

# **TM-D700 PC Command Specifications**

## 1. Notification

1. Your results may be different from the parameters mentioned in this document.
2. This document is for information purposes only and its content will not be supported by the technical support department.

## 2. Hardware Specification

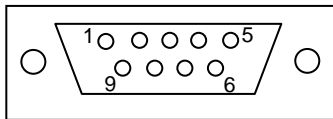
### 2.1. Communication specification

Communication method	Serial interface RS-232C compatible
Communication Speed	Selectable 9600, 19200, 38400 and 57600bps
Data length	8bit
Data	ASCII code
Stop bit	1 stop bit
Parity	None
Flow Control	Hardware Flow Control

### 2.2. Connection Port specification

Use ordinary straight RS-232C cable between the Radio and PC.

D-SUB 9pin (male)



Pin #	Pin Function at radio side	Pin Name at PC side
1,4,6,9	No connection	
2	Serial data output to PC	RXD
3	Serial data input from PC	TXD
5	Ground	GND
7	Disable to output a data to PC, while this logic is "L".	RTS
8	Disable to output a data from PC, while this logic is "L".	CTS

### 3. Software Specification

#### 3.1. Command set

**FQ 0014500000,0<CR>**  
 command | parameter terminator  
 separator (space)

##### 3.1.1. Command

Alphanumeric "A" – "Z" and "0" – "9" is used for Command. The Radio accepts both capital and small character, but replies always in capital.

##### 3.1.2. Separator

The separator must be inserted to divide between command and parameter. The separator assigned space (20H). If the parameter do not exist, the separator is not required.

##### 3.1.3. Parameter

ASCII code between 20h to 7Eh is used for parameters.

The digit numbers of the parameter must send as dedicated protocol.

Between the parameters, a character of "," must be used for the separator.

The parameter can be deleted, if the radio can not accept some dedicated parameter or the radio does not necessary it. However, "," can not be deleted.

##### 3.1.4. Terminator

The terminator must be added to means the end of the command. The terminator assigned CR (0Dh).

## 4. Command Description

### ABC *Automatic Band Changer*

Set: ABC [ON|OFF]<CR>  
 Read: ABC<CR>  
 Response: ABC [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio replies an error code "N<CR>" when single band mode.  
 The radio replies BC command when the radio band changes while AI function is ON.  
 The radio outputs ABC command when ABC operation occurs while AI function is ON.

### ABLG *Bulletin Group for APRS*

Set: ABLG [BLN group]<CR>  
 Read: ABLG<CR>  
 Response: ABLG [BLN group]<CR>

Parameter: [BLN group]  
 Maximum 29 bytes of ASCII code "A" to "Z", "0" to "9", "-" and ","

Note: Up to 6 group names can be designated with the separator of comma character.  
 Maximum of 4 characters can be used for one group name.  
 The radio outputs ABLG command when it changed by radio operation while AI function is ON.

### AD *Auto Dimmer*

Set: AD [ON|OFF]<CR>  
 Read: AD<CR>  
 Response: AD [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

### AG *Audio Gain*

Set: AG [Band],[Volume]<CR>  
 Read: AG [Band]<CR>  
 Response: AG [Band],[Volume]<CR>

Parameter: [Band]  
 0: A Band  
 1: B Band  
 [Volume]  
 2 digits ASCII code ("00" - "1F")

Note: The radio replies an error code "N<CR>" when it receives improper volume level.  
 The radio replies AG command when the radio volume level changes while AI function is ON.  
 The audio level resumes as selected position by AF volume after Power SW Off then ON.  
 The audio level resumes as selected position by AF volume when operate the radio volume knob after the audio level was changed by AG command.

**AI**     *Auto Information*

This feature is the radio automatically outputs the new status information through COM port when it changed.

Set:            AI [ON|OFF]<CR>  
 Read:           AI<CR>  
 Response:      AI [ON|OFF]<CR>

Parameter:     [ON|OFF]  
                   0: OFF  
                   1: ON

Note:           This command is not backed-up.

**AIP**     *AIP*

Set:            AIP [ON|OFF]<CR>  
 Read:           AIP<CR>  
 Response:      AIP [ON|OFF]<CR>

Parameter:     [ON|OFF]  
                   0: OFF  
                   1: ON

Note:           This command is available on VHF band only.

