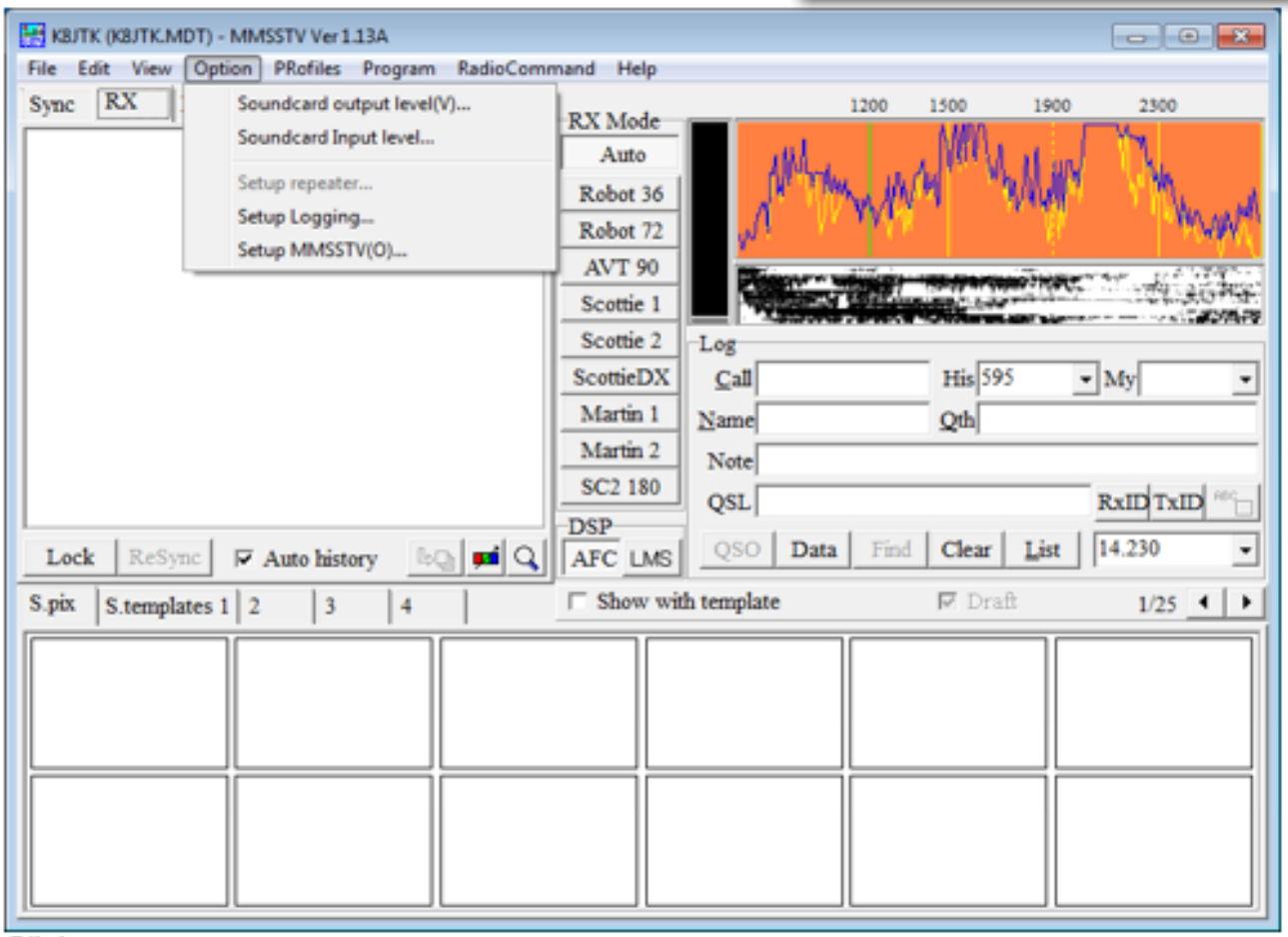
Click **Finish**.

Configuration

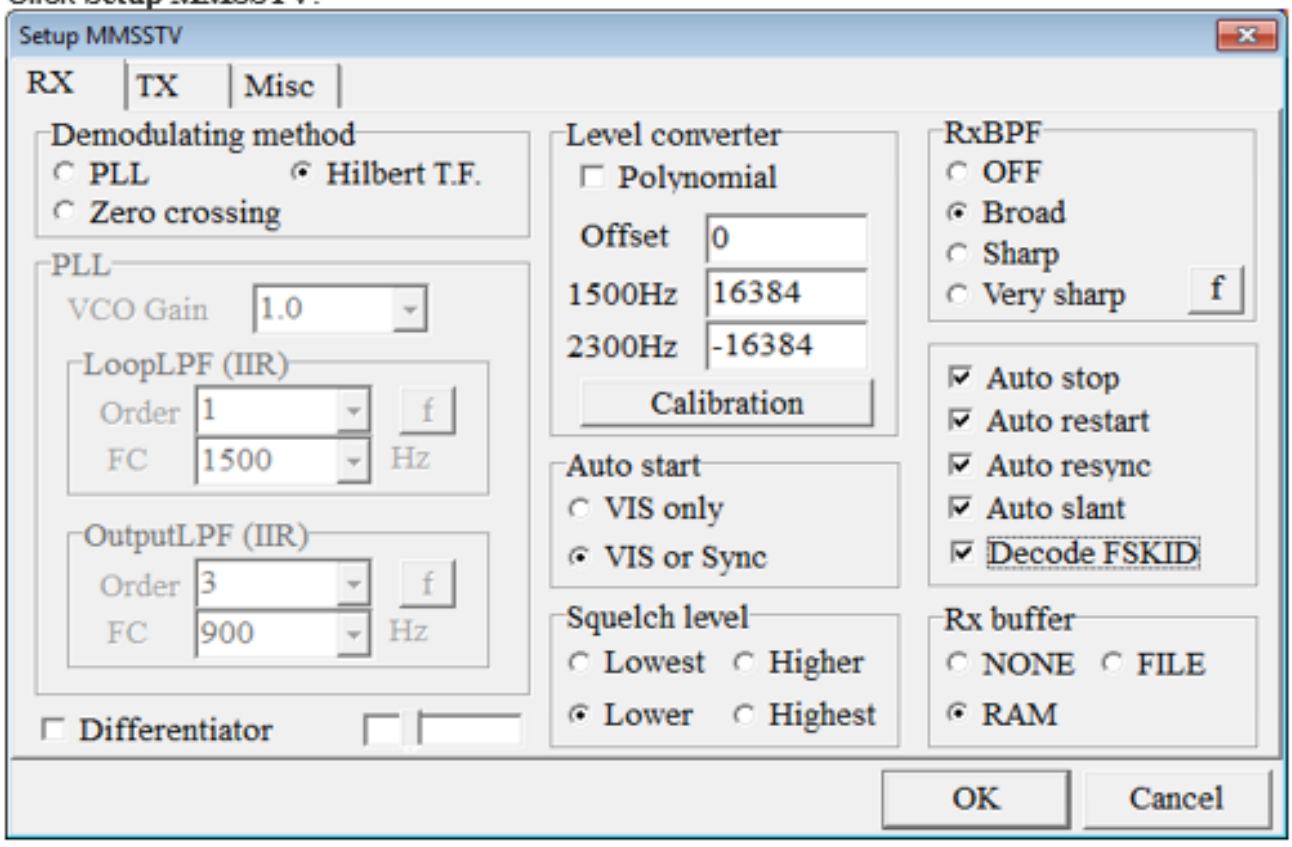
Configuration and setup of MMSSTV.



When MMSSTV is started the first time, you will be prompted to enter your **call sign**.
Click **OK**.



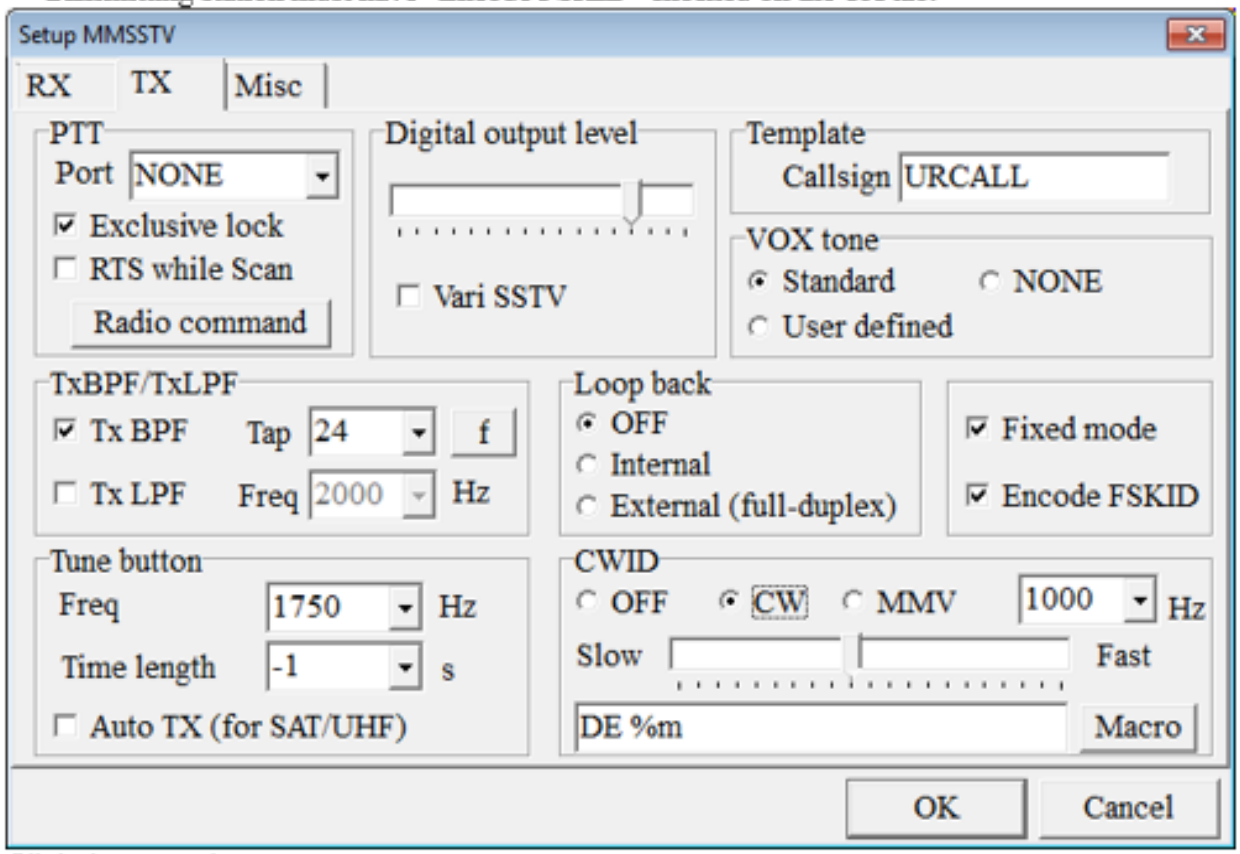
Click **Option**.
Click **Setup MMSSTV**.



