



**FT-950**  
**CAT OPERATION**  
**REFERENCE BOOK**

**VERTEX STANDARD CO., LTD.**

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

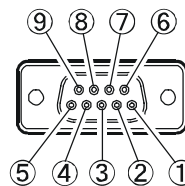
## OVERVIEW

The CAT (Computer Aided Transceiver) System in the **FT-950** transceiver provides control of frequency, VFO, memory, and other settings such as dual-channel memories and diversity reception using an external personal computer. This allows multiple control operations to be fully automated as single mouse clicks or keystroke operations on the computer keyboard.

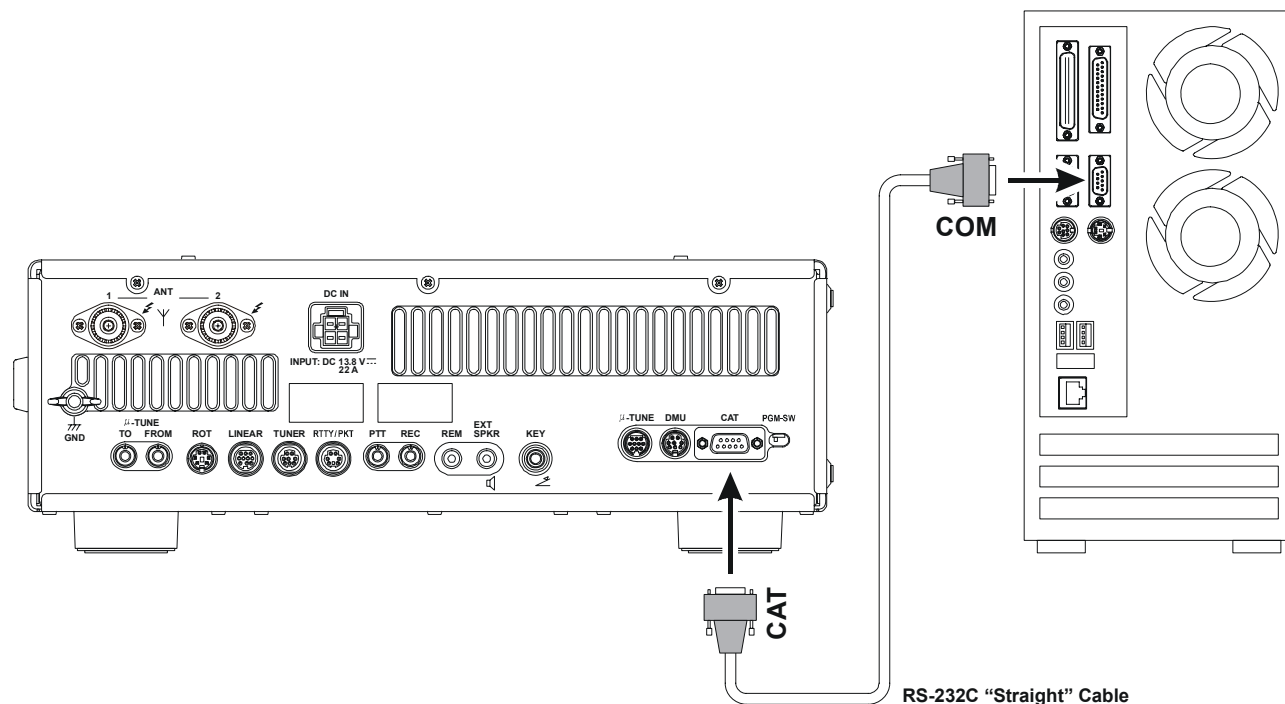
The **FT-950** transceiver has a built-in level converter, allowing direct connection from the rear-panel **CAT** jack to the serial port of your computer without the need of any external boxes. You will need a serial cable for connection to the RS-232C (serial or COM port) connector on your computer. Purchase a standard serial cable (not the so-called “null modem” type), ensuring it has the correct gender and number of pins (some serial COM port connectors use a 9-pin rather than 25-pin configuration). If your computer uses a custom connector, you may have to construct the cable. In this case, refer to the technical documentation supplied with your computer for correct data connection.

Vertex Standard does not produce CAT System operating software due to the wide variety of personal computers and operating systems in use today. However, the information provided in this chapter explains the serial data structure and opcodes used by the CAT system. This information, along with the short programming examples, is intended to help you start writing programs on your own. As you become more familiar with CAT operation, you can customize programs later on for your operating needs and discover the true operating potential of this system.

## CAT JACK



| PIN No. | PIN NAME   | I/O    | FUNCTION  |
|---------|------------|--------|---|
| ①       | N/A        | —      | —   |
| ②       | SERIAL OUT | Output | Outputs the Serial Data from the transceiver to the computer.   |
| ③       | SERIAL IN  | Input  | Inputs the Serial Data from the computer to the transceiver.  |
| ④       | N/A        | —      | —   |
| ⑤       | GND        | —      | Signal Ground   |
| ⑥       | N/A        | —      | —   |
| ⑦       | RTS        | Input  | When the computer is not ready to receive data, this port goes to “L” for inhibit the transmit data from the transceiver. |
| ⑧       | CTS        | Output | When the transceiver is not ready to receive data, this port goes to “L” for inhibit the transmit data from the computer. |
| ⑨       | N/A        | —      | —   |



# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND

A computer control command is composed of an alphabetical command, various parameters, and the terminator that signals the end of the control command.

*Example:* Set the VFO-A frequency to 14.250000 MHz.

|           |                 |            |
|-----------|-----------------|------------|
| <b>FA</b> | <b>14250000</b> | <b>;</b>   |
| ↑         | ↑               | ↑          |
| Command   | Parameter       | Terminator |

There is three for the **FT-950** Command as shown below:

**Set** command: Set a particular condition  
(to the **FT-950**)

**Read** command: Reads an answer  
(from the **FT-950**)

**Answer** command: Transmits a condition  
(from the **FT-950**)

For example, note the following in the case of the FA command (Set the VFO-A frequency):

- To set the VFO-A frequency to 14.250000 MHz, the following command is sent from the computer to the transceiver:  
“**FA14250000;**” (Set command)
- To read the VFO-A frequency, the following command is sent from the computer to the transceiver:  
“**FA;**” (Read command)
- When the Read command above has been sent, the following command is returned to the computer:  
“**FA14250000;**” (Answer command)

### Alphabetical Commands

A command consists of 2 alphabetical characters.

You may use either lower or upper case characters. The commands available for this transceiver are listed in the “PC Control Command Tables” on the following pages.

### Parameters

Parameters are used to specify information necessary to implement the desired command.

The parameters to be used for each command are predetermined. The number of digits assigned to each parameter is also predetermined. Refer to the “Control Command List” and the “Control Command Tables” to configure the appropriate parameters.

When configuring parameters, be careful not to make the following mistakes.

*For example*, when correct parameter is “**ISO+1000**” (IF SHIFT):

#### **ISO1000;**

Not enough parameters specified (No direction (+) given for the IF shift)

#### **ISO+100;**

Not enough digits (Only three frequency digits given)

#### **ISO+\_1000;**

Unnecessary characters between parameters

#### **ISO+10000;**

Too many digits (Five frequency digits given)

*Note:* If a particular parameter is not applicable to the **FT-950**, the parameter digits should be filled using any character except the ASCII control codes (00 to 1Fh) and the terminator (;).

### Terminator

To signal the end of a command, it is necessary to use a semicolon (;). The digit where this special character must appear differs depending on the command used.

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## CONTROL COMMAND LIST

| COMMAND | FUNCTION                | SET | READ | ANS. | AI | COMMAND | FUNCTION                  | SET | READ | ANS. | AI |
|---------|-------------------------|-----|------|------|----|---------|---------------------------|-----|------|------|----|
| AB      | VFO-A TO VFO-B          | 0   | X    | X    | X  | MS      | METER SW                  | 0   | 0    | 0    | 0  |
| AC      | ANTENNA TUNER CONTROL   | 0   | 0    | 0    | 0  | MW      | MEMORY WRITE              | 0   | X    | X    | X  |
| AG      | AF GAIN                 | 0   | 0    | 0    | 0  | MX      | MOX SET                   | 0   | 0    | 0    | 0  |
| AI      | AUTO INFORMATION        | 0   | 0    | 0    | X  | NA      | NARROW                    | 0   | 0    | 0    | 0  |
| AM      | VFO-A TO MEMORY CHANNEL | 0   | X    | X    | X  | NB      | NOISE BLANKER             | 0   | 0    | 0    | 0  |
| AN      | ANTENNA NUMBER          | 0   | 0    | 0    | 0  | NL      | NOISE BLANKER LEVEL       | 0   | 0    | 0    | 0  |
| BC      | AUTO NOTCH              | 0   | 0    | 0    | 0  | NR      | NOISE REDUCTION           | 0   | 0    | 0    | 0  |
| BD      | BAND DOWN               | 0   | X    | X    | X  | OI      | OPPOSITE BAND INFORMATION | X   | 0    | 0    | X  |
| BI      | BREAK-IN                | 0   | 0    | 0    | 0  | OS      | OFFSET (REPEATER SHIFT)   | 0   | 0    | 0    | 0  |
| BP      | MANUAL NOTCH            | 0   | 0    | 0    | 0  | PA      | PRE-AMP (IPO)             | 0   | 0    | 0    | 0  |
| BS      | BAND SELECT             | 0   | X    | X    | X  | PB      | PLAY BACK                 | 0   | 0    | 0    | X  |
| BU      | BAND UP                 | 0   | X    | X    | X  | PC      | POWER CONTROL             | 0   | 0    | 0    | 0  |
| BY      | BUSY                    | X   | 0    | 0    | 0  | PL      | SPEECH PROCESSOR LEVEL    | 0   | 0    | 0    | 0  |
| CH      | CHANNEL UP/DOWN         | 0   | X    | X    | X  | PR      | SPEECH PROCESSOR          | 0   | 0    | 0    | 0  |
| CN      | CTCSS NUMBER            | 0   | 0    | 0    | 0  | PS      | POWER SWITCH              | 0   | 0    | 0    | X  |
| CO      | CONTOUR                 | 0   | 0    | 0    | 0  | QI      | QMB STORE                 | 0   | X    | X    | X  |
| CS      | CW SPOT                 | 0   | 0    | 0    | 0  | QR      | QMB RECALL                | 0   | X    | X    | X  |
| CT      | CTCSS                   | 0   | 0    | 0    | 0  | QS      | QUICK SPLIT               | 0   | X    | X    | X  |
| DA      | DIMMER                  | 0   | 0    | 0    | X  | RA      | RF ATTENUATOR             | 0   | 0    | 0    | 0  |
| DN      | DOWN                    | 0   | X    | X    | X  | RC      | CLAR CLEAR                | 0   | X    | X    | X  |
| DP      | DISPLAY                 | 0   | 0    | 0    | 0  | RD      | CLAR DOWN                 | 0   | X    | X    | X  |
| ED      | ENCORDER DOWN           | 0   | X    | X    | X  | RF      | ROOFING FILTER            | 0   | 0    | 0    | 0  |
| EK      | ENT KEY                 | 0   | X    | X    | X  | RG      | RF GAIN                   | 0   | 0    | 0    | 0  |
| EU      | ENCORDER UP             | 0   | X    | X    | X  | RI      | RADIO INFORMATION         | X   | 0    | 0    | 0  |
| EX      | MENU                    | 0   | 0    | 0    | 0  | RL      | NOISE REDUCTION LEVEL     | 0   | 0    | 0    | 0  |
| FA      | FREQUENCY VFO-A         | 0   | 0    | 0    | 0  | RM      | READ METER                | X   | 0    | 0    | 0  |
| FB      | FREQUENCY VFO-B         | 0   | 0    | 0    | 0  | RO      | ROTATOR                   | 0   | 0    | 0    | X  |
| FK      | FUNCTION KEY            | 0   | X    | X    | X  | RS      | RADIO STATUS              | X   | 0    | 0    | 0  |
| FR      | FUNCTION RX             | 0   | 0    | 0    | 0  | RT      | CLAR                      | 0   | 0    | 0    | 0  |
| FS      | FAST STEP               | 0   | 0    | 0    | 0  | RU      | CLAR UP                   | 0   | X    | X    | X  |
| FT      | FUNCTION TX             | 0   | 0    | 0    | 0  | SC      | SCAN                      | 0   | 0    | 0    | 0  |
| GT      | AGC FUNCTION            | 0   | 0    | 0    | 0  | SD      | SEMI BREAK-IN DELAY TIME  | 0   | 0    | 0    | 0  |
| ID      | IDENTIFICATION          | X   | 0    | 0    | X  | SF      | SUB-DIAL FUNCTION         | 0   | 0    | 0    | 0  |
| IF      | INFORMATION             | X   | 0    | 0    | 0  | SH      | WIDTH                     | 0   | 0    | 0    | 0  |
| IS      | IF-SHIFT                | 0   | 0    | 0    | 0  | SM      | S METER                   | X   | 0    | 0    | 0  |
| KM      | KEYER MEMORY            | 0   | 0    | 0    | X  | SQ      | SQUELCH LEVEL             | 0   | 0    | 0    | 0  |
| KP      | KEY PITCH               | 0   | 0    | 0    | 0  | SV      | SWAP VFO                  | 0   | X    | X    | X  |
| KR      | KEYER                   | 0   | 0    | 0    | 0  | TS      | TXW                       | 0   | 0    | 0    | 0  |
| KS      | KEY SPEED               | 0   | 0    | 0    | 0  | TX      | TX SET                    | 0   | 0    | 0    | 0  |
| KY      | CW KEYING               | 0   | X    | X    | X  | UL      | UNLOCK                    | X   | 0    | 0    | 0  |
| LK      | LOCK                    | 0   | 0    | 0    | 0  | UP      | UP                        | 0   | X    | X    | X  |
| LM      | LOAD MESSEGE            | 0   | 0    | 0    | X  | VD      | VOX DELAY TIME            | 0   | 0    | 0    | 0  |
| MA      | MEMORY CHANNEL TO VFO-A | 0   | X    | X    | X  | VF      | VRF FILTER                | 0   | 0    | 0    | 0  |
| MC      | MEMORY CHANNEL          | 0   | 0    | 0    | X  | VG      | VOX GAIN                  | 0   | 0    | 0    | 0  |
| MD      | MODE                    | 0   | 0    | 0    | 0  | VM      | [V/M] KEY FUNCTION        | 0   | X    | X    | X  |
| MG      | MIC GAIN                | 0   | 0    | 0    | 0  | VS      | VFO SELECT                | 0   | 0    | 0    | 0  |
| MK      | MODE KEY                | 0   | X    | X    | X  | VX      | VOX                       | 0   | 0    | 0    | 0  |
| ML      | MONITOR LEVEL           | 0   | 0    | 0    | 0  | XT      | TX CLAR                   | 0   | 0    | 0    | 0  |
| MR      | MEMORY READ             | X   | 0    | 0    | X  |         |                           |     |      |      |    |