**AMGG**    *Message Group for APRS*

Set:            AMGG [message group]<CR>  
 Read:           AMGG<CR>  
 Response:      AMGG [message group]<CR>

Parameter:     [message group]  
                   Maximum 59 bytes of ASCII code "A" to "Z", "0" to "9", "-", ",", and "\*"

Note:           Up to 6 group names can be designated with the separator of comma character.  
 Maximum of 9 characters can be used for one group name.  
 The character "\*" can be used for a wild-card symbol.  
 The radio outputs AMGG command when it changed by radio operation while AI function is ON.

**AMR**     *Automatic Message Reply*

Set:            AMR [ON|OFF]<CR>  
 Read:           AMR<CR>  
 Response:      AMR [ON|OFF]<CR>

Parameter:     [ON|OFF]  
                   0: OFF  
                   1: ON

Note:           The radio outputs AMR command when it changed by radio operation while AI function is ON.

**AMSG**    *APRS message*

Set:            AMSG 00,[Destination Call Sign],[Message]<CR>  
 Read:           AMSG [Message number]<CR>

Response: AMSG [Message selection],[Tx/Rx],[Destination Call Sign], [Line Number],  
[Message Type/Status],[Date],[Time],[Group call],[Message][Read/Unread]<CR>

Parameter: [Message number]  
The message or bulletin number "01" to "16"  
[Tx/Rx]  
1: Sent message  
2: Received message  
[Destination Call Sign]  
Select the destination call sign or bulletin name.  
This parameter accepts 9 characters ASCII code "A" to "Z" , "0" to "9" and "-".  
[Line number]  
This parameter accept maximum 5 characters ASCII code "A" to "Z" and "0" to "9".  
[Message type/status]  
Message to be sent  
"0" to "5": TX remains numbers  
"\*": Acknowledgement received  
Message of my station  
"M": Message for my station.  
"B": Bulletin  
"!": NWS (National Weather Service).  
[Date]  
ddMM  
[Time]  
hhmm  
[Group call]  
9 characters ASCII code "A" to "Z" and "0" to "9".  
[Message]  
Maximum 64 digits ASCII code.  
[Read/Unread]  
0: Read  
1: Unread

Note: The Read numbers of the message are assigned from "01" as newest to "16" as oldest.  
The Message can be used following characters:  
"abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789?!.-/&#( ): "@  
and " (space).  
Message selection from "0" to "5" means retry transmit number while the radio do not receive,  
and "\*" means the radio already received.  
To set up the bulletin is assignment the "BLN#" (# can selectable between "0" to "9" and "A" to  
"Z") as a destination call sign.

**APO** *Automatic Power Off*

Set: APO [TIME]<CR>  
Read: APO<CR>  
Response: APO [TIME],[APO one minute before]<CR>

Parameter: [TIME]  
0: OFF  
1: 30  
2: 60  
[APO one minute before] (Only while APO is ON)  
0: more than one minute left  
1: within one minute left

Note: The [APO one minute before] parameter will be added to the command response when APO is set as ON.  
The "APO 1,1<CR>" will be replied at one minute before APO operation while AI function is ON.  
The radio outputs APO command when the APO is changed by radio operation while AI is ON.

**ARL** *APRS Position Limit*

Set: ARL [Data]<CR>  
 Read: ARL<CR>  
 Response: ARL [Data]<CR>

Parameter: [Data]  
 4 digits ASCII code

Note: Valuable between "0000" and "2500", step "10".  
 "0000" means OFF.

**ARLM** *Message for Automatic Message Reply function*

Set: ARLM [message]<CR>  
 Read: ARLM<CR>  
 Response: ARLM [message]<CR>

Parameter: [message]  
 Maximum 64 bytes of ASCII code between 20h and 7Fh.

Note: The radio outputs ARLM command when it changed by radio operation while AI function is ON.

**ARO** *Auto Repeater Offset*

Set: ARO [ON|OFF]<CR>  
 Read: ARO<CR>  
 Response: ARO [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

**ASC** *Automatic Simplex Checker*

Set: ASC [Band],[ON|OFF]<CR>  
 Read: ASC [Band]<CR>  
 Response: ASC [Band],[ON|OFF],[Check result]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [ON|OFF]  
 0: OFF  
 1: ON  
 [Check result] (Only while ASC is ON)  
 0: unable to communicate  
 1: able to communicate

Note: The [Check result] parameter is added to the response command when ASC is set as ON.  
 The radio outputs ASC command when the check result changed while the AI function is ON.  
 The radio outputs ASC command when the auto simplex checker function is changed by radio operation while AI function is ON.

