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Washington Amateur Communications Inc.



A 501-C3 Tax Exempt Organization



THE
WACOM
HAM

Building an SDR Transceiver Kit!

By Joe Caldwell- N3XE pp. 11-13

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WACOM

President's Message

November 2016



Bill—NY9H

Thoughts of a Ham....

We all have different ideas of what ham radio is. You've heard me exclaim: It's a service, and we certainly know how we active members have invested many hours into club service activities for the public. It also counts when you provide your time to benefit the club itself. We have our Hamfest this coming weekend. Time to put in an hour for your club? Many uncounted hours have been donated to the club by Bud & Norma Plants.N3TIR & N3YJJ and the result is obvious: a fantastically organized and GROWING hamfest...leadership. Many of us know how much energy goes into such events. Then there are the Walks, the Runs and now the "FLOATS" which all take advantage of our trained communicators. The On air practice sessions which we call NETS are another investment of time we provide. Be a NET controller!

Ham radio really is a sport....and all you need do is listen to the complaints about contesting when the weekend come. Just checkout 80 -40-20 for all the folks that can't figure out how to find another band, when the fierce contesters take over the contest bands. (During the contests listen for Tim K3LR ...if you can't hear him...start to accept that your station needs a lot of work). Oh and on Field Day, It does squawk like a duck....



What is THAT Floating??

As far as the hobby portion, I know of some folks that NEVER managed to transmit, although own a plethora of fine equipment. Such folks frequently have a penchant for the 'older gear'. Or maybe their thing is the building of a fine station or antenna system....and just forget about getting on the air. Or maybe their hobby is helping others with their stations.

So pick your corner or corners and take a run by putting in energy and get those things going that got you into this endeavor. You can put a lot of time into this Radio-Thing, but you will get MORE OUT than you put in. Give it a shot.

See you at the Christmas Party December 2nd where you will elect a new President and Treasurer as well as a new director.

73,

Bill ny9h/3

WACOM OFFICERS, BOARD OF DIRECTORS, STAFF, REPEATERS, AND NETS!

Washington Amateur Communications is a non-profit organization that is dedicated to advancing the principles of Amateur Radio while making it fun for all who participate. We have been affiliated with the ARRL for over 25 years. Our club call sign is WA3COM. Because of our activity in promoting Amateur Radio, including conducting classes, public demonstrations, emergency preparedness and training, studying technical advancements in radio and mentoring of new and soon-to-be hams, WACOM has earned the designation of Special Service Club from the ARRL.

Membership

- WACOM membership is open to anyone
- Annual Dues:
 - \$20 for individuals
 - \$10 for each additional family member
 - (send check & completed form to club treasurer)
- Questions? Contact the WACOM club treasurer.

Membership Meeting

- 7:30PM (1930 hrs), First Thursday of every month

Board of Directors Meeting

- 7PM (1900 hrs), Last Thursday of every month

Mailing Address

WACOM
c/o Norma Plants N3YJJ
236 Chambers Ridge Road
West Alexander, Pa 15376-2270

E-Mail

General Club Correspondence; wa3com@gmail.com

Club Officers

President: Bill Steffey, NY9H; ny9h@arrl.net
Vice President: Joe Caldwell, N3XE; n3xe.radio@gmail.com
Secretary: Randy Kief, KC3EKZ; randykief@comcast.net
Treasurer: Norma Plants, N3YJJ; n3yjj@arrl.net

Board of Directors

Director: Bob Fischer, KC3AJM; kc3ajm@outlook.com
Director: Dennis Presky, K3PSP; dpresky@mra1.com
Director: Bud Plants, N3TIR; bud@n3tir.com

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VE Liaison

Bob Kinnear, KI4DHB; ki4dhb@yahoo.com

Repeaters

K3PSP - 146.790+ MHz, EchoLink node - WA3COM-R
147.285+ MHz (Scenery Hill, PA)
145.250 - MHz (West Alexander)
147.390+ MHz (Smith Township)
147.315+ MHz (Greene County)
W3CYO - 145.490 MHz, 224.4 MHz, 443.300 MH z

Digital Net

- Mondays at 8PM (2000 hrs), on K3PSP Repeater
- Bob, KC3AJM Net Control

2 Meter Public Service Net

- Tuesdays at 8:30PM (2030 hrs), on K3PSP Repeater

10 Meter Net

- Tuesdays at 9PM (2100 hrs), on 28.340 MHz
- Bud, N3TIR Net Control

YL Net

- Wednesdays at 7:30PM (1930 hrs), on K3PSP Repeater
- Karen, K3PUP Net Control

Elmer Net

- Wednesdays at 8PM (2000 hrs), on K3PSP Repeater
- Bud N3TIR, Net Control

Club Elmers

DX Contest - Bill Sheehan, KB3LIX; kb3lix@comcast.net
QSL & DX - Bill Steffey, NY9H; ny9h@arrl.net
ARES & RACES - Bob Ketzell, KB3IN; kb3in@yahoo.com
CW - Loren McCullough, WA3WZR; lorenmcc@verizon.net
VHF - Craig Yoho, KB3RHR; craigyoho@consolenergy.com
Repeaters - Dennis Presky, K3PSP; dpresky@mra1.com
Websites - Joe Caldwell, N3XE; n3xe.radio@gmail.com





WACOM Board Meeting Minutes

29 September 2016, 7:30 PM



Board Meeting Minutes – 9/29/2016

The meeting was called to order by Bob (KC3AJM) at 7:00 pm.

Previous meeting minutes were read by Randy Kief (KC3EKZ). The secretary regrettably informed the board that the previous meeting minutes were lost.

The treasury report was read by Norma Plants. (N3YJJ) Motion to pass as read, and second by Bill (NY9H)/Dennis (K3PSP). Minutes accepted by unanimous vote.