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## CONTROL COMMAND TABLES

| <b>AB</b> | VFO-A TO VFO-B |          |   |   |   |   |   |   |   |    |  |
|-----------|----------------|----------|---|---|---|---|---|---|---|----|--|
| Set       | 1              | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>A</b>       | <b>B</b> | ; |   |   |   |   |   |   |    |  |
| Read      | 1              | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                |          |   |   |   |   |   |   |   |    |  |
| Answer    | 1              | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                |          |   |   |   |   |   |   |   |    |  |

| <b>AC</b> | ANTENNA TUNER CONTROL |          |    |    |    |   |   |   |   |    |   |
|-----------|-----------------------|----------|----|----|----|---|---|---|---|----|---|
| Set       | 1                     | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed    P3 0: Tuner "OFF"<br>P2 0: Fixed    1: Tuner "ON"<br>2: Tuning Start |
|           | <b>A</b>              | <b>C</b> | P1 | P2 | P3 | ; |   |   |   |    |   |
| Read      | 1                     | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>A</b>              | <b>C</b> | ;  |    |    |   |   |   |   |    |   |
| Answer    | 1                     | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>A</b>              | <b>C</b> | P1 | P2 | P3 | ; |   |   |   |    |   |

| <b>AG</b> | AF GAIN  |          |    |    |    |    |   |   |   |    |                             |
|-----------|----------|----------|----|----|----|----|---|---|---|----|-----------------------------|
| Set       | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 000 - 255 |
|           | <b>A</b> | <b>G</b> | P1 | P2 | P2 | P2 | ; |   |   |    |                             |
| Read      | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           | <b>A</b> | <b>G</b> | P1 | ;  |    |    |   |   |   |    |                             |
| Answer    | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           | <b>A</b> | <b>G</b> | P1 | P2 | P2 | P2 | ; |   |   |    |                             |

| <b>AI</b> | AUTO INFORMATION |          |    |   |   |   |   |   |   |    |  |
|-----------|------------------|----------|----|---|---|---|---|---|---|----|--|
| Set       | 1                | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Auto Information "OFF"<br>1: Auto Information "ON"<br><br>This parameter is set to "0" (OFF) automatically when the transceiver is turned "OFF." |
|           | <b>A</b>         | <b>I</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      | 1                | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>A</b>         | <b>I</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    | 1                | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>A</b>         | <b>I</b> | P1 | ; |   |   |   |   |   |    |  |

| <b>AM</b> | VFO-A TO MEMORY CHANNEL |          |   |   |   |   |   |   |   |    |  |
|-----------|-------------------------|----------|---|---|---|---|---|---|---|----|--|
| Set       | 1                       | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>A</b>                | <b>M</b> | ; |   |   |   |   |   |   |    |  |
| Read      | 1                       | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                         |          |   |   |   |   |   |   |   |    |  |
| Answer    | 1                       | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                         |          |   |   |   |   |   |   |   |    |  |

| <b>AN</b> | ANTENNA NUMBER |          |    |    |    |   |   |   |   |    |  |
|-----------|----------------|----------|----|----|----|---|---|---|---|----|--|
| Set       | 1              | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 1: ANT "1"<br>2: ANT "2"<br>P3 1: ANT "1"<br>2: ANT "2"<br>P4 0: Fixed |
|           | <b>A</b>       | <b>N</b> | P1 | P2 | ;  |   |   |   |   |    |  |
| Read      | 1              | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>A</b>       | <b>N</b> | P1 | ;  |    |   |   |   |   |    |  |
| Answer    | 1              | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>A</b>       | <b>N</b> | P1 | P3 | P4 | ; |   |   |   |    |  |

| <b>BC</b> | AUTO NOTCH |          |    |    |   |   |   |   |   |    |   |
|-----------|------------|----------|----|----|---|---|---|---|---|----|---|
| Set       | 1          | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: Auto Notch "OFF"<br>1: Auto Notch "ON" |
|           | <b>B</b>   | <b>C</b> | P1 | P2 | ; |   |   |   |   |    |   |
| Read      | 1          | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>B</b>   | <b>C</b> | P1 | ;  |   |   |   |   |   |    |   |
| Answer    | 1          | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>B</b>   | <b>C</b> | P1 | P2 | ; |   |   |   |   |    |   |

| <b>BD</b> | BAND DOWN |          |    |   |   |   |   |   |   |    |             |
|-----------|-----------|----------|----|---|---|---|---|---|---|----|-------------|
| Set       | 1         | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed |
|           | <b>B</b>  | <b>D</b> | P1 | ; |   |   |   |   |   |    |             |
| Read      | 1         | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |             |
|           |           |          |    |   |   |   |   |   |   |    |             |
| Answer    | 1         | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |             |
|           |           |          |    |   |   |   |   |   |   |    |             |

| <b>BI</b> | BREAK-IN |          |    |   |   |   |   |   |   |    |  |
|-----------|----------|----------|----|---|---|---|---|---|---|----|--|
| Set       | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Break-in "OFF"<br>1: Break-in "ON" |
|           | <b>B</b> | <b>I</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>B</b> | <b>I</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>B</b> | <b>I</b> | P1 | ; |   |   |   |   |   |    |  |

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## CONTROL COMMAND TABLES

| BP     | MANUAL NOTCH |          |    |    |    |    |    |   |   |    |    |                          |    |                                       |
|--------|--------------|----------|----|----|----|----|----|---|---|----|----|--------------------------|----|---------------------------------------|
| Set    | 1            | 2        | 3  | 4  | 5  | 6  | 7  | 8 | 9 | 10 | P1 | 0: Fixed                 | P3 | When P2=0                             |
|        | <b>B</b>     | <b>P</b> | P1 | P2 | P3 | P3 | P3 | ; |   |    | P2 | 0: Manual NOTCH "ON/OFF" |    | 000: OFF                              |
| Read   | 1            | 2        | 3  | 4  | 5  | 6  | 7  | 8 | 9 | 10 |    | 1: Manual NOTCH LEVEL    |    | 001: ON                               |
|        | <b>B</b>     | <b>P</b> | P1 | P2 | ;  |    |    |   |   |    |    |                          |    | When P2=1                             |
| Answer | 1            | 2        | 3  | 4  | 5  | 6  | 7  | 8 | 9 | 10 |    |                          |    | 001 - 300 (NOTCH Frequency : x 10 Hz) |
|        | <b>B</b>     | <b>P</b> | P1 | P2 | P3 | P3 | P3 | ; |   |    |    |                          |    |                                       |

| BS     | BAND SELECT |          |    |    |   |   |   |   |   |    |             |              |            |
|--------|-------------|----------|----|----|---|---|---|---|---|----|-------------|--------------|------------|
| Set    | 1           | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1          | 00: 1.8 MHz  | 06: 18 MHz |
|        | <b>B</b>    | <b>S</b> | P1 | P1 | ; |   |   |   |   |    | 01: 3.5 MHz | 07: 21 MHz   |            |
| Read   | 1           | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | 03: 7 MHz   | 08: 24.5 MHz |            |
|        |             |          |    |    |   |   |   |   |   |    | 04: 10 MHz  | 09: 28 MHz   |            |
| Answer | 1           | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | 05: 14 MHz  | 10: 50 MHz   |            |
|        |             |          |    |    |   |   |   |   |   |    |             | 11: GEN      |            |

| BU     | BAND UP  |          |    |   |   |   |   |   |   |    |    |          |  |
|--------|----------|----------|----|---|---|---|---|---|---|----|----|----------|--|
| Set    | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 | 0: Fixed |  |
|        | <b>B</b> | <b>U</b> | P1 | ; |   |   |   |   |   |    |    |          |  |
| Read   | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |    |          |  |
|        |          |          |    |   |   |   |   |   |   |    |    |          |  |
| Answer | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |    |          |  |
|        |          |          |    |   |   |   |   |   |   |    |    |          |  |

| BY     | BUSY     |          |    |    |   |   |   |   |   |    |              |               |  |
|--------|----------|----------|----|----|---|---|---|---|---|----|--------------|---------------|--|
| Set    | 1        | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1           | 0: BUSY "OFF" |  |
|        | <b>B</b> | <b>Y</b> | ;  |    |   |   |   |   |   |    | 1: BUSY "ON" |               |  |
| Read   | 1        | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P2           | 0: Fixed      |  |
|        | <b>B</b> | <b>Y</b> | ;  |    |   |   |   |   |   |    |              |               |  |
| Answer | 1        | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |              |               |  |
|        | <b>B</b> | <b>Y</b> | P1 | P2 | ; |   |   |   |   |    |              |               |  |

| CH     | CHANNEL UP/DOWN |          |    |   |   |   |   |   |   |    |                          |                        |  |
|--------|-----------------|----------|----|---|---|---|---|---|---|----|--------------------------|------------------------|--|
| Set    | 1               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1                       | 0: Memory Channel "UP" |  |
|        | <b>C</b>        | <b>H</b> | P1 | ; |   |   |   |   |   |    | 1: Memory Channel "DOWN" |                        |  |
| Read   | 1               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                          |                        |  |
|        |                 |          |    |   |   |   |   |   |   |    |                          |                        |  |
| Answer | 1               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                          |                        |  |
|        |                 |          |    |   |   |   |   |   |   |    |                          |                        |  |

| CN     | CTCSS TONE FREQUENCY |          |    |    |    |   |   |   |   |    |    |  |  |
|--------|----------------------|----------|----|----|----|---|---|---|---|----|----|--|--|
| Set    | 1                    | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 | 0: Fixed   |  |
|        | <b>C</b>             | <b>N</b> | P1 | P2 | P2 | ; |   |   |   |    | P2 | 00 - 49: Tone Frequency Number (See Table Below) |  |
| Read   | 1                    | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |    |  |  |
|        | <b>C</b>             | <b>N</b> | P1 | ;  |    |   |   |   |   |    |    |  |  |
| Answer | 1                    | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |    |  |  |
|        | <b>C</b>             | <b>N</b> | P1 | P2 | P2 | ; |   |   |   |    |    |  |  |

| CO     | CONTOUR  |          |    |    |    |    |   |   |   |    |    |                     |    |                             |
|--------|----------|----------|----|----|----|----|---|---|---|----|----|---------------------|----|-----------------------------|
| Set    | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 | 0: Fixed            | P3 | When P2=0,                  |
|        | <b>C</b> | <b>O</b> | P1 | P2 | P3 | P3 | ; |   |   |    | P2 | 0: CONTOUR "ON/OFF" |    | 000: CONTOUR "OFF"          |
| Read   | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |    | 1: CONTOUR LEVEL    |    | 001: CONTOUR "ON"           |
|        | <b>C</b> | <b>O</b> | P1 | P2 | ;  |    |   |   |   |    |    |                     |    | When P2=1,                  |
| Answer | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |    |                     |    | 01 - 30 (CONTOUR Frequency) |
|        | <b>C</b> | <b>O</b> | P1 | P2 | P3 | P3 | ; |   |   |    |    |                     |    |                             |

| CS     | CW SPOT  |          |    |   |   |   |   |   |   |    |       |        |  |
|--------|----------|----------|----|---|---|---|---|---|---|----|-------|--------|--|
| Set    | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1    | 0: OFF |  |
|        | <b>C</b> | <b>S</b> | P1 | ; |   |   |   |   |   |    | 1: ON |        |  |
| Read   | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |       |        |  |
|        | <b>C</b> | <b>S</b> | ;  |   |   |   |   |   |   |    |       |        |  |
| Answer | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |       |        |  |
|        | <b>C</b> | <b>S</b> | P1 | ; |   |   |   |   |   |    |       |        |  |

