Amateur Packet Radio Field Reference, Type II

For SCCo RACES Responders

October 2024

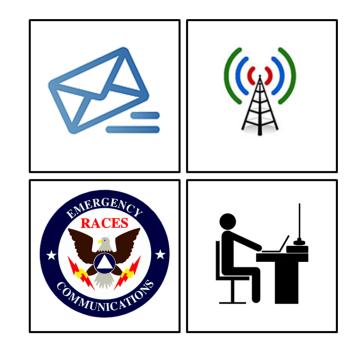


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Rev: 241031

1 Quick Reference	
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Frequencies (MHz)

Call Sign	Connect	User Access	My Pri, Sec BBS
W1XSC	W1XSC-1	145.750, 223.620, 433.570	
W2XSC	W2XSC-1	145.730, 223.560, 433.590	
W3XSC	W3XSC-1	144.310, 223.540, 433.450	
W4XSC	W4XSC-1	145.690, 223.600*, 433.550	

*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)

3.12 Notes on Manual ICS 309 Comm Log

- 1. From the PackItForm <u>Home Page</u>, clicking on **Edit ICS 309 Log** opens the ICS 309 form for editing and printing.
- 2. All fields are editable.
- 3. Required fields are highlighted in RED.
- 4. Trash Can symbol deletes the entry.
- 5. **Plus** symbol adds another line for a manual entry.
- Erase All clears the form.
 Once pressed, Undo Erase All is displayed that will restore the form
- 7. Generate CSV File creates a .csv file of the Comm Log.
- 8. **Print** prints the Comm Log to the selected printer.

9. Save – Saves any changes you made.

<u>F</u> ile	<u>E</u> dit	View	Hi <u>s</u> tory	<u>B</u> ookmarks	<u>T</u> ools	<u>H</u> elp				-	-		×
۲	S	CCo Pa	ckltForms		×	ICS-309	×	+					\sim
\leftarrow	->	C	;	0 0	127.0	0.0.1:60400/manual-edit-log	110%	☆	\bigtriangledown	\	?	பி	\equiv

COMM	LUY	dent Name and Ac	tivation Number	2. Operation	nal Period (Date/Time)
ICS 309- ARES/R					n/d/yyyy m/d/yyyy hh:mm To: hh:mm
3. Radio M	Net Name (for NCC	Ds) or Position/Tac	tical Call 4. F	Radio Operator (Na	ame, Call Sign)
					, call-sign
5. COMMUNICATIONS LOG					
Time	FF	ROM	۲	о	Message
(24:00)	Call Sign/ID	Msg #	Call Sign/ID	Msg #	Message
13:49	XND022	X22-121M	XNDEOC@w1		R_Check-In XND022, Kios 💼 🕀
14:27	XND022	X22-123M	XNDEOC@w1		R_ICS213_Opening Status 💼 🕀
14:41	4:41 xndeoc@w1 XND-3001P XND022		XND022	X22-124M	R_ICS213_opening status 💼 🕀
15:13	xndeoc@w1	. XND-2009P	XND022	X22-126M	R_ICS213_4-hour festiva 💼 🕀
15:33	XND022	X22-127M	XNDEOC@w1		I_EOC213RR_XANADU PICNI

09:26	XND014	X14-313M	XNDEOC@w1	R_Check-Out XND014, Fir 🛅 🕀
09:37	xndeoc	EOC-1245P	XND@xsc	R_Report Station/Staff 💼 🕀
hh:mm				Œ
6. Prepared By (Name, Call Sign)			6A. Signature	7. Date & Time Prepared
			1	m/d/yyyy hh:mm

3.10 Notes on Outpost Tags

- Messages sent from Outpost occasionally have "tags" inserted in messages that you might see.
- Some of the more common tags are:
 - !RRR! Request Read Receipt
 - !RDR! Request Delivery Receipt
 - ISCCoPIFO! This is a PackItForm message
 - !/ADDON! The end of a PackItForm or other Addon message
 - !UG! Mark message as urgent (lists as RED in the Outpost listing)
- PackItForms will ignore many Outpost tags that it sees and they will not show up in the message.