Old Business –

Radio Room – Randy (KC3EKZ) reported that the Titan parts are in. Bud (N3TIR) is going to get two tilt bases, one for the Titan mast, and another for an added mast for a beam tower. Antenna work will be postponed until the new bases arrive,

Bill (NY9H) brought up modifying the radio room manager position to a radio room committee to conform to the by-laws. Randy (KC3EKZ) is chairman; Patrick (KB3TFN) is assistant. A discussion was had of the role of the radio room committee. It was decided by the board that the chairman has full control of the radio room, and club assets located within. The radio room committee does not need board approval to allocate radio room assets where it deems fit.

Tower Trailer – Norma (N3YJJ) asked if she should renew the license plate on the tower trailer for another 5 years. The board voted yes to renew the plate.

The radio room will be available for the PA QSO party after the Marianna canoe race event is completed.

The two Well-built antenna masts need to be taken back to Washington County EMA for the PEMA audit per Dennis (K3PSP).

Bob (KC3AJM) discussed members that are leaving the club. He thinks the board needs to make a better effort to contact members that have left, and try to resolve any issues that may be the cause of them leaving the club.

Hamfest – Bud (N3TIR) stated that everything is going great. He had an issue with the post office, and the club 501C3 status. He has resolved this issue, and the printing is going out in the next day, or two. He needs to have some money moved around to pay the fairground. The VE testing has been moved to 8 am to accommodate scheduling.

Bud also reported that the club Christmas party has been booked, and is on the club website.

Meeting adjourned at 8:50 pm. Bill (NY9H)/Joe (N3XE)

Respectfully submitted by Randy Kief. (KC3EKZ)



WACOM General Meeting Minutes

6 October 2016, 7:30 PM



General Meeting Minutes – 10/6/2016

The meeting was called to order by Bill (NY9H) at 7:30 pm.

- Membership introductions and introducing visitors were performed.
- Old minutes were read by Randy (KC3EKZ). A motion to accept as corrected by Bob (KB3IN), 2nd by Dennis (K3PSP). There were no objections. Minutes accepted.
- The treasury report was read by Norma (N3YJJ) a motion to accept by Bob (KB3IN), 2nd by Dennis (K3PSP). There were no objections. Report accepted.
- Bud (N3TIR) reported on the hamfest. The VE exam will be from 8 am to 11 am. from 11 am to 11:30 will be the Yeasu demonstration. Flyers went out on October 5th. -All the prizes are Yeasu products. Set-up will begin Sat. November 5th at 1 pm. No vendors will be allowed in until after 6 pm on the 5th.
- Dennis (K3PSP) gave a report on the repeater system. He is working on a fill in repeater for the Mon valley.
- Bill (NY9H) reported on the classes. A tech class is scheduled for Feb. 2017.
- Joe (WA3WMB) reported on the Marianna canoe race. Those attending will meet at 8:15 am at Green Cove Yacht Club parking lot. The event will be on the east repeater, and he needs 6 people for the event.
- Bill (NY9H) reported on the QRP night. Ten people showed up.
- Bill also made a report on the Eagle scout ACS event. He provided EMCOMM during a bridge build that the scouts were having. He also mentioned the PA state fireman's parade ACS event. Rob (KB3ZUS) was not in attendance to give a report.
- Bill (NY9H) discussed the PA QSO party. It starts on 10/8 at 1 pm. Bud (N3TIR) is having an event at his home for the QSO party. The radio may also be open after the canoe race.
- Bud (N3TIR) mentioned the repeater council meeting on 10/6 at 1 pm.
- Meeting was adjourned at 8:40 pm. Motion by Joe (WA3WMB), 2nd by Dave (N3IDH).

Respectfully submitted by Randy Kief. (KC3EKZ)

Next WACOM meeting - 3 November 2016, 7:30 PM!

2016-17 WACOM Upcoming Events Calendar

Meetings, Contests & Other Significant Club Events (Subject to Change)

