APPENDIX ONE ICOM 7300 WINLINK SETTINGS

The ICOM 7300 is an exciting new transceiver that brings fully digital transceivers to the general amateur radio market. Packed with capabilities, getting it configured for disaster ministry communications, including both voice and data can take a bit of work. This Appendix discusses the settings that seemed to work well for the ICOM 7300 in the Florida Baptist Disaster Relief Comms Trailer.

Best to understand the different ways the ICOM 7300 can accept signals to be transmitted:

Input	Signal Type / Examples
Front panel microphone connector	Voice over the microphone electret mic element generates low-level (millivolt) analog audio frequency electrical signals from speech.
	external sound card could be injected here)
Rear Panel accessory connector	"Line Level" (100 mV) analog audio frequency electrical signals frm a TNC or external sound card can be injected here and here is where we inject the signal from the Pactor Modem
USB (Universal Serial Bus)	The USB connection on the ICOM 7300 accepts digital data (1's and 0's) to give the 7300's internal soundcard the information needed to synthesize the proper audio signals for the digital mode desired. (The USB connection also allow setting the band and frequency and other settings.) This is how WINMOR and ARDOP are utilized by WINLINK and also how one can make PSK31, FT8, or any other "soundcard" type signal.

Just to be clear, this table shows how each type signal for transmission is connected:

TECHNIQUE	PHYSICAL INPUT
Single Sideband Voice	Microphone, connected to front
Transmissions	panel mic input with transceiver
	in "SSB" mode (using whichever
	sideband is desired for the band)
PACTOR digital transmissions	Rear Panel Accessory socket
	with transceiver in "SSB" mode
	(using upper sideband)
All "soundcard" modes including	USB (Universal Serial Bus) digital
both connected modes (ARDOP,	signals from the computer with
WINMOR) and broadcast modes	transceiver in "SSB - Digital" mode
(PSK31, FT8, MT63, Olivia, etc)	

Because both the PACTOR digital and normal voice single sideband transmissions use the same ("SSB") mode -- the ICOM 7300 is configured to automatically accept analog input from either the front panel mic caonnector OR the rear panel accessory connector -- so if you are sending PACTOR and have talking noise in the room, it may be picked up by the microphone and go out along with the PACTOR transmissions (in the CW/DATA section of the band!) -- so an important suggestion:

PHYSICALLY REMOVE THE MICROPHONE TEMPORARILY WHILE CONDUCTING PACTOR DIGITAL COMMUNICATIONS WITH THE FLORIDA BAPTIST DISASTER RELIEF ICOM 7300 TO AVOID ACCIDENTAL MICROPHONE TRANSMISSIONS

Getting the right gain/volume and other settings for the incrediblyconfigurable ICOM 7300 external inputs, turns out to be rather important! Before these adjustments, I was unable to get things to work out well at all for PACTOR. The solutions were found in a helpful post by Demetre Valaris SV1UY here: https://groups.io/g/pactor/topic/scs_pactor_config_with/14354355? p=,,20,0,0,0::recentpostdate%2Fsticky,,20,2,0,14354355.

Settings entered into the ICOM 7300 via its "MENU" and "SET" configuration menus:

ACC/USB AF Output Level	15%
ACC MOD Level	15%
DATA MOD	ACC

It is important to have adequate filter bandwidth for both the PACTOR (using SSB) and for the soundcard modes (which are set to use USB-D) -- do not change FIL1 (FILTER ONE) to anything narrower than 2400 Hz. Adjusting that filter setting takes a bit of getting used to, and recommendation is not to adjust further if it is set properly.

WINLINK WINMOR OR ARDOP "RADIO SETUP"

Select Radio Mo	del Icom 7	300	~	Antenna S	election	Default	
Icom Address	94	USB 🔾	USB	Digital 🔘	FM 🔿	Use Inter	nal Tuner 📃
Radio Control Port Serial Port to Use	COM3	✓ Baud	9600	✓ Enable	RTS 🖂	Enable DT	
PTT Port (Optional)							
Corial Port to Llos	loom 7300	~	Baud	0039	Ena	ble BTS	Enable DTR

(ARDOP is similar) Note that USB Digital is selected. This allows the computer to control to send and receive via the USB (universal serial bus) connection.