3.11 Viewing saved messages

- 1. View your saved messages in the directory set up in Section 3.6. For example: C:\MyMessage\X14-24-1009T\
- 2. Sort by clicking on the Name or Date Modified column headers.

File Home Share	View		
\leftarrow \rightarrow \checkmark \uparrow \blacksquare \rightarrow This PC	C > Windows (C:) > MyMessages > X14-24-1009T	~ [©]	, ○ Search
MyActivations	Name	Date mo	dified
MyAddons	EOC-1245P_R_Report Station_Staff Status.txt	10/14/20	24 16:07 AM
MyMessages	X14-310M_R_Check-In XND014, Fire Station 14.txt	10/14/20	24 16:12 AM
Logs	X14-312M_R_ICS213_Equipment Status.txt	10/14/20	24 17:20 AM
Misc	X14-317M_R_ICS213_72 hour staffing plan.txt	10/14/20	24 18:15 AM
📕 X14-23-1009T	X14-319M_R_EOC213RR_Xanadu Complex Fire.txt	10/14/20	24 18:02 AM
MyMsgs2	X14-321M_R_Surprise Pizza.txt	10/14/20	24 18:23 PM
MyMsgs3	X14-325M_R_Check-Out XND014, Fire Station 14.txt	10/14/20	24 18:12 PM

2 Introduction

2.1 Purpose

This handbook is not an official Santa Clara County RACES deliverable.

This handbook provides the field packet radio operator with a job aid for the different tasks and activities that are needed to be successful in the field.

It builds on a reasonable working knowledge of:

- 1. Digital communications using amateur packet radio
- 2. Amateur packet radio hardware, software, and configuration
- 3. SCC RACES packet procedures, protocols, and standards

The experienced packet radio operator can use this handbook as a job aid and real-time reminder of the tasks that need to occur when deployed to the field. It is intended to ensure task consistency, completeness, and operational alignment with SCCo RACES policies and procedures when carrying out field packet radio operations.

2.2 How to use this Handbook

This handbook is not a tutorial on Amateur Radio Packet and will not teach you all about packet, the hardware, software, and local procedures. You are encouraged to attend SCCo RACES packet classes, acquire and use a packet station, and participate in weekly and monthly packet practice, and regular exercises where packet radio is deployed.

This handbook does provide a summary of how to operate packet radio in the field. However, the packet operator is responsible for keeping current with environmental, procedural, and SCC0 RACES packet system changes by:

- 1. periodically checking the <u>www.scc-ares-races.org</u> website joining,
- 2. monitoring the packet@scc-ares-races.groups.io mailing list, and
- 3. attending SCCo RACES packet training courses

Updates to this handbook should be made by the handbook user as soon as you become aware of them.

2.3 Other References

Have these SCCo RACES documents available to reference:

- 1. Standard Outpost Configuration Instructions 08/04/2018
- 2. Standard TNC Parameter Settings 10/31/2022

3 Manual Packet Operations

3.1 TNC Commands

1. HELP [command]

When entered alone, lists all available commands. With a command, provides details on that specific command.

2. MYCALL XXXXXX

Tells the TNC what its call sign is. Can be an FCC or Tactical Call sign

3. CONNECT call1 [via call2, call3, ...]

Call1 = Call sign of the station to be connected to. Adding "via call2..." connects to the BBS by digipeaters.

4. CONVERS

Puts the TNC into Conversational mode. Then, whatever you type is immediately transmitted.

5. <u><Cntl>C</u>

Puts the TNC into Command Mode. Enter TNC commands at the prompt.

6. RESTORE DEFAULT

Resets the TNC to the factory default settings; performs the AUTOBAUD routine. Defaults INTface to NEWUSER.