3 Nov 2016, WACOM Meeting at 7:30PM, Washington County Building

5-7 Nov 2016, ARRL Sweepstakes CW, <http://www.arrl.org>

6 Nov 2016—**WACOM HAMFEST!** Washington County Fairgrounds

19-21 Nov 2016, ARRL Sweepstakes SSB, <http://www.arrl.org>

26-27 Nov 2016, CQ WW DX Contest CW, <http://www.cqww.com>

2 Dec 2016, *WACOM Christmas Party* at 6:30PM, Buffalo Township Building

2-4 Dec 2016—ARRL 160-meter Contest, <http://www.arrl.org>

10-11 Dec 2016—ARRL 10-meter Contest, <http://www.arrl.org>

17-18 December 2016—Stew Perry Topband Challenge, <http://www.kkn.net/stew>

1 January 2017—ARRL Straight Key Night, <http://www.arrl.org>

7-8 January 2017—ARRL RTTY Roundup, <http://www.arrl.org>

5 January 2017, WACOM Meeting at 7:30PM, Washington County Building

21-23 January 2017—ARRL January VHF Contest, <http://www.arrl.org>

26 February 2017—**WASHFest**, Home Economics Bldg, South Park

WACOM HAM DX CORNER—NOVEMBER 2016

COURTESY: <http://www.ng3k.com/Misc/adxo.html>

2016 Nov01	2016 Nov11	Bonaire	PJ4L [spots]	LotW	DXW.Net 20160929	By ON7TQ ON6KX; SSB CW + digital; QSL also OK via ON3CQ (Buro or direct)
2016 Nov02	2016 Nov08	Palau	T88AB [spots]	JR1UBR	TDDX 20160913	By JR1UBR fm Koror I; 40-6m; SSB; 1kw; QSL OK via JARL Buro or direct
2016 Nov03	2016 Nov09	Barbados	8P	JH4IFF Direct	DXNews 20160901	By JH4IFF as 8P9JH and JH4CES as 8P9IP fm NA-021; 80-10m; CW SSB RTTY; 8P9IP QRV for IPARC Contest; QSL: Mitsumasa Uto, 681 Tatsukawa, Akaiwa, Okayama 709-0815, Japan
2016 Nov04	2016 Nov12	St Lucia	J6	LotW	OPDX 20160502	By AA4OC as J68OC, N7BF as J68BE, WT4BT as J68MT, W6ABM as J6/W6ABM, AK5SD as J6/AK5SD, NX8G as J6/NX8G; 80-10m; CW SSB + digital; QSL also OK via home_calls
2016 Nov04	2016 Nov14	Cambodia	XU7M DC	LotW	MDXC 20160420	By IZ8CCW I2VGW + 20 op team fm Sihanoukville; focus on low bands; focus on digital; 5 stations; 24x24 hours; QSL also OK via IK2VUC (Buro or direct)
2016 Nov05	2016 Nov12	St Lucia	J6		DXW.Net 20160812	By N7BF as J6/N7BF, WT4BT AA4OC W6ABM AK5SD NX8G likewise fm Chateau Devaux, Cap Estate (island north tip); 80-10m; SSB CW + digital
2016 Nov06	2016 Nov13	Bonaire	PJ4	LotW	DXW.Net 20161014	By N5JR as PJ4/N5JR, NT5V K5JP likewise; 160-10m; CW SSB RTTY; QSL also OK via home_call (Buro or direct)
2016 Nov06	2016 Nov16	Micronesia	V63AJ	DF8AN	DXNews 20160715	By DF8AN fm Yap I (OC-012); HF; CW, some RTTY PSK
2016 Nov06	2016 Nov16	Senegal	6V1IS	Club Log	IK7JWX 20160617	By IK7JWX IS0AGY IS0BWM IS0FQK IZ7ATN IS0FFR IW7EGQ fm Isole Ngor e Goree (AF-045); 160-6m; SSB CW PSK31-63-125 RTTY, perhaps SSTV; QSL also OK via IK7JWX direct and eQSL
2016 Nov07	2016 Dec02	Tanzania	5H3MB	LotW	DXNews 20160927	By IK2GZU; 80-10m; SSB CW RTTY; dipoles + ground plane; QSL also OK via IK2GZU (Buro or direct), Club Log, and eQSL
2016 Nov09	2016 Dec06	Mauritius	3B8	DJ7RJ Di- rect	AA1M 20161017	By DJ7RJ as 3B8/DJ7RJ; 160-10m, focus on 160m; 500w

COURTESY: <http://www.ng3k.com/Misc/adxo.html>

2016 Nov10	2016 Nov16	West Kiribati	T30	Home Call	TDDX 20161020	By JA1KJW as T30KJ, JA3MCA as T30MA, JA8VA as T30VE, JA1JQY as T30JY fm Tarawa I (OC-017); 160-10m; SSB CW RTTY
2016 Nov10	2016 Nov22	Central African Rep	TL8AO	LotW	DXW.Net 20160728	By LA7GIA fm Bangui; 80-10m; mainly CW; QSL also OK via LA7GIA
2016 Nov10	2016 Nov22	Curacao	PJ2	Club Log	DXW.Net 20161026	By PA3EYC as PJ2/PA3EYC; 160-10m; mainly CW; holiday style operation
2016 Nov11	2016 Nov18	Saba & St Eustatius	PJ6M	K2HVN	DXNews 20160911	By K2HVN fm Saba I (NA-145); 40-10m; CW SSB; may use PJ6/K2HVN
2016 Nov15	2016 Nov17	Palau	T88QR	JJ1DQR	DXW.Net 20160915	By JJ1DQR fm Koror I; 80-6m; SSB
2016 Nov15	2016 Dec15	St Kitts & Nevis	V47JA	LotW	W5JON 20160117	By W5JON fm Calypso Bay, St Kitts; 160-6m, incl 60m; SSB; yagi on 6m, verticals, dipole; QSL also OK via W5JON direct
2016 Nov16	2016 Nov22	Micronesia	V63	LotW	JA1SVP 20161102	By JA1VND as V63YY and JA1SVP as V63FA fm Chuuk (OC-011); 160m-10m; CW SSB RTTY; QSL also OK via home_call (Buro or direct)
2016 Nov16	2016 Nov30	Kenya	5Z4	Home Call	DJ6TF 20161019	By DJ6TF as 5Z4/DJ6TF and DL7KL as 5Z4/DL7KL fm Diani Beach; 80-10m; CW SSB; 500w; R7 + wire on 80m
2016 Nov16	2016 Dec05	Cambodia	XU7AEZ	LotW	OPDX 20160905	By Russian team fm Koh Rong Samloem I (AS-133); HF; various modes; QSL also OK via RC3C
2016 Nov17	2016 Nov20	Guam	KH2	DF8AN	TDDX 20160722	By DF8AN as KH2/DF8AN; HF; CW, some RTTY PSK
2016 Nov18	2016 Nov21	Fernando de Noronha	PY0F	PT7WA Direct	DXNews 20161014	By PV8IG as PY0F/PV8IG fm SA-003; HF; QSL: Luciano Sampaio de Souza, PO Box 825 - AC Monte Castelo, 60325-970 Fortaleza - CE, Brazil
2016 Nov18	2016 Nov25	St Barthelémy	TO2EE	K2HVN	DXNews 20160911	By K2HVN fm NA-146; 40-10m; CW SSB; may use PJ6/K2HVN
2016 Nov19	2016 Nov26	St Barthelémy	FJ	LotW	KO8SCA 20160913	By KO8SCA as FJ/KO8SCA; 160-10m; CW SSB + digital; 500w; BigIR vertical; holiday style operation; QSL also OK via Club Log
2016 Nov20	2016 Dec03	Maldives	8Q7SP	LotW	DXNews 20160711	By SP6EQZ SP2FAX SP3CYY SP3FZN SP6FXY SP6JIU SP9FOW SP3SLA fm Dhiffushi I (AS-013); 160-10m; CW SSB RTTY; QSL also OK via SP6FXY Buro and Club Log
2016 Nov20	2016 Nov23	Nepal	9N7NZ	JA6GWX Direct	JA6GWX 20161016	By JA6GWX; HF; SSB CW
2016 Nov20	2016 Dec25	DR Congo	9Q0HQ/3	Club Log	TDDX 20160916	By IS0BWM; all bands; SSB; QSL also OK via IS0BWM direct w/ 2USD
2016 Nov21	2016 Nov29	Curacao	PJ2	LotW	DXNews 20160810	By VE7ACN as PJ2/VE7ACN fm SA-099; 40-10m, perhaps 80m; mainly CW, some SSB; holiday style operation; QSL also OK via VE7ACN

