# Amateur Packet Radio Field Reference

## Cupertino ARES/RACES

**December 2019**

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# 1 Quick Reference

## County Packet BBS Specifics

***Notes:***
- Users can connect using the access frequencies listed below
- The BBS-BBS forwarding frequency is not for primary user access.  It may be used in emergency/backup situations and for occasional testing.
- See the SCCo_Packet_Tactical_Calls bulletin to determine which BBS the users in each agency should use.
- Agency EOCs and command posts are encouraged to use 220; individual users should be on 2m.

**Frequencies are in MHz**

| Call Sign | AX.25 Connect | User Access | NOTES |
|---|---|---|---|
| W1XSC | W1XSC-1 | 145.750, 223.620 | Cupertino **PRIMARY** |
| W2XSC | W2XSC-1 | 145.730  223.560 | |
| W3XSC | W3XSC-1 | 144.310, 223.540 | |
| W4XSC | W4XSC-1 | 145.690, 223.600* | Cupertino **SECONDARY** |

*223.600 is primarily for BBS forwarding; O.K. for back-up user access, testing.

**BBS Locations**

| Call Sign | Location |
|---|---|
| W1XSC | San Jose |
| W2XSC | Crystal Peak (South County) |
| W3XSC | Palo Alto |
| W4XSC | Frazier Peak (East of Milpitas) |

## Cupertino Tactical Calls

**Cupertino OES**
CUPCCC     Citizen Corps
CUPDOC     Citizens Corps DOC
CUPDPW     DPW/Service Center
CUPEOC     EOC
CUPMRC     Med Reserve Corps
CUPOPS     Field Ops

**ARKs**
CUPMVA     Monta Vista ARK (Z1)
CUPRSA     Regnart Sch ARK (Z2)
CUPGGA     Garden Gate ARK (Z3)
CUPLSA     Lawson Sch ARK (Z4)

CUPDZA     DeAnza ARK (Z5)
CUPCSA     Creekside ARK (Z6)
CUPMRA     Montebello Ridge ARK
CUPSCA     Stevens Canyon ARK

**City Parks & Rec**
CUPBBF     Blackberry Farm
CUPCSP     Creekside Park
CUPJOL     Jollyman Park
CUPMEM     Memorial Park
CUPPOR     Portal Park
CUPWIL     Wilson Park
CUPLVP     Linda Vista Park

CUPQLN     Quinlan Center
CUPSEN     Senior Center

**Public Safety**
XSCSWS     County Sheriff's Station, West Side
XSCF71     Cupertino Fire
XSCF72     Seven Springs Fire
XSCF77     Monta Vista Fire

**Local Services**
CUPSAN     Cup Sanitary District
CUPWVS     West Valley Community Services
SJWEOC     San Jose Water

**Shelters**
CUPSH1     Shelter 1
CUPSH2     Shelter 2
CUPSH3     Shelter 3
CUPSH4     Shelter 4

**Ad-hoc Addresses**
CUP001 through
CUP009

## SCCo Tactical Calls

### Santa Clara County OEM

XSCEOC     SCCo EOC, 55 W Younger Ave, San Jose
XSCRCT     SCCo RACES Communications Trailer

### Santa Clara County Communications

XSC911     SCCo 911 Dispatch
XSCCOM     SCCo Communications Center, 2700 Carol Dr, San Jose
XSCCIT     SCCo Communications Interoperability Trailer

*NOTE:* These SCCo RACES Packet Notices will automatically be downloaded and available to you for reference. Refer to them for configured Tactical Calls.
1. SCCo Packet Tactical Calls
2. SCCo XSC Tactical Calls

# 2   Packet Startup Procedure

This is a four-step process for confirming the operational state of a packet station.



**Connections:**  Confirm that all packet components are correctly cabled.

_____      1.   Laptop; Serial USB Adaptor (serial comm port may exists on older laptop models and is an alternative connection).

_____      2.   TNC

        a.   to PC: Serial modem cable to Serial USB Adaptor, or USB cable for newer KPC3+

        b.   to Radio: custom data cable; depends on the radio connection.

        c.   Power: fused, connected to battery or power supply

_____      3.   Radio

        a.   To Antenna:  coax connected to antenna

        b.   Power: fused, connected to battery or power supply

**Power Up:**  Apply power.  Verify all devices are correctly powered up.

_____      4.   Laptop boots up, battery charged, or power adaptor plugged in

_____      5.   TNC: Apply power, verify Power LED lights up; Verify the fuse LED is NOT lighted (indicates a blown fuse).

