j✍Com Transceiver Control Computer Interface

Model: ☐ TC-I   ☐ TC-K   ☐TC-Y   ☐ TC-Y2

The J-Com Transceiver Control Computer Interface allows you to control most if not all of radio functions from your computer. It is functionally identical to the **Icom CT-17, Yaesu FIF-232C, Ten Tec 305** and **Heath** computer interfaces. It will work with all radios and rig control software which use these interfaces.

- **No external power supply ...power is 'lifted' right from the computer's COMM port!**

- **RFI proof ...all electronics are enclosed in a shielded DB-25 connector hood.**

- **Fully hardware and software compatible...will work with any software including DXBase, LOGic, K1EA's CT program, Turbolog, RC-plus and many others.**

- **Fully wired and tested...just plug it in and go.**

- **Great for winning contests and making contacts easier than before.**

☐ **TC-I** 1/8 inch phone connector. For use with **ICOM** IC-781, IC-765, IC-761, IC-728, IC-735, IC-725, IC-726, IC-751A, IC-271, IC-471, IC-R71, IC-R9000, IC-R7100, IC-R700, IC-R72, IC-970; **Ten-Tec** Delta II, Argonaut II, Paragon, Omni VI.

☐ **TC-K** DIN connector. For use with **Kenwood** TS-950, TS-850, TS-450, T690, TS-940, TS-440, TS-140, TS-690, TS-5000, TS-711, TS-811.

☐ **TC-Y1** DIN connector. For use with **Yaesu** FT-1000D, FT-1000, FT-990, FT-980, FT-767, FT-736, FT-747; **Heath** SB-1400

RAMSEY
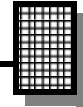
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- **PB-1 Telephone Transmitter**

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- **Packet Computer Interfaces**
- **QRP Power Amplifiers**

RAMSEY MINI-KITS
Many other kits are available for hobby, school, Scouts and just plain FUN. New kits are always under development. Write or call for our free Ramsey catalog.
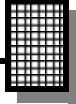
<u>j-Com Transceiver Control Computer Interface Instruction Manual</u>
Ramsey Electronics publication No. MTCCI
First printing: December 1994

jＣOM TRANSCEIVER CONTROL COMPUTER INTERFACE

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RAMSEY

INTRODUCTION:

The J-Com Transceiver Control Computer Interface provides the appropriate "level shift" of signals between your computer's RS-232 COMM port and your transceiver's TTL computer control connection. By using low power integrated circuit devices to make these conversions, we have been able to package the entire interface into the shielded hood of a DB25 type RS-232 connector. Because only 3.5 - 6 mA of current is required, the interface is able to "borrow" power from the computer for its operation.

