An AA2MF APPICATION

# YAESU FT-991/991A SETUP - SINGLE USB CABLE
# RTTY FSK with N1MM & MMTTY
# FT-8 FT-4 WITH WSJT-X
# CW Decoding with Fldigi
# PSK with N1MM+ Digital Interface Sound Card (MMVARI)

All other Menu Settings should be set to default
YAESU 991/991A new MENU SETTINGS

| | | |
|---|---|---|
| 031 | CAT RATE | 38400 |
| 032 | CAT TOT | 1000 |
| 033 | CAT RTS | DISABLE |
| 060 | PC KEYING | DTR |
| 062 | DATA MODE | OTHERS |
| 066 | DATA LCUT FREQ | 0FF |
| 071 | DATA PTT SELECT | RTS |
| 072 | DATA PORT SELECT | USB |
| 096 | RTTY SHIFT PORT | DTR |
| 108 | SSB PTT SELECT | RTS |
| 109 | SSB PORT SELECT | USB |
| 116 | SCP START CYCLE | OFF |

YAESU Virtual Drivers

Find COMPUTER Virtual com port drivers at: YAESU.COM
FT-991A-YAESU FILES

OPEN AND FIRST READ FT-991A/SCU-17 USB DRIVER INSTALLATION MANUAL (415.69KB)
Make note of file needed to be down loaded for Windows 10 operating system

DOWN LOAD FT-991A/SCU-17 USB DRIVER (VIRTUAL COM PORT DRIVER) (3.74 MB) find correct program, follow installation instructions

Connect your computer and FT-991/991A with a USB cable then turn both computer and transceiver on.

Go to the computer Device Manager to find the virtual Com Port numbers. You will see two new Com Ports, a STANDARD and an ENHANCED. Write the Com Port numbers down for further use.

N1MM+
Click on CONFIGURE located on the entry box window. A new screen will appear, click on “Configure Ports, Mode Control, Winkey, etc…”
The Configure window will appear.
You should now be in the HARDWARE window.
Within the first entry row will be listed, Port, Radio,
Digi, CW/Other, Details.

ENTER:
PORT - PUT ENHANCED COM PORT NUMBER
RADIO - FT-991A
DIGI Box - NO ENTRY
CW/OTHER - NO ENTRY

DETAILS - click on the SET box.
A new window will appear.
At the top of the box there will be the ENHANCED COM PORT NUMBER you just entered.
ENTER:
SPEED 38400
PARITY N
DATABITS 8
STOPBITS 2
DTR(pin 4) Always Off
RTS(pin 7) Always Off
Radio Nr 1
No other Boxes checked.
NOTE These settings are different from the “suggested YAESU settings”
Click OK

On the Second row
Enter:
PORT - PUT STANDARD COM PORT NUMBER
RADIO - NONE
DIGI - Check Box
CW/OTHER - Check Box

DETAILS - click on the SET box.
A new box will appear.
At the top of the box will be the STANDARD COM PORT NUMBER you just entered.

DTR (Pin4) - CW
RTS (Pin7) - PTT
VFO NR 1
PTT Delay 30
Dig Wind NR 1
No other boxes checked

Click OK

Click on the DIGITAL MODES TAB

Digital Interface 1-TU TYPE - Soundcard
DI-1 MMTTY Setup - MMTTY MODE - FSK
MMTTY PATH - set path to MMTTY
C:/HAM/MMTTY/MMTTY.exe ?

DI-1 MMVARI SETUP - MMVARI RTTY MODE - FSK
FSK PORT - EXTFSK

DO NOT CLICK OK

Click on MODE CONTROL TAB
Mode recorded in log - use radio mode (default)

MODE SENT TO RADIO

| MODE | RADIO1/VFO-A |
|---|---|
| RTTY | RTTY |
| DIGI | USB |

DO NOT CLICK OK

Click on AUDIO TAB

1-only use radio 1 output device, output on both channels

Radio 1 OUTPUT Device - SPEAKERS (USB Audio CODEC )
DO NOT CLICK OK

Click on WSJT/JTDX Setup TAB

WSJT-X and JTDX UDP SETTINGS
Check Enable Box (RADIO #1)

JTDX/Others TCP Settings
Check on Enable Box (RADIO #1)

Path to WSJT/JTDX
WSJT/JTDX Path used for SO1V, SO2V mode and Radio1 in SO2R
C:\WSJT\wsjtx\bin\wsjtx.exe ?? Select Location

Auto Load the WSJT Decode List Window when WSJT-X/JTDX Loads.
Check Radio #1  Enable box

CLICK OK

MMTTY

Signal levels seen in the RTTY Engine are determined by the computer AUDIO OUTPUT

RTTY Engine Window - OPTIONS – SETUP (O)…

Click on TX TAB
PTT&FSK - EXTFSK64

RADIO COMMAND

| | |
|---|---|
| PORT | NONE |
| BAUD | 38400 |
| CHAR WAIT | 0 |
| DATA LENGTH | 8 Bits |

| | |
|---|---|
| STOP | 2 Bits |
| PARITY | None |
| Flow Control | NO Boxes Checked |
| DTR/RTS | BOX Not Checked |
| Commands | Program Default |
| FREQUENCY OFFSET | Off |
| Polling Interval | 1 sec |
| GROUP WINDOW Find | YAESU 991 from list. |

DO NOT SAVE
CLICK on OK

MISC TAB
TX PORT COM-TXD (FSK)

SOUND CARD TAB
Reception Microphone (USB Audio CODEC)
Transmission Speakers (USB Audio CODEC)

Running MMTTY a box called EXT FSK 2.0e will appear
Do NOT CLOSE THIS BOX it must be visible

EXTFSK 2.0e Box settings.
Port STANDARD COM NUMBER
FSK OUTPUT DTR
PTT OUTPUT RTS
*States OK should be seen. If turns RED check COM PORT NUMBER

Changing mode from RTTY to CW and then back to RTTY causes the loss of the EXTFSK COM PORT. Closing N1MM and restarting the program reactivates the COM PORT and RTTY function.
Changing mode from RTTY to SSB and then back to RTTY does not seem to cause com port loss.