_____      6.   Radio: Apply power, verify radio turns on

**Equipment Settings:**  Confirm all equipment settings.  This occurs prior to starting Outpost.

_____      7.   Use a Laptop terminal program to verify Comm Port Settings

_____      8.   TNC Setting:

        a.   Comm Port setting

        b.   Terminal setting

        c.   CD Software

_____   9.   Radio set to the frequency for the selected BBS
        a.   Tone set to none
        b.   Offset set to none
        c.   Squelch open
        d.   Radio set to high power
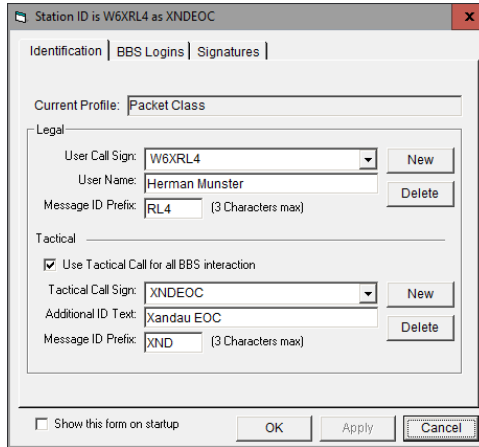        e.   Correct side of the radio is selected for packet (radio dependent)

**Outpost Application Settings**

_____   10.   Laptop Application (see *Section 3, Client Software*)
        a.   Station ID is set to your FCC Call Sign
        b.   Tactical Call is set per your operational instructions
        c.   PC Time is checked to be the correct time
        d.   BBS is set to the required BBS
        e.   TNC is set to the TNC type you are using
        f.    Other Outpost configurations

# 3    Client Software

## Application Startup

**1.    Start Outpost.**  Look for the Outpost icon on the PC desktop, and double-click on it.

**2.**    The **Station Identification Form** opens.
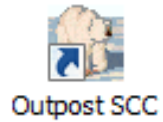


a.   Use the *User Call Sign* dropdown to select your call sign.  If your FCC call sign is not listed, press **New** and fill in all fields. Verify the User Fields are filled in as follows:

| | |
|---|---|
| User Call Sign: | < your call sign > |
| User Name: | < your name > |
| Message ID Prefix: | <Last 3 chars of call sign> |

b.    Press **Apply** when Done.

c.   Use the *Tactical Call Sign* dropdown to select your tactical call.  If your assigned Tactical call is not found, press **New** and fill in all fields.  Verify the Tac Call Fields are filled in as follows:

| | |
|---|---|
| User Tactical Call: | ☑ CHECKED. |
| Tactical Call Sign: | < per your assignment >, 6 characters |
| Additional ID Text: | Short description of the location |
| Message ID Prefix: | < Usually the first or last 3 characters of your tactical call > |

d.   Press OK when done. The Outpost main form will open.

3. **Setting up the TNC.**   From Outpost, select **Setups > TNC Settings**.

    a.   On the *Type* tab, set the Device Name, such as **XSC_Kantronics_KPC3-Plus**.  Select whatever TNC you have.
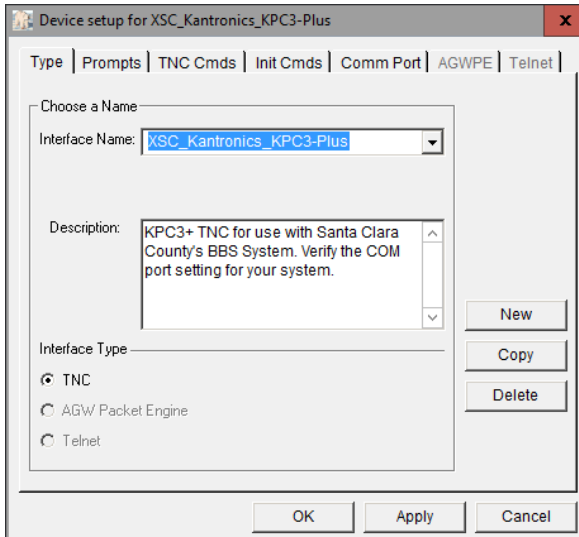


    b.   On the *Comm Port* tab, select the PC Comm Port to which the TNC is connected.   Only existing Comm Ports will be listed.
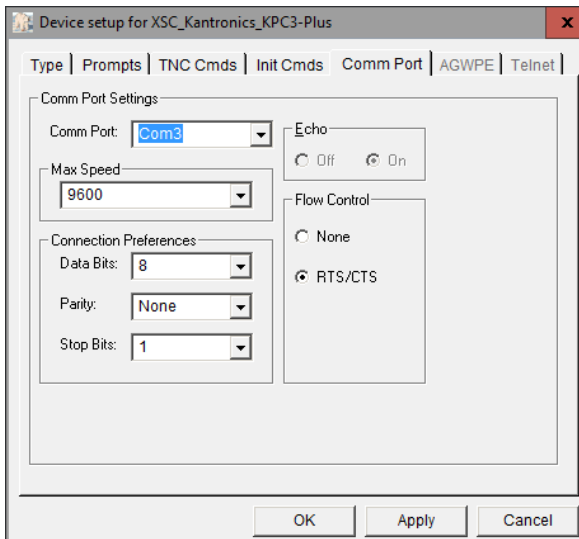


    c.   For KPC3: do not change any fields on any other tabs.

    d.   Press **OK** to Save your settings.