**BC** *Operating Band*



Set: BC [Ctrl Band],[Tx Band]<CR>  
 Read: BC<CR>  
 Response: BC [Ctrl Band],[Tx Band]<CR>

Parameter: [Ctrl Band]  
               0: A band  
               1: B band  
 [Tx Band]  
               0: A band  
               1: B band

Note: The radio outputs BC command when the operation band is changed by radio operation while AI function is ON.

**BCN**    *APRS Beacon*

Set: BCN [ON|OFF]<CR>  
 Read: BCN<CR>  
 Response: BCN [ON|OFF]<CR>

Parameter: [ON|OFF]  
               0: OFF  
               1: ON

Note: The radio outputs BCN command when it changed by radio operation while AI function is ON.

**BEP**    *Beep sound*

Set: BEP [ON|OFF]<CR>  
 Read: BEP<CR>  
 Response: BEP [ON|OFF]<CR>

Parameter: [ON|OFF]  
               0: OFF  
               1: ON

Note: The radio outputs BEP command when it changed by radio operation while AI function is ON.

**BEPT**    *APRS Beep sound type*

Set: BEPT [Type]<CR>  
 Read: BEPT<CR>  
 Response: BEPT [Type]<CR>

Parameter: [Type]  
               0: OFF  
               1: MINE  
               2: ALL NEW  
               3: ALL

Note: The radio outputs BEPT command when it changed by radio operation while AI function is ON.

**BVOL**    *Beep Volume*

Set: BVOL [Volume]<CR>  
 Read: BVOL<CR>

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Response: BVOL [Volume]<CR>

Parameter: [Volume]  
 0: OFF  
 1: Level 1  
 2: Level 2  
 3: Level 3  
 4: Level 4  
 5: Level 5  
 6: Level 6  
 7: Level 7

**BUF** *Information of displayed frequency and related data*

Set: BUF [Band],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],[TONE frequency],  
 [DCS number],[CTCSS frequency],[Offset],[FM|AM]<CR>

Read: BUF [Band]<CR>

Response: BUF [Band],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],[TONE frequency],  
 [DCS number],[CTCSS frequency],[Offset],[FM|AM]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [Frequency](Hz)  
 11 bytes data within the programmed VFO for each band  
 [Step](kHz)  
 0: 5                    5: 20  
 1: 6.25                6: 25  
 2: 10                   7: 30  
 3: 12.5                8: 50  
 4: 15                   9: 100  
 [Shift]  
 0: Simplex  
 1: + Shift  
 2: - Shift  
 3: -7.6MHz (Europe model only)  
 [Reverse]  
 0: OFF  
 1: ON  
 [Tone]  
 0: OFF  
 1: ON  
 [CTCSS]  
 0: OFF  
 1: ON  
 [DCS]  
 0: OFF  
 1: ON  
 [TONE frequency]  
 2 bytes data: "01", "03" – "39" (refer to the TN command)  
 [DCS number]  
 DCS code "001" – "104" and 4th digits is always "0" (refer to the DCSN command)  
 [CTCSS frequency]  
 2 bytes data: "01", "03" - "39" (refer to the CTN command)  
 [Offset](Hz)  
 9 bytes ASCII data  
 "000000000" to "029950000" in 50kHz step  
 [FM|AM]  
 0: FM  
 1: AM

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Note: The VFO frequency and related data will be changed when the radio is in the VFO mode.  
 The receive frequency and display frequency will be changed when the radio is in the MR or CALL mode.  
 The Memory channel and CALL channel data are not changed by this command.  
 The radio outputs BUF command when the VFO, MR, CALL mode, Frequency, Memory channel, Band and so on is changed by radio operation while AI function is ON.

**BY**     *Status of Busy*

Set:  
 Read:     BY [Band]<CR>  
 Response: BY [Band],[ON|OFF]<CR>

Parameter: [Band]  
             0: A band  
             1: B band  
 [ON|OFF]  
             0: OFF (no signal)  
             1: ON (detect signal)

Note: The radio outputs BY command when the status of BUSY signal is changed while AI function is ON.