Hard reset can also be performed with internal jumpers.

7. INTFACE [TERM | ...]

When set to TERMinal, the full command set of the TNC is available.

8. XMITLVL [<value>]

If blank, displays the current transmit level. If a value is included, sets the transmit level.

3.9 Receiving a PackItForm message manually

3.9.1 Receive a PackItForm message **PuTTY** is displayed.

- ____ 1. Connect to the BBS using PuTTY.
- _____ 2. List your messages with LM
 - _____ 3. Read your messages with **R** #
 - 4. Highlight all text from Date: to **!/ADDON!** (inclusive).

Copy Text from PuTTY: just select the text to copy it to the clipboard.

🚰 COM10 - PuTTY	1
<pre>(#1) > r 1 Message #1 Date: Mon, 9 oct 2023 20:26:51 PS From: xndx14@w1xsc.ampr.org To: xndeoc@w1xsc Subject: X14-312M_R_ICS213_Equipn !SCCoPIFO! #T: form-ics213.html #V: 3.11-2.2</pre>	
Other: [Packet] OpDate: [10/09/2023] OpTime: [20:17] !/ADDON!	

(#1) >

3.9.2 Recover the Message HOME Page is selected.

- ____ 5. Put your cursor in the lower
 "View a received message" section, and enter
 Edit > Paste or <ctrl>V to paste in the message.
- 6. Press Log and View.
 - This entry is logged to the ICS 309
 - The received message is opened in its PackItForm.
 - 7. Once the PackItForm is opened, print it and hand it off for delivery.

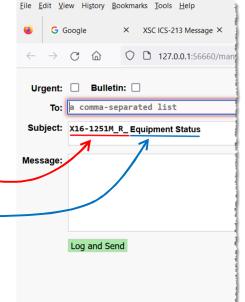
View a received message							
	ceived message, including the From, Subject p or upload a file.						
Message:	9a.: [Xanadu EOC]						
Upload	9b.: [Xanadu Fire Station 14] 10.: [Equipment Status]						
Download	12:: [All equipment is ready for de, Rec-Sent: [sender] OpCall: [W6XRL4] OpName: [Herman Munster] Method: [Other] Other: [Packet] OpDate: [10/09/2023] OpTime: [20:17] !/ADDON!						
Received Da	ate: 10/09/2023 Time: 20:41						
Log and Vie	Reset Fields						

3.8.6 Sending Plain Text Messages with PuTTY

PackItForms does support manual Plain Text message sending and receiving.

- from the Home Page, dropdown menu, pick Plain Text Message. The Message Page opens.
- Message ID and Handling order are filled in, **DO NOT CHANGE THIS!**
- Fill in...
 - To: destination packet address
 - The rest of the Subject text
 - Your plain text message
- Finally, press Log and Send

The rest of the send process is the same.



3.2 BBS Commands

1. HELP or ? [command]

H = List of available commands. ? is the same as H or HELP H <cmd> = Provides details on the command.

example: **H List** = shows all **List** command options and what they do.

2. LIST

L = Displays the headers for all unread messages, if any.

LA = Lists ALL messages, both read and unread

LM = Lists MY messages addressed to me

L> addr = Lists all messages that have "addr" in the message's To: field

3. READ

= The message number to be displayed.

4. KILL

= The message number to be deleted.

5. **AREA**

A = Lists all available bulletin areas.

AF = Gives a full listing of areas with descriptions (if available).

A area_name = Positions you to that area. Then, use the List and Read commands to view messages.

6. SEND [option] <dest_address>

S[**P**] = Send Private; example: SP w6xrl4@w5xsc.ampr.org

SB = Send Bulletin; example: *SB mtv@xsc*

ST = Send Traffic; this is used for NTS packet messages

SC = Send Copy; to multiple destination addresses

example: **SC** w6xrl4@w5xsc.ampr.org (enter the 1st address) (BBS then prompts with **Cc:** for the other addresses. Enter other addresses each separated by a comma.)