4. **Setting up the BBS.**  From Outpost, select Setups > BBS Settings.

    a. On the Name tab, select the primary BBS Name for your city. If that BBS is not available, select your secondary BBS.



    b. Set **BBS Type** to "**Let Outpost determine… "**

    c. Press **Set/Get TNC** to reopen the TNC Settings form, and press **OK** from that form.  This links the TNC to this BBS.

    d. Do not change any fields on any other tabs.

    e. Press **OK** to Save your settings

5. **Confirm your settings.**  Check the bottom of the Outpost main form and confirm you see your Station ID, Tactical Call, BBS, and TNC listed as you have just set up.

6. **Other SCC Outpost Settings (Installer v145C).** There are several settings that can be made in Outpost. The following are the default settings for operating in the SCC County BBS system.

*NOTE:* For Alt911 deployments, refer to *Section 4.3 Cupertino Packet Settings for ALT911 Deployments* for specific settings*.*

### Setup > Station ID

| Tab | Option | What to set |
| --- | --- | --- |
| **Signature** | ☐ Insert a signature for <call> in all messages          [                    ] | Optional |

### Setup > BBS

| Tab | Option | What to set |
| --- | --- | --- |
| **Retrieving** | ☑ Retrieve Private Messages | Checked |
| | ☐ Retrieve NTS | Unchecked |
| | ☑ Retrieve Bulletins | Checked |
| | ○ All new Bulletins<br>○ Selected Retrieval<br>⊙ Custom Retrieval<br><br>*NOTE:* Add the last 2 lines as shown | `A XSCPERM LA`<br>`A XSCEVENT LA`<br>**`A ALLXSC`**<br>**`L> CUP`** |
| | ☐ Skip NTS Messages that I send | Unchecked |
| | ☐ Skip Bulletins that I send | Unchecked |
| | ☐ Keep messages on BBS, do not delete after retrieving | Unchecked |
| | | |

### Tools > Send/Receive Settings

| Tab | Option | What to set |
| --- | --- | --- |
| **Automation** | ⊙ Manual – Initiate Send/Receive sessions manually. | Checked |
| | ☐ Send a message immediately when it is complete | Unchecked |
| | Send/Receive Button Setup<br>⊙ Send/Receive | Checked |
| **Receiving** | ☐ Play this sound on arrival: | Unchecked |
| **Printing** | ☐ Print received, sent messages | No preference |
| | ☑ Print with message headers | Checked |
| | ☐ Print Delivery, Receive Receipts | Unchecked |
| **Notifications** | ☑ N0 through N3 | Check All |
| | ☑ Play this sound on notification<br>[**sound136.wav**] | Checked |
| **Other** | ☑ Show the TNC session form during Send/Receive | Checked |

a. Press **OK** to Save your settings.

## Tools > Message Settings

| Tab | Option | What to set |
|---|---|---|
| New Messages | ⊙ Set default to Private | Checked |
| | ☐ Create and send NTS messages as private | Unchecked |
| | ☐ Default destination [_____] | Unchecked |

## Tools > Message Settings (continued)

| Tab | Option | What to set |
|---|---|---|
| Message Numbering | ☑ Add Message number to subject line ⊙ With hyphenation | Checked |
| | ☑ Add Message Number Prefix | Checked |
| | ☐ Add message number separator | Unchecked |
| | ☑ Assign a local message number to inbound messages. | Checked |
| **Replies / Forwards** | ⊙ Set default to private | Checked |
| | ☑ Close original message on reply or forward | Checked |
| **Receipts** | ☐ Always request a Delivery Receipt | Unchecked |
| | ☐ Always request a Read receipt | Unchecked |
| | ☑ Auto-Delivery Receipt | Checked |
| | ☐ Auto-Read Receipt | Unchecked |
| **Deleting** | ☑ Prompt before permanently deleting a message | Checked |
| **Adv** | ☑ Automatically start Opdirect Message Capture System | Checked |
| | Opening a locally created PacFORM… ⊙ Never  ○ Prompt  ○ Always | Never |
| | If the msg was previously submitted ○ Never  ⊙ Prompt  ○ Always | Prompt |
| | Opening a received PacFORM… ○ Never  ○ Prompt  ⊙ Always | Always |

   a.  Press **OK** to Save your settings.
   b.  Exit and restart Outpost to ensure the **Adv** Opdirect settings take effect.