**CH**     *Channel display mode*

Set:        CH [ON|OFF]<CR>  
 Read:     CH<CR>  
 Response: CH [ON|OFF]<CR>

Parameter: [ON|OFF]  
             0: OFF  
             1: ON

Note: The radio replies an error code "N<CR>" when the designated memory channel is empty.

**CIN**     *Store the displayed frequency data to the CALL channel.*

Set:        CIN<CR>  
 Read:  
 Response: CIN<CR>

Parameter: None

Note: This command affects for operation band.

**CKEY**    *[CALL] key*

Set:        CKEY [CALL|1750]<CR>  
 Read:     CKEY<CR>  
 Response: CKEY [CALL|1750]<CR>

Parameter: [CALL|1750]  
             0: CALL  
             1: 1750Hz

Note: The radio outputs CKEY command when the function assignment for the CALL key is changed

by radio operation while AI function is ON.

**CNT**    *LCD display Contrast.*

Set:            CNT [Level]<CR>  
 Read:          CNT<CR>  
 Response:    CNT [Level]<CR>

Parameter:    [Level]  
                   2 digits of ASCII code ("01" – "16")

**CP**        *COM port baud rate*

Set:            CP [baud rate]<CR>  
 Read:          CP<CR>  
 Response:    CP [baud rate]<CR>

Parameter :    [baud rate]  
                   0: 9600bps  
                   1: 19200bps  
                   2: 38400bps  
                   3: 57600bps

Note:           It is necessary to reboot the radio after changing the baud rate.  
 The radio outputs CP command when the baud rate is changed by radio operation while AI function is ON.

**CR**        *Read the CALL channel information.*

Set:  
 Read:          CR [Band],[Split]<CR>  
 Response :    CR [Band],[Split],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],[TONE frequency],  
                   [DCS number],[CTCSS frequency],[Offset],[FM|AM]<CR>

Parameter:    [Band]  
                   0: 144MHz band  
                   1: 430MHz band  
                   [Split]  
                   0: read the receiver information  
                   1: read the transmitter information  
                   [Frequency](Hz)  
                   11 bytes data cover range of the programmable VFO for each band  
                   [Step](kHz)  
                   0: 5                    5: 20  
                   1: 6.25                6: 25  
                   2: 10                    7: 30  
                   3: 12.5                 8: 50  
                   4: 15                    9: 100  
                   [Shift]  
                   0: Simplex  
                   1: + Shift  
                   2: - Shift  
                   3: -7.6MHz (Europe model only)  
                   [Reverse]  
                   0: OFF  
                   1: ON  
                   [Tone]  
                   0: OFF

1: ON  
 [CTCSS]  
 0: OFF  
 1: ON  
 [DCS]  
 0: OFF  
 1: ON  
 [TONE frequency]  
 2 bytes data: "01", "03" – "39" (refer to the TN command)  
 [DCS number]  
 DCS code "001" – "104" and 4th digits is always "0" (refer to the DCSN command)  
 [CTCSS frequency]  
 2 bytes data: "01", "03" - "39" (refer to the CTN)  
 [Offset](Hz)  
 9 bytes ASCII data  
 "000000000" to "029950000" in 50kHz step  
 [FM|AM]  
 0: FM  
 1: AM

Note: The radio replies an error "N<CR>" when the split memory is empty.

**CT** CTCSS

Set: CT [ON|OFF]<CR>  
 Read: CT<CR>  
 Response: CT [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: This command affects on the operating band only.  
 The radio outputs CT command when the CTCSS function is changed by radio operation while AI function is ON.

**CTD** Status of the CTCSS detection

Set:  
 Read: CTD [Band]<CR>  
 Response: CTD [Band],[detection]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [Detection]  
 0: not detected  
 1: detected

Note: The radio replies an error "N<CR>" when CTCSS function is OFF.  
 The radio outputs CTD command when the CTCSS detect condition changed while AI function is ON.

