EMO-YARA Radio Room Mini-Manual

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Introduction

1. In the drawer of the workspace there is user log-in sheet. Everyone using the YARA equipment in the EMO radio room should sign in.

2. This mini manual provides a short overview of the YARA radio setup in the EMO radio room. It does not provide comprehensive instructions on how everything works. There are some short notes and operating manuals for the radios and the linear amplifier. There are no instructions on the several logging programs or digital programs such as Winlink, WSJT-X, and Fldigi. Users can become familiar with the equipment and software by reading the manuals in the radio room, or on the computers, or down-loading and studying at home, or organizing a technical presentation on a specific topic.

3. There are dozens of manuals, user guides and videos on the computers. This mini manual contains a sample of what is on the computers.

4. In the EMO radio room YARA has one HF radio (Kenwood TS-590G), 3 VHF-UHF radios (Kenwood TM-D710, ID-5100, ID-1), and a 600wt linear amplifier (Ameritron ALS-600). In the comms trailer there are similar radios and a Yeasu FT-891 and DigiRig sound card.

5. YARA has 6 working computers: Five Toughbooks that VY1CO donated a couple of years ago and an old tower PC at EMO that Ron McFadyen (SK) donated.

6. All computers have identical software so a person using one in EMO would be familiar using one in MCU or in the Firehall.

7. There are two Toughbooks at EMO and two in MCU - one is the main operating computer, and the other is a backup in case the main one fails while operating in an event or in a comms activity

8. The apps on all the computers were updated October 2026 and several logging programs added - some used by different YARA members at their home locations. Many apps are frequently updated so there may be notices that some of the software may be needed to be updated.

9. For members who use Linux, there is a new Linux Mint USB dongle attached with a cord to the main laptops. It contains the apps from 73 Linux by KM4ACK as well as others. It is started by inserting the UBS stick into a USB port and turning on the computer. It is slow to load, but fast once running. In the menu there is a folder for many radio applications including: Pat Winlink, Fldigi, WSJTX (FT8), JS8Call, CHIRP, and others.

10. Winlink & WSJTX have been tested and work at EMO and are set up to operate in MCU with VY1MCU. The configuration file for other callsigns may be set up by the user.

11. If a member is interested in helping with computer maintenance or taking on this project, drop me a note.

12. The MCU comms trailer and equipment is checked and kept in a state of readiness under coordination of a volunteer, Terry VY1MAP. The last person to do this in the EMO radio room was Terry Maher. Others help in the EMO radio room from time to time. If a YARA member is interested taking on the lead for co-ordinating the EMO radio room readiness, please contact the YARA president.

George VY1GP

November 12, 2026

Overview

1. In the EMO radio room YARA has one HF radio (Kenwood TS-590G), 3 VHF-UHF radios (Kenwood TM-D710, ID-5100, ID-1), and a 600wt linear amplifier (Ameritron ALS-600).
2. The ID-1 is a DSTAR transceiver that operates on 1240.000-1300.00 MHz. It is capable of FM, Digital Voice, and Data. It turns on but is not currently functional because it the repeater on Haeckel has no internet connection.
3. The ID-5100 is capable of VHF/UHF voice, and DSTAR digital. It was checked on 146.880 and 146.940 and works.
4. The TM-D710 is capable of VHF/UHF voice and APRS. It was checked on 146.880 and 146.940 and works. APRS was not checked.
5. The TS-590GS (HF) is capable of voice, CW, and digital. It has a built-in tuner and sound card. It connects to computers with a USB printer style cable. There are two cables – a short one to connect to the laptop and a longer one to connect to the tower computer. They are normally kept in the drawer.
6. The Yeasu FT-891 in MCU comms trailer is capable of voice, CW and digital. When using digital it requires an external sound card and cables like a DigiRig. It has no internal tuner.
7. Microphones: all radios have hand mics. There is also a hands-free microphone on a boom with a foot pedal push-to-talk switch for the TS-590GS. This enables handsfree operation to enable the operator to take notes or operate a logging program. For operators who prefer to use a hand mic there is one available in the drawer or on the top shelf behind the closed doors.
8. The tower computer operating system is Windows 7. It is slow to boot up, but once running, it is fast enough for all radio apps and connections to the radios
9. The Toughbook laptops are kept in the top shelf behind the closed doors. The current operating system is Windows 10 and works well with all the apps. The battery charger for the laptops is in the top shelf.
10. The power box on the wall behind the operating station has four plugs, currently all used. If someone wants to connect the laptop charger, they can unplug the tower computer.

Antennas

1. There are HF antennas and VHF/UHF antennas connected to the radios.

2. There is 40-10 beam on the tower and a Barker and Wiliams multiband wire antenna on the roof of the building. The TS-590GS is connected to the two antennas. There is a switch for the antennas on the front panel of the radio.

3. There is direction control for the beam antenna on the shelf. It has a meter to show which direction the beam is facing. To operate the control, first press the break release, press the right or left direction, when the antenna stops moving release the break button.

4. Estimated directions of the beam:

Degrees	Target
5	Inuvik
55	Iqualuit
70	Yellowknife
75-90	Eastern Canada
100-115	Central Canada
120-130	Western Canada
145	Vancouver
155	California
175	Juneau
275	Anchorage
310	Fairbanks
330	Dawson City

5. SWR

a. The TS-590GS has a built-in tuner. The control for this is on the front panel.
b. The tuner may not be needed, depending on the antenna and frequency.
c. Pre-tuning for digital programs, such as Winlink, can done by:
    i. Selecting the frequency
    ii. Turning the power down to 5 watts
    iii. Turning the tuner on
    iv. Switching the mode to RTTY and pressing the mic momentarily
    v. Switch back to the appropriate mode eg. USB, USB data, etc

Logging Programs

1. There are several popular logging programs on the computers. None have been configured yet and this is being left for the operators who are familiar with those programs. Some may be connected to the radios to control the frequency and push to talk.