## Tools > Report Settings

| Tab | Option | What to set |
|---|---|---|
| Variables | Global Variables: Next Message Number  [ ### ] | Next Msg Number |
| | Organization: | "Cupertino ARES" |
| | County: | "Santa Clara County" |
| | All other fields at your discretion | Optional |
| ICS309 | ⊙ No Automation | Checked |
| | Task ID: | Activation No. |
| | Task Name: | Event Name |
| | Radio Operator Name: | See Station ID Form |

| Tab | Option | What to set |
|---|---|---|
|  | Station ID: | See Station ID Form |

    **a.** Press **OK** to Save your settings.

### Tools > Log Settings

| Tab | Option | What to set |
|---|---|---|
|  | ☑ L1: Send/Receive Session Window Logging | Checked |
|  | ☐ L2: Interface Data Logging | Unchecked |
|  | ☐ L3: Diagnostic Logging | Unchecked |

    **a.** Press **OK** to Save your settings.

### Tools > General Settings

| Tab | Option | What to set |
|---|---|---|
|  | ☑ Show Station Identification Form on Startup | Checked |
|  | ☑ PC Time Check, at startup… | Checked |
|  | Custom Folder labels:<br>Folder 1        [          ]<br>Folder 2        [          ]<br>Folder 3        [          ]<br>Folder 4        [          ]<br>Folder 5        [          ] | Optional |
| Addressing | ☐ Use hierarchical address Continent parameter in validation. | Unchecked |
| Profiles | Save profile changes when switching profiles…<br>○ Always (original Outpost behavior)<br>◉ Prompt (avoids unintentional changes)<br>○ Always (best for shared stations with presets) | Prompt |
| Miscellaneous | ☑ Auto-Print with Message Header | Checked |
|  | Recently used configuration list [ ] entries | 8 |

    **a.** Press **OK** to Save your settings.

### Tools > Script Settings

| Tab | Option | What to set |
|---|---|---|
|  | ☐ Run this script on startup  [     ] | Unchecked |
|  | ☐ Run this script on exit      [     ] | Unchecked |
|  | ◉ Send/Receive runs standard process | Checked |

    **a.** Press **OK** to Save your settings.

**7.** **Connection Test.** Verify connectivity with the BBS. From the Outpost Main Menu tool bar, press **Send/Receive**. Verify that the Send/Receive Session Window opens. When done, verify that it closes without error.

# 4   ALT911 Packet Message Handling

## 4.1   Introduction

**Description:**   This procedure describes how packet operators will handle the intake of emergency requests from the field and transmission to Santa Clara County Communications for dispatch.

**Process**
1. Set up Packet for Emergency Use.
2. Ask the right questions, gather the right information. Ensure you have enough information for County Comm to create an actionable and dispatchable event.
3. Create the message.  Use the Alt-911 message form to record all information, then load it into the **Alt911** packet program.
4. Address it to the right place:
   a. For emergencies – Medical, Fire, Law:
      To: **XSC911**; **CUPEOC**
   b. For emergencies – City Public Works (LGOV):
      To: **CUPEOC**
   c. For non-emergencies (requests, questions):
      To: **CUPEOC**
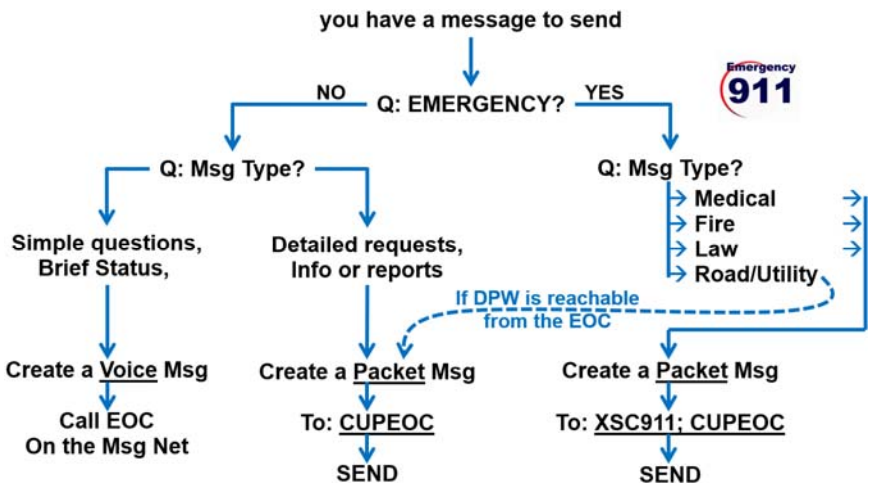
## 4.2    Ask the right questions

1.  First, determine if this really is an emergency?

    •   If this is a real emergency (medical, fire, law), then pass as a 911 message to County Comm

    •   If this is a real emergency (local access or road problem), then pass to the Cupertino EOC.

