# Harris XG-100 Portable Radio Programming Steps

**Note and Disclaimer: These instructions were developed for a specific training scenario and include configuration steps and choices that may not apply to your situation. Number of radios to be programmed, operating modes, personalized button assignments, and things of that nature should be modified to fit your particular needs. Although these steps have been validated to be operational in a field environment, they are not meant to take the place of professional training and should not be counted on to save lives until you have validated them for yourself, using your own specific operating parameters and firmware versions.**

Create a new Personality (Mission Plan) to include GPS and SA Exchange

1. Create a new Mission Plan:
    a. Open the Harris Radio Personality Manager (RPM) software on the programming laptop.
    b. In the top menu bar, select File > New.
    c. When prompted, select Unity XG-100 Portable from the list of radios and a new personality window will display.
2. Create a Channel Set:
    a. Select the + by Sets and double-click Conventional Frequency Set.
    b. Select the P25 Conv Frequency Set tab.
    c. Select the New P25 Freq Set button.
    d. Enter a name for the new set and select OK.
    e. Beginning with Channel 1, enter the required information for each channel to be included in the set. Parameters will vary with your mission but at a minimum, give the Channel a name, set TX Power as required, and set the bandwidth in the drop-down menu.

    **NOTE: Channel positions cannot be skipped. If Channel Banks are needed and your groups have less than 16 channels each, fill in any remaining channel positions by right-clicking and cloning the last entry; the new group(s) can begin at channels 17 and 33.**

    f. If the channel is to be used to exchange SA data to other team members, place a check in the SA check box.
    g. When all channels have been entered, select OK.
3. Programmable Bank Select Switch:
    a. In the Personality Details window, scroll down and open the Options menu tree.
    b. Scroll down and double-click Programmable Buttons/Knobs/Shortcut Menu.

    c. Set the programmable buttons as required and ensure the Programmable A/B/C Switch fields are set to index Channel Banks.
    d. Select OK.
4. Programmable Individual Call Options (“Stations or Nodes” in Tactical Nets):
    a. Scroll down and double-click Programmable Individual Call Menu.
    b. Highlight the first line in the call number list. At a minimum, enter the desired Call Name, Long Call Name, and enter a Unit ID to be assigned to that Call Name.
    c. Select the next line and enter the required information for the next unit.
    d. Continue until all units to be operated as a group have been entered and select OK.
5. SA Data Exchange Timing:
    a. Scroll down and double-click Timer Options.
    b. Enter the desired SA Transmit Interval in seconds. This will determine how often each radio will attempt to send updated SA information to all units in the ICALL Group.
    c. When the desired interval has been entered, select OK.,
6. Channel Editing “On the Fly”:
    a. Scroll all the way down and double-click XG-100P Radio Options.
    b. To enable channel editing from the radio front panel during operations, place a check in the box and enter the desired password. For this exercise enter 1234.
    c. When completed select OK.
7. Create the Call Set (“Net” of “Stations” in the tactical world):
    a. Scroll back up to the Sets menu and double-click Individual Call Sets.
    b. Select the New ICALL Set button, enter a name when prompted, and select OK.
    c. In the Call Number, highlight the first line and enter the Call Name, Long Call Name, and Unit ID in the same manner as in step four above.
    d. When all members of the set have been entered, select OK.
8. Assign Sets to a System:
    a. Scroll up and double-click Systems.
    b. In the General tab, select Add New System, enter a name for the System, and ensure the System Type is set appropriately (Project 25 Conventional for our exercise).
    c. Select the Project 25 Conventional tab and select the P25 Conv Channel Set created previously from the drop-down menu.
    d. Select the ICall Set we created from the drop-down menu, set the Unit ID to 1, and select OK. This implies that the first radio to be programmed will be Unit 1.
    e. Save the Mission Plan (Personality) on the programming laptop.

9. Program the Mission Plan to the Radio(s):
    a. **WITH THE RADIO TURNED OFF**, connect the programming cable from the laptop to the side connector of the radio. Once connected, turn on the radio and allow it to initialize.
    b. In the top menu bar, select the Unity Product Management icon (USB symbol).
    c. The software will read the radio's serial number and any Mission Plans that are on the radio.
    d. Since the Personality window is open, RPM will also "discover" the Mission Plan just created and it will be placed in the Program Mission Plans window and available for programming (loading into) the radio.
    e. In the Program Mission Plan window, select the new Mission Plan to highlight it.
    f. If the first radio to be programmed will be "Unit 1", place a 1 in the P25 Conv Ovr column and select the Program button.
    g. Observe the front panel of the radio to check installation progress.
    h. Once installed, highlight the new Mission Plan in the Discovered Mission Plans window and select the Activate button. Activation can also be initiated from the radio front panel once the programming cable is disconnected.

**Note: In my version of firmware, it was at this point that I had to select the Done button after each Mission Fill, connect the programming cable to the next radio, and select the USB icon again. The software did not like to keep the management window open when disconnecting and connecting to new radios. A little trial and error will get the process smoothed out in no time.**

    i. Leave the Personality window open, connect the next radio to be programmed, and select the USB icon to read the radio.
    j. Highlight the new Mission Plan and click the Increment Override LID button to increase the Unit ID by the desired number of digits. For example, if the first radio was Unit 1 in the ICall group, you changed the number to a 1. If this is the second unit in the group, press the Increment button one time to change to a 2. Lather, rinse, and repeat for all radios in the group to be programmed with their unique Unit ID number.
    k. When completed, select Done and disconnect the programming cable.
10. Ensure each radio is on the desired operating channel and conduct a two-way communications check among all members of the group.

Initiating Situational Awareness Exchange and Viewing Data

1. Initiate SA Exchange:
    a. Once communication checks have been completed, initiating GPS functions and SA exchange can be initiated in two ways. Press the center menu button and scroll or select hotkey 7 **or** press the main Menu button and arrow to GPS or select hotkey 6.
    b. The first screen will display information about your local unit and position once GPS lock has been achieved.
2. View additional SA Information:
    a. Use the Next soft-key to scroll to the next page.
    b. The second screen will display the status of your radio's connection to various satellites, to include a signal strength graph to each and an SNR value. This is very similar to the SkyView screen on a DAGR.
    c. The next screen will display a "target" of sorts, centered on your local position and will display how many units in your group you are exchanging with. It will also display other units relative to your position.
    d. The "Current Unit", information for which is displayed below, will be highlighted green. Use the arrow key to select additional units (if you have three or more) and the information will change to match that unit.
    e. The radios will exchange SA data based on the interval you set in the Timer Options when the plan was created. To force an out-of-interval transmit, you can select the right soft-key and scroll to select Refresh.