

Extended Rig Control in N3FJP Logging and Contest Software

For Yaesu FT-891 and similar Yaesu Radios

N3FJP's ham radio software for logging and contesting has many powerful features that remain hidden behind the user-friendly interface. If you have your rig connected to a computer, there's a world of options available. In this document we will explore using the "RI" (Rig Interface) feature found in Amateur Contact Log (ACLog) and all of the contest programs (Field Day, State QSO Parties, etc.).

The RI feature allows the user to program the F keys on a PC keyboard using CAT (Computer Aided Transceiver) commands to do just about anything on the radio. This is especially valuable when there is a function which is only available deep in the menu system of the radio. Plus, this feature provides powerful macro creation for contest exchanges — more about this advanced functionality a little later.

At the main screen of any N3FJP program, open SETTINGS > TRANSMIT > CW SETUP, and you'll see the window below (Control-W is a shortcut!)

CW Setup Form 1.2 (Ctrl W for this form or Ctrl > Shift W for the CW Mini form)

Com Port:				Keying Options		Timing Options		Description:			
<div>COM3 COM4 COM5</div>				<div><input checked="" type="radio"/> None <input type="radio"/> RTS <input type="radio"/> Winkeyer <input type="radio"/> DTR <input type="radio"/> N3FJP API</div>		<div><input type="radio"/> Sleep <input checked="" type="radio"/> Timer <input type="radio"/> Loop</div>		<div>To use computer generated CW, first, you will have to build or purchase an interface to connect from your computer's serial port to your transmitter. Schematics and purchase options are available on my website (www.n3fjp.com).</div> <div>Most folks only have USB ports now, but in most cases a USB to serial adapter will work fine. You'll find them on line or at your local Best Buy.</div> <div>Alternatively, you can select the Winkeyer device, which will key your rig independently from your PC's processor, which is a great solution if your processor's code is erratic. There is also a Winkeyer USB version that will connect right to your PC's USB port. For more on Winkeyer, please visit www.winkeyer.com.</div>			
<div>Save Settings</div>				<div>WPM</div>		<div>Word Space</div>				<div>Character Space</div>	
<div>Load Settings</div>				<div>Faster</div>		<div>More</div>				<div>More</div>	
<div>35</div>				<div>0</div>		<div>0</div>				<div>Send F9 Characters:</div>	
<div>Slower</div>				<div>Less</div>		<div>Less</div>		<div>Test</div>			
<div>Loop Sec</div>				<div>6</div>		<div>F4 RI:KM1<CALL> <SERIAL></div>		<div>F7</div>			
<div>F1</div>				<div>TSM - Tab</div>		<div>F5</div>		<div>F8</div>			
<div>F2</div>				<div>TSM - Enter</div>		<div>F6</div>		<div>F9 RI:BD0;</div>			
<div>F3</div>				<div>F10 RI:BU0;</div>		<div>F11</div>		<div>F12 Keyboard</div>			

Multi Radio Configuration: (Main Form Ctrl + X)		Lead (ms)		Tail (ms)	
Rig 1:	<div></div>	<div></div>	<div>10</div>	<div></div>	<div>5</div>
Rig 2:	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
Rig 3:	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
<div>Help</div>		<div>Done</div>		<div></div>	

☒ Faster Escape Check
☐ Show Mini on Startup

[Click for more info on rig to PC CW interfaces.](#)

Rig interface must be enabled to swap CW settings.

A Simple Demo

Let's get started with a simple demo. Before we continue, make sure your rig is talking to the computer. Open the CW Setup screen (CTRL-W). Select the proper COMM port in the top left. You can ignore any other settings in the window. Type exactly the characters you see in the F9 and F10 boxes above. (RI:BD0; and RI:BU0;). Note that RI is not R1. Click on the box labeled "TEST". Your radio should click down one band (BD = Band Down). Click the "Done" button at the bottom and now both Band Down and Band Up are programmed on your F9 & F10 keys. Try it.

So, what happened here? These F boxes are normally used to send canned CW messages (such as calling CQ) directly to the keyer on the radio (you can scroll the document in the top right box to learn more about this). However, if the message starts with "RI:", the software knows not to send it to the keyer, and instead it sends the text as a CAT command to the radio. In this demo, it's BD0 or BU0. Important: all Yaesu CAT commands end with a semicolon ";".