**CTN** CTCSS frequency

Set: CTN [CTCSS number]<CR>  
 Read: CTN<CR>  
 Response: CTN [CTCSS number]<CR>

Parameter: [CTCSS number]

01: 67.0Hz	11: 94.8Hz	21: 131.8Hz	31: 186.2Hz
02: not used	12: 97.4Hz	22: 136.5Hz	32: 192.8Hz
03: 71.9Hz	13: 100.0Hz	23: 141.3Hz	33: 203.5Hz
04: 74.4Hz	14: 103.5Hz	24: 146.2Hz	34: 210.7Hz
05: 77.0Hz	15: 107.2Hz	25: 151.4Hz	35: 218.1Hz
06: 79.7Hz	16: 110.9Hz	26: 156.7Hz	36: 225.7Hz
07: 82.5Hz	17: 114.8Hz	27: 162.2Hz	37: 233.6Hz
08: 85.4Hz	18: 118.8Hz	28: 167.9Hz	38: 241.8Hz
09: 88.5Hz	19: 123.0Hz	29: 173.8Hz	39: 250.3Hz
10: 91.5Hz	20: 127.3Hz	30: 179.9Hz	

Note: This command affects on the operating band only.  
The radio outputs CTN command when the CTCSS Frequency is changed by radio operation while AI function is ON.

**CW** *Data write to the CALL channel.*

Set : CW [Band],[Split],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],[TONE frequency],  
[DCS number],[CTCSS frequency],[Offset],[FM|AM]<CR>

Read:

Response: CW<CR>

Parameter: [Band]  
0: 144MHz band  
1: 430MHz band  
[Split]  
0: set the data to the receiver  
1: set the data to the split memory  
[Frequency](Hz)  
11 bytes data cover range of the programmable VFO for each band  
[Step](kHz)  
0: 5                    5: 20  
1: 6.25                6: 25  
2: 10                   7: 30  
3: 12.5                8: 50  
4: 15                   9: 100  
[Shift]  
0: Simplex  
1: + Shift  
2: - Shift  
3: -7.6MHz (Europe model only)  
[Reverse]  
0: OFF  
1: ON  
[Tone]  
0: OFF  
1: ON  
[CTCSS]  
0: OFF  
1: ON  
[DCS]  
0: OFF  
1: ON  
[TONE frequency]  
2 bytes data: "01", "03" – "39" (refer to the TN command)  
[DCS number]  
DCS code "001" – "104" and 4th digits always "0" (refer to the DCSN command)  
[CTCSS frequency]

2 bytes data: "01", "03" - "39" (refer to the CTN command)  
 [Offset](Hz)  
 9 bytes ASCII data  
 "000000000" to "029950000" in 50kHz step  
 [FM|AM]  
 0: FM  
 1: AM

Note: Send "CW [Band],[Split],[Frequency],[Step]<CR>" for the split data.  
 The radio replies an error "N<CR>" when the receiver frequency is out of range or mismatch between preset frequency and step.  
 The display frequency is not changed by this command.

**DATP** *Packet speed of the equipment that connected to the external data port.*

Set: DATP [1200|9600]<CR>  
 Read: DATP<CR>  
 Response: DATP [1200|9600]<CR>  
 Parameter: [1200|9600]  
 0: 1200bps  
 1: 9600bps

Note: The radio outputs DTB command when the Data Port Band is changed by radio operation while AI function is ON.

**DATE** *Date*

Set: DATE [yyMMdd]<CR>  
 Read: DATE<CR>  
 Response: DATE[yyMMdd]<CR>  
 Parameter: [yyMMdd]  
 6 digits ASCII code

Note: The radio replies an error "N<CR>" when the parameter can not acceptable.  
 The radio outputs DATE command when the Date is changed by radio operation while AI function is ON.

**DCS** *DCS*

Set: DCS [ON|OFF]<CR>  
 Read: DCS<CR>  
 Response: DCS [ON|OFF]<CR>  
 Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: This command affects on the operating band only  
 The radio outputs DCS command when the DCS is changed by radio operation while AI function is ON.

**DCSD** *Status of the DCS detection*

Set:  
 Read: DCSD [Band]<CR>

Response: DCSD [Band],[detection]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [detection]  
 0: not detected  
 1: detected

Note: The radio replies an error "N<CR>" when DCS is OFF.  
 The radio outputs DCSD command when the DCS detect condition is changed while AI function is ON.