    •   If this is a non-emergency request, question, or information, then pass it to the Cupertino EOC.

2.  Ensure you have enough information for 911/County Comm to them to create an actionable and dispatchable event.

| *911 Requests* | *What does 911/County Comm minimally need to know?* |
|---|---|
| **GET THIS FIRST:** | • *Location of the problem (address)*<br>• *Reporting Person's (RP) name, contact phone number*<br>• *When did you last see the problem? (hours, minutes)* |
| **Medical Assistance:** | • Age: How old is the person?<br>• Gender: Male or Female<br>• Medical problem (difficulty breathing, unconscious, severe bleeding, etc.) |
| **Fire Report:** | • What is burning (Car, building, etc.)<br>• Are there any people inside?<br>• What is happening now (everyone is safe/trapped, heavy smoke, etc.) |
| **Law Report:** | • Type of problem (suspicious person, fight, accident, break-in, etc.)<br>• What is happening now (suspicious car on street, heard broken glass, etc.) |
| **Local Gov't:** | • Type of problem (tree/pole down, water main break, etc.)<br>• What is happening now (road is blocked, power line arcing, street flooding, etc.) |

## 4.3    Cupertino Packet Settings for ALT911 Deployments

The following settings are in addition or a replacement of the settings listed elsewhere in this guide.  From Outpost, make the following changes:

### Setup > Identification

| Tab | Option | What to set |
|---|---|---|
| Identification | Call Sign: | Your call sign |
| | User Name: | Your name |
| | Message ID prefix: | Last 3 chars of your call sign |
| | ☑  Use Tactical Call | Checked |
| | Tactical Call Sign: | As assigned |
| | Additional ID Text: | As assigned |
| | Message ID Prefix: | As assigned |

### Setup > BBS

| Retrieving | ☑  Retrieve Private Messages | Checked |
|---|---|---|
| | ☐  Retrieve NTS | Unchecked |
| | ☐  Retrieve Bulletins | Unchecked |
| | Enter as a list of filter items: | Leave Blank |
| | ☑ Skip (do not retrieve) NTS Messages I send to the BBS | Checked |
| | | |

### Tools > Send/Receive Settings

| Tab | Option | What to set |
|---|---|---|
| Automation | ⊙ Schedule a Send/Receive Session every [ **10** ] minutes. | Checked |
| | ☑  Send a message immediately when it is complete | Checked |

### Tools > Message Settings

| Tab | Option | What to set |
|---|---|---|
| New Messages | ⊙Set default to Private | Checked |
| | ☐  Create and send NTS messages as private | Unchecked |
| | ☐  Default destination **[_____]** | Unchecked |
| | | |

# 5 Creating packet messages

## 5.1 Packet message addressing basics

Addressing a packet message requires 2 types of addresses:

1. What individual do you want to receive the message?
2. What packet station can deliver it to the individual?

We want to "embed" our message below into a packet message with additional addressing information

```
From:  Ops, Xanadu Fire ICP
To:    Ops, Xanadu EOC
Subj:  ICP Staffing Summary

~~~~~~~~~~~
~~~~~~~~~~~
~~~~~~~~~~~
~~~~~~~~~~~

Signed,
Dave Miller Ops Chief
```

```
BBS:   W1XSC-1
From:  XNDFS1
To:    XNDEOC
Subj:  XND47823P: ICP Staffing Summary

From:  Ops, Xanadu Fire ICP
To:    Ops, Xanadu EOC
Subj:  ICP Staffing Summary

~~~~~~~~~~~
~~~~~~~~~~~
~~~~~~~~~~~
~~~~~~~~~~~

Signed,
Dave Miller Ops Chief
```

## 1. Packet Address Header

The packet address header gets the message to the correct packet station.

**BBS:** The "store and forward" mail drop where this message is sent. **Automatically filled in.**

**From:** Tactical call of your packet station. **Automatically filled in.**

**To:** Destination station

**Subject:** Outpost automatically sets the Message ID in the subject line.

You need to fill in the rest of the subject text.
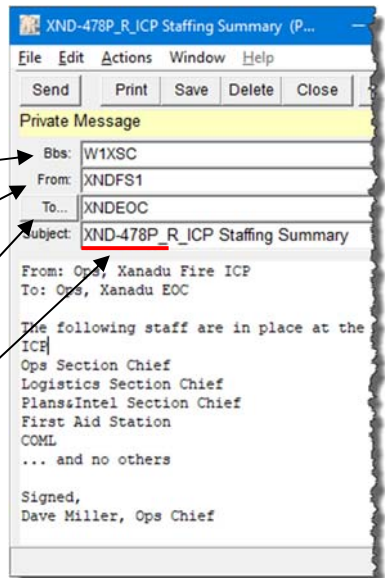
## 2. Recipient Address and Message

To ensure the message gets to the right person, fill in the rest of the message.