Something More Useful

Let's say you are in a contest running CW at 30wpm and you need to QRS for a station. Not a simple task on the FT-891. Is there a CAT function to set the keying speed? Download the CAT manual at the Yaesu website www.yaesu.com. Look in the "files" area under "FT-891". There on page 11 you'll find this:

CAT (Computer Aided Transceiver) Operation

KR	KEYER									
Set	1	2	3	4	5	6	7	8	9	10
	K	R	P1	:						
Read	1	2	3	4	5	6	7	8	9	10
	K	R	:							
Answer	1	2	3	4	5	6	7	8	9	10
	K	R	P1	:						

P1 0: KEYER "OFF"
1: KEYER "ON"

KS	KEY SPEED									
Set	1	2	3	4	5	6	7	8	9	10
	K	S	P1	P1	P1	:				
Read	1	2	3	4	5	6	7	8	9	10
	K	S	:							
Answer	1	2	3	4	5	6	7	8	9	10
	K	S	P1	P1	P1	:				

P1 004 - 060 (WPM)

KY	CW KEYING									
Set	1	2	3	4	5	6	7	8	9	10
	K	Y	P1	:						
Read	1	2	3	4	5	6	7	8	9	10
Answer	1	2	3	4	5	6	7	8	9	10

P1 1: Keyer Memory "1" Playback
2: Keyer Memory "2" Playback
3: Keyer Memory "3" Playback
4: Keyer Memory "4" Playback
5: Keyer Memory "5" Playback
6: Message Keyer "1" Playback
7: Message Keyer "2" Playback
8: Message Keyer "3" Playback
9: Message Keyer "4" Playback
A: Message Keyer "5" Playback

Box 2 shows the "KS" command. To set the key speed to 15wpm for example, the command would be:

RI:KS015;

That would be entered in an unused F box. To go back to 30wpm, another F box would be needed.

Creating and Displaying your Commands

Look through the CAT manual and find commands you think would be useful while logging or especially while working a contest. Take a closer look at the EX command which can execute any menu item from 01-01 to 18-03. After the semi-colon, a few characters can be added to describe the command as shown in the figure at the right. After you have loaded the F keys with your favorites and closed the CW setup screen, you can display all F keys in a floating window on the main screen using CTRL-SHIFT-W. Bonus: simply click on an item in the floating window and it will be sent to the radio.

Populating the Keyer Memories

The FT-891 has 5 internal CW memories which can hold up to 50 characters each. Complete descriptions on how these memories work is beyond the scope of this document. Learn about them under “Contest Memory Keyer” in the Advanced manual available at the Yaesu website. To keep it simple, we’ll be using memory slot #1. Make sure that memory #1 is set to “TEXT” in the menu system.

MENU	04-07	KEYER
CW MEMORY 1		TEXT
CW MEMORY 2		TEXT
CW MEMORY 3		TEXT
CW MEMORY 4		TEXT

KM	KEYER MEMORY											
Set	1	2	3	4	5	6	7	~	53	n	P1	1 - 5 : Keyer Memory Channel Number
	K	M	P1	P2	P2	P2	P2	~	P2	:	P2	P2 Message Characters (up to 50 characters)
Read	1	2	3	4	5	6	7	8	9	10		
	K	M	P1	:								
Answer	1	2	3	4	5	6	7	~	53	n		
	K	M	P1	P2	P2	P2	P2	~	P2	:		

CW F (Ctrl+Shift W) ×

F1: RI:KY6; EXCH

F2: RI:KY7; EXCH

F3: RI:KY8; MYCALL

F4: RI:KM1<CALL>

F5: RI:KM2TU 5NN

F6: RI:KM3W8RD};

F7:

F8: RI:SV; SWAP

F9: RI:MD03; MODE

F10: RI:BD0; BAND

F11: RI:BU0; BAND

Settings

From the CAT manual, the KM command is used to load the text into a memory location. And, as noted in the Advanced manual, messages are terminated with a right brace “}”. So, to load a CQ call into memory #1 for playback, the command would look like this:

RI:KM1CQ CQ CQ DE W8RD};KY6;

Assign that to an F key, it will populate memory slot #1, and then play the CQ message on the radio’s keyer. Wait... what’s that KY6 after the semicolon? Two commands are joined: the KM and KY. (see the KY command back on page 2). Note that “6” is needed to playback memory #1, and “7” for memory #2, etc. Don’t ask. It’s a Yaesu thing.

Creating Contest Exchanges with Variables

Once a callsign has been entered in the callsign box on N3FJP software, it is available to be used in a keyer memory., like this:

RI:KM1<CALL> DE W8RD KN};KY6;

The variable <CALL> will be replaced by the callsign of the other station. Here’s an example of a complex contest exchange for the ARRL CW Sweepstakes:

RI:KM1<CALL> TU <SERIAL> W8RD 64 WCF};KY6;

Here, the contest serial number <SERIAL> is a variable. Another available variable is <RST> .