**DCSN** *DCS code number*

Set: DCSN [Number]<CR>  
 Read: DCSN<CR>  
 Response: DCSN [Number]<CR>

Parameter: [Number]  
 001:023 013:071 025:143 037:225 049:266 061:356 073:452 085:532 097:703  
 002:025 014:072 026:145 038:226 050:271 062:364 074:454 086:546 098:712  
 003:026 015:073 027:152 039:243 051:274 063:365 075:455 087:565 099:723  
 004:031 016:074 028:155 040:244 052:306 064:371 076:462 088:606 100:731  
 005:032 017:114 029:156 041:245 053:311 065:411 077:464 089:612 101:732  
 006:036 018:115 030:162 042:246 054:315 066:412 078:465 090:624 102:734  
 007:043 019:116 031:165 043:251 055:325 067:413 079:466 091:627 103:743  
 008:047 020:122 032:172 044:152 056:331 068:423 080:503 092:631 104:754  
 009:051 021:125 033:174 045:255 057:332 069:431 081:506 093:632  
 010:053 022:131 034:205 046:261 058:343 070:432 082:516 094:654  
 011:054 023:132 035:212 047:163 059:346 071:445 083:523 095:662  
 012:065 024:134 036:223 048:265 060:351 072:446 084:526 096:664

The 4th digits is always "0".

Note: This command affects on the operating band only.  
 The radio outputs DCSN command when the DCS code is changed by radio operation while AI function is ON.

**DIG** *Digipeater*

Set: DIG [ON|OFF]<CR>  
 Read: DIG<CR>  
 Response: DIG [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs DIG command when the Digipeater function is changed by radio operation while AI function is ON.

**DIM** *Dimmer level*

Set: DIM [Level]<CR>  
 Read: DIM<CR>  
 Response: DIM [Level]<CR>

Parameter: [Level]



0: OFF  
 1: Level 1  
 2: Level 2  
 3: Level 3  
 4: Level 4

Note: The radio outputs DIM command when the Dimmer condition is changed by radio operation while AI function is ON.

### **DL** *Dual/Single Band Mode*

Set: DL [ON|OFF]<CR>  
 Read: DL<CR>  
 Response: DL [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: single band mode  
 1: dual band mode

Note: The radio outputs DIG command when the Dual/Single mode is changed by radio operation while AI function is ON.

### **DM** *DTMF Memory*

Set: DM [Channel],[DTMF code]<CR>  
 Read: DM [Channel]<CR>  
 Response : DM [Channel],[DTMF code]<CR>

Parameter: [Channel]  
 "00" - "09"  
 [DTMF code]  
 "0" – "9", "A", "B", "C", "D", "E" and "F" within 16 digits.

Note: "DM [Channel]<CR>" command makes the radio transmit the DTMF memory while transmitting.  
 "DM [Channel],<CR>" command deletes the DTMF memory of the designated channel.  
 The radio outputs DM command when the DTMF memory is changed by radio operation while AI function is ON.

### **DMN** *DTMF Memory Name*

Set: DMN [Channel],[Name]<CR>  
 Read: DMN [Channel]<CR>  
 Response: DMN [Channel],[Name]<CR>

Parameter: [Channel]  
 "00" - "09"  
 [Name]  
 20h – 7Eh: within 8 digits characters

Note: "DMN [Channel],<CR>" command deletes the DTMF memory name of the designated channel.  
 The radio outputs DMN command when the DTMF memory name is changed by radio operation while AI function is ON.

### **DS** *DCD Sense*

Set: DS [Mode]<CR>  
 Read: DS<CR>

---

Response: DS [Mode]<CR>

Parameter: [Mode]  
0: Data Band Only  
1: Both Bands

Note: The radio outputs DS command when the DCD sense is changed by radio operation while AI function is ON.

### **DTB** *Data band for external DATA terminal*

Set: DTB [band]<CR>  
Read: DTB<CR>  
Response: DTB [band]<CR>

Parameter: [band]  
0: A (set A band as data band)  
1: B (set B band as data band)  
2: A:Tx, B:Rx (set A band as data transmission and B band as data reception band)  
3: A:Rx, B:Tx (set A band as data reception and B band as data transmission band)

Note: The radio outputs DTB command when the Data Band is changed by radio operation while AI function is ON.

