NEW MEMBERS

We're very pleased to welcome our latest members: Yoshi, JO1FHM #21289 and Shin, JR2AWS #21735.

SW-3B A SMALL THREE-BAND TRANSCEIVER FOR CAMPING - #15150, JS1QIZ, TAK

I purchased a small QRP 3-band CW-only transceiver from Venus Information Technology, China. I saw the radio on YouTube and thought it would be perfect for backpack camping. Although I had to wait two months to get it licensed with my callsign, the radio proved to be a good buddy in the camp.

The size of the radio (excluding connectors and knobs) is 7.2 cm × 10.5 cm × 2.5 cm (D, W, H), 177 g. It requires a 12 V power source (mobile battery is enough), a paddle, earphone, and an antenna, altogether, a weight of a kilo or less. It has a built-in electric keyer, semi-break-in function, and frequency display with signal strength indicator, just enough for making contacts and chats, if you want.

The audio quality is just enough for copying morse code, meaning not Hi-fi. However, the power consumption is extremely low. A 20000 mAh Li-ion battery can run the radio for days without compromising its 5W output power. The heat dissipation is excellent, and I can barely feel the radio get warm.

Since rain was expected in the camp in which I used the radio for the first time, I made a small switch to activate my waterproof ATU, AH750, from SW-3B. In the rain, the 8 m wire and 5 m × 5 ground wires connected to the ATU enabled me to have QSO all over Japan and the Philippines on 20, 30, and 40 mtrs with 5 W power output from a campsite beside the Arakawa River. The setup worked well, so I kept using the same antenna after the first trial.

So far, I have had more than 150 QSOs in four overnight camps using SW-3B and AH705, including some chats of 30min or more. It is so nice that you add one kilo to the backpack and share the pleasant atmosphere of the camp with your friends hundreds of kilometers away.

73 and 72, JS1QIZ
VLOGs of the camp with SW-3B: https://youtu.be/pTUrKVv4eHQ , https://youtu.be/RU26cWaOTek , https://youtu.be/uRblLurKQ0s , https://youtu.be/wiD6Jf-EPcs (last two with English Subtitle)

T8 (PLAU) DX VACATRION – MASUMI, JA3AVO, #15029

Our group will active in Palau at the end of January. It's been three years. However, due to UA's flight reduction, the second half of our schedule overlapped with 3Y0J's schedule. Hi

[Flight]
2023. 1. 22 (Sun.) KIX > ROR
2023. 2. 1 (Wed.) ROR > KIX

[Web site]
http://bccweb.bai.ne.jp/~asg99501/t8_2022.htm

[Operator]
(1) T88MB/ Masumi Nakade
(2) T88DN/ Shozo Nishimura
(3) T88ED/ Jusei Kitai
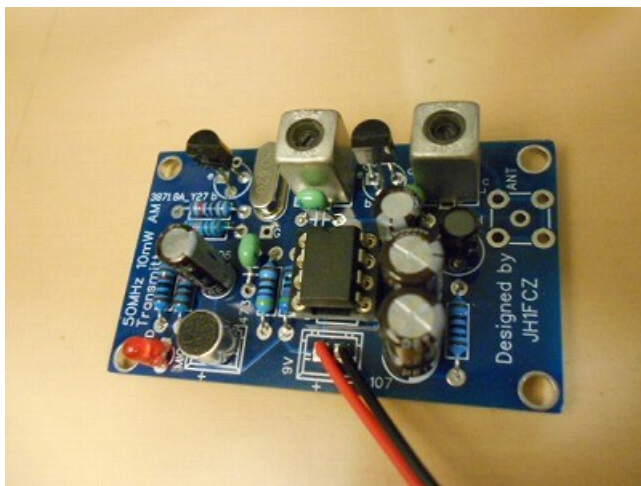(4) T88DK/ Kunio Miyagawa
(5) T88EF/ Tatsuo Ohkushi
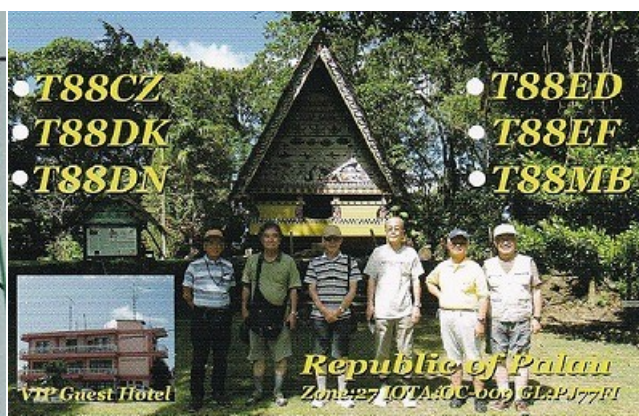
6-M AM TRANSMITTER - SUGI, JK7UST, #7178