7. **BYE**

Disconnects from the BBS

8. XM [lines to display]

XM = Displays the current page length setting

XM 24 = Sets the page length to 24 lines

XM 0 = Turns off pagination (required when using Outpost)

NOTE: If a page length is set, message listings, messages and other content longer than the page length are paused and a "More (N=no)?" prompt is shown. Press SPACE to see the next page or 'n' to stop

3.3 Connecting to the TNC with PuTTY

Set up PuTTY as follows:

1. Ge	tting Started	🕵 PuTTY Configuratio
	Find and run PuTTY	Category:
2. Se	ssion category	Session
	Connection Type: Serial	Logging
	Enter serial port name (i.e.: COM3)	Keyboard Bell
3. Se	ssion > Logging category	Features
	Session Logging: "All session output"	Appearance
	Log file name: Enter a path and file name	Behaviour Translation Selection Colours
	What to do if: "Always append to the end of it"	Connection Data Proxy
4. Te	rminal > Keyboard category	Telnet Rlogin
	Backspace key: "Control-H"	⊕-SSH Serial
5.Coi	nnection > Serial category	Senar
	Speed (baud): 9600	
	Data Bits: 8	
	Stop Bits: 1	About
	Parity: None	Zbour
	Flow Control RTS/CTS	
6. W	indow > Translation category	
	Change "Remove character set" to	
	Win1252 (Western)	
7. Se	ssion category	
	Saved Sessions: Enter a name in the	
	field, click Save	
	Click Open to start the session	
8. Ve		
	Put cursor in the PuTTY text area.	
	Make sure the TNC is turned on.	
	Press Enter and confirm you see the	
	TNC Prompt (cmd:)	

nfiguration	
	Basic
9	Specify the destin
ard	Host <u>N</u> ame (or IP
ance	Connection type: ORaw OI
our	-Load, save or deli
tion	Saved Sessions
on	
1	
	Close window on Always
<u>H</u> elp	

BBS COMMAND Page is displayed.

12. Copy the message. Put your mouse cursor in the text area, and then either: Edit > Select All, then Edit > Copy or enter<ctrl>A <ctrl>C.

Send the message with PuTTY

copied the packet message from the **BBS Command** Page

NOTE: Include the blank line below

Verify you get the BBS Prompt.
16. Paste the message in PuTTY:
Put the cursor in the PuTTY text area after the last BBS

prompt, and then
Mouse *right-click* to paste in the message.

Reminder: All SCCo BBSs have a 2-minute

inactivity timer.

13. Make sure you previously

(previous section).

the **/EX** statement. 14. Start PuTTY

15. Connect to the BBS

3.8.5

PuTTY is displayed.

NOTE: Do not change the subject line.

•	SCC0 Pa	CKITFORMS		^	127.0.0.1:648/4/tex
\leftarrow	\rightarrow C	÷ ۵	00	127.0.0).1 :64874/text-24/
X14- !SCC #T: MsgN 1a.: 1b.: 5.: 7.: 8.: 9a.: 9b.: 10.: 12.: Rec- OpCa OpCa	312M_R_ oPIF0! form-ic: 3.11-2.: o: [X14 [20:16] [ROUTINI [Logist: [Station] [Station] [Station] [Station] [Station] [All et Sent: [] [All et Sent: [] [All et	-312M] /2023] j ics] icc] ics] iccc] icc] icc] icc] icc] icc] icc] icc] icc]	uipment] ation 14 us] is ready]	leployment.]
		10 - PuTT\			and and a second second
(#11 SP X144 !scc #T: #V: Msgl 1a. 1b. 5.: 7.: 88.: 9a. 9b. 10. 12. Recc OpCa OpNa Meth OpDa OpT !/AI / AI / AI / AI / AI / AI	> NDEO -312M form 3.11 NO: [2 : [200 [ROU" [LOU" [Stat : [200 [Stat : [200] [Stat : [200 [Stat : [200] [Stat : [200] [Stat : [200] [Stat : [200] [Stat : [200] : [Stat : [200] : [Stat : [200] : [Stat : [200] : [Stat : [200] : [Stat : [Stat	C@wlxs _R_ICS D! -ics21 -2.2 x14-31 (09/20) :16] istics tion Ca nadu F istics tion Ca tion Ca nadu F istics ti	c.ampr 213_Ec 3.htm 2M] 23] aptair oc] ire St t Stat oment der] 4] n Muns] /2023]] sc.amp End	atio ster br.o	on 14] ready fo]