TABLE

| CTCSS TONE CHART |         |    |          |    |          |    |          |    |          |    |          |
|------------------|---------|----|----------|----|----------|----|----------|----|----------|----|----------|
| 00               | 67.0 Hz | 09 | 91.5 Hz  | 18 | 123.0 Hz | 27 | 162.2 Hz | 36 | 189.9 Hz | 45 | 229.1 Hz |
| 01               | 69.3 Hz | 10 | 94.8 Hz  | 19 | 127.3 Hz | 28 | 165.5 Hz | 37 | 192.8 Hz | 46 | 233.6 Hz |
| 02               | 71.9 Hz | 11 | 97.4 Hz  | 20 | 131.8 Hz | 29 | 167.9 Hz | 38 | 196.6 Hz | 47 | 241.8 Hz |
| 03               | 74.4 Hz | 12 | 100.0 Hz | 21 | 136.5 Hz | 30 | 171.3 Hz | 39 | 199.5 Hz | 48 | 250.3 Hz |
| 04               | 77.0 Hz | 13 | 103.5 Hz | 22 | 141.3 Hz | 31 | 173.8 Hz | 40 | 203.5 Hz | 49 | 254.1 Hz |
| 05               | 79.7 Hz | 14 | 107.2 Hz | 23 | 146.2 Hz | 32 | 177.3 Hz | 41 | 206.5 Hz | -- | --       |
| 06               | 82.5 Hz | 15 | 110.9 Hz | 24 | 151.4 Hz | 33 | 179.9 Hz | 42 | 210.7 Hz | -- | --       |
| 07               | 85.4 Hz | 16 | 114.8 Hz | 25 | 156.7 Hz | 34 | 183.5 Hz | 43 | 218.1 Hz | -- | --       |
| 08               | 88.5 Hz | 17 | 118.8 Hz | 26 | 159.8 Hz | 35 | 186.2 Hz | 44 | 225.7 Hz | -- | --       |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| CT     | CTCSS    |          |    |    |   |   |   |   |   |    |  |
|--------|----------|----------|----|----|---|---|---|---|---|----|--|
| Set    | 1        | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: CTCSS "OFF"<br>1: CTCSS ENC/DEC "ON"<br>2: CTCSS ENC "ON" |
|        | <b>C</b> | <b>T</b> | P1 | P2 | ; |   |   |   |   |    |  |
| Read   | 1        | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | <b>C</b> | <b>T</b> | P1 | ;  |   |   |   |   |   |    |  |
| Answer | 1        | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | <b>C</b> | <b>T</b> | P1 | P2 | ; |   |   |   |   |    |  |

| DA     | DIMMER   |          |    |    |    |    |   |   |   |    |  |
|--------|----------|----------|----|----|----|----|---|---|---|----|--|
| Set    | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 00 - 15: Backlight Brightness Level<br>P2 00: Fixed |
|        | <b>D</b> | <b>A</b> | P1 | P1 | P2 | P2 | ; |   |   |    |  |
| Read   | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |  |
|        | <b>D</b> | <b>A</b> | ;  |    |    |    |   |   |   |    |  |
| Answer | 1        | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |  |
|        | <b>D</b> | <b>A</b> | P1 | P1 | P2 | P2 | ; |   |   |    |  |

| DN     | MIC DWN  |          |   |   |   |   |   |   |   |    |  |
|--------|----------|----------|---|---|---|---|---|---|---|----|--|
| Set    | 1        | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | <b>D</b> | <b>N</b> | ; |   |   |   |   |   |   |    |  |
| Read   | 1        | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |          |          |   |   |   |   |   |   |   |    |  |
| Answer | 1        | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |          |          |   |   |   |   |   |   |   |    |  |

| DP     | DISPLAY  |          |    |   |   |   |   |   |   |    |   |  |
|--------|----------|----------|----|---|---|---|---|---|---|----|---|--|
| Set    | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: World Clock Display<br>1: Band Scope Display<br>2: AF Oscilloscope/Spectrum Analyzer Display<br>3: Log Book Display<br>4: Temperature/SWR Display<br>5: Rotator Display<br>6: Memory Channel List Display | ※: This command does not activate when the optional DMU-2000 Data Management Unit is not attached. |
|        | <b>D</b> | <b>P</b> | P1 | ; |   |   |   |   |   |    |   |  |
| Read   | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |  |
|        | <b>D</b> | <b>P</b> | ;  |   |   |   |   |   |   |    |   |  |
| Answer | 1        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |  |
|        | <b>D</b> | <b>P</b> | P1 | ; |   |   |   |   |   |    |   |  |

| ED     | ENCORDER DOWN |          |    |    |    |   |   |   |   |    |   |
|--------|---------------|----------|----|----|----|---|---|---|---|----|---|
| Set    | 1             | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 0: MAIN DIAL Knob<br>1: CLAR/VFO-B Knob<br>2: SELECT Knob<br>P2 01-99: Steps |
|        | <b>E</b>      | <b>D</b> | P1 | P2 | P2 | ; |   |   |   |    |   |
| Read   | 1             | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|        |               |          |    |    |    |   |   |   |   |    |   |
| Answer | 1             | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|        |               |          |    |    |    |   |   |   |   |    |   |

| EK     | ENT KEY  |          |   |   |   |   |   |   |   |    |  |
|--------|----------|----------|---|---|---|---|---|---|---|----|--|
| Set    | 1        | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | <b>E</b> | <b>K</b> | ; |   |   |   |   |   |   |    |  |
| Read   | 1        | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |          |          |   |   |   |   |   |   |   |    |  |
| Answer | 1        | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |          |          |   |   |   |   |   |   |   |    |  |

| EU     | ENCORDER UP |          |    |    |    |   |   |   |   |    |   |
|--------|-------------|----------|----|----|----|---|---|---|---|----|---|
| Set    | 1           | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 0: MAIN DIAL Knob<br>1: CLAR/VFO-B Knob<br>2: SELECT Knob<br>P2 01-99: Steps |
|        | <b>E</b>    | <b>U</b> | P1 | P2 | P2 | ; |   |   |   |    |   |
| Read   | 1           | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|        |             |          |    |    |    |   |   |   |   |    |   |
| Answer | 1           | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|        |             |          |    |    |    |   |   |   |   |    |   |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| EX     | MENU |   |   |   |   |   |   |   |    |    | P1 : 001-118 (MENU Number)<br>P2 : Parameter (See Table 2 and Table 3) |   |    |    |    |    |    |    |    |    |
|--------|------|---|---|---|---|---|---|---|----|----|--|---|----|----|----|----|----|----|----|----|
| Set    | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | nn | ** |  | E | X  | P1 | P1 | P1 | P2 | P2 | ~  | P2 |
| Read   | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9  | 10 |  |   |    |    |    |    |    |    |    |    |
| Answer | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | nn | ** | E  | X | P1 | P1 | P1 | P2 | P2 | ~  | P2 | ;  |
|        | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9  | 10 |  |   |    |    |    |    |    |    |    |    |

TABLE 2

| P1  | FUNCTION                                | P2   |
|-----|---|--|
| 001 | AGC FAST DELAY TIME                     | 0020 ~ 4000 msec (20 msec/step)  |
| 002 | AGC MID DELAY TIME                      | 0020 ~ 4000 msec (20 msec/step)  |
| 003 | AGC SLOW DELAY TIME                     | 0020 ~ 4000 msec (20 msec/step)  |
| 004 | DISPLAY COLOR                           | 0: COOL BLUE 1: CONTRAST BLUE 2: FLASH BLUE 3: CONTRAST UMBER 4: UMBER   |
| 005 | DISPLAY DIMMER                          | 00 ~ 15  |
| 006 | TUNING OFFSET INDICATOR                 | 0: CLARIFIER OFFSET 1: CW TUNING METER 2: VRF PEAK POSITION  |
| 007 | S-METER PEAK HOLD                       | 0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec  |
| 008 | PO METER PEAK HOLD                      | 0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec  |
| 009 | ALC METER PEAK HOLD                     | 0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec  |
| 010 | ID METER PEAK HOLD                      | 0: OFF 1: 0.5 sec 2: 1.0 sec 3: 2.0 sec  |
| 011 | ROTATOR STARTING POINT                  | 0: 0° 1: 90° 2: 180° 3: 270°   |
| 012 | ROTATOR NEEDLE PRECISELY                | 00 ~ 30° (0 ~ -30°, 2° step)   |
| 013 | QMB MAKER                               | 0: OFF 1: ON   |
| 014 | VOICE MEMORY AUDIO (DVS-6) OUTPUT LEVEL | 000 ~ 100  |
| 015 | VOICE MEMORY AUDIO (DVS-6) TX LEVEL     | 000 ~ 100  |
| 016 | CW BEACON                               | 000 (OFF) ~ 255 sec  |
| 017 | CONTEST NUMBER STYLE                    | 0: 1290 1: AunO 2: Aunt 3: A2nO 4: A2nt 5: 12nO 6: 12nt  |
| 018 | CONTEST NUMBER                          | 0000 ~ 9999  |
| 019 | CW MEMORY "1" MEMORY TYPE               | 0: TEXT MEMORY 1: MESSAGE MEMORY   |
| 020 | CW MEMORY "2" MEMORY TYPE               | 0: TEXT MEMORY 1: MESSAGE MEMORY   |
| 021 | CW MEMORY "3" MEMORY TYPE               | 0: TEXT MEMORY 1: MESSAGE MEMORY   |
| 022 | CW MEMORY "4" MEMORY TYPE               | 0: TEXT MEMORY 1: MESSAGE MEMORY   |
| 023 | CW MEMORY "5" MEMORY TYPE               | 0: TEXT MEMORY 1: MESSAGE MEMORY   |
| 024 | ANTENNA SELECTION MODE                  | 0: BAND 1: STACK   |
| 025 | BEEP LEVEL                              | 000 ~ 100  |
| 026 | CAT BAUD RATE                           | 0: 4800 bps 1: 9600 bps 2: 19200 bps 3: 38400 bps  |
| 027 | CAT TIME-OUT TIMER                      | 0: 10 msec 1: 100 msec 2: 1000 msec 3: 3000 msec   |
| 028 | CAT RTS PORT                            | 0: OFF 1: ON   |
| 029 | MEMORY GROUP                            | 0: OFF 1: ON   |
| 030 | QUICK SPLIT TUNING OFFSET               | -20 ~ +00 (or -00) ~ +20 kHz   |
| 031 | TX TIME OUT TIMER                       | 00 (OFF) ~ 30 min  |
| 032 | μ-TUNE DIAL                             | 0: STEP-2 1: STEP-1  |
| 033 | MIC SCAN                                | 0: OFF 1: ON   |
| 034 | SCAN RESUME                             | 0 PAUSE 1: TIME  |
| 035 | FREQUENCY ADJUST                        | -25 ~ +00 (or -00) ~ +25   |
| 036 | AM MIC GAIN                             | 1000: MIC KNOB 0000 ~ 0100 (FIX)   |
| 037 | FRONT PANEL KEY JACK TYPE               | 0: OFF 1: BUG 2: IAMBIC KEYER W/O ACS 3: IAMBIC KEYER W/ACS  |
| 038 | FRONT PANEL KEY JACK WIRING             | 0: NORMAL 1: REVERSE   |
| 039 | REAR PANEL KEY JACK TYPE                | 0: OFF 1: BUG 2: IAMBIC KEYER W/O ACS 3: IAMBIC KEYER W/ACS  |
| 040 | REAR PANEL KEY JACK WIRING              | 0: NORMAL 1: REVERSE   |
| 041 | CW AUTO MODE                            | 0: OFF 1: 50 MHz ONLY 2: ON  |
| 042 | CW BFO INJECTION SIDE                   | 0: USB 1: LSB 2: AUTO  |
| 043 | CW BREAK-IN MODE                        | 0: SEMI BREAK-IN 1: FULL BREAK-IN  |
| 044 | CW BREAK-IN DELAY TIME                  | 0030 ~ 3000 msec (10 msec/step)  |
| 045 | CW PITCH FREQUENCY                      | 00: 300 Hz, 01: 350 Hz, 02: 400 Hz, 03: 450 Hz, 04: 500 Hz, 05: 550 Hz<br>06: 600 Hz, 07: 650 Hz, 08: 700 Hz, 09: 750 Hz, 10: 800 Hz, 11: 850 Hz<br>12: 900 Hz, 13: 950 Hz, 14: 1000 Hz, 15: 1050 Hz |
| 046 | CW WEIGHT                               | 25 (1:2.5) ~ 45 (1:4.5)  |
| 047 | CW FREQUENCY DISPLAY                    | 0: DIRECT FREQUENCY 1: PITCH OFFSET  |
| 048 | CW PC KEYING                            | 0: OFF 1: ON   |
| 049 | CW QSK TIME                             | 0: 15 msec 1: 20 msec 2: 25 msec 3: 30 msec  |
| 050 | DATA MODE TX GAIN                       | 000 ~ 100  |
| 051 | DATA MODE OUTPUT LEVEL                  | 000 ~ 100  |
| 052 | DATA MODE VOX DELAY TIME                | 0030 ~ 3000 msec (10 msec/step)  |
| 053 | DATA MODE VOX GAIN                      | 000 ~ 100  |
| 054 | PACKET MODE FREQUENCY DISPLAY OFFSET    | -3000 ~ +0000 (or -0000) ~ +3000 Hz (10 Hz/step)   |
| 055 | PACKET MODE CARRIER POINT FREQUENCY     | -3000 ~ +0000 (or -0000) ~ +3000 Hz (10 Hz/step)   |
| 056 | FM MIC GAIN                             | 1000: MIC KNOB 0000 ~ 0100 (FIX)   |
| 057 | 28 MHz REPEATER SHIFT                   | 0000 ~ 1000 kHz (10 kHz/step)  |
| 058 | 50 MHz REPEATER SHIFT                   | 0000 ~ 4000 kHz (10 kHz/step)  |
| 059 | RTTY MODE RX POLARITY (MARK/SPACE)      | 0: NORMAL 1: REVERSE   |
| 060 | RTTY MODE TX POLARITY (MARK/SPACE)      | 0: NORMAL 1: REVERSE   |
| 061 | RTTY MODE DATA OUTPUT LEVEL             | 000 ~ 100  |
| 062 | RTTY MODE SHIFT FREQUENCY               | 1: 170 Hz 2: 200 Hz 3: 425 Hz 4: 850 Hz  |
| 063 | RTTY MODE MARK FREQUENCY                | 1: 1275 Hz 2: 2125 Hz  |
| 064 | SSB MODE TX BPF BANDWIDTH               | 0: 100 - 3000 Hz 1: 100 - 2900 Hz 2: 200 - 2800 Hz 3: 300 - 2700 Hz 4: 400 - 2600 Hz   |
| 065 | LSB CARRIER POINT                       | -200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step)   |
| 066 | USB CARRIER POINT                       | -200 ~ +000 (or -000) ~ +200 Hz (10 Hz/step)   |
| 067 | NB LEVEL (NARROW)                       | 000 ~ 255  |
| 068 | NB LEVEL (WIDE)                         | 000 ~ 255  |
| 069 | CONTOUR GAIN                            | -40 ~ +00 (or -00) ~ +20 dB  |
| 070 | CONTOUR WIDTH                           | 01 ~ 11  |
| 071 | DIGITAL NOTCH FILTER                    | 0: OFF 1: ON   |
| 072 | DIGITAL NOISE REDUCTION                 | 00 (OFF) ~ 15  |



# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

TABLE 3

| P1  | FUNCTION  | P2   |
|-----|---|--|
| 073 | SPECTRUM SCOPE SCAN START FREQUENCY (1.8 MHz)             | 01800 ~ 01999 (1.800 MHz ~ 1.999 MHz)  |
| 074 | SPECTRUM SCOPE SCAN START FREQUENCY (3.5 MHz)             | 03500 ~ 03999 (3.500 MHz ~ 3.999 MHz)  |
| 075 | SPECTRUM SCOPE SCAN START FREQUENCY (5.0 MHz)             | 05250 ~ 05499 (5.250 MHz ~ 5.499 MHz)  |
| 076 | SPECTRUM SCOPE SCAN START FREQUENCY (7.0 MHz)             | 07000 ~ 07299 (7.000 MHz ~ 7.299 MHz)  |
| 077 | SPECTRUM SCOPE SCAN START FREQUENCY (10 MHz)              | 10100 ~ 10149 (10.100 MHz ~ 10.149 MHz)  |
| 078 | SPECTRUM SCOPE SCAN START FREQUENCY (14 MHz)              | 14000 ~ 14349 (14.000 MHz ~ 14.349 MHz)  |
| 079 | SPECTRUM SCOPE SCAN START FREQUENCY (18 MHz)              | 18000 ~ 18199 (18.000 MHz ~ 18.199 MHz)  |
| 080 | SPECTRUM SCOPE SCAN START FREQUENCY (21 MHz)              | 21000 ~ 21449 (21.000 MHz ~ 21.449 MHz)  |
| 081 | SPECTRUM SCOPE SCAN START FREQUENCY (24.5 MHz)            | 24800 ~ 24989 (24.800 MHz ~ 24.989 MHz)  |
| 082 | SPECTRUM SCOPE SCAN START FREQUENCY (28 MHz)              | 28000 ~ 29699 (28.000 MHz ~ 29.699 MHz)  |
| 083 | SPECTRUM SCOPE SCAN START FREQUENCY (50 MHz)              | 50000 ~ 53999 (50.000 MHz ~ 53.999 MHz)  |
| 084 | MAIN TUNING DIAL KNOB DIALSTEP                            | 0: 1 Hz    1: 5 Hz    2: 10 Hz   |
| 085 | MAIN TUNING DIAL KNOB CW FINE TUNING                      | 0: OFF    1: ON  |
| 086 | CLAR/VFO-B KNOB MHz STEP                                  | 0: 0.1 MHz    1: 1 MHz   |
| 087 | MICROPHONE [UP]/[DOWN] KEY AM STEP                        | 0: 2.5 kHz    1: 5 kHz    2: 9 kHz    3: 10 kHz    4: 12.5 kHz   |
| 088 | MICROPHONE [UP]/[DOWN] KEY FM STEP                        | 0: 5 kHz    1: 6.25 kHz    2: 10 kHz    3: 12.5 kHz    4: 20 kHz    5: 25 kHz  |
| 089 | MAIN TUNING DIAL KNOB DIALSTEP (FM MODE)                  | 0: 10 Hz    1: 100 Hz  |
| 090 | MY BAND SELECT  | 0: OFF    1: ON<br>P2(6): 1.8 MHz    P2(7): 3.5 MHz    P2(8): 5 MHz    P2(9): 7 MHz    P2(10): 10 MHz<br>P2(11): 14 MHz    P2(12): 18 MHz    P2(13): 21 MHz    P2(14): 24.5 MHz    P2(15): 28 MHz<br>P2(16): 50 MHz    P2(17): GENERAL    P2(17): TRANSVERTER<br>Example: P2 = 11010101100 (My Band = 1.8/3.5/7/14/21/28/50 MHz) |
| 091 | MIC EQUAQLIZER CENTER FREQUENCY (LOW RANGE)               | 00: OFF    01: 100 Hz    02: 200 Hz    03: 300 Hz    04: 400 Hz<br>05: 500 Hz    06: 600 Hz    07: 700 Hz  |
| 092 | MIC EQUAQLIZER GAIN (LOW RANGE)                           | -10 ~ +00 (or -00) ~ +10   |
| 093 | MIC EQUAQLIZER BANDWIDTH (LOW RANGE)                      | 1 ~ 10   |
| 094 | MIC EQUAQLIZER CENTER FREQUENCY (MID RANGE)               | 00: OFF    01: 700 Hz    02: 800 Hz    03: 900 Hz    04: 1000 Hz<br>05: 1100 Hz    06: 1200 Hz    07: 1300 Hz    08: 1400 Hz    09: 1500 Hz  |
| 095 | MIC EQUAQLIZER GAIN (MID RANGE)                           | -10 ~ +00 (or -00) ~ +10   |
| 096 | MIC EQUAQLIZER BANDWIDTH (MID RANGE)                      | 01 ~ 10  |
| 097 | MIC EQUAQLIZER CENTER FREQUENCY (HIGH RANGE)              | 00: OFF    01: 1500 Hz    02: 1600 Hz    03: 1700 Hz    04: 1800 Hz    05: 1900 Hz<br>06: 2000 Hz    07: 2100 Hz    08: 2200 Hz    09: 2300 Hz    10: 2400 Hz    11: 2500 Hz<br>12: 2600 Hz    13: 2700 Hz    14: 2800 Hz    15: 2900 Hz    16: 3000 Hz    17: 3100 Hz<br>18: 3200 Hz  |
| 098 | MIC EQUAQLIZER GAIN (HIGH RANGE)                          | -10 ~ +00 (or -00) ~ +10   |
| 099 | MIC EQUAQLIZER BANDWIDTH (HIGH RANGE)                     | 01 ~ 10  |
| 100 | SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY (LOW RANGE)  | 00: OFF    01: 100 Hz    02: 200 Hz    03: 300 Hz    04: 400 Hz<br>05: 500 Hz    06: 600 Hz    07: 700 Hz  |
| 101 | SPEECH PROCESSOR EQUAQLIZER GAIN (LOW RANGE)              | -10 ~ +00 (or -00) ~ +10   |
| 102 | SPEECH PROCESSOR EQUAQLIZER BANDWIDTH (LOW RANGE)         | 1 ~ 10   |
| 103 | SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY (MID RANGE)  | 00: OFF    01: 700 Hz    02: 800 Hz    03: 900 Hz    04: 1000 Hz<br>05: 1100 Hz    06: 1200 Hz    07: 1300 Hz    08: 1400 Hz    09: 1500 Hz  |
| 104 | SPEECH PROCESSOR EQUAQLIZER GAIN (MID RANGE)              | -10 ~ +00 (or -00) ~ +10   |
| 105 | SPEECH PROCESSOR EQUAQLIZER BANDWIDTH (MID RANGE)         | 01 ~ 10  |
| 106 | SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY (HIGH RANGE) | 00: OFF    01: 1500 Hz    02: 1600 Hz    03: 1700 Hz    04: 1800 Hz    05: 1900 Hz<br>06: 2000 Hz    07: 2100 Hz    08: 2200 Hz    09: 2300 Hz    10: 2400 Hz    11: 2500 Hz<br>12: 2600 Hz    13: 2700 Hz    14: 2800 Hz    15: 2900 Hz    16: 3000 Hz    17: 3100 Hz<br>18: 3200 Hz  |
| 107 | SPEECH PROCESSOR EQUAQLIZER GAIN (HIGH RANGE)             | -10 ~ +00 (or -00) ~ +10   |
| 108 | SPEECH PROCESSOR EQUAQLIZER BANDWIDTH (HIGH RANGE)        | 01 ~ 10  |
| 109 | SPEECH PROCESSOR COMPRESSION LEVEL                        | 000 ~ 100  |
| 110 | ANTENNA TUNER SELECT                                      | 0: INTERNAL TUNER    1: EXTERNAL (FC-40) TUNER   |
| 111 | TRANSMITTER OUTPUT POWER                                  | 005 ~ 100  |
| 112 | AM CARRIER LEVEL  | 000 ~ 100  |
| 113 | TX POWER CONTROL  | 0: ALL MODE    1: CARRIER  |
| 114 | VOX OPERATION   | 0: MIC INPUT    1: DATA INPUT  |
| 115 | VOX GAIN  | 000 ~ 100  |
| 116 | VOX DELAY TIME  | 0030 ~ 3000 msec (10 msec/step)  |
| 117 | VOX ANTI-TRIP GAIN  | 000 ~ 100  |
| 118 | EMERGENCY CHANNEL   | 0: DISABLE    1: ENABLE  |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| <b>FA</b> | <b>FREQUENCY VFO-A</b> |          |    |    |    |    |    |    |    |    |                            |
|-----------|------------------------|----------|----|----|----|----|----|----|----|----|----------------------------|
| Set       | 1                      | 2        | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | P1 0030000 - 56000000 (Hz) |
|           | <b>F</b>               | <b>A</b> | P1 | P1 | P1 | P1 | P1 | P1 | P1 | P1 |                            |
| Read      | 11                     | 12       | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |                            |
|           | <b>F</b>               | <b>A</b> | ;  |    |    |    |    |    |    |    |                            |
| Answer    | 1                      | 2        | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |                            |
|           | <b>F</b>               | <b>A</b> | P1 | P1 | P1 | P1 | P1 | P1 | P1 | P1 |                            |
|           | 11                     | 12       | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |                            |
|           | ;                      |          |    |    |    |    |    |    |    |    |                            |

| <b>FB</b> | <b>FREQUENCY VFO-B</b> |          |    |    |    |    |    |    |    |    |                            |
|-----------|------------------------|----------|----|----|----|----|----|----|----|----|----------------------------|
| Set       | 1                      | 2        | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | P1 0030000 - 56000000 (Hz) |
|           | <b>F</b>               | <b>B</b> | P1 | P1 | P1 | P1 | P1 | P1 | P1 | P1 |                            |
| Read      | 11                     | 12       | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |                            |
|           | P1                     | P1       | P1 | ;  |    |    |    |    |    |    |                            |
| Answer    | 1                      | 2        | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |                            |
|           | <b>F</b>               | <b>B</b> | P1 | P1 | P1 | P1 | P1 | P1 | P1 | P1 |                            |
|           | 11                     | 12       | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |                            |
|           | P1                     | P1       | P1 | ;  |    |    |    |    |    |    |                            |