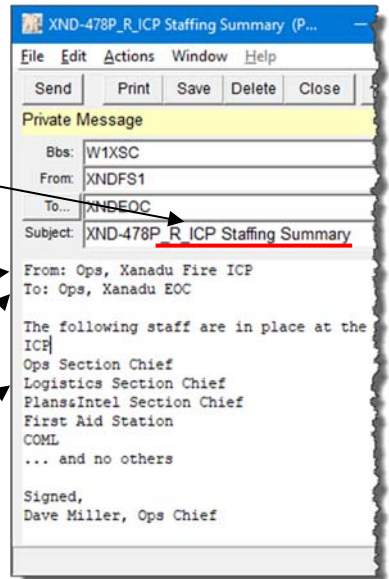**Subject:** Fill in the rest of the subject line after the Message ID.

### Message Body

**From:** Whom is the message from? Include the ICS position or function.

**To:** To who do you want to receive the message? Include ICS position or function.

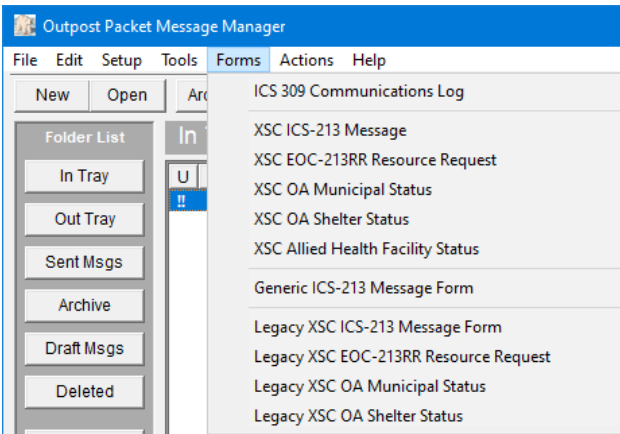**Message** Fill in the message details.

**Signature:** Put whom the message is from.



## 5.2 Sending a PackItForm message

1. PackItForms are browser-based, fill-in-the-blank, html message forms used within Santa Clara County.

   To open the forms from Outpost, go to the Forms Menu, and choose the desired form.



| Form name | Purpose |
|---|---|
| **Standard Santa Clara County PackItForms** | |
| XSC ICS-213 Message Form | Send a message from the cities/agencies to Santa Clara County EOC, or other jurisdictions within the county. |

| XSC EOC-213RR Resource Request | PackItForms version of the Santa Clara County Resource Request Form. |
|---|---|
| XSC OA Municipal Status | Report city status and incidents |
| XSC OA Shelter Status | Report shelter status |
| XSC Allied Health Facility Status | Report skilled nursing facility status |

| Other Forms | |
|---|---|
| ICS 309 Communications Log | Creates a standard ICS 309 Comm log report based on packet messages sent. Different report options let you customize the data and look and feel. Run this report at the end of your shift. |
| Generic ICS-213 Message Form | This form is a program that can run on a remote PC on the same subnet as Outpost. See the ICS-213mm Message Manager User Guide for details. |
| Legacy PacFORMS | Replaced by PackItForms |

2. For City-to-County packet messages, use the above SCCo RACES PackItForms or free-form messages.

3. Run PackItForms from Outpost to ensure several of the default fields are automatically filled in.

4. Select the PackItForm to use; the form opens in a browser
.



**Completing the PackItForm**

5. Required fields are all highlighted in **RED**.

6. When all required fields are filled in, the top banner turns **Green** and the controls are enabled. Press the **Submit to Outpost** button at the top to pass this message to Outpost.



7. The form data is extracted, formatted, and transferred to Outpost where it is loaded in a message form and opened.

*NOTE:* If you don't see the message form, then check the Windows Tool Bar for a highlighted Outpost icon.

8. Fill in the **To:** field. All other fields are disabled.

9. When done, press **Send**.

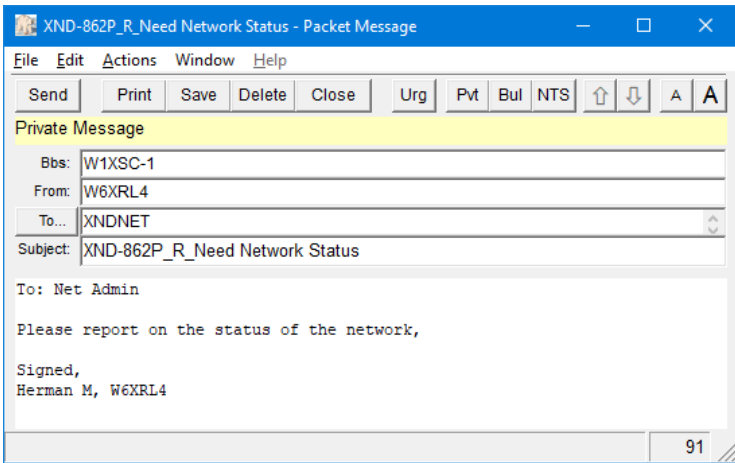10. From Outpost, press **Send/Receive** to send the message.