WINLINK PACTOR "RADIO SETUP"

Select Radio Model	Icom Amate	ur Radios	~	Antenna Sele	ction De	efault	
Icom Address	94 U	SB 🖲	USB Dig	ital 🔿 🛛 Fi	мО	Use Internal Tur	ner 🔲
Radio Control Port Serial Port to Use	COM3 ~	Baud	9600 ~	Enable R	TS 🗌	Enable DTR	TTL [
PTT Port (Optional)							
Serial Port to Use Via	a TNC	~	Baud 9	600 🗸	Enable	RTS Enab	le DTR

Note that "USB" rather than the USB-Digital is selected -- this allows the external PACTOR modem to send and receive signals via the analog cable to the rear panel ACCESSORY connection.

For proper linear (non-distorted) operation of the transmitter, the gain settings for the audio signals to be transmitted should be adjusted so that the signals don't cross into the "red" portion of the Power Output scale (or little to no ALC action if this is monitored). This has been preset for the WINMOR/ARDOP USB-Digital. For the PACTOR, the transmission levels of the individual Pactor modem are set as shown in the following figure:

WINLINK PACTOR TNC SETTINGS:

Send FEC Identificat	ion 🔲	
TNC Type:	PTC-Ilusb	~
TNC Serial Port:	COM5	×
TNC Serial Port Baud Rate:	38400	~
PSK Level:	175	+
FSK Level:	160	*
TX Delay (milliseconds):	30	-
Max Pactor Level:	3	~
Emphasize Pactor signals (Requires P4 modem with 1.17.	for busy det 8 or later fin	ection nware)
	Class	

The proper com port for the Bluetooth connection from the PACTOR modem could possibly change and requires a bit of experimentation and examination of the WINDOWS SETTINGS "Device Manager" Com-Ports displays to figure out. Bluetooth connections from Pactor Modems always TWO sequential com ports. The one to select in the WINLINK tnc setup is the higher, or ODD number. Leave the TX Delay at 30 milliseconds, and for USA operation, the max pactor level is 3. The Serial port Baud Rate must be set to 38400 (the rate the Pactor Modem prefers)

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APPENDIX TWO EXPORTING AND IMPORTING WINLINK MESSAGES

A strength of many disaster ministry organizations is they have planned on truly MASSIVE operations for feeding thousands of disaster survivors.

Planning for outbound so-called "health & welfare" communications from disaster areas to let loved ones know the status of survivors, has to be approached with the same planning for truly large numbers of messages. Just planning to "use the comms trailer computer to type them in" probably isn't adequate planning. One person can probably read a hand-scribbled message and type it into WINLINK in a minute or two, allowing for a throughput of perhaps 30 messages per hour. If you just received 300 messages by return delivery from several shelters, you could be looking at 10 hours of typing on one locked-down computer.

Luckily WINLINK provides a system allowing division of labor -which can be replicated into as many windows-based computers as you can muster.

WINLINK allows for XML EXPORT of one or even a batch of messages -- and then IMPORT into the actual computer doing the radio transmission.

Let's look into how this work, and how it can be integrated into a significant ministry service to large numbers of persons.

PHOTOCOPY. Have a large number of copies of blank, selfexplanatory message forms that can be delivered directly to disaster survivors, or by delivery (perhaps with ready-to-serve food) to shelters being managed by other service organizations. Consider using a form such as that on page 23 of this text.

COLLECT. Arrange for the orderly collection of responses and return to your disaster ministry, so that none are lost.

PREPARE TYPISTS AND COMPUTERS. Get WINLINK installed on several typists' computers. Messages will "go out" under the callsign chosen on the instance of WINLINK into which they were created -- so install the desired callsign, etc., on each typist's computer. They can all be the same callsign, or they can be different -- doesn't really matter. Have the typists go to work entering all the messages. It is simplest just to have them "post out outbox" even though the messages won't be sent from that computer

TRANSFER FROM TYPISTS' COMPUTER TO RADIO COMPUTER:

1. Select the OUTBOX of a typist's computer.

Winlink Express 1.5.24.1 - NF4RC						
NF4RC + Settings	Message Attachments	Move To: Saved Items	✓ Delete	Open Session:	Telnet Winlink	↓ Logs Help
	≿ 🛃 🦪 ≫ 🎯					
lo active session.						
System Folders	Date/Time	👻 Message ID	Size Source	Sender	Recipient	Subject
nbox (2 unread)	2019/11/0	2 1 GBJADKUULF	195 NF4RC	NF4RC	docvacuumtu	//WL2K Test Message #2
Read Items (0) Suthery (2)	2019/11/02	11:30 SYDQ5KTWD1EC	192 NF4RC	NF4RC	docvacuumtubes	//WL2K Test Message 1
Saved Items (U) Deleted Items (D) Drafts (D) Personal Folders Global Folders	Message ID: S Date: 2019/11 From: NF4RC To: docvacuum Source: NF4RC Subject: //WI	YDQ5KTWD1EC /02 11:30 tubes@gmail.com 2K Test Message 1				
	<no k<="" message="" td=""><td>ody></td><td></td><td></td><td></td><td></td></no>	ody>				

2. Select ALL the messages that you want to export (click on the top one, then SHIFT-CLICK on the bottom one, for example).

NF4RC - Settings Me:	sage Attachments M	ove To: Saved Items	✓ Delete	Open Session:	Telnet Winlink	∼ Logs Help
	🛃 🎯 🈁 🎯					
to active session.						
System Folders	Date/Time	👻 Message ID	Size Source	Sender	Recipient	Subject
nbox (2 unread) Read Items (0)	2019/11/02 11:	31 GBJADKUULFRH	195 NF4RC	NF4RC	docvacuumtubes.	//WL2K Test Message #2
Read Items (U)	2019/11/02 11:	30 SYDQ5KTWD1EC	192 NF4RC	NF4RC	docvacuumtubes.	//WL2K Test Message 1
Sent Items (11) Saved Items (0) Deleted Items (0) Drafts (0)						
Personal Foldets	- Nessage ID: SYD Date: 2019/11/0 From: NF4RC	Q5KTWD1EC 2 11:30				
Chicket Fallers	- To: docvacuumtu	bes@gmail.com				

3. Select Message | Export messages

4. When offered, BROWSE to find the location of your transport location (**might be a simple USB thumb drive**, or a networked directory if you have your computers on a local area network). Export the files.

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	Date/Time 2019/11/02 2019/11/02	→ 11:31 11:30	Message ID GBJADKUULFRH SYDQ5KTWD1EC	Size 195 192	Source NF4RC NF4RC	Sender NF4RC NF4RC	Recipient docvacuumtu docvacuumtu
	Date/Time 2019/11/02 2019/11/02	11:31 11:30	Message ID GBJADKUULFRH SYDQ5KTWD1EC	Size 195 192	Source NF4RC NF4RC	Sender NF4RC NF4RC	Recipient docvacuumtu docvacuumtu
<u>p</u>	Date/Time 2019/11/02 2019/11/02	▼ 11:31 11:30	Message ID GBJADKUULFRH SYDQ5KTWD1EC	Size 195 192	Source NF4RC NF4RC	Sender NF4RC NF4RC	Recipient docvacuumtu docvacuumtu
<u></u>	0 2019/11/02 2019/11/02	11:31 11:30	GBJADKUULFRH SYDQ5KTWD1EC	195 192	NF4RC NF4RC	NF4RC NF4RC	doovacuumti doovacuumti
	2019/11/02	11:30	SYDQ5KTWD1EC	192	NF4RC	NF4RC	doevacuumt
				8 1957c			
age Exp	ort File Name to:	Exp	port	Ca	ncel	Br	owse
Subj	ect: //WL message b	2K Te	est Message 1	L			<u> </u>
	subj subj	essages to: Subject: //WL <no b<="" message="" td=""><td>Subject: //WL2K Tr <no body="" message=""></no></td><td>Export Export Subject: //WL2K Test Message : <no body="" message=""></no></td><td>Export Ca Subject: //WL2K Test Message 1 <no body="" message=""></no></td><td>Export Cancel Subject: //WL2K Test Message 1 <no body="" message=""></no></td><td>Export Cancel Subject: //WL2K Test Message 1 <no body="" message=""></no></td></no>	Subject: //WL2K Tr <no body="" message=""></no>	Export Export Subject: //WL2K Test Message : <no body="" message=""></no>	Export Ca Subject: //WL2K Test Message 1 <no body="" message=""></no>	Export Cancel Subject: //WL2K Test Message 1 <no body="" message=""></no>	Export Cancel Subject: //WL2K Test Message 1 <no body="" message=""></no>