File Edit View History Bookmarks Tools Help

× 127.0.0.1:64874/tex

SCCo PackItForms

11/16

3.8 Sending a manual PackItForm message

3.8.1 Run manual PackItForms

- 1. Open File Explorer, navigate to C:\PackItForms\Outpost\SCCo
- 2. Find and double-click on manual.cmd.

Setup Manual PackItForm 3.8.2 SETUP Page is displayed.

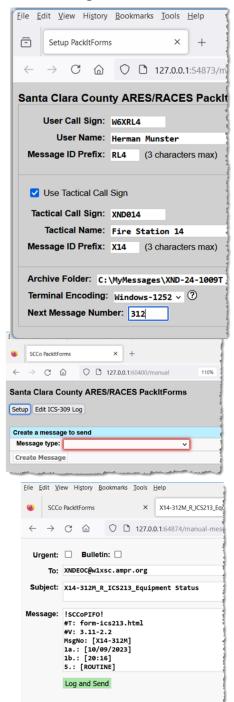
- 3. Fill in or update all fields:
 - User information
 - Tactical call information
 - Select your Archive Folder (messages are auto saved here)
 - Select Terminal Encoding
 - Next Message Number
- Press **OK** when done. 4.

Pick and fill in a Form 3.8.3 HOME Page is displayed.

- 5. From the dropdown menu, select a PackItForm.
- Press Create Message. 6.
- Fill in the PackItForm as usual.
- When done. 8. press Create Message.

3.8.4 Create the packet message MESSAGE Page is displayed.

- 9. If needed, check the boxes if this message is **Urgent** \Box or a Bulletin 🗆.
- 10. In the **To**: Field:
 - enter a single Dest address
 - multiple addresses separated with commas.
 - 11. When done, press Log and Send.



3.4 Start of Shift: Configure TNC Settings HINT !!! Create TNC Init Command text files

Create text files that contain the Start-of-Shift and End-of-Shift TNC commands for the TNCs you might use. This should be done before you ever find yourself needing to send and receive packet messages manually.

- 1. For each TNC that you use, create a text file with the "Start of Shift" and "End of Shift" TNC commands.
- 2. Each file should contain both sets of commands.

CAUTION: Do NOT cut-and-paste directly from the PDF into your terminal emulator; it may not work.

**Best practice: copy the commands first into a text editor (Notepad),

save it, and then copy-and-paste from there into your terminal program.

Kantronics_KPC3-Plus.txt - Notepad File Edit Format View Help --- KPC3-Plus Start of Shift --INTFACE TERMINAL TWARE E ON NV ON EVERY Ø ME 10

Save each file with the TNC Name. 3.

> Packet > Field Responder > TNC Init Files				CD SOFTWARE
•	Name	Date modified	Туре	NEWMODE ON 8BITCONV ON
	🔊 Kantronics_KPC3.txt	10/3/2021 8:55 AM	Text Docu	BEACON EVER
	Kantronics_KPC3-Plus.txt	10/3/2021 8:57 AM	Text Docu	SLOTTIME 10
	🔊 Kenwood_TH-D72A.txt	10/3/2021 8:53 AM	Text Docu	PERSIST 63
Ľ	Kenwood_TM-D710A.txt	10/3/2021 8:51 AM	Text Docu	PACLEN 128 MAXERAME 2
	🔊 MFJ_1270C-1274C.txt	10/3/2021 9:00 AM	Text Docu	FRACK 6
	JAPR_TNC2.txt	10/3/2021 9:02 AM	Text Docu	RETRY 8
~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	CHECK 30