## 5.3  Free-Form Message

1.  From Outpost's main window, create a new message by pressing the **New** button.  A blank message form opens.

2.  The **BBS:** and **From:** fields are filled in with the BBS and From Station call sign or tactical call that were previously defined.

3.  Fill in the **To**: field with the call sign or tactical call of the station to receive this message.

4.  Complete the **Subject:** text.  Add a message description after the Message ID characters (**XND-862P** in this example).



*NOTE!*  Not adding any additional subject line detail (Handling Order and message summary) will delay processing your message on the receiving end.

5.  Enter the body of the message.

6.  Press **Send** when done.

7.  From Outpost, press **Send/Receive** to connect and send the message to the BBS.
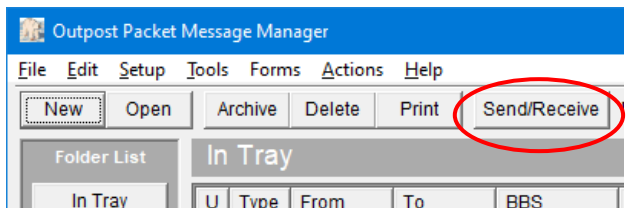
## 5.4 Sending a text file

The text of the message can originate from a text file created elsewhere. To import a message from a text file, do the following:
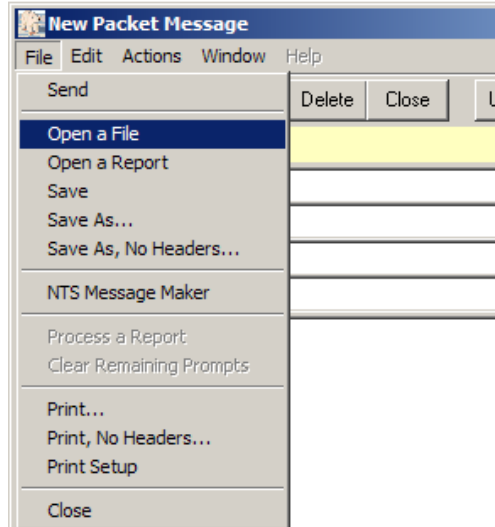
1. From the Outpost main form, click on the **New** button.

2. Select **File > Open a File**. Navigate to the directory where the file resides and select the file. Press **OK**.

3. The text will be loaded into the Message area.

4. The message Subject is set to the text file name.

5. Press **Send** when done.

6. From Outpost, press **Send/Receive** to connect and deliver the message to the BBS.

## 5.5 Sending a spreadsheet .csv file

Attempting to send a standard spreadsheet file will cause Outpost, the BBS, or both, to hang because of embedded binary content in the spreadsheet.

However, most spreadsheet applications support a way to export spreadsheet data into one or more ASCII formats that are compatible with Outpost.

This approach also works with other spreadsheet packages.

1. Once the spreadsheet is created, move a copy of it to the PC where Outpost resides.

2. At the Outpost PC, open the spreadsheet, press **File->Save As** from the spreadsheet menu.

3. Change the "Save as Type" to "Comma Delimited (*.csv)". Press **Save**. A file with a *.csv extension is created.
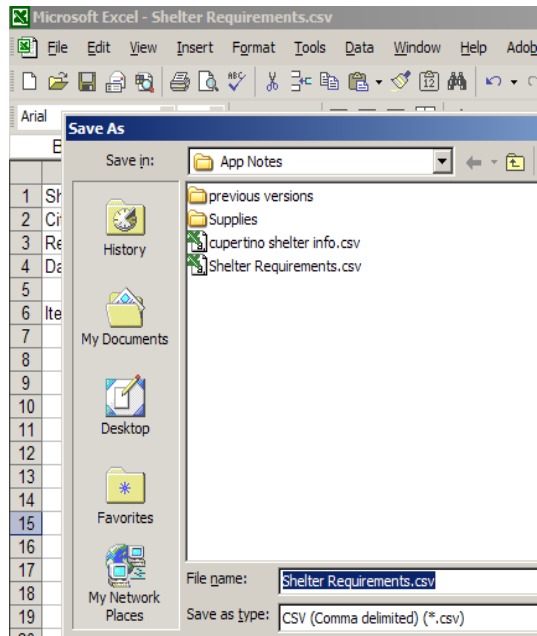
4. Go back to Outpost. Open an Outpost message form. Press **File->Open** from the Outpost message menu.