On the RX tab, check **Auto stop**.
Check **Auto slant**.
Check **Decode FSKID**.
The remaining settings are the default settings.

Notes:

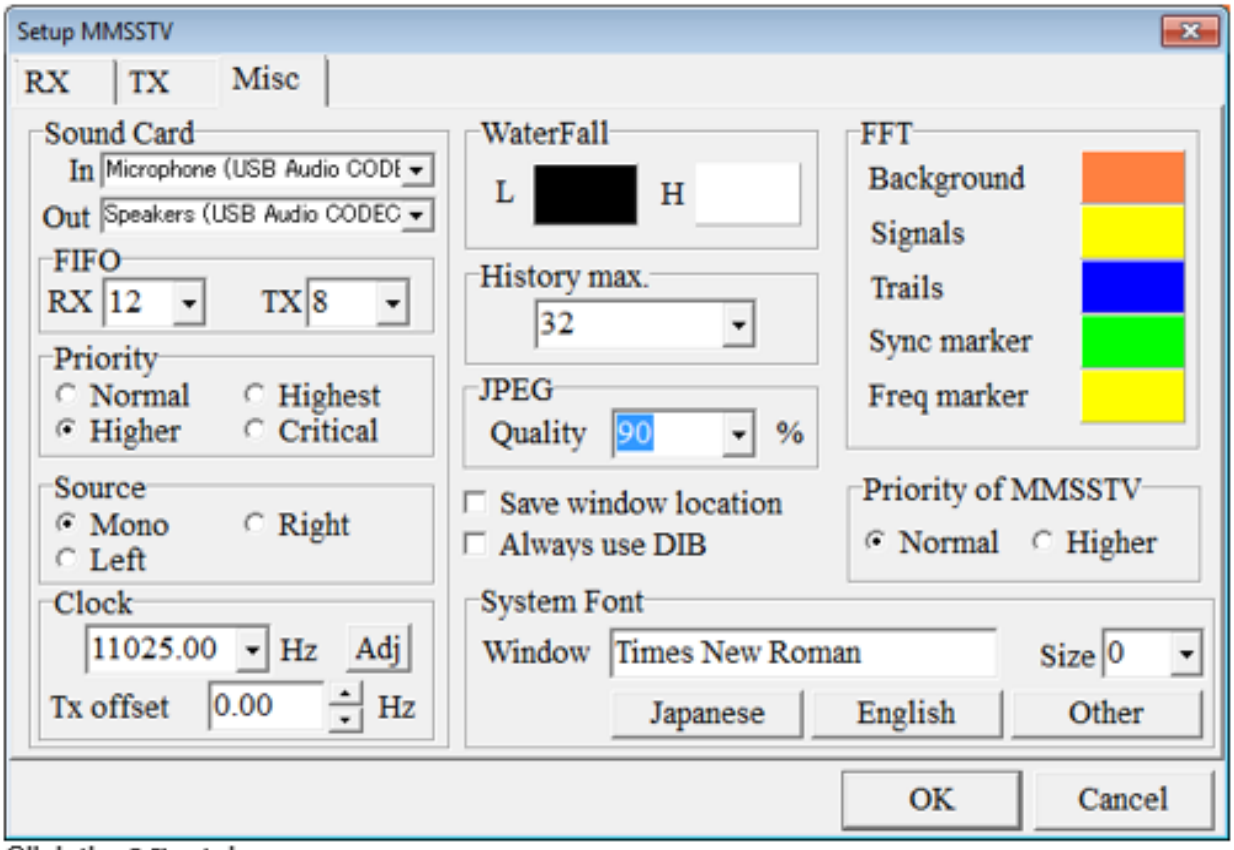
- All 5 check boxes should now be checked in that box.
- **Auto stop** automatically stops receiving when the synchronization signal is lost.
- **Auto restart** restarts receiving form the beginning when it detects an SSTV synchronization signal.
- **Auto resync** attempts to re-synchronize the image after the synchronization signal has been lost.
- **Auto slant** automatically adjusts the image slant by measuring the synchronization signal. See notes for the "Misc" tab.
- **Decode FSKID** decodes the call sign of the transmitting station and populates the logging window. The transmitting station must have "Encode FSKID" checked on the TX tab.



Click the **TX** tab.
Check **Encode FSKID**.
Under CWID, select **CW**.
The remaining settings are the default settings.

Notes:

- Your **call sign** should appear in the Template box from when MMSSTV was first started.
- **Encode FSKID** populates your callsign for the receiving station in the Log should they choose to use the logging functionality of MMSSTV. The receiving station must have "Decode FSKID" checked on the RX tab.
- Some radio interfaces use a serial COM port to key the transmitter. This is set in the **PTT** box.



Click the **Misc** tab.

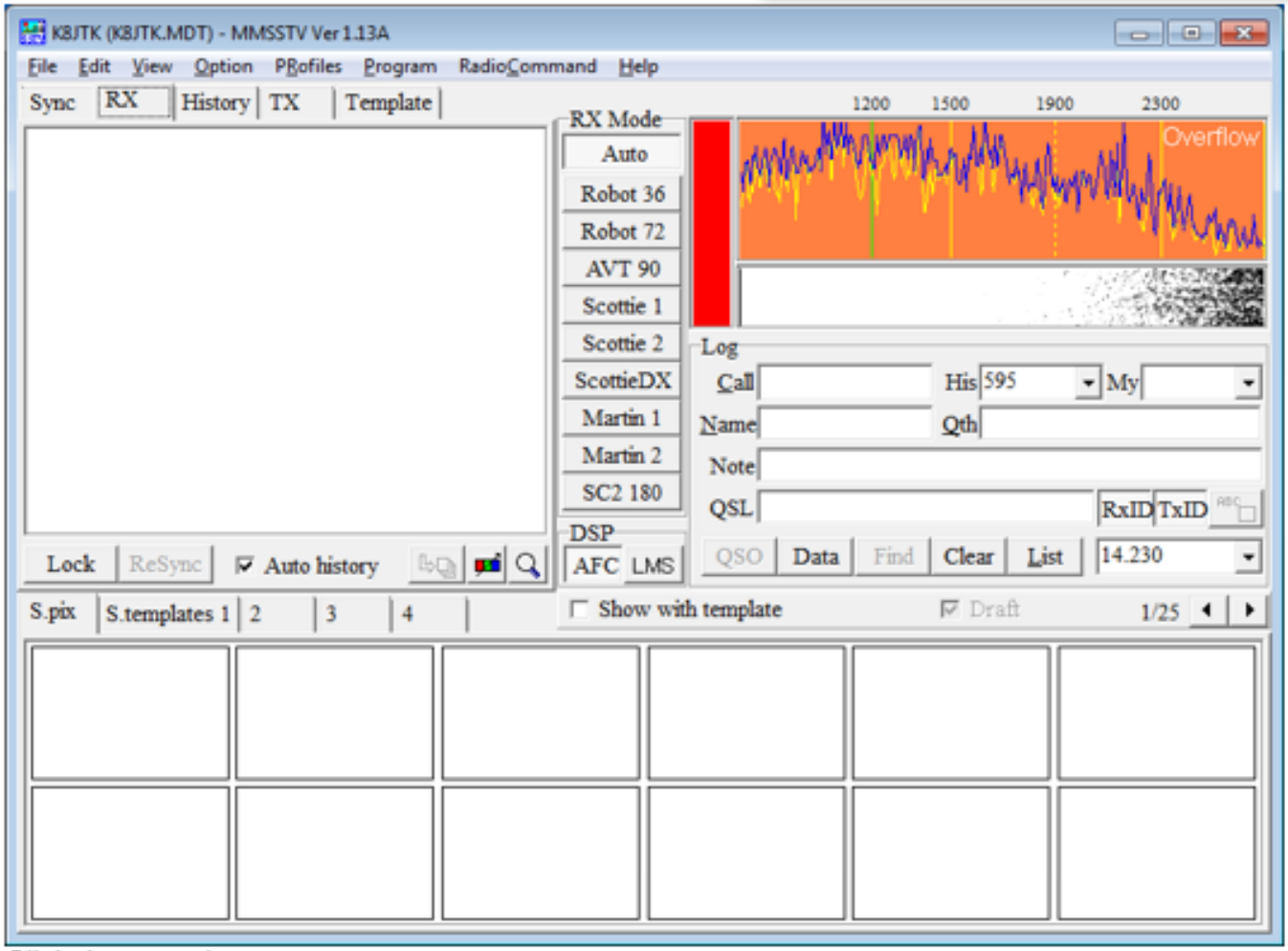
In the Sound Card box, select the receive audio interface (**In**) and transmit audio interface (**Out**).
If the TX offset of the sound card is known, enter it in **TX offset**.
History max sets the number of images saved in the History tab before they are overwritten.
JPEG Quality is the quality when saving images to the computer.
Click **OK**.