### **DTBA** *Data band for internal APRS function*

Set: DTBA [band]<CR>  
Read: DTBA<CR>  
Response: DTBA [band]<CR>

Parameter: [band]  
0: A (set A band as data band)  
1: B (set B band as data band)  
2: A:Tx, B:Rx (set A band as data transmission and B band as data reception band)  
3: A:Rx, B:Tx (set A band as data reception and B band as data transmission band)

Note: The radio outputs DTBA command when the Data Band is changed by radio operation while AI function is ON.

### **DTM** *DTMF Monitor*

Set: DTM [ON|OFF]<CR>  
Read: DTM<CR>  
Response: DTM [ON|OFF]<CR>

Parameter: [ON|OFF]  
0: OFF  
1: ON

Note: The radio outputs DTM command when the DTMF monitor function is changed by radio operation while AI function is ON.

### **DTX** *APRS data transmission method*

Set: DTX [method]<CR>  
Read: DTX<CR>  
Response: DTX [method]<CR>

---

Parameter: [method]  
 0: MANUAL  
 1: PTT  
 2: AUTO

Note: The radio outputs DTX command when it changed by radio operation while AI function is ON.

**DW** *Down*

Set: DW [number of steps]<CR>  
 Read:  
 Response: DW<CR>

Parameter: [number of steps]  
 "01" - "99"

Note: "DW<CR>" command makes one step down.

**FUNC** *Type of function key mode*

Set: FUNC [Mode]<CR>  
 Read: FUNC<CR>  
 Response : FUNC [Mode]<CR>

Parameter : [Mode]  
 1: Mode 1  
 2: Mode 2  
 3: Mode 3

Note: The radio outputs FUNC command when it changed by radio operation while AI function is ON.

**FQ** *Frequency*

Set: FQ [Frequency],[Step]<CR>  
 Read: FQ<CR>  
 Response: FQ [Frequency],[Step]<CR>

Parameter: [Frequency](Hz)  
 11 bytes data, unit is "Hz"  
 Each frequency range for each band: "00000000000" to "99999999999"  
 [Step](kHz)  
 0: 5                      5: 20  
 1: 6.25                    6: 25  
 2: 10                      7: 30  
 3: 12.5                    8: 50  
 4: 15                      9: 100

Note: Display frequency will be changed automatically when set the frequency.  
 During the MR/CALL mode, only the radio display change but memory data will not change.  
 The VFO data changes when the radio is in the VFO mode.  
 The radio adjusts the frequency then replies FQ command when the frequency is changed by the radio operation.

**GDAT** *Current GPS data*

Set:

Read: GDAT<CR>  
 Response: GDAT [latitude],[longitude],[date],[time],[speed],[course],[altitude],[status]<CR>

Parameter: [latitude]  
           Latitude: 7bytes data (00° 00.000 - 90° 59.990' )  
           North|South: 0: North Latitude  
                           1: South Latitude

[longitude]  
           Longitude: 8 bytes data (000° 00.000' - 180° 59.990')  
           East|West: 0: East Longitude  
                       1: West Longitude

[date]  
           6 digits ASCII code  
           The data format is yyMMdd.

[time]  
           6 digits ASCII code  
           The data format is hhmmss.

[speed]  
           4 digits ASCII code  
           Speed over the ground in knots

[course]  
           3 digits ASCII code  
           Heading direction

[altitude]  
           6 digits ASCII code  
           Altitude mean-sea-level in meters  
           "-----" is output when the altitude information is invalid.

[status]  
           GPS status  
           0: Invalid  
           1: Valid

Note: The radio responds "N<CR>" when the parameter of GU command is set to "Not used".

**GU**     *GPS receiver configuration*

Set: GU [Type]<CR>  
 Read: GU<CR>  
 Response: GU [Type]<CR>

Parameter: [Type]  
           0: Not used  
           1: NMEA  
           2: NMEA96

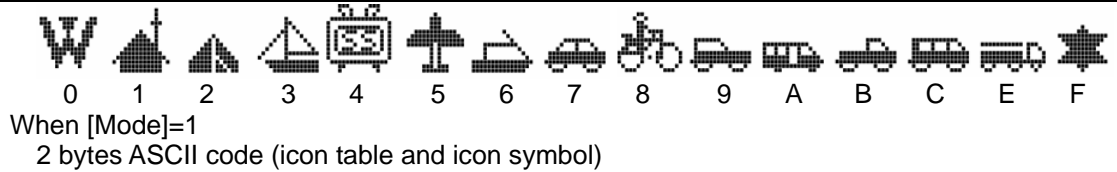
Note: The radio outputs GU command when it changed by radio operation while AI function is ON.