DX Feature of the Month

MICRONESIA, V63AJ operating from 6-16 November 2016

The **Federated States of Micronesia (FSM)** is an independent sovereign island nation and a United State sassociated state consisting of four states – from west to east, Yap, Chuuk, Pohnpei and Kosrae – that are spread across the Western Pacific Ocean. Together, the states comprise around 607 islands (a combined land area of approximately 271 sq mi that cover a longitudinal distance of almost 2,700 km (1,678 mi) just north of the equator. They lie northeast of New Guinea, south of Guam and the Marianas, west of Nauru and the Marshall Islands, east of Palau and the Philippines, about 2,900 km (1,802 mi) north of eastern Australia and some 4,000 km (2,485 mi) southwest of the main islands of Hawaii. While the FSM's total land area is quite small, it occupies more than 1,000,000 sq mi of the Pacific Ocean, giving the country the 14th largest Exclusive Economic Zone in the world. The capital is Palikir, located on Pohnpei Island, while the largest city is Weno, located in the Chuuk Atoll.



Each of its four states is centered on one or more main high islands, and all but Kosrae include numerous outlying atolls. The Federated States of Micronesia is spread across part of the Caroline Islands in the wider region of Micronesia, which consists of thousands of small islands divided among several countries. The term *Micronesia* may refer to the Federated States or to the region as a whole. The FSM was formerly a part of the Trust Territory of the Pacific Islands (TTPI), a United Nations Trust Territory under U.S. administration, but it formed its own constitutional government on May 10, 1979, becoming a sovereign state after independence was attained on November 3, 1986 under a Compact of Free Association with the United States.



History

The ancestors of the Micronesians settled over four thousand years ago. A decentralized chieftain-based system eventually evolved into a more centralized economic and religious culture centered on Yap. Nan Madol, consisting of a series of small artificial islands linked by a network of canals, is often called the Venice of the Pacific. It is located on the eastern periphery of the island of Pohnpei and used to be the ceremonial and political seat of the Saudeleur dynasty that united Pohnpei's estimated 25,000 people from about AD 500 until 1500, when the centralized system collapsed.

European explorers—first the Portuguese in search of the Spice Islands (Indonesia) and then the Spanish—reached the Carolines in the sixteenth century. The Spanish incorporated the archipelago to the Spanish East Indies and in the 19th century established a number of outposts and missions. In 1887, they founded the town of *Santiago de la Ascension* in what today is Kolonia on the island of Pohnpei.

Following defeat in the Spanish–American War, the Spanish sold the archipelago to Germany in 1899 under the German–Spanish Treaty of 1899. Germany incorporated it into German New Guinea. During World War I, it was captured by Japan. Following the war, the League of Nations awarded a mandate for Japan to administer the islands as part of the South Pacific Mandate. During World War II, a significant portion of the Japanese fleet was based in Truk Lagoon. In February 1944, Operation Hailstone, one of the most important naval battles of the war, took place at Truk, in which many Japanese support vessels and aircraft were destroyed. Following World War II, it was administered by the United States under United Nations auspices in 1947 as part of the Trust Territory of the Pacific Islands pursuant to Security Council Resolution 21.

On May 10, 1979, four of the Trust Territory districts ratified a new constitution to become the Federated States of Micronesia. Palau, the Marshall Islands, and the Northern Mariana Islands chose not to participate. The FSM signed a Compact of Free Association with the United States, which entered into force on November 3, 1986, marking Micronesia's emergence from trusteeship to independence. Independence was formally concluded under international law in 1990, when the United Nations officially ended the Trusteeship status pursuant to Security Council Resolution 683. The Compact was renewed in 2004.

Government

The Federated States of Micronesia is governed by the 1979 constitution, which guarantees fundamental human rights and establishes a separation of governmental powers. The unicameral Congress has fourteen members elected by popular vote. Four senators—one from each state—serve four-year terms; the remaining ten senators represent single-member districts based on population, and serve two-year terms. The President and Vice President are elected by Congress from among the four state-based senators to serve four-year terms in the executive branch. Their congressional seats are then filled by special elections. The president and vice president are supported by an appointed cabinet. There are no formal political parties.