Notes:

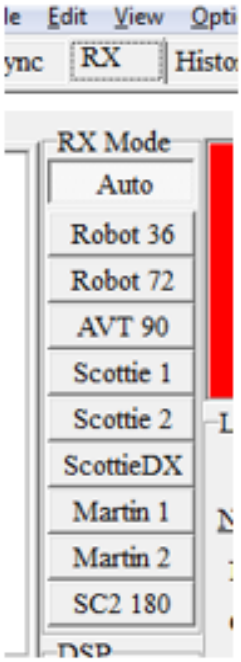
- Signa Link USB is labeled USB Audio CODEC in Sound Card.
- SSTV operators on the HF bands will not run with "Auto Slant" enabled. They want transmitting stations to calibrate their sound card. To calibrate, click the **ADJ** button under Clock. See the "Calibration" section at the beginning of this document for methods to calibrate MMSSTV.
- **JPEG Quality**, the higher percentages use less compression but takes more space.
- If a user is having issues with running MMSSTV with other programs, under Priority select **higher**.

RX

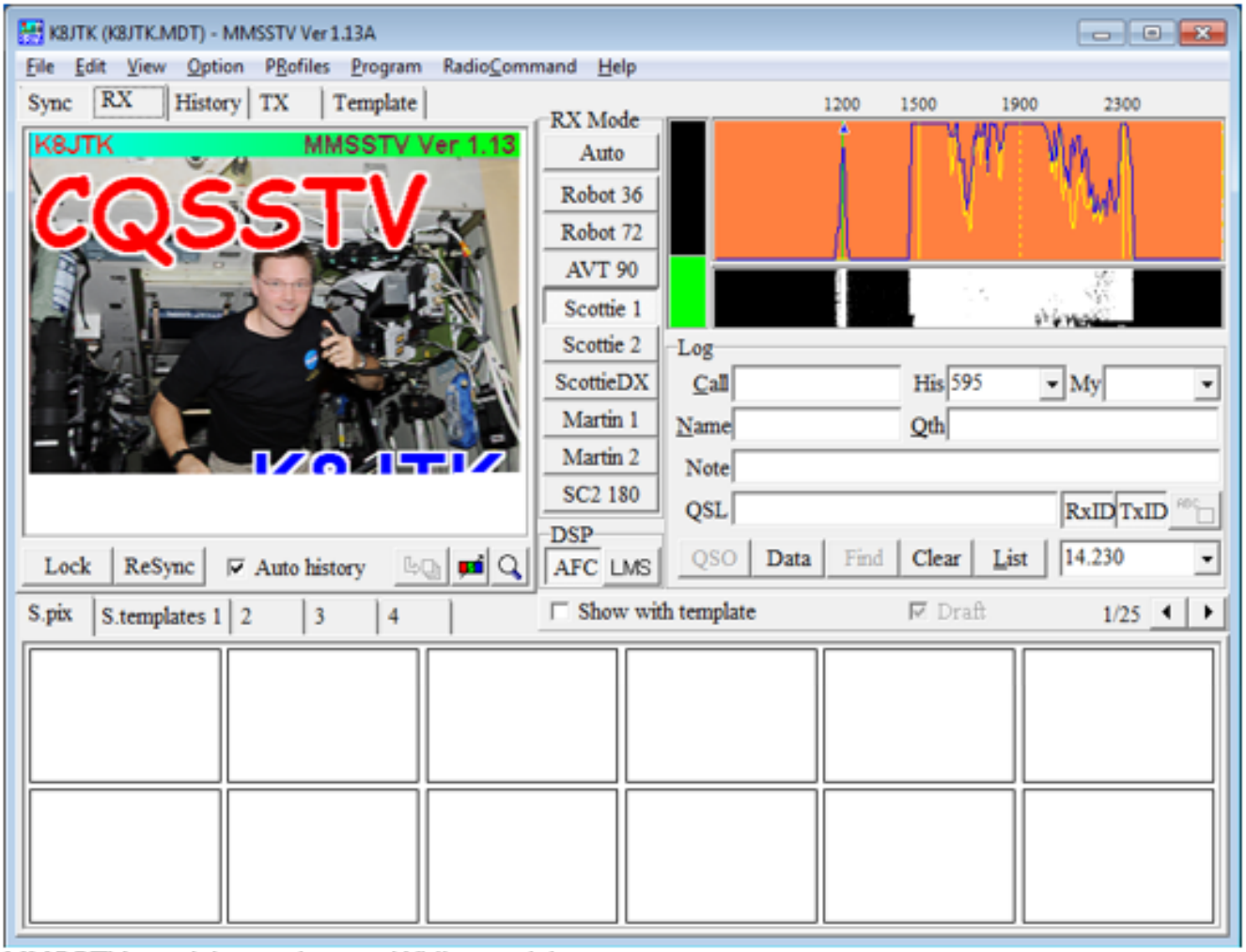
In the RX tab, images will appear as they are received.



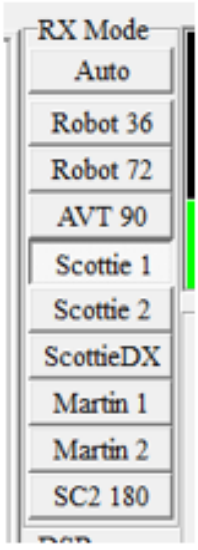
Click the **RX** tab.



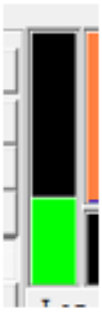
In the center for RX Mode, click **Auto**.



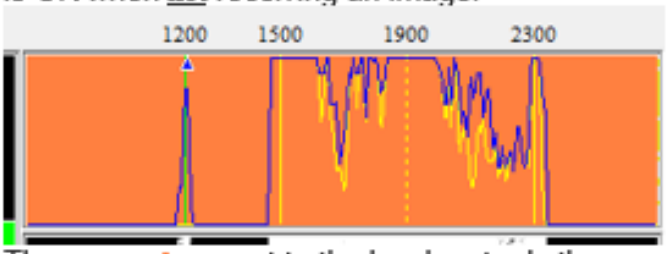
MMSSTV receiving an image. While receiving:



RX Mode will automatically change to the mode the sending station is transmitting. If the mode is not one of the options displayed, it will change out one of the modes.



The **level meter** next to RX Mode will turn **green** when decoding an SSTV signal. The level should be about half way. Adjust the audio level on your radio interface, not in the Windows Sound Control Panel. A **gray** level meter means no SSTV signal is detected. **Red** level meter (and **Overflow** in the orange box) means the audio level is too high! Turn down the audio level on the radio interface. Red is OK when not receiving an image.



The **orange box** next to the level meter is the spectrum analyzer. This will settle when receiving an image. A pulse or sync tone at **1200** Hz (green line) tells MMSSTV when the next line of the image is being transmitted. Between **1500** and **2300** are tones for the color information of each line. The RX window displays the colors until it incurs the sync tone and begins displaying the next line of the image. Darker colors are tones near 1500 and brighter colors near 2300.

The **waterfall** is the black and white box below the spectrum analyzer.
The spectrum analyzer and waterfall will be similar to the screenshot above during a clean reception of an SSTV image. Noise will show up as other frequencies on the spectrum.

Colors of the spectrum and waterfall can be changed in the "Misc" tab options.

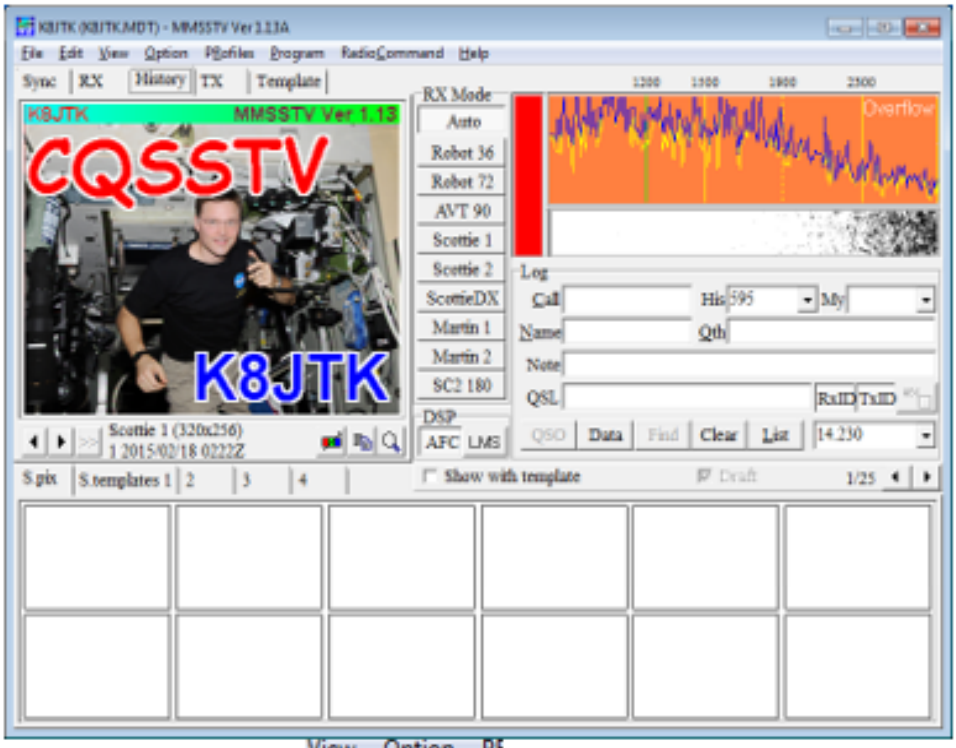
Logging

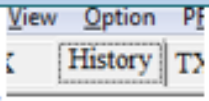
If the transmitting station has "Encode FSKID" checked their call will automatically populate under Log at the end of the transmission. Otherwise it can be manually entered. Click **QSO**. This will log the start time of the QSO.
Continue exchanging images with the other station. The remaining fields in the log need to be filled in manually. FSKID tones only populate the call sign. More fields are available by clicking **Data**.
When the QSO has ended, click **QSO** again to log the end time and record the QSO.
If the station is already in the log, working that station again will populate fields from the previous log entry.