When I was a high school student, I failed to build a 6-m AM transceiver. I knew the other day that the transceiver becomes in a separate transmitter and receiver kit. I bought a kit and completed the transmitter. I will make receiver. I would be happy if I could communicate this summer.

MY NEW ANTENNA PROJECT (QUOTE FROM QRZ.COM)
MANABU, JE1RZR, #15020

Actually I took all antennas down in May 2022 due to some trouble on 20-m YAGI. I realized the importance of safety indeed. Then I consulted a professional team about what kind of measure I should take and decided to put a PV rope inside of every aluminum pipe so that pipe would not fall down on the ground even if they were apart. Also I replaced pipes and tightened all tapping screws. I managed to install a new 5-ele YAGI by myself in mid of October 2022. The design of the new antenna is the same as the previous W1JR type. The parameters show almost the same as simulation software. No adjustment needed. Amazing!

AN INTRODUCTION TO COMPUTER AIDED TRANSCEIVER – NAO, JO3HPM, #15008

This is a story of a happy man who created his own graphical user interface software (GUI) to control his radio. If you are dissatisfied with the usability or functionality of your radio, this story may be of interest to you. The same goes for if you feel commercially available software is hard to use.

Using my radio as an example, I will show the process of installing a driver, connecting to a PC, testing the connection, installing python and libraries, and creating a GUI to select an operation band. I will also show a GUI of sending/receiving arbitrary control commands and a GUI of the QRM rejection functions. And finally, I will introduce my main GUI I use all the time.

The YAESU FTDX10 came on my desk as shown in Figure 1. I chose this radio because it has a narrow-band roofing filter, a spectrum scope, and is compact. I am basically satisfied with its performance. However, it is compact, so the front panel is narrower and has fewer keys and knobs. As a result, the usability is not so good.

For example, to select an operation band, I must press the [BAND] key on the front panel first. This [BAND] key is located in a narrow gap of only 15 mm between the [FUNC] knob and the MPVD (Multi Purpose VFO outer Dial) ring. So it is difficult to press. Next, I must touch the desired band in the selection menu appears on the display in 5 seconds. I am not allowed to operate slowly. A mouse can be connected to this radio. I can touch the desired band in the menu using the mouse. But it is not

Figure 1

possible to display the band selection menu by the mouse. Why can't I select an operation band using only the mouse? Why does the menu close automatically? Some of YAESU's ergonomic concept seems impressive for me. The motivation to create my GUI is to resolve these complaints.

YAESU provides a system to control the radio via serial communication from a PC. YAESU names it CAT (Computer Aided Transceiver) system. The manuals I need to create GUI are the "CAT Operation Reference Manual" and "Virtual COM Port Driver Installation Manual." I downloaded these manuals from the YAESU website. I read the manuals carefully and installed the drivers on my Windows PC. Next, I connected the radio and the PC with a USB cable (A-B). Then, I opened the device manager of Windows and checked the COM port number of "Enhances COM Port." In my case, it was COM4.

I tested the serial connection with a terminal emulator Tera Term. Before the test, it was necessary to set CAT TIMEOUT TIMER to 3000 msec and CAT RTS to OFF from the [OPERATION SETTING] – [GENERAL] menu of the radio. Serial communication parameters such as "baud rate" were set referring to the "CAT operation reference manual." If "?;" is displayed on the terminal, the connection is probably established. To set the operation band to 15 m, try typing "BS07;" and if the band display changes, it is a success. Next, let's read the current VFO-A frequency. Type "FA;" and if the terminal displays "FA014058000;" or something, it is also a success. In the following, I will create GUI to send and receive these commands.