Economy

Economic activity in the Federated States of Micronesia consists primarily of subsistence farming and fishing. The islands have few mineral deposits worth exploiting, except for high-grade phosphate. Long line fishing of tuna is also viable with foreign vessels from China operated in the 1990s. The potential for a tourist industry exists, but the remoteness of the location and a lack of adequate facilities hinder development. Financial assistance from the U.S. is the primary source of revenue, with the U.S. pledged to spend \$1.3 billion in the islands in 1986–2001; the CIA World Factbook lists high dependence on U.S. aid as one of the main concerns of the FSM. Geographical isolation and a poorly developed infrastructure are major impediments to long-term growth.

Transportation

The Federated States of Micronesia is served by four international airports.

Pohnpei International Airport, on the main island of Pohnpei State.

Chuuk International Airport, located on the main island of Chuuk State.

Kosrae International Airport, located on the main island of Kosrae State.

Yap International Airport, located on the main island of Yap State.



People

The indigenous population of the nation, which is predominantly Micronesian, consists of various ethnolinguistic groups. It has a nearly 100% Pacific Islander and Asian population: Chuukese 48.8%, Pohnpeian 24.2%, Kosraean 6.2%, Yapese 5.2%, Yap outer islands 4.5%, Asian 1.8%, Polynesian 1.5%, other 6.4%, unknown 1.4%. A sizeable minority also have some Japanese ancestry, which is a result of intermarriages between Japanese settlers and Micronesians during the Japanese colonial period

There is also a growing expatriate population of Americans, Australians, Europeans, and residents from China and the Philippines since the 1990s. English has become the common language of the government, and for secondary and tertiary education. Outside of the main capital towns of the four FSM states, the local languages are primarily spoken. Population growth remains high at more than 3% annually, offset somewhat by net emigration.

Each of the four States has its own culture and traditions, but there are also common cultural and economic bonds that are centuries old. Cultural similarities include the importance of the traditional extended family and clan systems and are found on all the islands.



Yap Money

The island of Yap is notable for its "stone money" (Rai stones), large disks usually of calcite, up 13 feet in diameter, with a hole in the middle. The islanders, aware of the owner of a piece, do not necessarily move them when ownership changes. There are five major types: *Mmbul*, *Gaw*, *Ray*, *Yar*, and *Reng*, the last being only 12" in diameter. Their value is based on both size and history, many of them having been brought from other islands, as far as New Guinea, but most coming in ancient times from Palau. Approximately 6,500 of them are scattered around the island.

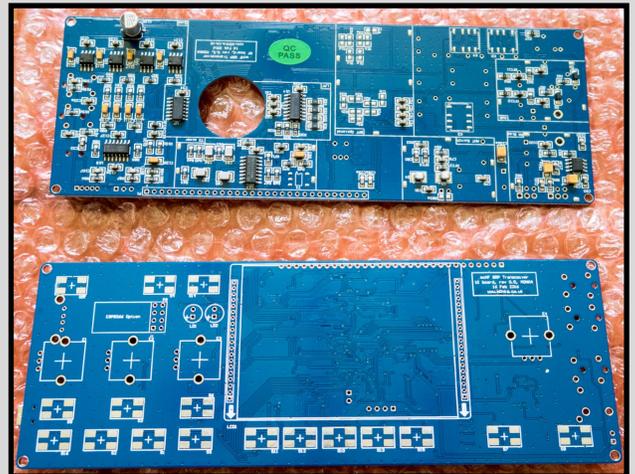


SOURCE: WIKIPEDIA

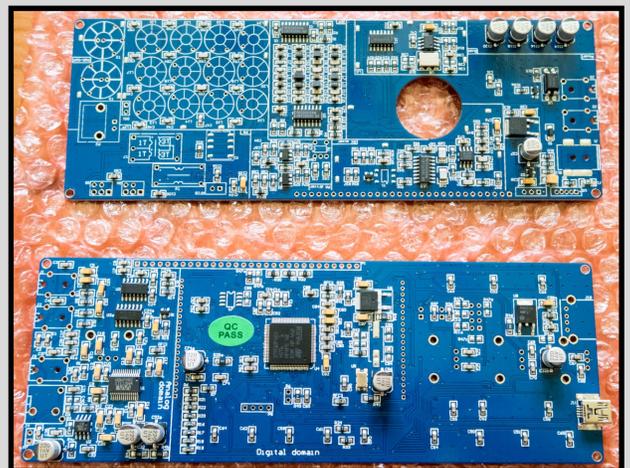
Building an SDR Transceiver Kit

by Joe Caldwell—N3XE

A huge part of the history of ham radio involves people building their own equipment. Over the years various companies and organizations have sold transceiver kits, but in recent years most of these have consisted of basic CW only or single frequency SSB devices intended for digital communications. With the increased development of software defined radio, however, this is changing. Unlike other basic transceiver kits the mcHF is a full featured radio with 80M-10M coverage, multi-mode support, variable bandwidth filtering, DSP (noise reduction, notch filtering, etc.), sound card interface, rig control, and band scope / waterfall capability. Not bad for a \$388 kit.