If no log entry is started, the "Call" field will be replaced when another FSKID is received.

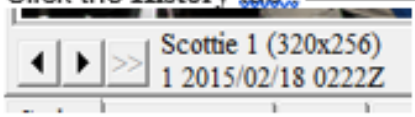
History

The History tab stores the last 32 received images. The number can be changed in the options "Misc" tab.





Click the **History** tab.



The < and > arrows advance through the received images. Mode, resolution, picture number, and time received are displayed below the image.

Saving images

Right-click the image. There are two options to save the image to your computer: **Save to file** and **Save to file with Time Stamp**. The latter option overlays a time stamp in the lower right (examples below). The image can be copied directly to the clipboard with the **Copy** icon and pasted in another program.
Quality of the saved image is set in the options "Misc" tab.

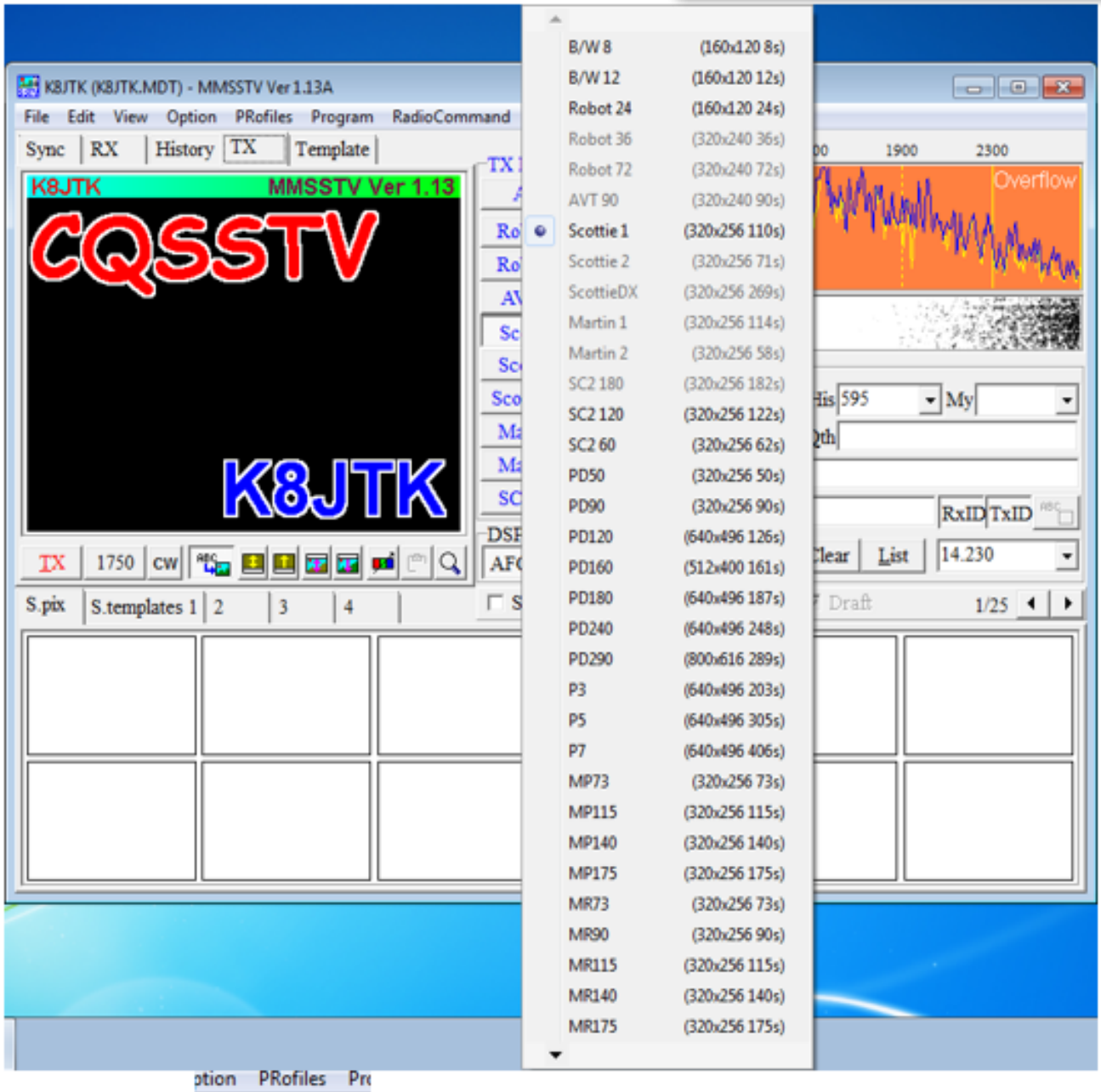
Saved image without time stamp.

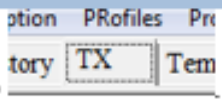
Saved image with received time stamp in the lower right.

TX

In the TX tab, images are prepared and transmitted.

Modes





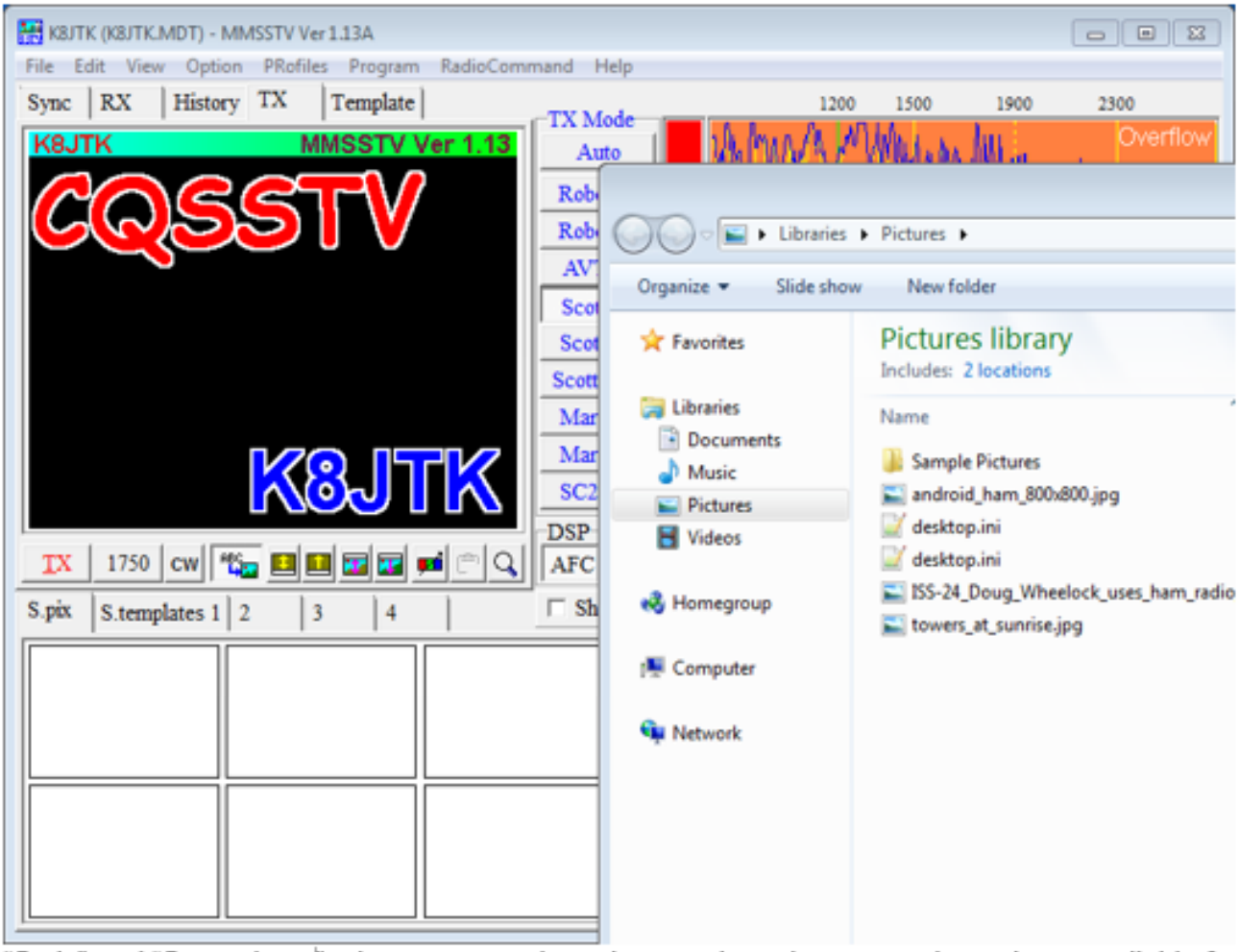
Click the **TX** tab

Right-clicking any of the **mode slots** under TX Mode will bring up the entire list of supported SSTV modes including resolution and transmit times. More modes are available by clicking the solid black arrows at the top and bottom of the list. The selected option will be the mode the image is transmitted.