2. Some of the logging programs include guidelines on how to use them.

Digital Operations

1. All the radios in the radio room are capable of digital operations and can be connected to computers with a USB cable or USB/serial cable. These cables are generally kept in the drawer.

2. Users can connect to the computers as required and as noted in the radio manuals.

3. Configuration for the software will need to match the configuration of the radios for digital operation. (Com port, speed, etc.) Radio configuration is set by opening the menu and going to the submenus for the settings. They may need to be changed, depending on how the last operator configured it.

4. The TS-590GS has been tested with Winlink, and F8 both in Windows and Linux.

Linear Amplifier

1. The ALS-600 is a solid-state amplifier with no vacuum tubes to warm up.

2. It is connected to the multi-band wire antenna.

3. In most situations it will not be necessary to use a linear to transmit. Remember if a linear amp is used, and the signal is heard beyond the horizon, the transmitting station receiving the YARA transmission may not be heard here.

4. Anyone using the linear amp should read the operating manual carefully.

Readme Notes

1. There are several readme notes and guides on the computers. Some need additional information. Copies of those notes are included below:

2. EMO WIFI connection
    a. WIFI: EMO mobile unit
    b. Password: Nanook2023

3. VARA Registration
    a. VY1MCU Winlink Password: YARAWLK

b. VY1MCU VARA Registration: 5mij25elod1aw8y8

4. Omni Rig Client and Digital Apps
    a. This is app used to minimize changing the radio CAT setting on several digital program when a different radio app and different radios are used. You only need to change Omni Rig Client.
    b. Flrig can be used in the same and depends upon the digital app you are using. Some don't show Omni Rig or Flrig as an option.
    c. Omni Rig connects radio to: WSJT-X (FT8), JS8Call, VarAC Chat, and SDRConsole.
    d. It connects radio to SDRConsole to synchronize the controls of the radio with SDRConsole to work as a panadapter.
    e. This is a quick explanation of how to use these programs with the other software and radios.
    f. Start the Omni Rig Client from the shortcut.
    g. If you see the OmniRig client app has the same frequency as the radio it connected to the radio.
    h. If you see that the client is not connecting to the radio and does not have the same frequency, press the "Open Dialog" button at the top.
    i. Enter the correct information for the radio and setting: rig type, port, baud rate (same as the setting on the radio menu).
    j. If you don't know the com port, in the utilities folder, open the Device Manager and check the available com ports.
    k. Then start one of the other digital programs e.g. Winlink or SDRConsole.
5. Flrig
    a. Flrig can be used in the same way as OmniRig – to connect a radio to an app. Some apps will show Flrig or OmniRig in the listings of radios it can connect to.

6. Winlink Reminders
    a. CAT control is NOT via OmniRig, close OmniRig if it is open before starting Winlink.
    b. TS-590S menu item #63 DATA communications should be "USB", not "Acc2".
    c. Winlink is a digital program, it does not require 100 wt power.
    d. Ensure that the ATU has an SWR
    e. You can manually check SWR - turn on the ATU (AT button), change mode to FRS (CW/FRS button), press the mic button, note the SWR on the meter.

7. VarAC Chat Reminders
    a. CAT control is via Omni Rig
    b. In VarAC Chat, the settings menu has Rig Control & VARA Configurations
    c. Frequency control is USB, not USB-data, but if the radio screen is showing USB-data, press the data button on the radio.

8. Internet SDR Receivers Read Me
    a. This is a short explanation of how to use Internet SDR receivers.
    b. You need to be connected to the Internet.
    c. Click on the "Internet SDR Receivers" Shortcut.
    d. Zoom/scroll on the map to find a receiver in the region you want listen to.
    e. Click on the icon.
    f. When it opens, click on the link address and go to that tab.
    g. Click on the web page to start the SDR
    h. Select the band from a drop-down menu
    i. Select the mode - SSB, etc
    j. Use the mouse to move to the desired frequency.
    k. Play with the other controls - you can't break it. If you do, delete the tab in the browser and select the receiver again or another receiver.
    l. More to do...

9. Panadapter Read Me
    a. This is a short explanation of how to connect the panadapter to the radio.
    b. To use this software, you need to have ab SDR radio connected to the computer and an antenna. E.g. RTL.SDR dongle, SDRplay receiver.
    c. If you are not familiar with SDR Console, watch the video at the bottom of the page in "manuals" first.
    d. Start the Omni Rig App first. If the rig is not responding, check the com port number with Device Manager.
    e. Start the SDR Console App.
    f. When the SDR Console App opens, select the RTL Dongle USB from the list in the popup window, press start at the bottom of this window.
    g. Check Home, HF Mode: HF= "In Phase or Quadrature", Broadcast FM (CKRW)= "None"
    h. Connect and track the radio from the options in the left menu.
    i. When SDR Console starts to receive radio signals, select the frequency and mode, the radio will follow. Alternately, change the controls on the radio, the app will follow the radio.

j. Memories: There are a few popular HF, VHF, and FM broadcast frequencies - try them.
k. Again, if you are not familiar with SDR Console, watch the video at the bottom of the page in "manuals" first.