First, I set up the programming environment. I decided to use the python tkinter. The tkinter is a toolkit for building GUI in Python. Both python and tkinter are easy to learn. There are many introduction on the Internet. To build a python environment, I installed Anaconda on my PC. Anaconda is a distribution that installs python and frequently used libraries such as Jupyter in one package. If you search for "install Anaconda," you will find a lot of instructions. Next, I installed pySerial for serial communication in python. On the Anaconda prompt, type "conda install pyserial."

Now let's start programming. Using Jupyter Notebook makes development easy. You can find a lot of information of Jupyter Notebook on the Internet.

As a first example, I will show the GUI to select operation band in Figure 2. After coding a python program with only 21 lines shown in Figure 3, my first goal was achieved. Don't you feel like you can do it too?

Figure 2

```python
import tkinter as tk
from tkinter import ttk
import serial

def write_serial(cmd):
    data = cmd + ';'
    ser.write(bytes(data.encode()))

ser = serial.Serial('COM4', 38400, stopbits = 2, timeout = 0.1)
root = tk.Tk()
root.title('Operating Band Selection')
dict_bs = ['1.9':'00', '3.5':'01', '07':'03', '10':'04', '14':'05',
           '18':'06', '21':'07', '24':'08', '28':'09', '50':'10']
var_bs = tk.IntVar()

for i, item in enumerate(list(dict_bs.keys())):
    rb = ttk.Radiobutton(root, text = item, value = i, variable = var_bs,
                         command = lambda:write_serial('BS' + list(dict_bs.values())[var_bs.get()]))
    rb.pack(side = 'left', padx = 2, pady = 10)

root.mainloop()
ser.close()
```

Figure 3

As a second example, Figure 4 shows the GUI to set/read an arbitrary CAT command. The previous band selection GUI was only for Set function, but this one has Read function as well. I tested various commands by referring to the "CAT Operation Reference Manual."
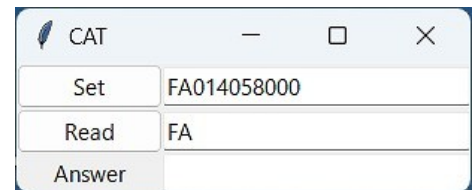

Figure 4

As a third example, the GUI with a collection of QRM rejection functions of the radio is shown in Figure 5. It has many QRM rejection functions, but some parameters are deep in the menu and difficult to adjust effectively. In this GUI, turning on/off and adjusting parameters can be performed only by operating the scroll wheel of the mouse. Note that the Ttk (Themed Tk) widget must be used in the program to enable the mouse scroll wheel.
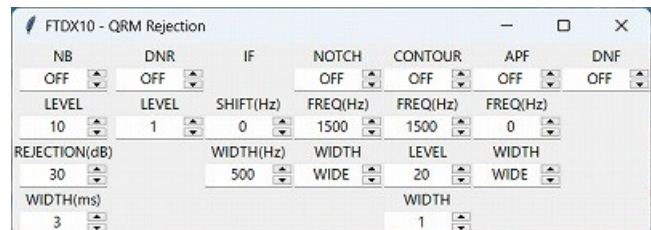

Figure 5

Finally, the GUI I usually use is shown in Figure 6. Only the items that I mainly use are collected here. I also added some features that don't implemented in the radio. For example, when IF width is changed, the roofing filter is also changed in conjunction with the IF width. Also, when CLAR RX turn on and ZERO-IN is performed, only the receive frequency is adjusted. Since I started using this GUI, the only part I touch is the Main dial knob to set the operation frequency. After all, the Main dial knob is better than the mouse scroll wheel. :-)

Figure 6

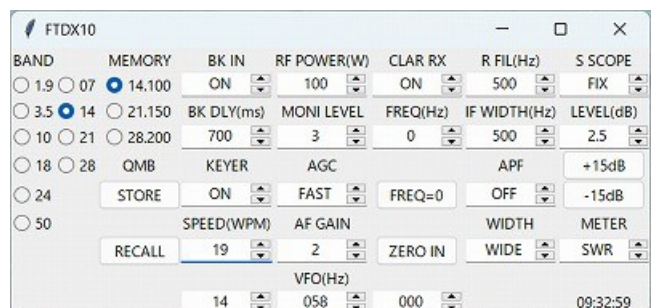I note how to start the GUI. Once the source code has been debugged and completed, save it in a text file with the py or pyw file extension. Then associate py file extension with python.exe or pyw with pythonw.exe in the anaconda folder. The python.exe opens a console, but pythonw.exe does not open it. If you place your GUI source on the desktop of the PC, you can launch it simply by double clicking the GUI icon.