TCCI Block Diagram

Everything but Kenwood

```
         TX              RS232
radio    ┌────▷────┐      levels    pc
         RX  └────◁────┘

              ↑
            level

           shifting
```

```
Kenwood

         TX   ▷○           ▷      RS232
radio                             levels    pc
         RX   ○◁           ◁

              ↑            ↑
          inverters       level

                         shifting
```
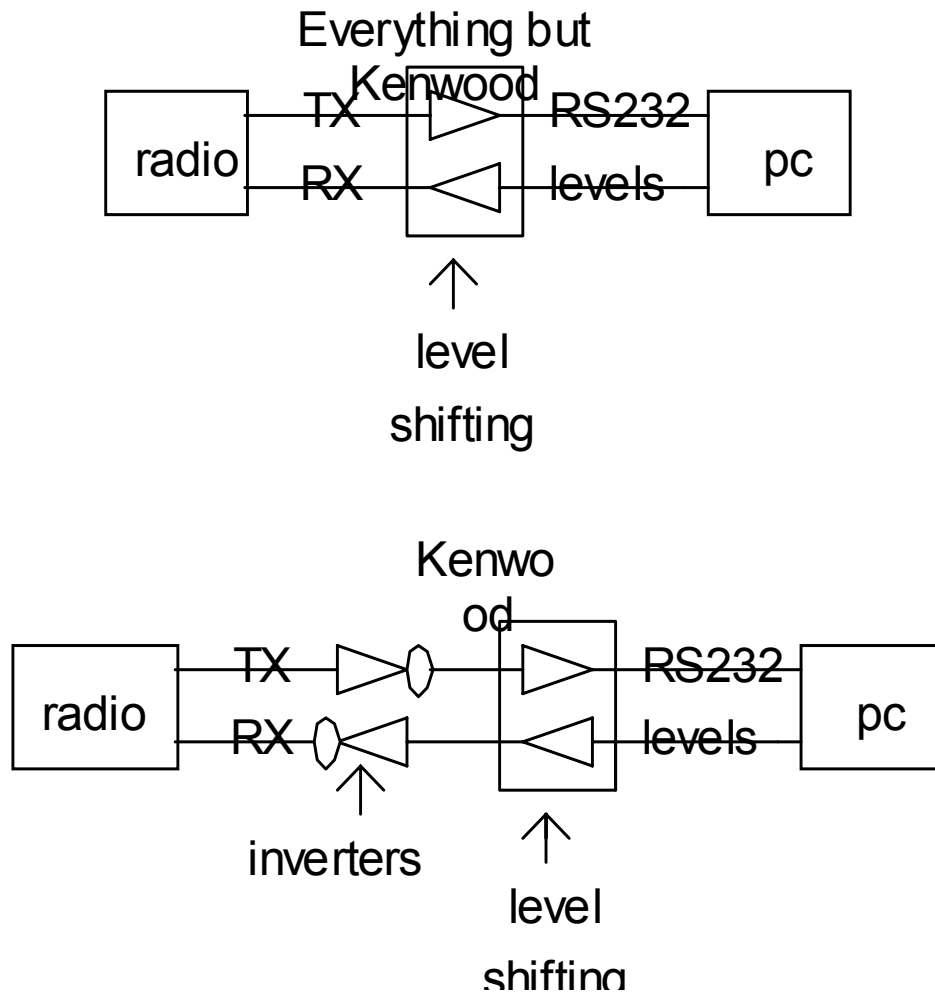
The block diagram shown is a very general interpretation of the J-Com Transceiver control Computer. When a signal is sent from your computer it is in binary (a logic 1 or 0). The binary signal is between 3 and 25 volts for a logic 1 and between -3 and -25 volts for a logic 0. Your radio doesn't use such voltage levels, therefore a level shifter is used to change these voltage levels to something that it can deal with. A logic 1 is shifted to become between 3.2 and 5 volts and a logic 0 is shifted to become between 0 to 2.4 volts. A Kenwood i different than other radios though,in that it require the data to be inverted.

PARTS LIST

❐ Software Disk
❐ Cable with appropriate connectors

INSTALLATION:

Please understand that you must possess a basic computer "literacy" for the following instructions. If you have trouble, your local computer or amateur radio club can be quite helpful in explaining terms and the intricacies of your individual computing system, including any software "glitches" that you encounter while installing this interface.

❐ 1. Turn off the AC power to both the transceiver and the computer.

❐ 2. Plug the DB-25 connector into the desired COMM port of the computer.

❐ 3. Plug the transceiver connector into the appropriate jack on the back of your transceiver. Consult the transceiver manuals if you are unsure which is the correct jack.

SOFTWARE:

The J-Comm Transceiver Control Computer Interface is compatible with all rig control software available. This includes Kenwood's HamWindows®, DXBase, K1EA CT, LOGic, NA, TurboLog, Hyperlog, RC-Plus and many others. Consult the software manual and any other on-disk information (READ.ME files) which came with your software to understand how to properly configure it to communicate with your radio. Many software programs have different recommendations regarding the setting of these parameters.

❐ 1. Select the appropriate serial port: COMM 1,2,3,... These may be referred to as serial ports, comm ports or asynchronous communications adapters in your software manual.

❐ 2. Set the serial interface parameters : base address and interrupt request line (IRQ). You may need to tell the software how to access the serial port on your computer.

❐ 3. Tell the software the brand and model of radio you are using. In most cases, the software will determine the following parameters automatically from its own data base of radio standards. If you are having trouble, check the ASCII interface parameter: Baud rate, number of data bits, parity, and number of stop bits. The radio and computer must use the same standard in order to communicate. Consult your radio manual first to determine the appropriate data transfer standard. Some radios allow these parameters to be modified by setting the DIP switches to internally. If you experience problems, verify that the switches are set to the default positions. Consult your software manual to determine how to set these parameters in the program.