When successful, you'll get a notice like this:

Winlink Express 1.5.24.1	- NF4RC										
NF4RC - Se	ttings M	lessage A	ttachments	Move	To: Saved Items	1	✓ Delete	Open Session:	Telnet Winlink	~ Lo	ogs Help
	+ ■ ヽ	E 🖬 a) >> 🧑				_		h		
No active session.											
System Folders	8		Date/Time	v	Message ID	Size	Source	Sender	Recipient	Subject	
Inbox (2 unread)		ļ 🖡	2019/11/02	11:31	GBJADKUULFRH	195	NF4RC	NF4RC	docvacuumtubes	//w/L2K	Test Message
Read Items (0)	-		1 2019/11/02	11-30	SYDO5K TWD1EC	192	NE4BC	NF4RC	docvacuumtubes	//w/L2K	Test Message
Deleted Items (0) Drafts (0) Personal Folder	0	Successfully C:\bib\Proje sages.xml	exported 2 me cts\REDCROSS	essages HAMCL	to: UB\2019\NOV\Exp	orted_M OK	ies —				
Global Folders		From To: Sour Subj	: NF4RC docvacuum ce: NF4RC ect: //WL	tubes 2K Te	:0gmail.com st Message :	1					

AT THE RADIO COMPUTER

5. Move to the actual computer that will do the WINLINK connection.

6. Select Message | Import Messages.

7. Find the location where the messages were exported to, select the XML file, and import -- the messages will automatically go into your

OUTBOX, but to be safe, it might be wise to already have selected that System Folder in WINLINK.

KX4Z	Settings Message	Attach	ments Move	To: Saved Items	 Delete 	Open Session:	Telnet Winlin
	🔮 Please select the XML file wit	h messa <u>c</u>	jes to import				×
No active se	$\leftarrow \rightarrow \neg \uparrow \square$ « Redcf	OSSHAN	1CLUB > 2019	> NOV ~ ♂	Search	NOV	م
Inbox (70 u	Organize 🔻 New folder						
Read Items Outbox (2) Sent Items Saved Item Deleted Iter Drafts (0) FieldDay20 Gordon (0) HurricaneT	 Photos SpoofingWinlink OneDrive This PC 3D Objects Desktop Documents Downloads Music Pictures Videos 	Ŷ	Name	^ J_Messages.xml		Date modified 11/2/2019 7:37 A	IVI IM XN
	🏪 Windows (C:)	~	<				>
43228@NTSC AD4BL AG6SV AI4NF AI4D10	File name	: [~	XML fi	les (*.xml) pen C	v K ancel

NOTE FOR TRAINERS: If those messages already exist ANYWHERE in that WINLINK system, they don't seem to import. **This can trip you up in training demonstrations** -- delete them even from the "deleted" folder if you want to re-import them as part of a demo!

NOTE FOR OPERATORS: If the messages were created under a different WINLINK callsign, you won't be able to edit them -- but you can still send them.

8. When the messages import successfully into the radio-connected computer, you'll get a helpful notice telling you how many you imported.

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🗱 Winlink Express 1.	5.24.1 - KX4Z						_	
16(4Z	 ✓ Settings 	Message	Attachments	Move To:	Saved Item	15 3	> Delete	٢
		12	🕘 🏵 🔞					
No active session.								
System	Folders		Date/Time		ssage ID	Size	Source	
Read Items (0) In Outbox (2) Sent Items (137) Saved Items (2) Deleted Items (0) Drafts (0) Perso	Comp Comp Mess Mess Numb Numb	oleted mess ages were e ages were i oer of mess oer of dupli	age import, xported by NF4RC mported into Outl ages imported = 2 cates already in da	on 2019/11 20x tabase = 0	/02 11:37 (ut	a		
FieldDay2018 (0 Gordon (0) HurricaneTest ((- Inders				ОК			

9. Initiate a radio session (e.g., WINMOR, ARDOP or PACTOR) make a connection to an RMS station, and all your messages will transfer out of the disaster area. If you lose your connection at any point, messages that were not fully and correctly transferred will still be there in your outbox. Make another connection and the transfers will resume. A little practice at this is helpful!

THANKS for your ministry to others!