Notes:

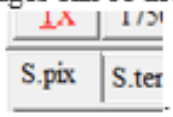
- For an FM repeater net, select a mode that is at least 30 seconds less than the Time-Out-Timer on the repeater. This allows for delays, protocol overhead, FSKID tones, and CW IDing which adds about 10 seconds to the duration. Choose a mode 150s (2:30) or less. Scottie 1, PD90, PD120, MP140 would be good choices. PD180, PD240, PD290 would not be good choices and would time-out the repeater during transmission.
- The Auto button in TX changes the transmit mode to the last mode received. For example, the RX tab has an image received in Scottie 1. In the TX tab, having any other mode selected and pressing Auto will change TX mode to Scottie 1. This does not work without an image in the RX tab. If the Auto option is already enabled (pressed in), release it by clicking, then click it again.

Loading images



"S.pix" and "S.templates" tabs are convenient places to have images and templates available for quick recall.

Methods for loading images

- Images can be **dragged and dropped** to either the TX window or a frame in the "S.pix" (standard pix) tab 

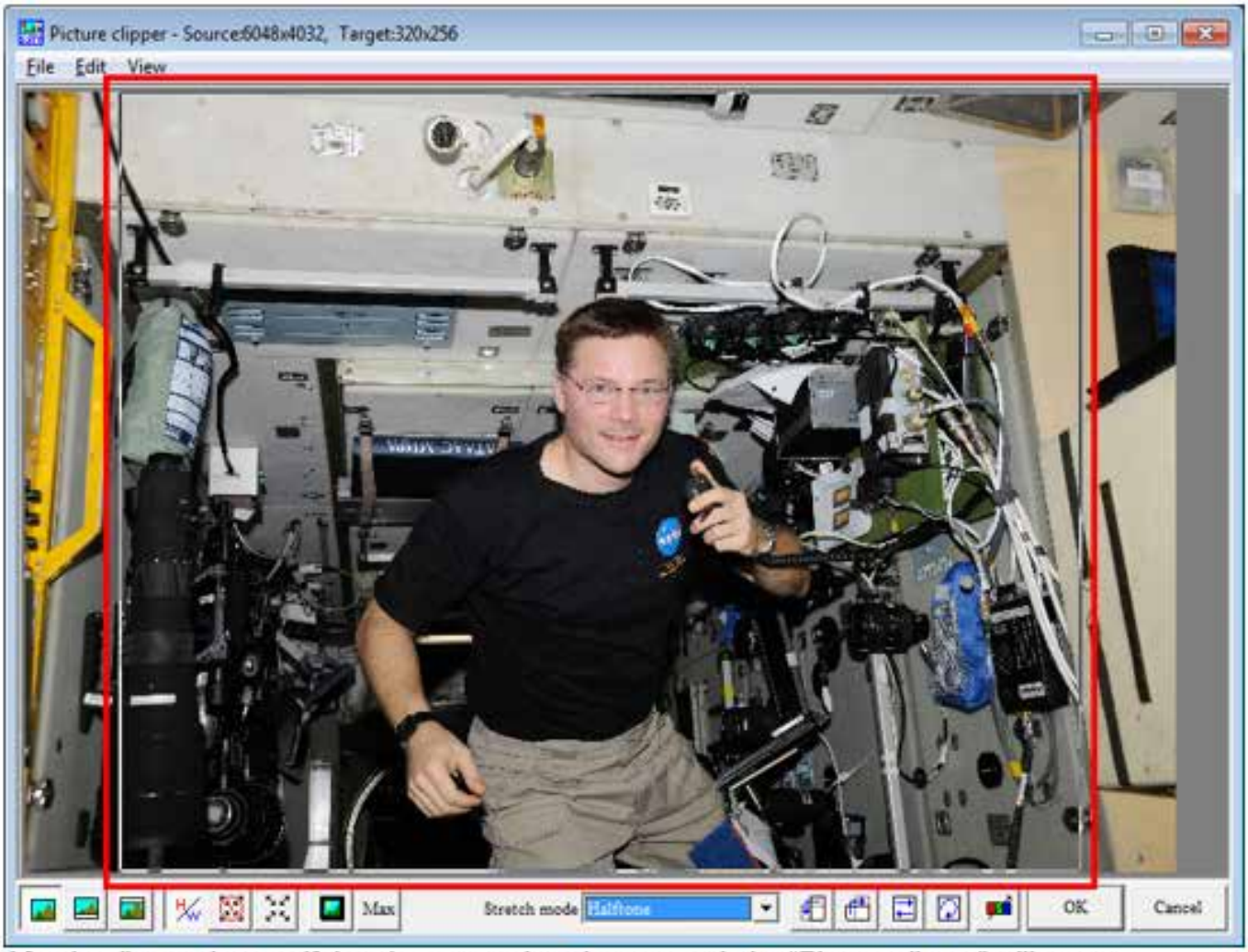
.
- **Right-click** in the TX window or "S.pix" frame and click **Load from file**. Then **select a file**.
- A picture can be pasted directly from the clipboard by clicking the **Paste** icon.

Notes:

- Select the SSTV mode first before importing using the TX tab. The "target" resolution of the imported image will be at least 320×256 (noted in the title bar of Picture clipper). When the selected SSTV mode is larger than 320×256 (examples: PD290, P3, ML180), the target resolution will match the mode. Modes with smaller resolutions (examples: B/W 8, Robot 36) will be imported at 320×256 then automatically scaled down.
- S.pix images will always be imported at 320×256. When a larger resolution SSTV mode is selected and an S.pix image is used, the image (and template) will appear smaller than the full frame.
- JPG, BMP, and WMF are the supported file formats. An image in another format would have to be converted into one of the supported file formats before it can be loaded. Any image editing program will

work for converting and adjusting. Free image editing choices are: Gimp (http://www.gimp.org/) or Paint.Net (http://www.getpaint.net/).

Picture clipper



After loading an image, if the picture needs to be cropped, the "Picture clipper" will appear.

A majority of the picture will be selected in a transparent gray box (the gray box is just inside the red highlighted box). The selected area will be the area imported.

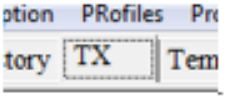
Picture clipper can make some other basic adjustments with the tools below the picture.

Click **OK**.

Transmitting an image from s.pix

To load an image from the "S.pix" tab to the TX window simply, **double-click the image**.
An image can be removed from "S.pix" by **right-clicking** and click **Delete**.

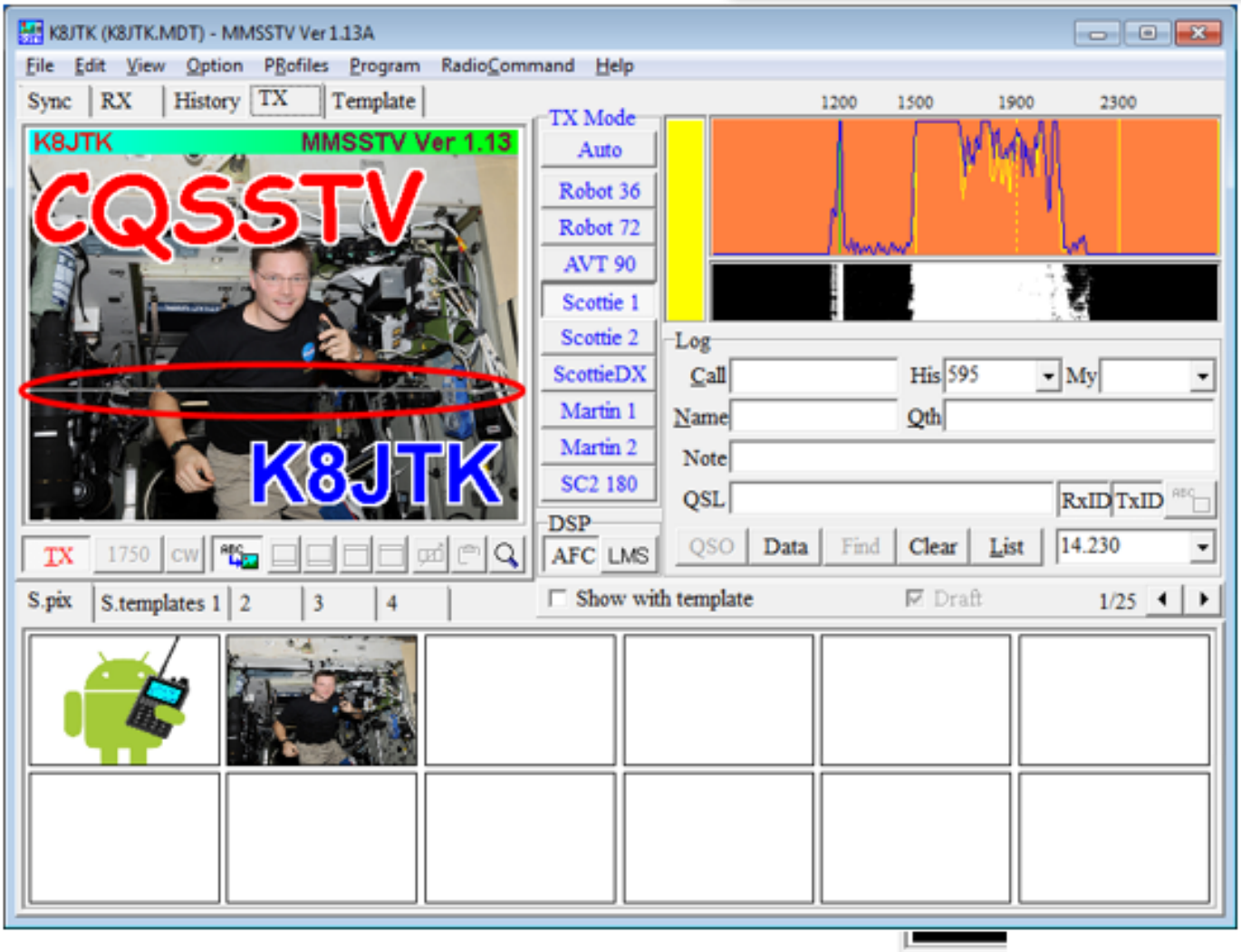
Transmit loaded image

Click the **TX** tab 

To change the selected template, click the **S.templates tab** 

and **double-click the template**.