5. Change the "Files of Type" to "All files (*.*)."

6. Change the directory to where the *.csv file is located, select the file, and press **Open.** The *.csv file is copies into the message form.

7. Take a look at this example to the right. Note that all fields are separated by commas, and fields with embedded commas are surrounded by quotes.

8. When done, press **Send** to move the message to the Out Tray.

9. From Outpost, press **Send/Receive** to connect and deliver the message to the BBS.

```
SSA167: Shelter-Requirements.csv - Packet Message
File   Edit   Actions   Window   Help

 Print    Send    Save    Delete    Close    Urg

Private Message

    Bbs:  W1XSC-1
   From:  CUPSSA
    To...  CUPEOC
Subject:  SSA167: Shelter-Requirements.csv

Shelter:,Quinlan Center,,,,,
City:,"Cupertino, CA",,,,,
Request:,Material replenishment,,,,,
Date:,10/5/2012,,,,,
,,,,,,
Item Number,Description,On Hand,Units,Qty ne
1,cots,30,ea,25,18-Mar,18:00
2,blankets,45,ea,15,18-Mar,18:00
3,"water, 12 oz bottles",200,bottles,100,19-
4,First Aid kits,3,kits,12,ASAP,
5,Toilet paper,50,rolls,250,19-Mar,12:00
6,tooth brushes,10,ea,50,ASAP,
7,tooth paste,5,ea,55,ASAP,
8,note pads,0,ea,25,19-Mar,18:00
9,pecils,0,ea,25,19-Mar,18:00
```

**NOTE:** The file name is also set as part of the Subject. This will come in handy at the receiving end.

## 5.6    Receiving a spreadsheet .csv file

Continuing with the above example, proceed to recover the file as follows:

1. Once the Outpost message arrives, open the message.

2. Press **File->Save As** from the Outpost message menu.

3. The file name will default to that of the message's subject with the correct *csv extension. Press **Save**. Close the message.

4. Open Excel.

5. Press **File->Open** from the Excel menu. Change the "Files of Type" to "Comma Delimited (*.csv)." Locate the file saved by Outpost. Press **Open**.

6. The entire message is brought into the spreadsheet. Delete any header lines that may show up in the file.

# 6   Amateur Radio Packet Overview

## What is Ham Radio Packet?
- Amateur packet radio is one of many digital modes that hams can use.
- Packet Radio is used to transmit digital data by radio or other wireless communications links.
- Packet radio can send to or retrieve "mail" from a packet Bulletin Board System (BBS).
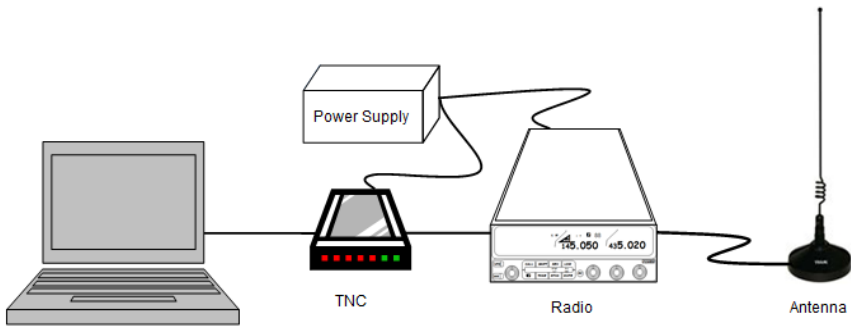


## Typical Packet System
Computer:        Runs the packet software that communicates with the BBS.
TNC:             Terminal Node Controller; the interface between your radio and your computer (similar to a telephone modem).
Radio:           Set to the frequency of the BBS and other packet stations.
Antenna:         Connected to the Radio.
Power Supply:   Powers the Radio and TNC; could also be a battery.

## Why use Packet Radio?
1. BBSs allow messages to be stored, retrieved, or forwarded throughout the connected BBS network.

2. The recipient does not need to be on line to get the message, meaning that messages can be retrieved at the recipient's convenience.

3. Packet is ideal for passing lists of material, addresses, instructions, or complex words (e.g. pharmaceuticals or chemicals)

4. We would use packet radio for the same reasons we would use internet email: message accuracy, delivery, and the ability to handle message complexity.

5. The Santa Clara County Emergency Management Association (EMA) knows that our local communications infrastructure **WILL FAIL** during an earthquake and **expects** Ham Radio to enable the response and speed the recovery.  Packet Radio is part of the response.