A home-made GUI may be inferior to a commercially available software. Nevertheless, it is easy to use because only the functions I need are selected. And new functions can be added through programming. I am looking forward to meeting with you with my computer aided transceiver.

SUMMARY OF FEA NET IN 2022 - NAO, JO3HPM, #15008

FEA Net, which began in December 2004, celebrates its 18th anniversary in last December. In Japan, the age of adulthood was lowered from 20 to 18 last April. Babies born in 2004 are already adults. The years go by so fast.

Thank you for your participation in the FEA net in 2022. Hiro JJ1FXF was the most involved in the net. He is passionate about CW QSO outside of the net as well. Among the JA, Atsu JE1TRV also JS2AHG increased its participation. Old member, Hide JE3ECD also joined us again. Taku JG1UQD, who joined FEA in May, also did well. From VK, Roy VK6RR and Manny VK3DRQ participated enthusiastically. What was a little disappointing was the lack of participation from outside JA in Part 2. We hope that members from all over the world will participate in Part 2 this year.

You can see all results at http://www.feacw.net/qrv/FEA_Net_Result.html. We always welcome you, even if you are not an FEA member. See you at the FEA net!

Summary table in 2022.

	Part 1 (7 MHz)	Part 2 (14 MHz)
Total number of nets	52	52
Average participants per net (including controllers)	8.0	5.1
Number of actual participants (including controllers)	27	21
The day with most participants	11 stations (29 Jan.)	9 stations (6 Feb.)
Number of nets with no participants	0	0
The persons who participated most (excluding controllers)	JJ1FXF (49 times)	JE1RZR (31 times)
The day with most countries	none	16 Oct., 3 countries
Countries	JA	BV, JA, VK

Participants list excluding controllers.

CALL	PART 1+2	PART 1	PART 2
JJ1FXF	79	49	30
JE1RZR	69	38	31
JO3HPM	67	44	23
7J1ATG+VK4BGR	59	24	35
JL1GEL	57	43	14
JE1TRV+JS2AHG	49	37	12
JA4IIJ	40	34	6
JS1QIZ	32	31	1
JK7UST	29	21	8
VK6RR	28	0	28
VK3DRQ	16	0	16
JE3ECD	8	8	0
JG1UQD	7	7	0
JG1BGT	4	4	0
JI2GZC	3	3	0
JM4AOA	3	3	0
JJ1TTG	2	2	0
JQ3PPC	2	2	0
JR1WYW	2	2	0
JR7OEF	2	2	0
VK5GG	2	0	2
JA3SYK	1	1	0
JA7IKQ	1	1	0
JE0ERZ	1	1	0
JE1LGY	1	1	0
JE2OUK	1	1	0
JF1DFA	1	1	0
JH2HTQ	1	1	0
JH4TXW	1	1	0
JI1CJJ	1	1	0
BX8AAD	1	0	1
JF3KNW	1	0	1
JJ1VNV/6	1	0	1
VK3TX	1	0	1
VK4HQ	1	0	1
VK4TJ	1	0	1
VK6BAP	1	0	1
VK6LIN	1	0	1