| <b>FK</b> | <b>FUNCTION KEY</b> |          |    |   |   |   |   |   |   |    |   |
|-----------|---------------------|----------|----|---|---|---|---|---|---|----|---|
| Set       | 1                   | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 1: F1 ([1.8(1)]) key<br>2: F2 ([3.5(2)]) key<br>3: F3 ([7(3)]) key<br>4: F4 ([10(4)]) key<br>5: F5 ([14(5)]) key<br>6: F6 ([18(6)]) key<br>7: F7 ([21(7)]) key |
|           | <b>F</b>            | <b>K</b> | P1 | ; |   |   |   |   |   |    |   |
| Read      | 1                   | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           |                     |          |    |   |   |   |   |   |   |    |   |
| Answer    | 1                   | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           |                     |          |    |   |   |   |   |   |   |    |   |

| <b>FR</b> | <b>FUNCTION RX</b> |          |    |   |   |   |   |   |   |    |   |
|-----------|--------------------|----------|----|---|---|---|---|---|---|----|---|
| Set       | 1                  | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: VFO-A: RX, VFO-B: "OFF"<br>1: VFO-A: Mute, VFO-B: "OFF"<br>4: VFO-A: "OFF", VFO-B: RX<br>5: VFO-A: "OFF", VFO-B: Mute |
|           | <b>F</b>           | <b>R</b> | P1 | ; |   |   |   |   |   |    |   |
| Read      | 1                  | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>F</b>           | <b>R</b> | ;  |   |   |   |   |   |   |    |   |
| Answer    | 1                  | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>F</b>           | <b>R</b> | P1 | ; |   |   |   |   |   |    |   |

| <b>FS</b> | <b>FAST STEP</b> |          |    |   |   |   |   |   |   |    |  |
|-----------|------------------|----------|----|---|---|---|---|---|---|----|--|
| Set       | 1                | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: FAST Key "OFF"<br>1: FAST Key "ON" |
|           | <b>F</b>         | <b>S</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      | 1                | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>F</b>         | <b>S</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    | 1                | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>F</b>         | <b>S</b> | P1 | ; |   |   |   |   |   |    |  |

| <b>FT</b> | <b>FUNCTION TX</b> |          |    |   |   |   |   |   |   |    |  |
|-----------|--------------------|----------|----|---|---|---|---|---|---|----|--|
| Set       | 1                  | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: VFO-A: TX/RX (Toggle)<br>1: VFO-B: TX/RX (Toggle)<br>2: VFO-A: TX<br>3: VFO-B: TX<br>P2 0: VFO-A: TX<br>1: VFO-B: TX |
|           | <b>F</b>           | <b>T</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      | 1                  | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>F</b>           | <b>T</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    | 1                  | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>F</b>           | <b>T</b> | P2 | ; |   |   |   |   |   |    |  |

| <b>GT</b> | <b>AGC FUNCTION</b> |          |    |    |   |   |   |   |   |    |   |
|-----------|---------------------|----------|----|----|---|---|---|---|---|----|---|
| Set       | 1                   | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: AGC "OFF"<br>1: AGC "FAST"<br>2: AGC "MID"<br>3: AGC "SLOW"<br>4: AGC "AUTO"<br>P3 0: AGC "OFF"<br>1: AGC "FAST"<br>2: AGC "MID"<br>3: AGC "SLOW"<br>4: AGC "AUTO-FAST"<br>5: AGC "AUTO-MID"<br>6: AGC "AUTO-SLOW" |
|           | <b>G</b>            | <b>T</b> | P1 | P2 | ; |   |   |   |   |    |   |
| Read      | 1                   | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>G</b>            | <b>T</b> | P1 | ;  |   |   |   |   |   |    |   |
| Answer    | 1                   | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>G</b>            | <b>T</b> | P1 | P3 | ; |   |   |   |   |    |   |

| <b>ID</b> | <b>IDENTIFICATION</b> |          |    |    |    |    |   |   |   |    |                       |
|-----------|-----------------------|----------|----|----|----|----|---|---|---|----|-----------------------|
| Set       | 1                     | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0310 (Fixed value) |
|           |                       |          |    |    |    |    |   |   |   |    |                       |
| Read      | 1                     | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                       |
|           | <b>I</b>              | <b>D</b> | ;  |    |    |    |   |   |   |    |                       |
| Answer    | 1                     | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                       |
|           | <b>I</b>              | <b>D</b> | P1 | P1 | P1 | P1 | ; |   |   |    |                       |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| IF     | INFORMATION |    |    |    |     |    |    |    |    |    |  |
|--------|-------------|----|----|----|-----|----|----|----|----|----|--|
| Set    | 1           | 2  | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 | P1 000-117 (Memory Channel) P2 VFO-A Frequency (Hz)<br>P3 Clarifier Direction +: Plus Shift, -: Minus Shift<br>Clarifier Offset: 0000 - 9999 (Hz)<br>P4 0: RX CLAR "OFF" 1: RX CLAR "ON"<br>P5 0: TX CLAR "OFF" 1: TX CLAR "ON"<br>P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)<br>7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM<br>B: FM-N C: PKT-U<br>P7 0: VFO 1: Memory 2: Memory Tune 3: Quick Memory Bank (QMB) 4: QMB-MT<br>P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC<br>P9: Tone Number (See Table 1)<br>P10 0: Simplex 1: Plus Shift 2: Minus Shift |
|        |             |    |    |    |     |    |    |    |    |    |  |
| Read   | 1           | 2  | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 |  |
|        | I           | F  | ;  |    |     |    |    |    |    |    |  |
| Answer | 1           | 2  | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 |  |
|        | I           | F  | P1 | P1 | P1  | P2 | P2 | P2 | P2 | P2 |  |
|        | 11          | 12 | 13 | 14 | 15  | 16 | 17 | 18 | 19 | 20 |  |
|        | P2          | P2 | P2 | P3 | P3  | P3 | P3 | P4 | P5 |    |  |
|        | 21          | 22 | 23 | 24 | 25  | 26 | 27 | 28 | 29 | 30 |  |
|        | P6          | P7 | P8 | P9 | P10 | ;  |    |    |    |    |  |

| IS     | IF-SHIFT |   |   |    |     |    |    |    |    |    |                                    |
|--------|----------|---|---|----|-----|----|----|----|----|----|------------------------------------|
| Set    | 1        | 2 | 3 | 4  | 5   | 6  | 7  | 8  | 9  | 10 | P1 0: Fixed<br>P2 -1000 ~ +1000 Hz |
|        |          | I | S | P1 | -/+ | P2 | P2 | P2 | P2 | ;  |                                    |
| Read   | 1        | 2 | 3 | 4  | 5   | 6  | 7  | 8  | 9  | 10 |                                    |
|        |          | I | S | P1 | ;   |    |    |    |    |    |                                    |
| Answer | 1        | 2 | 3 | 4  | 5   | 6  | 7  | 8  | 9  | 10 |                                    |
|        |          | I | S | P1 | -/+ | P2 | P2 | P2 | P2 | ;  |                                    |

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

| KP     | KEY PITCH |   |   |    |    |   |   |   |   |    |  |
|--------|-----------|---|---|----|----|---|---|---|---|----|--|
| Set    | 1         | 2 | 3 | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 00: 300 Hz 07: 650 Hz 14: 1000 Hz<br>01: 350 Hz 08: 700 Hz 15: 1050 Hz<br>02: 400 Hz 09: 750 Hz<br>03: 450 Hz 10: 800 Hz<br>04: 500 Hz 11: 850 Hz<br>05: 550 Hz 12: 900 Hz<br>06: 600 Hz 13: 950 Hz |
|        |           | K | P | P1 | P1 | ; |   |   |   |    |  |
| Read   | 1         | 2 | 3 | 4  | 5  | 6 | 7 | 8 | 9 | 10 |  |
|        |           | K | P | ;  |    |   |   |   |   |    |  |
| Answer | 1         | 2 | 3 | 4  | 5  | 6 | 7 | 8 | 9 | 10 |  |
|        |           | K | P | P1 | P1 | ; |   |   |   |    |  |

| KR     | KEYER |   |   |    |   |   |   |   |   |    |                                    |
|--------|-------|---|---|----|---|---|---|---|---|----|------------------------------------|
| Set    | 1     | 2 | 3 | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: KEYER "OFF"<br>1: KEYER "ON" |
|        |       | 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 | ; |   |   |   |   |    |                                    |

| KS     | KEY SPEED |   |   |    |    |    |   |   |   |    |                    |
|--------|-----------|---|---|----|----|----|---|---|---|----|--------------------|
| Set    | 1         | 2 | 3 | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 004 - 060 (WPM) |
|        |           | 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 | ; |   |   |    |                    |

| KY     | CW KEYING |   |   |    |   |   |   |   |   |    |   |
|--------|-----------|---|---|----|---|---|---|---|---|----|---|
| Set    | 1         | 2 | 3 | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 1: Keyer Memory "1" Playback 6: Message Keyer "1" Playback<br>2: Keyer Memory "2" Playback 7: Message Keyer "2" Playback<br>3: Keyer Memory "3" Playback 8: Message Keyer "3" Playback<br>4: Keyer Memory "4" Playback 9: Message Keyer "4" Playback<br>5: Keyer Memory "5" Playback A: Message Keyer "5" Playback |
|        |           | 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 |   |
|        |           |   |   |    |   |   |   |   |   |    |   |

| LK     | LOCK |   |   |    |   |   |   |   |   |    |  |
|--------|------|---|---|----|---|---|---|---|---|----|--|
| Set    | 1    | 2 | 3 | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: DIAL Lock "OFF"<br>1: DIAL Lock "ON" |
|        |      | L | K | P1 | ; |   |   |   |   |    |  |
| Read   | 1    | 2 | 3 | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |      | L | K | ;  |   |   |   |   |   |    |  |
| Answer | 1    | 2 | 3 | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |      | L | K | P1 | ; |   |   |   |   |    |  |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| LM     | LOAD MESSAGE |   |    |    |   |   |   |   |   |    |   |
|--------|--------------|---|----|----|---|---|---|---|---|----|---|
| Set    | 1            | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: DVS-6 (Recording Stop)<br>1: DVS-6 (CH "1" Recording Start/Stop)<br>2: DVS-6 (CH "2" Recording Start/Stop)<br>3: DVS-6 (CH "3" Recording Start/Stop)<br>4: DVS-6 (CH "4" Recording Start/Stop)<br>5: DVS-6 (CH "5" Recording Start/Stop) |
|        | L            | M | P1 | P2 | ; |   |   |   |   |    |   |
| Read   | 1            | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | L            | M | P1 | ;  |   |   |   |   |   |    |   |
| Answer | 1            | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | L            | M | P1 | P2 | ; |   |   |   |   |    |   |

\*: This command does not activates when the optional DVS-6 Voice Memory Unit is not installed.

| MA     | MEMORY CHANNEL TO VFO-A |   |   |   |   |   |   |   |   |    |  |
|--------|-------------------------|---|---|---|---|---|---|---|---|----|--|
| Set    | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | M                       | A | ; |   |   |   |   |   |   |    |  |
| Read   | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |                         |   |   |   |   |   |   |   |   |    |  |
| Answer | 1                       | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |                         |   |   |   |   |   |   |   |   |    |  |

| MC     | MEMORY CHANNEL |   |    |    |    |   |   |   |   |    |   |
|--------|----------------|---|----|----|----|---|---|---|---|----|---|
| Set    | 1              | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 000 - 117: Memory Channel Number<br>000 - 099: Regular Memory Channel<br>100: P1L<br>101: P1U<br>?<br>116: P9L<br>117: P9U |
|        | M              | C | P1 | P1 | P1 | ; |   |   |   |    |   |
| Read   | 1              | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|        | M              | C | ;  |    |    |   |   |   |   |    |   |
| Answer | 1              | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|        | M              | C | P1 | P1 | P1 | ; |   |   |   |    |   |

| MD     | OPERATING MODE |   |    |    |   |   |   |   |   |    |  |
|--------|----------------|---|----|----|---|---|---|---|---|----|--|
| Set    | 1              | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)<br>7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM<br>B: FM-N C: PKT-U D: AM-N |
|        | M              | D | P1 | P2 | ; |   |   |   |   |    |  |
| Read   | 1              | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | M              | D | P1 | ;  |   |   |   |   |   |    |  |
| Answer | 1              | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | M              | D | P1 | P2 | ; |   |   |   |   |    |  |

| MG     | MIC GAIN |   |    |    |    |   |   |   |   |    |              |
|--------|----------|---|----|----|----|---|---|---|---|----|--------------|
| Set    | 1        | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 000 - 255 |
|        | M        | G | P1 | P1 | P1 | ; |   |   |   |    |              |
| Read   | 1        | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|        | M        | G | ;  |    |    |   |   |   |   |    |              |
| Answer | 1        | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|        | M        | G | P1 | P1 | P1 | ; |   |   |   |    |              |