To remove or show the template on a transmitted image, click the **Use Template** button  . It is not required to have a call sign in the transmitted image. However, someone going back through their history would not know who sent the image. The CW ID (if enabled) will legally ID your signal.



When ready to transmit, make sure you are on the **TX** tab, and click **TX** 

.

During transmission, the audio level meter will turn yellow. A transparent gray line will progress down the image indicating which line is being transmitted (highlighted by the red circle).
Similar to receiving, the spectrum analyzer and waterfall will display the tones as they are transmitted.

To cancel any transmission in progress, click the **TX** button again.

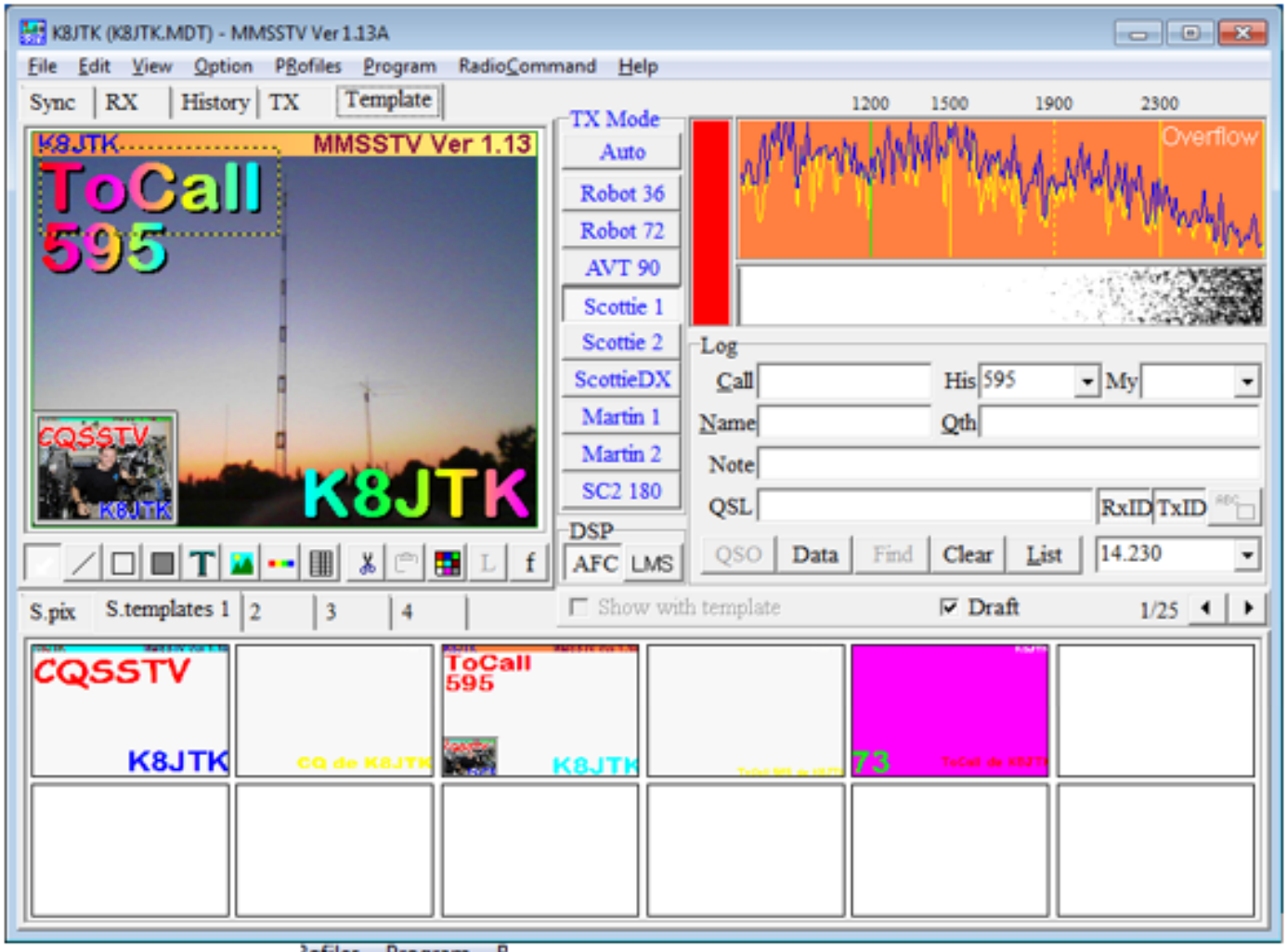
Notes:

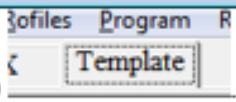
- The **S.templates 1, 2, 3, and 4 tabs** represent different stages of QSO exchange. This allows the operator to quickly recall images and templates for transmit. The different QSO stages are:
  1. CQ SSTV.
  2. Returning CQ with call sign and RST.
  3. RST of the returning station.

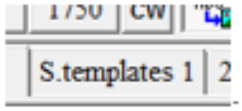
4. 73's.

Template editing

The Template tab edits the overlays and artwork that can be placed over a transmitted image.



Click the **Template** tab 

Click the **S.templates** (standard templates) tab 

Double-clicking an existing template will load it into the Template tab for editing. To begin with a new template, **double-click any empty S.template**.

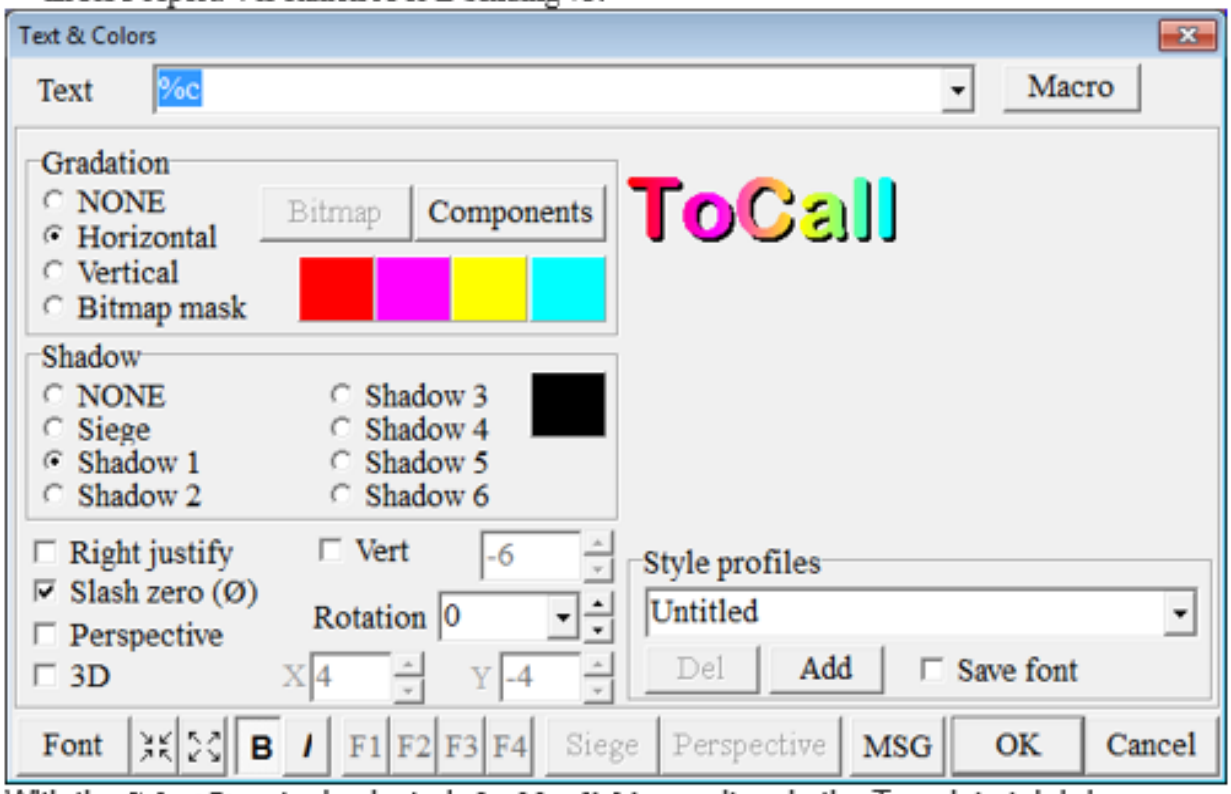
Items can be added or removed in the Template tab using the editing tools below the image. To remove items, click the **Select Item** tool. Click the **item**. **Right-click** and click **Delete**.