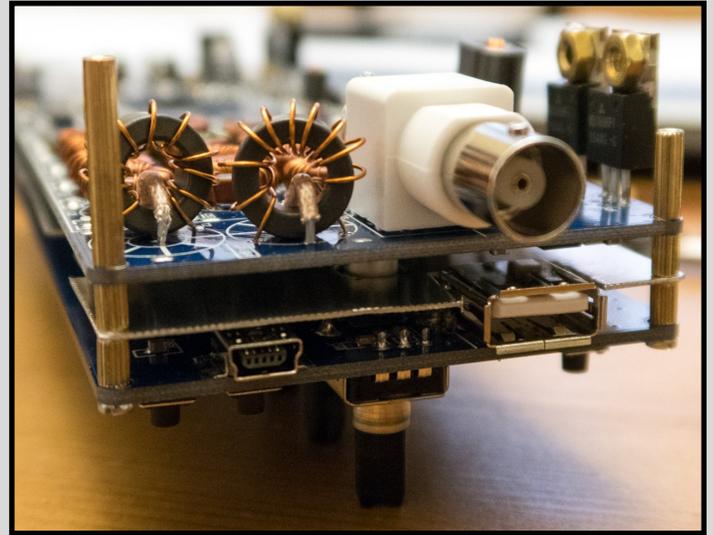


The project was originated by Chris, M0NKA in the UK about 2 years ago and the design has gone through a number of revisions resulting in the current v0.5, which is what I purchased. One of the major reasons I was willing to undertake this project was that the kit includes the circuit boards already populated with about 95% of the surface-mount parts, including all of the tricky to solder chips and super tiny resistors and capacitors. The only remaining parts to install are larger, and therefore easier to solder, surface-mount parts and standard through-hole components. The builder also has to hand wind several toroid inductors and transformers. You also have to provide your own final power amplifier MOSFETs, shielding plate between the boards, and case for the radio. These requirements go along with the way this kit is sold, which is to say bare bones. The kit includes zero instructions. The builder is responsible for sorting through the mcHF downloads page, the mcHF Yahoo group, and the Github Wiki to find the details regarding how to wind the toroids and transformers as well as details on any recommended mods and instructions for how to use the radio.



Since this project is open source, both the hardware and firmware have undergone considerable development. In fact, from the time I started building the kit to when I completed the project a large firmware update was released which revised the main screen and menu layout as well as added a number of fixes and features.

Next I completed the remainder of the RF board, which was fairly time consuming since winding toroids and transformers is a tedious operation. This portion of kit construction is somewhat confusing because there are a ton of possible mods for the various transformers that can improve performance of the final power amplifier. I decided to build mine in the default configuration which results in a solid 5W output on 80M-12M and about 4W on 10M.



After completing construction of the boards, I turned my attention to completing the radio as a whole. The first step of this was to construct the shield plate between the boards. For this I used a thin sheet of aluminum that I hand cut, drilled and nibbled according to a pattern available on the mcHF website. I then test fit and assembled the board and shield sandwich to check for proper clearance. When I was satisfied I completed the assembly using 5mm standoffs.

I purchased the aluminum case for the mcHF from a ham in Poland for about \$63. Since the case serves as the heatsink for the power supply circuitry as well as the final amplifier transistors, a good mechanical connection between the components and the case is necessary. To accomplish this I soldered brass #4-40 nuts to the heatsink fin on power supply and amplifier components. I then drilled holes in the case to match where these nuts line up when the case is assembled. When bolts are inserted and tightened, the electrical components are pulled tight to the wall of the case. The last step in construction was labeling the buttons and ports.

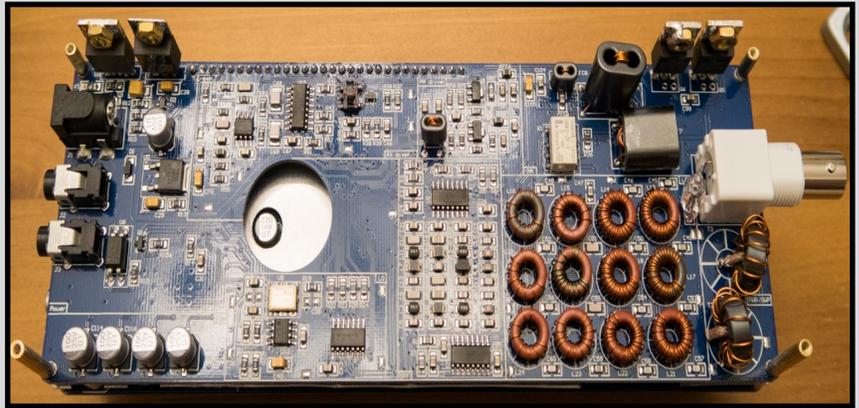


The final adjustment before testing the transmitter involves setting the proper bias for the final amplifier and then setting the transmitter gain for each band of operation. This is done by adjusting menu settings while monitoring the radio's current draw and output wattage using an ammeter and a RF power meter.

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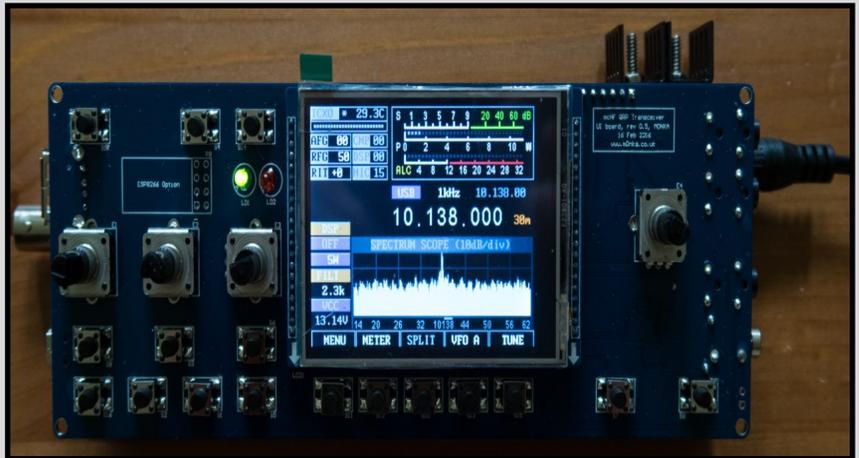


Finally, after about 20 hours of work I put my mcHF on the air. After adjusting my microphone gain I made a contact on 40M SSB. I then plugged the transceiver into my PC and fired up WJST-X. Following the guide on the Github Wiki I was able to get rig control working and made a half dozen contacts using JT65 on the 30M band using nothing but the mcHF and my laptop.