| MK     | MODE KEY |   |    |   |   |   |   |   |   |    |  |
|--------|----------|---|----|---|---|---|---|---|---|----|--|
| Set    | 1        | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: SSB key<br>1: SSB key<br>2: CW key<br>3: AM/FM key<br>4: AM/FM key<br>5: RTTY/PKT key<br>6: RTTY/PKT key |
|        | M        | K | P1 | ; |   |   |   |   |   |    |  |
| Read   | 1        | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |          |   |    |   |   |   |   |   |   |    |  |
| Answer | 1        | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |          |   |    |   |   |   |   |   |   |    |  |

| ML     | MONITOR LEVEL |   |    |    |    |    |   |   |   |    |   |
|--------|---------------|---|----|----|----|----|---|---|---|----|---|
| Set    | 1             | 2 | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0: MONI "ON/OFF"<br>1: MONI Level<br>P2 When P1=0<br>000: MONI "OFF"<br>001: MONI "ON"<br>When P1=1<br>001 - 255 |
|        | M             | L | P1 | P2 | P2 | P2 | ; |   |   |    |   |
| Read   | 1             | 2 | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |   |
|        | M             | L | P1 | ;  |    |    |   |   |   |    |   |
| Answer | 1             | 2 | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |   |
|        | M             | L | P1 | P2 | P2 | P2 | ; |   |   |    |   |

| MR     | MEMORY CHANNEL READ |    |    |    |    |     |    |    |    |    |  |
|--------|---------------------|----|----|----|----|-----|----|----|----|----|--|
| Set    | 1                   | 2  | 3  | 4  | 5  | 6   | 7  | 8  | 9  | 10 | P1 Memory Channel Number P2 Memory Channel Frequency (Hz)<br>P3 Clarifier Direction +: Plus Shift, -: Minus Shift<br>Clarifier Offset: 0000 - 9999 (Hz)<br>P4 0: RX CLAR "OFF" 1: RX CLAR "ON"<br>P5 0: TX CLAR "OFF" 1: TX CLAR "ON"<br>P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)<br>7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM<br>B: FM-N C: PKT-U<br>P7 0: VFO 1: Memory<br>P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC<br>P9: Tone Number (See Table 1)<br>P10 0: Simplex 1: Plus Shift 2: Minus Shift |
|        |                     |    |    |    |    |     |    |    |    |    |  |
| Read   | 1                   | 2  | 3  | 4  | 5  | 6   | 7  | 8  | 9  | 10 |  |
|        | M                   | R  | P1 | P1 | P1 | ;   |    |    |    |    |  |
| Answer | 1                   | 2  | 3  | 4  | 5  | 6   | 7  | 8  | 9  | 10 |  |
|        | M                   | R  | P1 | P1 | P1 | P2  | P2 | P2 | P2 | P2 |  |
|        | 11                  | 12 | 13 | 14 | 15 | 16  | 17 | 18 | 19 | 20 |  |
|        | P2                  | P2 | P2 | P3 | P3 | P3  | P3 | P3 | P4 | P5 |  |
|        | 21                  | 22 | 23 | 24 | 25 | 26  | 27 | 28 | 29 | 30 |  |
|        | P6                  | P7 | P8 | P9 | P9 | P10 | ;  |    |    |    |  |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| <b>MS</b> | <b>METER SW</b> |          |    |   |   |   |   |   |   |    |   |
|-----------|-----------------|----------|----|---|---|---|---|---|---|----|---|
| Set       | 1               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: COMP<br>1: ALC<br>3: SWR<br>4: ID<br>5: VDD |
|           | <b>M</b>        | <b>S</b> | P1 | ; |   |   |   |   |   |    |   |
| Read      | 1               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>M</b>        | <b>S</b> | ;  |   |   |   |   |   |   |    |   |
| Answer    | 1               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>M</b>        | <b>S</b> | P1 | ; |   |   |   |   |   |    |   |

| <b>MW</b> | <b>MEMORY CHANNEL WRITE</b> |          |    |    |     |    |    |    |    |    |   |
|-----------|-----------------------------|----------|----|----|-----|----|----|----|----|----|---|
| Set       | 1                           | 2        | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 | P1 Memory Channel Number<br>P2 Memory Channel Frequency (Hz)<br>P3 Clarifier Direction +: Plus Shift, -: Minus Shift<br>Clarifier Offset: 0000 - 9999 (Hz)<br>P4 0: RX CLAR "OFF" 1: RX CLAR "ON"<br>P5 0: TX CLAR "OFF" 1: TX CLAR "ON"<br>P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)<br>7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM<br>B: FM-N C: PKT-U<br>P7 0: (Fixed)<br>P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC<br>P9: Tone Number (See Table on page 5)<br>P10 0: Simplex 1: Plus Shift 2: Minus Shift |
|           | <b>M</b>                    | <b>W</b> | P1 | P1 | P1  | P2 | P2 | P2 | P2 | P2 |   |
|           | 11                          | 12       | 13 | 14 | 15  | 16 | 17 | 18 | 19 | 20 |   |
|           | P2                          | P2       | P2 | P3 | P3  | P3 | P3 | P4 | P5 |    |   |
|           | 21                          | 22       | 23 | 24 | 25  | 26 | 27 | 28 | 29 | 30 |   |
|           | P6                          | P7       | P8 | P9 | P10 | ;  |    |    |    |    |   |
| Read      | 1                           | 2        | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 |   |
|           |                             |          |    |    |     |    |    |    |    |    |   |
| Answer    | 1                           | 2        | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 |   |
|           |                             |          |    |    |     |    |    |    |    |    |   |

| <b>MX</b> | <b>MOX SET</b> |          |    |   |   |   |   |   |   |    |                                |
|-----------|----------------|----------|----|---|---|---|---|---|---|----|--------------------------------|
| Set       | 1              | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: MOX "OFF"<br>1: MOX "ON" |
|           | <b>M</b>       | <b>X</b> | P1 | ; |   |   |   |   |   |    |                                |
| Read      | 1              | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                                |
|           | <b>N</b>       | <b>X</b> | ;  |   |   |   |   |   |   |    |                                |
| Answer    | 1              | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                                |
|           | <b>N</b>       | <b>X</b> | P1 | ; |   |   |   |   |   |    |                                |

| <b>NA</b> | <b>NARROW</b> |          |    |    |   |   |   |   |   |    |   |
|-----------|---------------|----------|----|----|---|---|---|---|---|----|---|
| Set       | 1             | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: NARROW "OFF"<br>1: NARROW "ON" |
|           | <b>M</b>      | <b>A</b> | P1 | P2 | ; |   |   |   |   |    |   |
| Read      | 1             | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>N</b>      | <b>A</b> | P1 | ;  |   |   |   |   |   |    |   |
| Answer    | 1             | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>N</b>      | <b>A</b> | P1 | P2 | ; |   |   |   |   |    |   |

| <b>NB</b> | <b>NOISE BLANKER STATUS</b> |          |    |    |   |   |   |   |   |    |   |
|-----------|-----------------------------|----------|----|----|---|---|---|---|---|----|---|
| Set       | 1                           | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: Noise Blanker "OFF"<br>1: Noise Blanker "ON"<br>2: Noise Blanker (Wide) "ON" |
|           | <b>N</b>                    | <b>B</b> | P1 | P2 | ; |   |   |   |   |    |   |
| Read      | 1                           | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>N</b>                    | <b>B</b> | P1 | ;  |   |   |   |   |   |    |   |
| Answer    | 1                           | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>N</b>                    | <b>B</b> | P1 | P2 | ; |   |   |   |   |    |   |

| <b>NL</b> | <b>NOISE BLANKER LEVEL</b> |          |    |    |    |    |   |   |   |    |                             |
|-----------|----------------------------|----------|----|----|----|----|---|---|---|----|-----------------------------|
| Set       | 1                          | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 000 - 255 |
|           | <b>N</b>                   | <b>L</b> | P1 | P2 | P2 | P2 | ; |   |   |    |                             |
| Read      | 1                          | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           | <b>N</b>                   | <b>L</b> | P1 | ;  |    |    |   |   |   |    |                             |
| Answer    | 1                          | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           | <b>N</b>                   | <b>L</b> | P1 | P2 | P2 | P2 | ; |   |   |    |                             |

| <b>NR</b> | <b>NOISE REDUCTION</b> |          |    |    |   |   |   |   |   |    |   |
|-----------|------------------------|----------|----|----|---|---|---|---|---|----|---|
| Set       | 1                      | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: Noise Reduction "OFF"<br>1: Noise Reduction "ON" |
|           | <b>N</b>               | <b>R</b> | P1 | P2 | ; |   |   |   |   |    |   |
| Read      | 1                      | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>N</b>               | <b>R</b> | P1 | ;  |   |   |   |   |   |    |   |
| Answer    | 1                      | 2        | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>N</b>               | <b>R</b> | P1 | P2 | ; |   |   |   |   |    |   |

| <b>OI</b> | <b>OPPOSITE BAND INFORMATION</b> |          |    |    |     |    |    |    |    |    |   |
|-----------|----------------------------------|----------|----|----|-----|----|----|----|----|----|---|
| Set       | 1                                | 2        | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 | P1 Current Memory Channel<br>P2 VFO-B Frequency (Hz)<br>P3 Clarifier Direction +: Plus Shift, -: Minus Shift<br>Clarifier Offset: 0000 - 9999 (Hz)<br>P4 0: RX CLAR "OFF" 1: RX CLAR "ON"<br>P5 0: TX CLAR "OFF" 1: TX CLAR "ON"<br>P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)<br>7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM<br>B: FM-N C: PKT-U<br>P7 0: VFO 1: Memory<br>P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC<br>P9: Tone Number (See Table on page 5)<br>P10 0: Simplex 1: Plus Shift 2: Minus Shift |
|           |                                  |          |    |    |     |    |    |    |    |    |   |
| Read      | 1                                | 2        | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 |   |
|           | <b>O</b>                         | <b>I</b> | ;  |    |     |    |    |    |    |    |   |
| Answer    | 1                                | 2        | 3  | 4  | 5   | 6  | 7  | 8  | 9  | 10 |   |
|           | <b>O</b>                         | <b>I</b> | P1 | P1 | P1  | P2 | P2 | P2 | P2 | P2 |   |
|           | 11                               | 12       | 13 | 14 | 15  | 16 | 17 | 18 | 19 | 20 |   |
|           | P2                               | P2       | P2 | P3 | P3  | P3 | P3 | P4 | P5 |    |   |
|           | 21                               | 22       | 23 | 24 | 25  | 26 | 27 | 28 | 29 | 30 |   |
|           | P6                               | P7       | P8 | P9 | P10 | ;  |    |    |    |    |   |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| OS     | OFFSET (REPEATER SHIFT) |   |    |    |   |   |   |   |   |    |   |
|--------|-------------------------|---|----|----|---|---|---|---|---|----|---|
| Set    | 1                       | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: Simplex<br>1: Plus Shift<br>2: Minus Shift<br>※: This command can be activated only with an FM mode. |
|        | O                       | S | P1 | P2 | ; |   |   |   |   |    |   |
| Read   | 1                       | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | O                       | S | P1 | ;  |   |   |   |   |   |    |   |
| Answer | 1                       | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | O                       | S | P1 | P2 | ; |   |   |   |   |    |   |

| PA     | PRE-AMP (IPO) |   |    |    |   |   |   |   |   |    |  |
|--------|---------------|---|----|----|---|---|---|---|---|----|--|
| Set    | 1             | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: IPO<br>1: AMP 1<br>2: AMP 2 |
|        | P             | A | P1 | P2 | ; |   |   |   |   |    |  |
| Read   | 1             | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | P             | A | P1 | ;  |   |   |   |   |   |    |  |
| Answer | 1             | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | P             | A | P1 | P2 | ; |   |   |   |   |    |  |

| PB     | PLAY BACK |   |    |    |   |   |   |   |   |    |   |
|--------|-----------|---|----|----|---|---|---|---|---|----|---|
| Set    | 1         | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: DVS-6 (Recording Stop)<br>1: DVS-6 (CH "1" Recording Start/Stop)<br>2: DVS-6 (CH "2" Recording Start/Stop)<br>3: DVS-6 (CH "3" Recording Start/Stop)<br>4: DVS-6 (CH "4" Recording Start/Stop)<br>5: DVS-6 (CH "5" Recording Start/Stop)<br>※: This command does not activates when the optional DVS-6 Voice Memory Unit is not installed. |
|        | P         | B | P1 | P2 | ; |   |   |   |   |    |   |
| Read   | 1         | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | P         | B | P1 | ;  |   |   |   |   |   |    |   |
| Answer | 1         | 2 | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | P         | B | P1 | P2 | ; |   |   |   |   |    |   |

| PC     | POWER CONTROL |   |    |    |    |   |   |   |   |    |              |
|--------|---------------|---|----|----|----|---|---|---|---|----|--------------|
| Set    | 1             | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 005 - 100 |
|        | P             | C | P1 | P1 | P1 | ; |   |   |   |    |              |
| Read   | 1             | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|        | P             | C | ;  |    |    |   |   |   |   |    |              |
| Answer | 1             | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|        | P             | C | P1 | P1 | P1 | ; |   |   |   |    |              |