When finished editing the template, **drag and drop** from the Template tab to a frame in the S.templates tab. Dragging onto an existing S.template will replace it. To delete an S.template, **right-click** and click **Delete**.

Notes:

- Editing and saving of templates will be in the resolution of the selected SSTV mode.

- The tabs labeled S.templates 1, 2, 3, and 4 are for creating templates that refer to parts of a standard SSTV QSO. 1 is station A Calling CQ. 2 is station B returning with call sign and RST report. 3 is station A sending an RST report. 4 is station A or B sending 73.

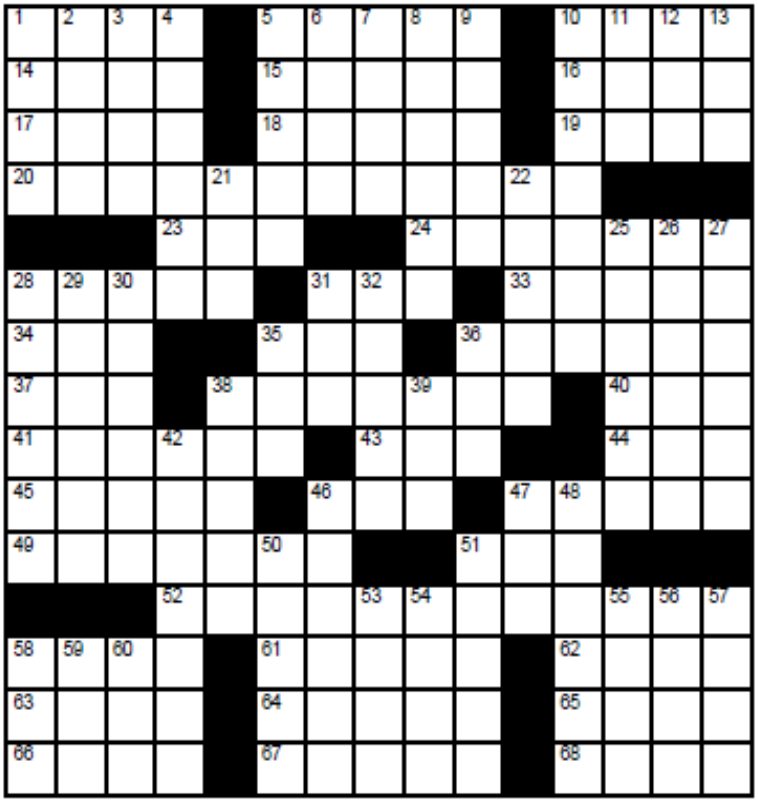


With the **Select Item** tool selected, **double-clicking** an item in the Template tab brings up properties for that item.
ToCall is a macro that fills in the station's call sign from the Log window/received FSKID.

Credit: https://www.jeffreykopcak.com/2015/04/16/getting-started-with-mmsstv/

by Chris Codella, W2PA 7/15/2009

Ham Humor, Part 1



Across

1. Four after A

5. High frequency prefix

10. Two is one

14. Dubai designator

15. Best condition for contesting, or tower climbing, say

16. ZS neighbor's prefix

17. AI language

18. Diminish

19. FET type

20. With 41 and 52 across, society highlighted in 36 across and founded by 31 down

23. VE2 way

24. They make some displays play

28. Skedaddles

31. Buzzer (non-RF)

33. 5N dough

34. Mint alt., on eBay, e.g.

35. "Excuse me", low in the band

36. QST department

37. React. plus res.

38. Hams love them

40. Bird word

41. See 20 across

43. Owns

44. Coffee maker

45. "Sesame Street" regular

46. Cut 100

47. Salad green

49. Kane's word

51. "QRZ?"

52. See 20 across

58. N.Y.C. part

61. 4W, was CR8 during the time of 31 down writing 36 across

62. Tuvalu

63. Houston university

64. 31 down's prefix

65. She sheep

66. Rotating rings for towers

67. "Yes, Sen. Kennedy", familiarly

68. Zero

Down

1. Unadorned

2. Nassau prefix

3. EME antenna

4. IC-7800, say, in JA

5. Grammar topic

6. Radiation pattern feature

7. Ski lift

8. Respond again, on RTTY, say

9. "He's ___ nowhere man"

10. Tool for reducing spectrum width?

11. 20's dispenser

12. JA transceiver maker middle

13. Don'ts partner

21. Famous DXpedioner, when 31 down wrote 36 across, familiarly

22. Trillions of zeptos

25. Goof

26. Passions

27. 5th century G-land settlers

28. Last second on-line bidder

29. D6 place

30. Poplars, in W0, say

31. Callsign suffix of one time 36 across writer and creator of 20 across.

32. Zero zulu in two-land June

35. Articulate

36. Very popular examples of 38 across

38. Early radio maker

39. Fast no more

42. Decorates 60's-style

46. "...like taking _____ from a fire hose." (information overload)

47. Half a Latin dance

48. T.O.M.'s series of articles

50. Where the DX might be listening

51. Kit alternative

53. Radiate

54. UHF antenna type, with dis-

55. Prefix in Lombardia

56. First astronaut ham, familiarly

57. Well known DXer KH6IJ when 31 down ran 36 across

58. Disp. device before LCD, LED

59. Early first century year

60. Inter-area NTS org

B	C	D	E	■	U	L	T	R	A	■	B	A	N	D
A	S	I	X	■	S	O	B	E	R	■	A	T	W	O
L	I	S	P	■	A	B	A	T	E	■	N	M	O	S
D	X	H	O	G	G	E	R	Y	A	N	D	■	■	■
■	■	■	R	U	E	■	■	P	L	A	S	M	A	S
S	C	A	T	S	■	B	E	E	■	N	A	I	R	A
N	O	S	■	■	S	R	I	■	H	O	W	S	D	X
I	M	P	■	G	A	D	G	E	T	S	■	C	O	O
P	O	E	T	R	Y	■	H	A	S	■	■	U	R	N
E	R	N	I	E	■	A	T	T	■	C	R	E	S	S
R	O	S	E	B	U	D	■	■	W	H	O	■	■	■
■	■	■	D	E	P	R	E	C	I	A	T	I	O	N
C	I	T	Y	■	T	I	M	O	R	■	T	T	W	O
R	I	C	E	■	W	N	I	N	E	■	E	W	E	S
T	I	C	S	■	O	K	T	E	D	■	N	O	N	E

Weekend Antennas No. 4
A Simple 70cm Satellite Antenna

Dave Long's excellent talk "Satellites for Beginners" at Radio Technology in Action has renewed interest in low-earth orbit satellites like AO-51 (Amsat Echo). Several of these are quite easily worked using FM transceivers with the uplink in the 2m band and the downlink in the 70cm band.

The 70cm downlink is usually the more critical in terms of antenna requirements because the satellite's transmitter is relatively low-powered and because path loss increases with frequency. Amsat estimates the path loss for the 2m AO-51 uplink to be 145dB and the path loss for the 70cm downlink to be 155dB. With the satellite's transmitter operating at 1W output, an antenna gain of about 10 dBi is required to hear the satellite at its maximum range of 3,000km. On the other hand, even with only a 5W transmitter, an antenna with no gain (0 dBi) would suffice for the uplink

This column describes an easily constructed antenna that performs well as a 70cm antenna for satellite use. By orienting it vertically or horizontally it can also be used to access terrestrial repeaters or for simplex communications. The antenna, a corner reflector, is particularly easy to construct because – unlike Yagis – almost all the dimensions are non-critical. The only critical dimension is the length of the driven element, which is simply adjusted for minimum SWR.

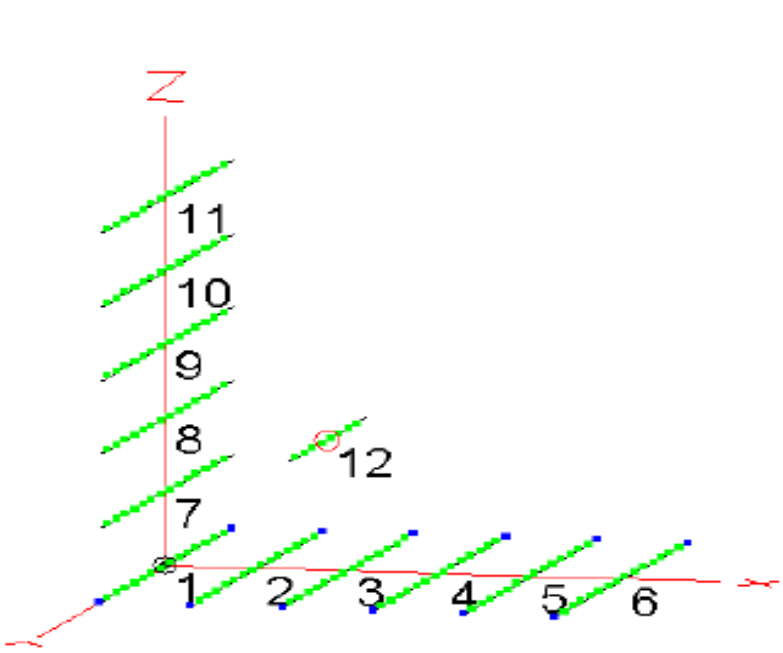


Figure 1 – Layout of the Corner Reflector

Cut a 40cm piece from the 21mm x 21mm cross-section wood. Drill five 3.5mm holes in this piece, 8cm apart (from centre to centre), starting 1cm from one end and ending 7cm from the other end. The holes should be just large enough for the welding rods to fit snugly.