A note from us at J-COM:

We want to help you make sure that everything is working on the J-COM interface cables before we see perfectly good interfaces coming back to be repaired. Many of the other programs on this included disk turn out to be only DEMOS. This means that many of them don't even try to communicate to your radio, you need to register the program first! This depends mostly on radio you have since some programs for other radios are fully functional. Please read the readme files before jumping to conclusions!

RC-PLUS

We have included a copy of the RC-Plus shareware radio control program on our HamBase demo diskette. This program will be found in the directory \RCPLUS. To use the program, copy all the files in the directory to your hard disk, or to a different disk by typing :

C:> MD RCPLUS
C:> CD RCPLUS
C:>COPY A:\RCPLUS*.*
(If copying from A drive, type COPY B ....,
if copying from B drive, type COPY A ....)

To print the document type:

C:>\RCPLUS>PRINT RCPLUS>DOC

To run the program type:

C:>\RCPLUS>RCPLUS

F1 will give you outline help.   **ALT-S** will allow you to specify your radio. If you have trouble uderstanding the above, we suggest that you contact a local computer user to help you.

TROUBLESHOOTING:

If the interface appears not to be working, here are some things to try:

❐   1. If the interface controls the radio in any way rest assured that it is operating correctly and a software bug is to blame.This means that the cable is not at fault.

❐   2. Check all connections for proper fit.

❐   3. Check that the correct radio is selected in your software.

❐   4.Check the serial port and it's properties.

❐   5. Check the radio parameters and DIP switches (if any).

❐   6. Remove any TSRs that may conflict with your serial ports.

❐   7.Try using a different serial port.

❐   8. If you have more than two serial ports on your computer, check for IRQ conflicts.

TCCI-1 ● 7

Remember that the person with the most knowledge of your computer system is you. We wish we could be more helpful, but it is virtually impossible for us to debug your entire system on the telephone. **The majority of problems encountered are software setup related, i.e. wrong COMM port, IRQ conflicts. Since we did not setup your system, it is unadvisable for us to recommend that you change your system settings.** Please only call as a last resort and consult the warranty procedure before doing so.

TESTING YOUR INTERFACE:

Connect the radio as you normally would to a power supply, connect the interface cable to a communications port of your computer (COM1 or COM2), and connect the other end to the radio. If needed, remove your modem or other device to allow you to temporarily use one of these ports to test your interface. These ports tend to be more standardized than COM3 or COM4, so the program was not written to include the diversity of options available. Now run the program by typing in the following commands at the default prompt.

A:\COMMTEST.EXE (Where A is the drive that the install disk is in)

After making sure everything is set to go, look in your radio's manual under computer control. There should be a good general description of the codes required to perform certain tasks, data protocols (ie. , 4800, N, 8, 1) and so on.

Look up the protocol first, and then set it in Commtest by pressing "S" on the main menu. Follow the directions and answer the questions for baud rates, stop bits, etc. Then look up a simple code like setting the frequency or turning some feature on and off. Depending on how the manufacturer has set up the op codes in the radio will determine what format to use. For example the Yeasu 2.5200 Mhz, the op code needed is 0Ah, 01h, 42h, 50h, 00h. Note that 0Ah is the op code for setting frequency. The problem that you will find upon trying to send this code to the radio is that it needs to be sent in reverse order of what makes sense to you and me. The Yeasu FT-900 radio requires that the codes be sent out in reverse order, so when entered into the program you will need to start with 00h and end with the code of 0Ah.

To enter these codes into the program, press "O" on the main menu, then choose the type of data transfer you require. In the case of the Yeasu FT-900, you would choose "Enter Hex". Now you can enter your code in, and in case of the Yeasu and possibly others, enter the code in reverse.

Now you can press "1" or "2" on the main menu depending on which comm port you are using. If you accidently press the comm port where your mouse is running, it may disable your mouse temporarily until you restart another program. Watch carefully on the radio to see if anything happens when you transmit this data through the interface.

If the radio is receiving the data it means that your interface cable is operating properly. If the display shows that it is receiving the data, but no action occurs, check the op code you are using to make sure it is being entered in the correct order, as well as the correct op code. If so, check your comm specs again.

Naxt try to send out a code that returns some information-such as to retrieve the operating frequency. This will help to verify that your receive data line is operational also. Set up the comm specs as before and then enter an op code that returns data. Now Comm test should show you the data it has received after sending out the op code. If you are able to receive something, rejoice, everything should work for you. If not, you will want to check everything out, such as; your wiring, certain functions being enabled on the radio, the correct op codes being used, and so on. If you are still having trouble, have a fellow computer wiz help you out, maybe there is something you missed.