| PL     | SPEECH PROCESSOR LEVEL |   |    |    |    |   |   |   |   |    |              |
|--------|------------------------|---|----|----|----|---|---|---|---|----|--------------|
| Set    | 1                      | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 000 - 100 |
|        | P                      | L | P1 | P1 | P1 | ; |   |   |   |    |              |
| Read   | 1                      | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|        | P                      | L | ;  |    |    |   |   |   |   |    |              |
| Answer | 1                      | 2 | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|        | P                      | L | P1 | P1 | P1 | ; |   |   |   |    |              |

| PR     | SPEECH PROCESSOR |   |    |   |   |   |   |   |   |    |   |
|--------|------------------|---|----|---|---|---|---|---|---|----|---|
| Set    | 1                | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Speech Processor "OFF"<br>1: Speech Processor "ON"<br>2: Parametric Microphone Equalizer "ON" |
|        | P                | R | P1 | ; |   |   |   |   |   |    |   |
| Read   | 1                | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | P                | R | ;  |   |   |   |   |   |   |    |   |
| Answer | 1                | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | P                | R | P1 | ; |   |   |   |   |   |    |   |

| PS     | POWER SWITCH |   |    |   |   |   |   |   |   |    |   |
|--------|--------------|---|----|---|---|---|---|---|---|----|---|
| Set    | 1            | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: POWER "OFF"<br>1: POWER "ON"<br>This command requires dummy data be initially sent. Then after one second and before two seconds the command is sent. |
|        | P            | S | P1 | ; |   |   |   |   |   |    |   |
| Read   | 1            | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | P            | S | ;  |   |   |   |   |   |   |    |   |
| Answer | 1            | 2 | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|        | P            | S | P1 | ; |   |   |   |   |   |    |   |

| QI     | QMB STORE |   |   |   |   |   |   |   |   |    |  |
|--------|-----------|---|---|---|---|---|---|---|---|----|--|
| Set    | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | Q         | I | ; |   |   |   |   |   |   |    |  |
| Read   | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |           |   |   |   |   |   |   |   |   |    |  |
| Answer | 1         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |           |   |   |   |   |   |   |   |   |    |  |

| QR     | QMB RECALL |   |   |   |   |   |   |   |   |    |  |
|--------|------------|---|---|---|---|---|---|---|---|----|--|
| Set    | 1          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        | Q          | R | ; |   |   |   |   |   |   |    |  |
| Read   | 1          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |            |   |   |   |   |   |   |   |   |    |  |
| Answer | 1          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|        |            |   |   |   |   |   |   |   |   |    |  |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| <b>QS</b> |            | <b>QUICK SPLIT</b> |   |   |   |   |   |   |   |   |    |  |
|-----------|------------|--------------------|---|---|---|---|---|---|---|---|----|--|
| Set       |            | 1                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>Q S</b> | :                  |   |   |   |   |   |   |   |   |    |  |
| Read      |            | 1                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |            |                    |   |   |   |   |   |   |   |   |    |  |
| Answer    |            | 1                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |            |                    |   |   |   |   |   |   |   |   |    |  |

| <b>RA</b> |            | <b>RF ATTENUATOR</b> |    |   |   |   |   |   |   |   |    |   |
|-----------|------------|----------------------|----|---|---|---|---|---|---|---|----|---|
| Set       |            | 1                    | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 0: OFF<br>1: 6 dB<br>2: 12 dB<br>3: 18 dB |
|           | <b>R A</b> | P1                   | P2 | : |   |   |   |   |   |   |    |   |
| Read      |            | 1                    | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>R A</b> | P1                   | :  |   |   |   |   |   |   |   |    |   |
| Answer    |            | 1                    | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>R A</b> | P1                   | P2 | : |   |   |   |   |   |   |    |   |

| <b>RC</b> |            | <b>CLAR CLEAR</b> |   |   |   |   |   |   |   |   |    |  |
|-----------|------------|-------------------|---|---|---|---|---|---|---|---|----|--|
| Set       |            | 1                 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>R C</b> | :                 |   |   |   |   |   |   |   |   |    |  |
| Read      |            | 1                 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |            |                   |   |   |   |   |   |   |   |   |    |  |
| Answer    |            | 1                 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |            |                   |   |   |   |   |   |   |   |   |    |  |

| <b>RD</b> |            | <b>CLAR MINUS OFFSET</b> |    |    |    |   |   |   |   |   |    |                     |
|-----------|------------|--------------------------|----|----|----|---|---|---|---|---|----|---------------------|
| Set       |            | 1                        | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0000 - 9999 (Hz) |
|           | <b>R D</b> | P1                       | P1 | P1 | P1 | : |   |   |   |   |    |                     |
| Read      |            | 1                        | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |                     |
|           |            |                          |    |    |    |   |   |   |   |   |    |                     |
| Answer    |            | 1                        | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |                     |
|           |            |                          |    |    |    |   |   |   |   |   |    |                     |

| <b>RF</b> |            | <b>ROOFING FILTER</b> |    |   |   |   |   |   |   |   |    |   |
|-----------|------------|-----------------------|----|---|---|---|---|---|---|---|----|---|
| Set       |            | 1                     | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed    P3 1: 15 kHz<br>P2 0: AUTO    2: 6 kHz<br>1: 15 kHz    3: 3 kHz<br>2: 6 kHz    4: AUTO - 15 kHz<br>3: 3 kHz    5: AUTO - 6kHz<br>6: AUTO - 3 kHz |
|           | <b>R F</b> | P1                    | P2 | : |   |   |   |   |   |   |    |   |
| Read      |            | 1                     | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>R F</b> | P1                    | :  |   |   |   |   |   |   |   |    |   |
| Answer    |            | 1                     | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>R F</b> | P1                    | P3 | : |   |   |   |   |   |   |    |   |

| <b>RG</b> |            | <b>RF GAIN</b> |    |    |    |   |   |   |   |   |    |                             |
|-----------|------------|----------------|----|----|----|---|---|---|---|---|----|-----------------------------|
| Set       |            | 1              | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 000 - 255 |
|           | <b>R G</b> | P1             | P2 | P2 | P2 | : |   |   |   |   |    |                             |
| Read      |            | 1              | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |                             |
|           | <b>R G</b> | P1             | :  |    |    |   |   |   |   |   |    |                             |
| Answer    |            | 1              | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |                             |
|           | <b>R G</b> | P1             | P2 | P2 | P2 | : |   |   |   |   |    |                             |

| <b>RI</b> |            | <b>RADIO INFORMATION</b> |    |   |   |   |   |   |   |   |    |  |
|-----------|------------|--------------------------|----|---|---|---|---|---|---|---|----|--|
| Set       |            | 1                        | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Hi-SWR<br>1: MIC-EQ<br>3: REC<br>4: PLAY<br>P2 0: OFF<br>1: ON |
|           |            |                          |    |   |   |   |   |   |   |   |    |  |
| Read      |            | 1                        | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>R I</b> | P1                       | :  |   |   |   |   |   |   |   |    |  |
| Answer    |            | 1                        | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>R I</b> | P1                       | P2 | : |   |   |   |   |   |   |    |  |

| <b>RL</b> |            | <b>NOISE REDUCTION LEVEL</b> |    |    |   |   |   |   |   |   |    |                           |
|-----------|------------|------------------------------|----|----|---|---|---|---|---|---|----|---------------------------|
| Set       |            | 1                            | 2  | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 01 - 15 |
|           | <b>R L</b> | P1                           | P2 | P2 | : |   |   |   |   |   |    |                           |
| Read      |            | 1                            | 2  | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                           |
|           | <b>R L</b> | P1                           | :  |    |   |   |   |   |   |   |    |                           |
| Answer    |            | 1                            | 2  | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                           |
|           | <b>R L</b> | P1                           | P2 | P2 | : |   |   |   |   |   |    |                           |

| <b>RM</b> |            | <b>READ METER</b> |    |    |    |   |   |   |   |   |    |   |
|-----------|------------|-------------------|----|----|----|---|---|---|---|---|----|---|
| Set       |            | 1                 | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: S/PO Meter<br>1: S Meter<br>3: COMP Meter<br>5: PO Meter<br>7: ID Meter<br>P2 0 - 255<br>2: Depends of the front panel's METER switch<br>4: ALC Meter<br>6: SWR Meter<br>8: VDD Meter |
|           |            |                   |    |    |    |   |   |   |   |   |    |   |
| Read      |            | 1                 | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>R M</b> | P1                | :  |    |    |   |   |   |   |   |    |   |
| Answer    |            | 1                 | 2  | 3  | 4  | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           | <b>R M</b> | P1                | P2 | P2 | P2 | : |   |   |   |   |    |   |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| <b>RO</b> |  | <b>ROTATOR</b> |          |    |    |    |    |    |    |    |    |  |
|-----------|--|----------------|----------|----|----|----|----|----|----|----|----|--|
| Set       |  | 1              | 2        | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | P1 0: OFF<br>1: Counter Clockwise<br>2: Clockwise<br>3: SPEED 1% DOWN<br>4: SPEED 1% UP<br>P2 DIRECTION (0 - 450)<br>P3 SPEED (0 - 100%) |
|           |  | <b>R</b>       | <b>O</b> | P1 | ;  |    |    |    |    |    |    |  |
| Read      |  | 1              | 2        | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |  |
|           |  | <b>R</b>       | <b>O</b> | ;  |    |    |    |    |    |    |    |  |
| Answer    |  | 1              | 2        | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |  |
|           |  | <b>R</b>       | <b>O</b> | P1 | P2 | P2 | P2 | P3 | P3 | P3 | ;  |  |

| <b>RS</b> |  | <b>RADIO STATUS</b> |          |    |   |   |   |   |   |   |    |   |
|-----------|--|---------------------|----------|----|---|---|---|---|---|---|----|---|
| Set       |  | 1                   | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: NORMAL MODE<br>1: MENU MODE<br>2: MENU Read (from Optional DMU-2000 Data Management Unit) |
|           |  |                     |          |    |   |   |   |   |   |   |    |   |
| Read      |  | 1                   | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           |  | <b>R</b>            | <b>S</b> | ;  |   |   |   |   |   |   |    |   |
| Answer    |  | 1                   | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |   |
|           |  | <b>R</b>            | <b>S</b> | P1 | ; |   |   |   |   |   |    |   |

| <b>RT</b> |  | <b>CLAR</b> |          |    |   |   |   |   |   |   |    |  |
|-----------|--|-------------|----------|----|---|---|---|---|---|---|----|--|
| Set       |  | 1           | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: RX Clarifier "OFF"<br>1: RX Clarifier "ON" |
|           |  | <b>R</b>    | <b>T</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      |  | 1           | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |  | <b>R</b>    | <b>T</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    |  | 1           | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |  | <b>R</b>    | <b>T</b> | P1 | ; |   |   |   |   |   |    |  |

| <b>RU</b> |  | <b>RX CLARIFIER PLUS OFFSET</b> |          |    |    |    |    |   |   |   |    |                     |
|-----------|--|---------------------------------|----------|----|----|----|----|---|---|---|----|---------------------|
| Set       |  | 1                               | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0000 - 9999 (Hz) |
|           |  | <b>R</b>                        | <b>U</b> | P1 | P1 | P1 | P1 | ; |   |   |    |                     |
| Read      |  | 1                               | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                     |
|           |  |                                 |          |    |    |    |    |   |   |   |    |                     |
| Answer    |  | 1                               | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                     |
|           |  |                                 |          |    |    |    |    |   |   |   |    |                     |

| <b>SC</b> |  | <b>SCAN</b> |          |    |   |   |   |   |   |   |    |  |
|-----------|--|-------------|----------|----|---|---|---|---|---|---|----|--|
| Set       |  | 1           | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: Scan "OFF"<br>1: Scan "ON" (Upward)<br>2: Scan "ON" (Downward) |
|           |  | <b>S</b>    | <b>C</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      |  | 1           | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |  | <b>S</b>    | <b>C</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    |  | 1           | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |  | <b>S</b>    | <b>C</b> | P1 | ; |   |   |   |   |   |    |  |

| <b>SD</b> |  | <b>CW BREAK-IN DELAY TIME</b> |          |    |    |    |    |   |   |   |    |   |
|-----------|--|-------------------------------|----------|----|----|----|----|---|---|---|----|---|
| Set       |  | 1                             | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0000: Full Break-in<br>0030 - 3000 mS (10 mS/step) |
|           |  | <b>S</b>                      | <b>D</b> | P1 | P1 | P1 | P1 | ; |   |   |    |   |
| Read      |  | 1                             | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |   |
|           |  | <b>S</b>                      | <b>D</b> | ;  |    |    |    |   |   |   |    |   |
| Answer    |  | 1                             | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |   |
|           |  | <b>S</b>                      | <b>D</b> | P1 | P1 | P1 | P1 | ; |   |   |    |   |

| <b>SF</b> |  | <b>CLAR/VFO-B KNOB FUNCTION</b> |          |    |   |   |   |   |   |   |    |  |
|-----------|--|---------------------------------|----------|----|---|---|---|---|---|---|----|--|
| Set       |  | 1                               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: BAND<br>1: MHz<br>2: GRP<br>3: MCH<br>8: Off (Read only) |
|           |  | <b>S</b>                        | <b>F</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      |  | 1                               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |  | <b>S</b>                        | <b>F</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    |  | 1                               | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |  | <b>S</b>                        | <b>F</b> | P1 | ; |   |   |   |   |   |    |  |

| <b>SH</b> |  | <b>WIDTH</b> |          |    |    |    |   |   |   |   |    |   |
|-----------|--|--------------|----------|----|----|----|---|---|---|---|----|---|
| Set       |  | 1            | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 00-13: Bandwidth (See Table on the next page) |
|           |  | <b>S</b>     | <b>H</b> | P1 | P2 | P2 | ; |   |   |   |    |   |
| Read      |  | 1            | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|           |  | <b>S</b>     | <b>H</b> | P1 | ;  |    |   |   |   |   |    |   |
| Answer    |  | 1            | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |   |
|           |  | <b>S</b>     | <b>H</b> | P1 | P2 | P2 | ; |   |   |   |    |   |

| <b>SM</b> |  | <b>S-METER READING</b> |          |    |    |    |    |   |   |   |    |                             |
|-----------|--|------------------------|----------|----|----|----|----|---|---|---|----|-----------------------------|
| Set       |  | 1                      | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 000 - 255 |
|           |  |                        |          |    |    |    |    |   |   |   |    |                             |
| Read      |  | 1                      | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           |  | <b>S</b>               | <b>M</b> | P1 | ;  |    |    |   |   |   |    |                             |
| Answer    |  | 1                      | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           |  | <b>S</b>               | <b>M</b> | P1 | P2 | P2 | P2 | ; |   |   |    |                             |



# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| <b>SQ</b> | <b>SQUELCH LEVEL</b> |          |    |    |    |    |   |   |   |    |                             |
|-----------|----------------------|----------|----|----|----|----|---|---|---|----|-----------------------------|
| Set       | 1                    | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0: Fixed<br>P2 000 - 255 |
|           | <b>S</b>             | <b>Q</b> | P1 | P2 | P2 | P2 | ; |   |   |    |                             |
| Read      | 1                    | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           | <b>S</b>             | <b>Q</b> | P1 | ;  |    |    |   |   |   |    |                             |
| Answer    | 1                    | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                             |
|           | <b>S</b>             | <b>Q</b> | P1 | P2 | P2 | P2 | ; |   |   |    |                             |

| <b>SV</b> | <b>SWAP VFO</b> |          |   |   |   |   |   |   |   |    |  |
|-----------|-----------------|----------|---|---|---|---|---|---|---|----|--|
| Set       | 1               | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>S</b>        | <b>V</b> | ; |   |   |   |   |   |   |    |  |
| Read      | 1               | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                 |          |   |   |   |   |   |   |   |    |  |
| Answer    | 1               | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                 |          |   |   |   |   |   |   |   |    |  |

| <b>TS</b> | <b>TXW</b> |          |    |   |   |   |   |   |   |    |                              |
|-----------|------------|----------|----|---|---|---|---|---|---|----|------------------------------|
| Set       | 1          | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0:TXW "OFF"<br>1:TXW "ON" |
|           | <b>T</b>   | <b>S</b> | P1 | ; |   |   |   |   |   |    |                              |
| Read      | 1          | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                              |
|           | <b>T</b>   | <b>S</b> | ;  |   |   |   |   |   |   |    |                              |
| Answer    | 1          | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                              |
|           | <b>T</b>   | <b>S</b> | P1 | ; |   |   |   |   |   |    |                              |

| <b>TX</b> | <b>TX SET</b> |          |    |   |   |   |   |   |   |    |  |
|-----------|---------------|----------|----|---|---|---|---|---|---|----|--|
| Set       | 1             | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: RADIO TX "OFF" CAT TX "OFF"<br>1: RADIO TX "OFF" CAT TX "ON"<br>2: RADIO TX "ON" CAT TX "OFF" (Answer) |
|           | <b>T</b>      | <b>X</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      | 1             | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>T</b>      | <b>X</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    | 1             | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>T</b>      | <b>X</b> | P1 | ; |   |   |   |   |   |    |  |

| <b>UL</b> | <b>PLL UNLOCK STATUS</b> |          |    |   |   |   |   |   |   |    |                                     |
|-----------|--------------------------|----------|----|---|---|---|---|---|---|----|-------------------------------------|
| Set       | 1                        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: PLL "Lock"<br>1: PLL "Unlock" |
|           |                          |          |    |   |   |   |   |   |   |    |                                     |
| Read      | 1                        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                                     |
|           | <b>U</b>                 | <b>L</b> | ;  |   |   |   |   |   |   |    |                                     |
| Answer    | 1                        | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                                     |
|           | <b>U</b>                 | <b>L</b> | P1 | ; |   |   |   |   |   |    |                                     |

| <b>UP</b> | <b>UP</b> |          |   |   |   |   |   |   |   |    |  |
|-----------|-----------|----------|---|---|---|---|---|---|---|----|--|
| Set       | 1         | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>U</b>  | <b>P</b> | ; |   |   |   |   |   |   |    |  |
| Read      | 1         | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |           |          |   |   |   |   |   |   |   |    |  |
| Answer    | 1         | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |           |          |   |   |   |   |   |   |   |    |  |

| <b>COMMAND</b> | <b>BANDWIDTH</b> |              |            |             |           |                   |                 |
|----------------|------------------|--------------|------------|-------------|-----------|-------------------|-----------------|
|                | P2               | SSB (Narrow) | SSB (Wide) | CW (Narrow) | CW (Wide) | RTTY/PKT (Narrow) | RTTY/PKT (Wide) |
| 00             |                  | 1800 Hz      | 2400 Hz    | 500 Hz      | 2400 Hz   | 300 Hz            | 500 Hz          |
| 01             |                  | 200 Hz       | —          | —           | —         | —                 | —               |
| 02             |                  | 400 Hz       | —          | —           | —         | —                 | —               |
| 03             |                  | 600 Hz       | —          | 100 Hz      | —         | 100 Hz            | —               |
| 04             |                  | 850 Hz       | —          | 200 Hz      | —         | 200 Hz            | —               |
| 05             |                  | 1100 Hz      | —          | 300 Hz      | —         | 300 Hz            | —               |
| 06             |                  | 1350 Hz      | —          | 400 Hz      | —         | 400 Hz            | —               |
| 07             |                  | 1500 Hz      | —          | 500 Hz      | 500 Hz    | 500 Hz            | 500 Hz          |
| 08             |                  | 1650 Hz      | —          | —           | 800 Hz    | —                 | 800 Hz          |
| 09             |                  | 1800 Hz      | 1800 Hz    | —           | 1200 Hz   | —                 | 1200 Hz         |
| 10             |                  | —            | 1950 Hz    | —           | 1400 Hz   | —                 | 1400 Hz         |
| 11             |                  | —            | 2100 Hz    | —           | 1700 Hz   | —                 | 1700 Hz         |
| 12             |                  | —            | 2250 Hz    | —           | 2000 Hz   | —                 | 2000 Hz         |
| 13             |                  | —            | 2400 Hz    | —           | 2400 Hz   | —                 | 2400 Hz         |
| 14             |                  | —            | 2450 Hz    | —           | —         | —                 | —               |
| 15             |                  | —            | 2500 Hz    | —           | —         | —                 | —               |
| 16             |                  | —            | 2600 Hz    | —           | —         | —                 | —               |
| 17             |                  | —            | 2700 Hz    | —           | —         | —                 | —               |
| 18             |                  | —            | 2800 Hz    | —           | —         | —                 | —               |
| 19             |                  | —            | 2900 Hz    | —           | —         | —                 | —               |
| 20             |                  | —            | 3000 Hz    | —           | —         | —                 | —               |

# CAT (COMPUTER AIDED TRANSCEIVER) OPERATION

## CONTROL COMMAND TABLES

| <b>VD</b> | <b>VOX DELAY TIME</b> |          |    |    |    |    |   |   |   |    |                                |
|-----------|-----------------------|----------|----|----|----|----|---|---|---|----|--------------------------------|
| Set       | 1                     | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 | P1 0030 - 3000 mS (10 mS/step) |
|           | <b>V</b>              | <b>D</b> | P1 | P1 | P1 | P1 | ; |   |   |    |                                |
| Read      | 1                     | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                                |
|           | <b>V</b>              | <b>D</b> | ;  |    |    |    |   |   |   |    |                                |
| Answer    | 1                     | 2        | 3  | 4  | 5  | 6  | 7 | 8 | 9 | 10 |                                |
|           | <b>V</b>              | <b>D</b> | P1 | P1 | P1 | P1 | ; |   |   |    |                                |

| <b>VF</b> | <b>VRF FILTER</b> |          |     |    |    |    |    |    |   |    |   |
|-----------|-------------------|----------|-----|----|----|----|----|----|---|----|---|
| Set       | 1                 | 2        | 3   | 4  | 5  | 6  | 7  | 8  | 9 | 10 | P1 0: Fixed                    P4 0 - 9 (Step)<br>P2 0: OFF                    P5 000 - 255<br>1: ON                    P6 1: Fixed<br>P3 2: Default set<br>+: Plus Shift<br>-: Minus Shift |
|           | <b>V</b>          | <b>F</b> | P1  | P2 | P3 | P4 | ;  |    |   |    |   |
| Read      | 1                 | 2        | 3   | 4  | 5  | 6  | 7  | 8  | 9 | 10 |   |
|           | <b>V</b>          | <b>F</b> | P1; |    |    |    |    |    |   |    |   |
| Answer    | 1                 | 2        | 3   | 4  | 5  | 6  | 7  | 8  | 9 | 10 |   |
|           | <b>V</b>          | <b>F</b> | P1  | P2 | P5 | P5 | P5 | P6 | ; |    |   |

| <b>VG</b> | <b>VOX GAIN</b> |          |    |    |    |   |   |   |   |    |              |
|-----------|-----------------|----------|----|----|----|---|---|---|---|----|--------------|
| Set       | 1               | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 | P1 000 - 100 |
|           | <b>V</b>        | <b>G</b> | P1 | P1 | P1 | ; |   |   |   |    |              |
| Read      | 1               | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|           | <b>V</b>        | <b>G</b> | ;  |    |    |   |   |   |   |    |              |
| Answer    | 1               | 2        | 3  | 4  | 5  | 6 | 7 | 8 | 9 | 10 |              |
|           | <b>V</b>        | <b>G</b> | P1 | P1 | P1 | ; |   |   |   |    |              |

| <b>VM</b> | <b>VFO-A TO MEMORY CHANNEL</b> |          |   |   |   |   |   |   |   |    |  |
|-----------|--------------------------------|----------|---|---|---|---|---|---|---|----|--|
| Set       | 1                              | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>V</b>                       | <b>M</b> | ; |   |   |   |   |   |   |    |  |
| Read      | 1                              | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                                |          |   |   |   |   |   |   |   |    |  |
| Answer    | 1                              | 2        | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           |                                |          |   |   |   |   |   |   |   |    |  |

| <b>VS</b> | <b>VFO SELECT</b> |          |    |   |   |   |   |   |   |    |                         |
|-----------|-------------------|----------|----|---|---|---|---|---|---|----|-------------------------|
| Set       | 1                 | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: VFO-A<br>1: VFO-B |
|           | <b>V</b>          | <b>S</b> | P1 | ; |   |   |   |   |   |    |                         |
| Read      | 1                 | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                         |
|           | <b>V</b>          | <b>S</b> | ;  |   |   |   |   |   |   |    |                         |
| Answer    | 1                 | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                         |
|           | <b>V</b>          | <b>S</b> | P1 | ; |   |   |   |   |   |    |                         |

| <b>VX</b> | <b>VOX STATUS</b> |          |    |   |   |   |   |   |   |    |                                |
|-----------|-------------------|----------|----|---|---|---|---|---|---|----|--------------------------------|
| Set       | 1                 | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: VOX "OFF"<br>1: VOX "ON" |
|           | <b>V</b>          | <b>X</b> | P1 | ; |   |   |   |   |   |    |                                |
| Read      | 1                 | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                                |
|           | <b>V</b>          | <b>X</b> | ;  |   |   |   |   |   |   |    |                                |
| Answer    | 1                 | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |                                |
|           | <b>V</b>          | <b>X</b> | P1 | ; |   |   |   |   |   |    |                                |

| <b>XT</b> | <b>TX CLAR</b> |          |    |   |   |   |   |   |   |    |  |
|-----------|----------------|----------|----|---|---|---|---|---|---|----|--|
| Set       | 1              | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | P1 0: TX CLAR "OFF"<br>1: TX CLAR "ON" |
|           | <b>X</b>       | <b>T</b> | P1 | ; |   |   |   |   |   |    |  |
| Read      | 1              | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>X</b>       | <b>T</b> | ;  |   |   |   |   |   |   |    |  |
| Answer    | 1              | 2        | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |
|           | <b>X</b>       | <b>T</b> | P1 | ; |   |   |   |   |   |    |  |

# *CAT (COMPUTER AIDED TRANSCEIVER) OPERATION*

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## **NOTE**

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