Drill six 3.5mm holes in the remaining 1.4m length of 21mm x 21mm, starting 1cm from one end, 8cm apart (from centre to centre). Attach the 40cm piece at right angles to the 1.4m piece using the 90-degree corner brace. The holes in the 40cm piece should be lined up with the last of the holes in the 1.4m length (see Figure 2).

Cut the 1m length of 19x9mm into two equal halves. Attach these diagonally between the vertical and horizontal members of the frame, one on either side of the frame, using 6x50mm bolts. The centre of both the bolt holes should be 28cm from the bottom-left reflector element, which places the bolts mid-way between the forth and fifth reflector elements. Once the bolts are in place, cut these diagonal pieces flush with the sides of the vertical and horizontal members.

Drill 3.5mm holes through the centre of both of the diagonal pieces. These holes support the driven element and it is important that they line up precisely, so it is best to drill both holes together. Cut one of the aluminium welding rods to exactly 29.8cm long, insert it through the holes you have just drilled so that the middle of the element is midway between the two diagonal members, and epoxy it into place.

Insert the 13 reflector elements into their holes and epoxy them in place. The exact length of the elements is not critical, provided they are at least 41cm long and are all about the same length. Mine came in 50cm lengths, so I used them like this.

Once the epoxy has cured cut a 5mm gap in the centre of the driven element. Attach the coax screen to one side, and the braid to the other. Unfortunately ordinary solder does not bond aluminium effectively. I crimped a couple of lugs onto either side of the driven element, and soldered the coax to these and then covered the crimps with a layer of epoxy to shield it from the elements. Alternatively, if you can find some zinc/tin solder you should be able to solder directly to the aluminium.

Finally, coat the entire wooden structure with a couple of coats of wood seal, varnish or paint to waterproof it.

If you have access to an SWR meter or antenna analyzer that works on the 70cm band, then you can trim the driven element for minimum SWR (in this case, it might be wise to start with a 31cm driven element). Since I didn't have access to a suitable SWR meter, I just cut the element to exactly 29.8cm and checked that my 70cm rig was able to put full power into it through the entire band, so the SWR can't be too bad! Unlike other directional antennas, the element lengths are not critical, so provided the radio is able to deliver power into the antenna, you can be confident that the antenna will function correctly.

Performance

Figure 3 shows the elevation pattern of the antenna when it is mounted 5m above ground.

Cut a 40cm piece from the 21mm x 21mm cross-section wood. Drill five 3.5mm holes in this piece, 8cm apart (from centre to centre), starting 1cm from one end and ending 7cm from the other end. The holes should be just large enough for the welding rods to fit snugly.

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Performance

Figure 3 shows the elevation pattern of the antenna when it is mounted 5m above ground.

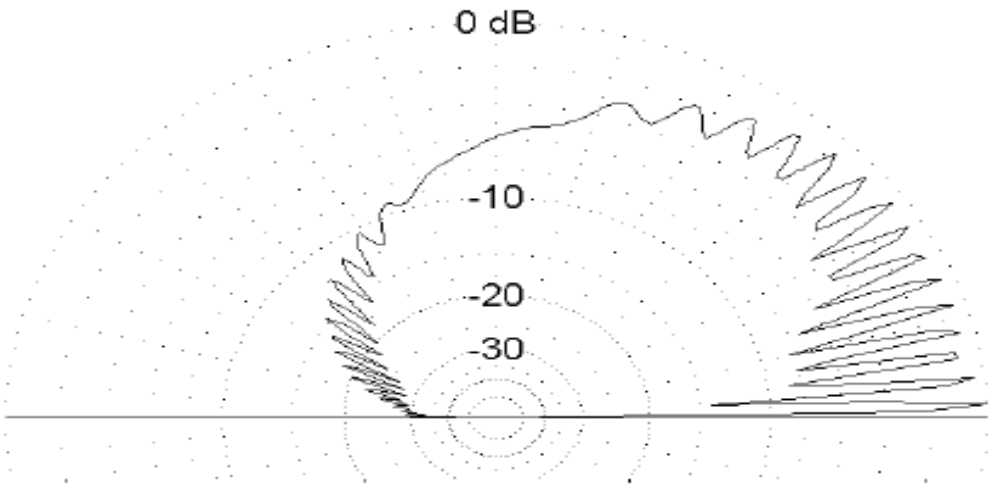

Figure 3 – Elevation pattern at 435MHz mounted 5m above ground.

Maximum gain is 10.36 dBi at an elevation angle of 2 degrees. However as you can see, the antenna provides significant gain at all elevation angles up to 90 degrees, which is ideal for satellite work. The is some variation in gain due to ground reflections, but this is much less pronounced than it is for most horizontally-polarized antennas, thanks to the effect of the horizontal reflector plane immediately below the driven element.

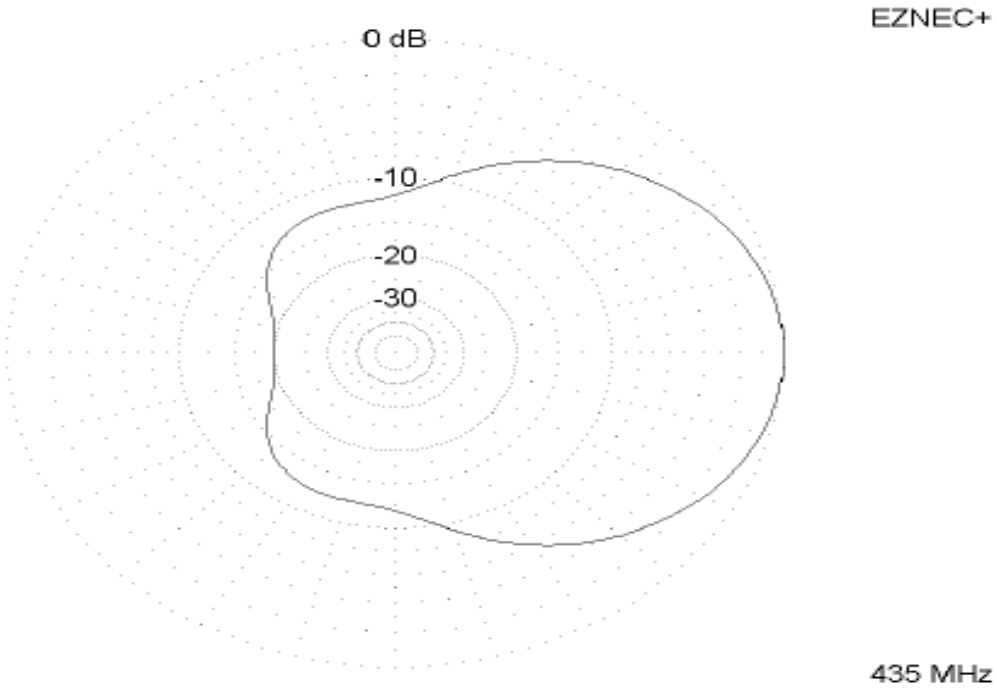

Figure 4 – Azimuth pattern at 30 degrees elevation

Figure 4 shows the azimuth pattern at an elevation angle of 30 degrees. Maximum gain is 9.8dBi, the -3dB beamwidth is 85 degrees and the front/back ratio 20 dB.

Note that the antenna is horizontally polarized. Those familiar with satellite operation may ask whether a circularly-polarized antenna would not be a better choice? Well yes and no. If you know the polarization of the received signal, then a circularly polarized antenna with the correct handedness (right-hand or left-hand) would be ideal. However in the case of AO-51 there are two UHF transmitters, and to maximize the isolation between the antenna systems, one uses left-circular polarization (LCP) while the other uses right-circular polarization (RCP). Typically, the LCP antenna is used for the digital downlink, and the RCP antenna for the voice downlink, although this is configuration-dependent. So the ideal solution would be to have two antennas, one LCP and one RCP, or a single antenna with switchable polarization. However this would add substantial additional complexity, so I chose instead to use linear polarization and accept the 3 dB penalty that this will give with a circularly polarized signal of either handedness. This was taken into account when calculating the required gain.

Figure 5 – The finished antenna

The antenna could be turned on its side to give vertical polarization for repeater use, or could be tilted downwards by 45 degrees so the two reflector planes are 45 degrees above and below horizontal to maximize low-angle radiation for terrestrial weak-signal work. I mounted mine on an ancient Hy-Gain AR-22XL rotator and have started happily exploring the wonderful world of satellites.

MEMBERSHIP APPLICATION

E P A R A

Eastern Pennsylvania Amateur Radio Association

Address: PO Box 521, Sciota, PA 18354
Email: N3IS@qsl.net
Website: www.qsl.net/n3is

Date: _____

Name: _____ **Callsign** _____

License: Novice Technician General Advanced Extra

Address: _____

City: _____ **State:** _____ **Zip:** _____

Home Phone: _____

Cell Phone: _____

Email: _____

* **Note:** We do not publicize your phone or email information.

ARRL Member: _____ **Skywarn Spotter:** _____ **ARES/RACES Member:** _____ **VE:** _____

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Building Antennas _____ Electronic Repairs _____ Elmering _____ Kit Building _____ EmComm: ____

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Please list any relevant qualifications or assets you have or are willing to share/contribute to the club.

Use reverse side if needed:

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Sponsored or Reviewed by: _____ **Callsign:** _____

Membership Rates,

Membership: **$20.00** per year Spouse: **$10.00** per year
Full time Student: **$15.00** per year Senior:(Over 62 years of Age): **$15.00** per year