WSJT-X

Click on File
Click on Settings

GENERAL TAB
Insert your information

DISPLAY
Check on “Blank line between decoding periods”
Check on “Display distance in miles”
Check on “TX Messages to Rx frequency window”
Check on “Show DXCC, grid, and worked before status”

BEHAVIOR
Check on “Double-click on call sets TX enable”
Check on “Disable TX after sending 73”
Check on “Allow TX frequency changes while transmitting”

RADIO TAB
At first check on FT-991 Radio setting. This will be changed to “DX Lab Suite Commander” after needed information is entered.

CAT CONTROL
PORT - PUT ENHANCED COM PORT NUMBER

SERIAL PORT PARAMETERS
Baud Rate 38400

Data Bits Check EIGHT Box
Stop Bits Check TWO Box
Handshake Check HARDWARE Box

NOW CHANGE RIG TO “DX Lab Suite Commander”
Screen will change graying out information and removing com port entry box. This is normal.

PTT METHOD
PORT - PUT STANDARD COM PORT NUMBER
To do this you may need to have the RTS or DTR box checked. Once you enter this com port information check the CAT BOX
The PORT window will gray out.
This is normal.

TRANSMIT AUDIO SOURCE
Should be grayed out with Front/Mic selected

MODE Check USB Box

SPLIT OPERATION Check Fake it Box

AUDIO TAB
SOUND CARD program Default Devices - MONO

REPORTING TAB
Logging Check “Prompt me to log QSO”

ADVANCED TAB
Special operation activity box will be checked for contests listed. For ARRL Field Day your report information will be placed in that window. Example: 1D WCF

CHECK ON OK

WSZT-X/JTDX program is listed in the Windows Tab of N1MM. To run click on “LOAD WSJT/JTDX”. Your QSO’s will be stored in the N1MM log.

DO NOT CLOSE or Check “N1MM-WSJT Radio Connection-1” window

To adjust the vertical receive level bar graph to maintain a green color by setting the microphone input level within the computer. My setting 50. Transmit output audio level is monitored by viewing the radio ALC Meter. This is adjusted with the radio’s DT GAIN adjustment.

Fldigii PROGRAM
Fldigi is being used only as a CW READER. The program does not control the radio in any way.

Setup and RUNNING this program within N1MM:
With N1MM in the CW Mode.
Within N1MM Click on WINDOWS TAB
Click on CW READER
A CW Reader 1 window will appear.

CW ENGINE TO USE
Check BOX Fldigi to ENABLE
Align Frequency 600
For alignment treat CW as  Check USB Box
Path to Fldigi window BROWSE
C:\Program Files (x86)\Fldigi-4.14\fldigi.exe ??

CLICK ON SAVE

CW DECODING with Fldigi

Run Fldigi by clicking on CW Reader in the N1MM WINDOW TAB.
The RADIO and N1MM+ software must be in the CW mode.

Within the Waterfall window click on OP MODE then click on CW as the mode. Do this as other modes are available.

Click on Configure Tab in Waterfall window.
Then Config Dialog. A new window will appear  Fldigi configuration.
From the configure list select SOUND CARD then DEVICES

Check PortAudio Box
Within the capture entry window list select your audio input devise.
“Microphone (USB Audio CODEC)” ??

Within the Playback entry window list select your audio output devise.
“”Speakers (USB Audio CODEC)” ??

Click on SAVE to save this description

Click on CLOSE to close this window.

At the base of the waterfall window you will see a small entry window, by placing your mouse over it a message “Adjust cursor frequency”.
Change this number to 600.

USING Fldigi as a CW code Reader

As CW signals are heard on the radio the waterfall will display vertical lines. By tuning your radios receive frequency to place a selected vertical line in the center of the RED BOX' now centered at 600Hz as the monitor frequency, the CW will be decoded and written as text onto the large CW Reader 1 screen. Adjusting your radio so that this vertical line is in the center of the RED BOX also puts your transmit frequency directly on the stations receiving frequency. When you do transmit you will be correctly on frequency. This is important as the station your trying to work may be using a narrow receiving filter and will not hear you if you transmit outside his bandpass. Receive filters can be as narrow as 125 Hz which makes it critical for you to be on the correct transmitting frequency.

PSK with DIGITAL INTERFACE SOUND CARD (MMVARI)

MMVARI is implemented by choosing the PSK mode located in the N1MM+ logging window. The MMVARI screen will appear with the waterfall screen to capture the PSK signals. If PSK operation in not seen then click on INTERFACE > MMVARI and the screen should change for PSK signal decoding.

Software used in this application:

N1MM+
https://n1mmwp.hamdocs.com/

MMTTY
https://hamsoft.ca/pages/mmtty.php

WSJT-X
https://physics.princeton.edu/pulsar/K1JT/wsjtx.html

FLDIGI
https://sourceforge.net/projects/fldigi/

DIMENTION4
http://www.thinkman.com/dimension4/