Also note that not all radios send back their information in ASCII type code. Most of the information they send back is encoded information, which when displayed on the screen will look like Greek to most of us. You don't really need to decode the information unless you are really expecting ASCII and did not get it. If that is the case, you may wish to check the clock speeds of your radio or computer, either that or turn the computer off, and then on again to reset the serial ports. This is a problem beyond the scope of the interface cable and the solution is in your existing hardware.

The Ramsey Warranty

Please read carefully BEFORE calling or writing in about your product. Most problems can be solved without contacting the factory.

Notice that this is not a "fine print" warranty. We want you to understand your rights and ours to! All Ramsey kits will work if assembled properly. The very fact that your kit includes this new manual is your assurance that a team of knowledgeable people have field-tested several "copies" of this kit straight from the Ramsey Inventory. If you need help, please read through your manual carefully, all information required to properly build and test your kit is contained within the pages!

1. DEFECTIVE PARTS: It's always easy to blame a part for a problem in your kit, Before you conclude that a part may be bad, thoroughly check your work. Today's semiconductors and passive components have reached incredibly high reliability levels, and its sad to say that our human construction skills have not! But on rare occasion a sour component can slip through. All our kit parts carry the Ramsey Electronics Warranty that they are free from defects for a full ninety (90) days from the date of purchase. Defective parts will be replaced promptly at our expense. If you suspect any part to be defective, please mail it to our factory for testing and replacement. Please send only the defective part (s), not the entire kit. The part(s) MUST be returned to us in suitable condition for testing. Please be aware that testing can usually determine if the part was truly defective or damaged by assembly or usage. Don't be afraid of telling us that you 'blew-it', we're all human and in most cases, replacement parts are very reasonably priced.

2. MISSING PARTS: Before assuming a part value is incorrect, check the parts listing carefully to see if it is a critical value such as a specific coil or IC, or whether a RANGE of values is suitable (such as "100 to 500 uF"). Often times, common sense will solve a mysterious missing part problem. If you're missing five 10K ohm resistors and received five extra 1K resistors, you can pretty much be assured that the '1K ohm' resistors are actually the 'missing' 10 K parts ("Hum-m-m, I guess the 'red' band really does look orange!") Ramsey Electronics project kits are packed with pride in the USA. If you believe we packed an incorrect part or omitted a part clearly indicated in your assembly manual as supplied with the basic kit by Ramsey, please write or call us with information on the part you need and proof of kit purchase

3. FACTORY REPAIR OF ASSEMBLED PRODUCT:
To qualify for Ramsey Electronics factory repair, kits MUST:
1. NOT be assembled with acid core solder or flux.
2. NOT be modified in any manner.
3. BE returned in fully-assembled form, not partially assembled.
4. BE accompanied by the proper repair fee. No repair will be undertaken until we have received the MINIMUM repair fee (1 hour labor) of $36.00, or authorization to charge it to your credit card account.
5. INCLUDE a description of the problem and legible return address. DO NOT send a separate letter; include all correspondence with the unit. Please do not include your own hardware such as non-Ramsey cabinets, knobs, cables, external battery packs and the like. Ramsey Electronics, Inc., reserves the right to refuse repair on ANY item in which we find excessive problems or damage due to construction methods. To assist customers in such situations, Ramsey Electronics, Inc., reserves the right to solve their needs on a case-by-case basis.

The repair is $36.00 per hour, regardless of the cost of the kit. Please understand that our technicians are not volunteers and that set-up, testing, diagnosis, repair and repacking and paperwork can take nearly an hour of paid employee time on even a simple kit. Of course, if we find that a part was defective in manufacture, there will be no charge to repair your kit (But please realize that our technicians know the difference between a defective part and parts burned out or damaged through improper use or assembly).

4. REFUNDS: You are given ten (10) days to examine our products. If you are not satisfied, you may return your unassembled kit with all the parts and instructions and proof of purchase to the factory for a full refund. The return package should be packed securely. Insurance is recommended. Please do not cause needless delays, read all information carefully.

**TCCI j·Com Transceiver Control Computer Interface
Quick Reference Page Guide**

RAMSEY

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