Main circuit board completed

Overall I have to say that I am incredibly happy with the mcHF kit. It has been a great learning experience and the radio itself is an incredibly capable and configurable device that offers a lot of bang for your buck. I highly recommend this kit for anyone with some electronics experience. While the documentation has not been collected into one easily digestible package, the kit itself is actually very straightforward to put together and I was able to get it on the air with only a cheap multi-meter and an RF power meter. It is also an incredible bargain for such full featured radio; I spent under \$500 total for the kit, case and other ancillary parts (not including the microphone) which is not bad at all when you compare this to what is available commercially.



Turned on before installing outer case

In the months since I completed my kit, mcHF firmware developers released version 2.0 of the mcHF bootloader. The updated bootloader allows the use of the larger USB Type A port for firmware upgrades using only a USB Flash Drive. This eliminates the need for the proprietary software that was required to update the firmware in the past and solidifies the open source development of the mcHF going forward.



Final product with the outer case

The developers also released version 1.2 of the firmware for the mcHF. The new firmware has a number of feature improvements and bug fixes including better spectrum display performance and system responsiveness overall. Other future upgrades are in the works and I look forward to what the new features will bring.



630 Meter Special Event Set for Mid-November!

Participants in the ARRL WD2XSH 630-meter experiment, Canadian radio amateurs, and members of the Maritime Radio Historical Society (MRHS) will participate in a special event on Sunday, November 13 (UTC) on 630 meters (the evening of Saturday, November 12, in US time zones). The event will commemorate the Berlin Treaty of 1906 that made 500 kHz the International Distress Frequency. US Part 5 Experimental licenses will operate in the 472-479 kHz band, using CW for two-way contacts and beacons with commemorative messages. There may also be some operation on 500 kHz.

“Canadian amateurs will also engage in QSOs in the 472-479 kHz band,” said ARRL 630-Meter Experiment Coordinator Fritz Raab, W1FR. “They will also participate in cross-band QSOs with amateurs operating on 160, 80, and 40 meters.”

Canadian radio amateurs gained 630-meter privileges in 2014. A proceeding that would grant similar privileges to US hams is still awaiting FCC approval.

The Maritime Radio Historical Society will activate the KSM/KPH transmitter in Bolinas, California, for a mini “Night

of Nights,” with special messages and bulletins.

Confirmed Canadian participants include:

VO1NA (Joe) GN37 Torbay, Newfoundland
Time: 2130-0130 UTC (Saturday, November 12/Sunday November 13 UTC)
TX Frequency: 477.7 kHz
RX (QSX) Frequency: 3.562 kHz

VE3OT (Mitch) EN92 London, Ontario
Time: 0000-0400 UTC (Sunday, November 13 UTC)
TX Frequency: 477.0 kHz
RX (QSX) Frequency: 3.563 kHz, 7.058 kHz

VE7BDQ (John) CN89 Delta, British Columbia
Time: 0300-0700 UTC (Sunday, November 13 UTC)
TX Frequency: 474.0 kHz
RX (QSX) Frequency: 3.555 kHz

VE7CNF (Toby) CN89 Burnaby, British Columbia
Time: 0300-0800 UTC (Sunday, November 13 UTC)
TX Frequency: 476.5 kHz
RX (QSX) Frequency: 1.836 kHz, 3.558 kHz, 7.031 kHz

VE7SL (Steve) CN88 Mayne Island, British Columbia
Time: 0200-0700 UTC (Sunday, November 13 UTC)
TX Frequency: 473.0 kHz
RX (QSX) Frequency: 3.566 kHz, 7.066 kHz

VE7CA (Markus) CN89 North Vancouver, British Columbia
Time: 0200-0700 UTC (Sunday, November 13 UTC)
TX Frequency: 477.5.0 kHz
RX (QSX) Frequency: 1.820 kHz, 3.550 kHz, 7.048 kHz

New Satellites with Amateur Radio Payloads Launched, Monitored

The *AlSat-1N* and *Pratham* satellites, both carrying Amateur Radio payloads, have both been heard and identified following the India Space Research Organization (ISRO) PSLV-C35 mission launch on September 26. Reports are requested. Reports on AMSAT-BB indicate the *Pratham* CW beacon on 145.980 MHz is active.

The 3U *AlSat-1N* CubeSat was built in collaboration with the Algerian Space Agency, the UK Space Agency (UKSA), Surrey Space Centre (SSC) staff, and Algerian students as a technology transfer and demonstrator for Algeria.

AlSat-1N is also hosting three UK payloads from various institutions and aims to take images of the Earth and send back data from the UK payloads. The IARU coordinated downlink is 437.650 MHz (9,6 FSK). Downlinked **data reports** are welcome, both decoded hex files and recordings.

The *Pratham* satellite, built by students at the Indian Institute of Technology-Bombay, also is a 3U CubeSat. It was designed to measure total electron count at an 800 kilometer (approximately 500 mile) altitude sun-synchronous orbit. The CW beacon (35 WPM) will transmit continuously at 145.980 MHz, and the Institute seeks post-launch reports. The satellite's 1200 bps FSK downlink is on 437.455 MHz.

Two Radio Amateurs among Three Returning ISS Crew Members

Three crew members on the International Space Station (ISS) are set to depart the orbital outpost on Saturday, October 29. Expedition 49 Commander Anatoly Ivanishin and Flight Engineers Kate Rubins, KG5FYJ, and Takuya Onishi, KF5LKS, will undock their *Soyuz* spacecraft at 1237 UTC on Saturday and land in Kazakhstan at 0359 UTC on Sunday.

Their return will wrap up 115 days in space for the crew since their July launch. Together, the Expedition 49 crew members pursued hundreds of experiments in biology, biotechnology, physical science, and Earth science aboard the orbiting laboratory.