TNC Reset

Insure all TNC settings are at the current SCCo standard values

1. Get current Transmit Level	P COM3 - PuTTY
Connect to the TNC with PuTTY cmd: <u>XMITLVL</u> (for KPC-3+) Record the value displayed.	cmd: cmd:xmitlvl XMITLVL 261 cmd:restore default xxxxxxxd#xxxxxxxxxxxxxxxxxxxxxxxxxxx PRESS (*) TO SET BAUD RATEÌ
2. Reset the TNC cmd: restore default Watch for PRESS (*) TO SET BAUD RATE When you see this text, PRESS "*" and enter your call sign at the prompt. ENTER YOUR CALL SIGN: <callsign> cmd: INT Term cmd: XMITLVL <value> cmd: CD software</value></callsign>	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

3. Start of Shift

__ If assigned a tactical call sign, then check or enter it now: cmd: mycall <TacCall>

4. Send Start-of-Shift TNC commands

- __ Select and copy (<cntl>C) the entire "Start of Shift" command list from the text file.
- ____ At Putty, mouse **right-click** to paste the TNC commands

3.5 End of Shift: Restore TNC Settings

When your shift is over and before you pack up the gear or turn it over to someone else, return the TNC to "normal" settings.

1. End of Shift TNC cleanup

- ____ Disconnect from the BBS.
- Cut-and-paste the "End of Shift" TNC commands into PuTTY at the TNC command prompt

<				>
STREAMSW \$7C				
		•		
KPC3-Plus	End	of	Shift	
	~~~~	~~~~		~~~~

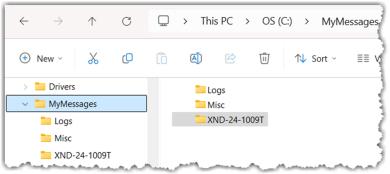
# 3.6 Getting ready for Manual Messaging

# Directory structure for manual messages

- 1. Create a directory structure (your choice) for your manual text message files, such as:
  - C:\MyMessages\XND-24-1009T (Activation no, example below)
  - C:\MyMessages\2024-10-09
- (date)

(assignment)

- C:\MyMessages\XND-F14
- Other
- 2. Identify a starting message number.



# 3.7 Manual message basics

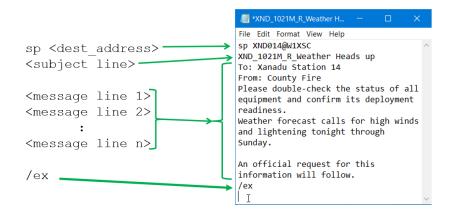
Knowing how manual packet works will help you troubleshoot problems. Manually create a message without Outpost or PackItForm for test purposes.

#### 1. Manually create a packet message

- ____ Open Notepad or any other text editor.
- Create a message with the four key elements of a manual packet message:

<pre>sp <destination></destination></pre>	Send Private
<subject line=""></subject>	standard SCCo Subject line format
<message lines=""></message>	the essence of the message to send
/ex <cr></cr>	End of Message
<b>.</b>	

- Create a round-trip test message (send to yourself) with whatever message content you want (example below).
- _____ Use the Subject as the file name and save to your **manual data** folder.



#### 2. Use PuTTY to the manually send the packet message

- Highlight the entire message from the saved file.
   Select All with <ctrl>A, then Copy using <Ctrl>C.
- ____ Start PuTTY.
- ____ Connect to the BBS.
- Put the cursor in the PuTTY screen by the BBS Prompt. Paste using **M**ouse **right-click** into Putty. The message should start transmitting immediately.