No.	Date (Y/M/D)	Time (UTC)	Freq. (MHz)	Controller	Participants
940-2	2022/12/25	0800-0822	14.054	JL1GEL	JE1RZR, 7J1ATG/2, JO3HPM
940-1	2022/12/24	2300-0015	7.026	JA4IIJ	JS1QIZ, JK7UST, 7J1ATG/2, JE1RZR, JL1GEL, JO3HPM, JS2AHG, JJ1FXF
939-2	2022/12/18	0800-0835	14.054	JE1RZR	VK6RR, JO3HPM, JJ1FXF, 7J1ATG/2
939-1	2022/12/17	2300-0005	7.026	JE7YTQ	JL1GEL, JM4AOA, JE1RZR, 7J1ATG/2, JO3HPM, JA4IIJ, JS1QIZ, JJ1FXF
938-2	2022/12/11	0800-0840	14.054	JO3HPM	JK7UST, JE1RZR, 7J1ATG/2, VK6RR, JS2AHG, JJ1FXF
938-1	2022/12/10	2300-0018	7.0255	JL1GEL	JA4IIJ, JJ1FXF, JS2AHG, 7J1ATG/2, JE1RZR, JM4AOA, JO3HPM, JS1QIZ
937-2	2022/12/4	0800-0840	14.054	JE7YTQ	JE1RZR, 7J1ATG/2, JJ1FXF, VK5GG
937-1	2022/12/3	2300-0006	7.026	JS1QIZ	JK7UST, JE1RZR, JO3HPM, 7J1ATG/2, JJ1FXF, JA4IIJ, JL1GEL, JS2AHG
936-2	2022/11/27	0800-0816	14.0555	JL1GEL	JE1RZR, VK6RR
936-1	2022/11/26	2300-2352	7.026	JA4IIJ	JS1QIZ, JL1GEL, JJ1FXF, JO3HPM
935-2	2022/11/20	0800-0840	14.054	JE1RZR	VK4BGR, JO3HPM, VK4HQ, VK5GG
935-1	2022/11/19	2300-2350	7.026	JE1RZR	JS1QIZ, JE1TRV, JK7UST, JO3HPM, JJ1FXF, JA4IIJ, JM4AOA
934-2	2022/11/13	0800-0827	14.054	JO3HPM	VK6RR, JE1RZR
934-1	2022/11/12	2300-2340	7.0265	JS1QIZ	JA4IIJ, JE1TRV, JE1RZR, JK7UST, JO3HPM, JJ1FXF
933-2	2022/11/6	0800-0838	14.054	JE7YTQ	VK6RR, JO3HPM, JE1RZR, JA4IIJ, JJ1FXF
933-1	2022/11/5	2300-2352	7.026	JA4IIJ	JS1QIZ, JK7UST, JE1RZR, JL1GEL, JO3HPM, JJ1FXF
932-2	2022/10/30	0800-0823	14.054	JL1GEL	JE1RZR, JO3HPM, 7J1ATG/2, VK6RR
932-1	2022/10/29	2300-2345	7.026	JL3YMV	JL1GEL, JA4IIJ, JS1QIZ/1, JE1RZR, JJ1FXF, JE1TRV, JR7OEF
931-2	2022/10/23	0800-0840	14.054	JE1RZR	VK6RR, 7J1ATG/2, JO3HPM, JL1GEL, VK3TX, JS2AHG
931-1	2022/10/22	2300-2346	7.0265	JS1QIZ	JS2AHG, 7J1ATG/2, JE1RZR, JL1GEL, JA4IIJ, JO3HPM
930-2	2022/10/16	0800-0841	14.0535	JO3HPM	JE1RZR, BX8AAD, 7J1ATG/2, JJ1FXF, VK6RR, JL1GEL
930-1	2022/10/15	2300-2354	7.026	JE1RZR	JS1QIZ, JE1TRV, JA4IIJ, 7J1ATG/2, JL1GEL, JJ1FXF, JO3HPM
929-2	2022/10/9	0800-0844	14.045	JE7YTQ	JE1RZR, 7J1ATG/2, JJ1FXF, JO3HPM, JA4IIJ
929-1	2022/10/8	2300-2356	7.0075	JA4IIJ	JA3SYK, JO3HPM, JJ1FXF, 7J1ATG/2, JS2AHG
928-2	2022/10/2	0800-0837	14.054	JE7YTQ	7J1ATG/2, JE1RZR, JS2AHG, JJ1FXF
928-1	2022/10/1	2300-2344	7.026	JS1QIZ	JE1RZR, 7J1ATG/2, JL1GEL, JS2AHG, JJ1FXF, JA4IIJ

FINALE

Recently, some oscilloscopes have large touch panel screens, such as 15.6-inches. As a result, the height of the front panel of such oscilloscopes has become longer than their depth. I expect that the design of transceivers for us will be like that in the near future. Speaking of design, have you ever heard of the word WAF? WAF stands for wife acceptance factor. One dictionary explains it as "(informal) An assessment of the visual design elements of a consumer product (e.g. a home music system)." The WAF article of Wikipedia has an interesting story. The radio receiver become popular about 95 years ago. The reason is that women were influenced to buy radios because they were beautifully designed to look good in their living rooms. If a stylish transceiver like the iMac go on sale, will your wife place it in the living room? I pray for a peaceful world this year. 73/88 and stay sober de Nao.