Once the *Soyuz* undocks, Expedition 50 will begin aboard the ISS under the command of NASA astronaut Shane Kimbrough, KE5HOD. He and his crewmates Sergey Ryzhikov and Andrey Borisenko will operate the station for 3 weeks until the arrival the next crew increment — Peggy Whitson, KC5ZTD; Thomas Pesquet, KG5FYG, and Oleg Novitsky are scheduled to launch in November from Kazakhstan.



WACOM 2016 HAMFEST

Washington Amateur Communications Inc.

SUNDAY, NOVEMBER 6th 2016

WASHINGTON COUNTY FAIRGROUNDS

2151 North Main St.

WASHINGTON, PA 15301

8:00 A.M –3:00 P.M—Admission \$5.00

Doors open early for **VENDOR SETUP** Saturday Nov5th 6:30 p.m.

Talk in on 146.790 City-147.285 East-147.390 North-145.250 West -147.315 South- All PI-131.8

MAJOR VENDORS

Over 250 tables

KJI ELECTRONICS- -QUICKSILVER RADIO-YAESU FACTORY DISPLAY

MAIN PRIZES

- 1ST YAESU FT-DX1200 1.8 - 54 MHz HF + 6m Multi Mode Transceiver**
- 2nd YAESU FT2900R/E High power 75w 145MHz FM mobile**
- 3rd YAESU FT2900R/E High power 75w 145MHz FM mobile**
- 4th YAESU FTM-3100R 144Mhz 65W FM Mobile Transceiver**

BLACK BOX PRIZE'S ONLY 50 TICKETS Sold

MAIN DRAWING AT 1:00 P.M. NEED NOT BE PRESENT TO WIN

CONTACT FOR HAMFEST TABLES **N3TIR** bud@n3tir.com **724-350-6745**

Vendor Forms located at www.wacomarc.org under Hamfest tab

We will sell out ALL TABLE SPACE PLEASE CALL EARLY

6Ft TABLES SUPPLIED, cost \$12.00 ea. - Discount reserve more than (4) \$10.00ea.

ADMISSION not INCLUDED ON TABLES rentals

VE TESTING TIME 8:00am

BREAKFAST AND LUNCH WILL BE AVAILABLE

DOOR PRIZES--YL PRIZE--DX CARD CHECKER

THE MEADOWS CASINO & Tanger Outlets less than 2 miles

Send all vendor payments to address below for tables

Please include vendor form and make checks payable to

WACOM c/o Norma Plants N3YJJ

236 Chambers Ridge Road West Alexander, Pa 15376



WASHfest 2017

The South Hills Hamfest — Now in our **TWENTY SECOND** big year!

Sponsored by the WIRELESS ASSOCIATION OF SOUTH HILLS AMATEUR RADIO CLUB, INC.

Sunday, February 26th, 2017

8:00 AM until 3:00 PM Rain or Shine (or Snow!)

Home Economics Building, South Park

3735 Buffalo Drive, South Park Township, PA 15129

Talk-In on 146.955(-) and 443.650(+) 131.8 PL

Donation \$5



(800) 545-8881

Breakfast & Lunch will be available!



FREE Coffee for the entire Hamfest courtesy of HAM RADIO INSURANCE ASSOCIATES of Canonsburg, PA

NEW LOCATION!

Due to tentatively scheduled major renovations, we regret that the Castle Shannon VFD Memorial Hall will not be available to us in 2017

NEW LOCATION!

MAIN PRIZES TBA — *You've Got to Play to WIN!*

Additional Hourly Door Prizes! Special Black Box Prize (Separate Drawing)!

Main Prize tickets are \$2.00 each, 3 for \$5.00, 7 for \$10, 15 for \$20

All Prizes Subject to last-minute changes

For Table Reservations, or More Information, Please Contact:

Carol Danko KB3GMN at (412) 884-1466 n3sbf@comcast.net

E-mail us directly at washarc@yahoo.com Check out our website too! www.n3sh.org

Please Note: Early Table Reservations must be paid in full on or before January 31st, 2017. Reservations received after February 1st, 2017 must include payment in full. Reserve now... we have sold out in advance seven years running!

Hamfest Table Reservation Form—Please PRINT LEGIBLY ALL INFORMATION

Name: _____ Email: _____

Address: _____ Phone: () _____ - _____

City: _____ State: _____ Zip: _____

Call Sign: _____

Tables WITH Electricity: _____ X \$15.00 = _____

Tables WITHOUT Electricity: _____ X \$12.00 = _____

5 Or More Tables w/o: _____ X \$10.00 = _____

Please make all checks payable to:
WIRELESS ASSOCIATION OF SOUTH HILLS
PLEASE MAIL RESERVATION TO:
WASHFEST 2017
c/o CAROL DANKO KB3GMN
4246 Seton Drive
Pittsburgh, PA 15227-1244

We reserve the right to resell any tables not occupied by 8 AM, unless prior arrangements have been made!



WASHINGTON AMATEUR COMMUNICATIONS



2017

MEMBER INFORMATION AND DUES RENEWAL FORM

Name: _____ Address: _____

City: _____ State: _____ Zip: _____

Home Phone: _____ Business Phone: _____

Other Phone: E-Mail: _____

Amateur Call: _____ License Class : _____

Spouse: _____ Spouse Call: _____

Spouse License Class: _____

In case of emergency, for what bands do you have equipment?

What are your favorite amateur activities?

What activities would you like to see WACOM sponsor?

ARRL Member? Y N

Please return completed form and dues to:

WACOM c/o Norma Plants 236 chambers Ridge Road, West Alexander PA 15376

E- mail n3yjj@arrl.net

Dues: Individual \$20 per year, Additional Family Members \$10 each