**ICO**     *My APRS icon*

Set: ICO [Mode],[Icon number]<CR>  
 Read: ICO<CR>  
 Response: ICO [Mode],[Icon number]<CR>

Parameter: [Mode]  
           0: Predefined icon number  
           1: Icon table/symbol

[Icon number]  
           When [Mode]=0



Note: The radio outputs ICO command when it changed by radio operation while AI function is ON.

**ID** *Model Name*

Set:  
Read: ID<CR>  
Response: ID TM-D700<CR>  
  
Parameter: none

**KILO** *Unit of distance, speed and rain fall*

Set: KILO [mile|km]<CR>  
Read: KILO<CR>  
Response: KILO [mile|km]<CR>  
  
Parameter: [mile|km]  
0: miles  
1: kilometers

Note: The radio outputs KILO command when it changed by radio operation while AI function is ON.

**LDEL** *Delete APRS list data*

Set: LDEL [Channel]<CR>  
Read:  
Response: LDEL<CR>  
  
Parameter: [Channel]  
Select "01" - "40"

Note: The radio replies an error "N<CR>" command when the designated channel is empty.

**LIST** *APRS list*

Set:  
Read: LIST [Channel]<CR>  
Response: LIST [Channel],[Call sign],[Date],[Time],[Category],[Latitude],[Longitude],[Icon Table],[Icon Symbol],[Overlay character],[Position comment],[Altitude],[Status text],[Additional information data]<CR>  
  
Parameter: [CH]  
2 bytes ASCII data: "01" - "40"  
[Call sign]  
Maximum 9 characters of ASCII data  
[Date]  
ddMM  
[Time]  
hhmm  
[Category]  
0: Normal position data

---

1: ID data  
 2: Status data  
 3: Fixed station data  
 4: Fixed station data with PHGD  
 5: Object data  
 6: Weather data  
 7: Moving station data  
 8: Mic Encoder data  
 9: TH-D7  
 : : TM-D700  
 ; : Raw GPS data (Good/ \$GPGGL)  
 < : Raw GPS data (Last/ \$GPGGL)  
 = : Raw GPS data (Good/ \$GPGGA)  
 > : Raw GPS data (Last/ \$GPGGA)  
 ? : Raw GPS data (Good/ \$GPRMC)  
 @ : Raw GPS data (Last/ \$GPRMC)  
 A: Fixed station data (compressed format)  
 B: Grid-square format data  
 C: Grid-square format data with PHGD  
 D: Grid-square format data with Weather data  
 E: Grid-square format data from moving station  
 [Latitude]  
 7 bytes data  
 Latitude: 6bytes data (00° 00.00 - 90° 59.99' )  
 North|South: 0: North Latitude  
 1: South Latitude  
 [Longitude]  
 Longitude: 7 bytes data (000° 00.00' - 180° 59.99')  
 East|West: 0: East Longitude  
 1: West Longitude  
 [Icon Table]  
 1 character of ASCII data  
 [Icon Symbol]  
 1 character of ASCII data  
 [Overlay character]  
 1 character of ASCII data  
 A space character (20h) is output when no overlay character is configured.  
 [Position comment]  
 00: Off Duty  
 01: Enroute  
 02: In Service  
 03: Returning  
 04: Committed  
 05: Special  
 06: PRIORITY  
 07: CUSTOM 0  
 08: CUSTOM 1  
 09: CUSTOM 2  
 10: CUSTOM 3  
 11: CUSTOM 4  
 12: CUSTOM 5  
 13: CUSTOM 6  
 14: EMERGENCY !  
 [Altitude]  
 6 bytes ASCII data  
 [Status text]  
 Maximum 28 characters of ASCII data  
 [Additional information data]  
 Additional of Maximum 12 characters of ASCII data

Note: The radio will issue "LIST 01,...<CR>" command, when radio receives APRS data while AI

function is ON.

**LK**     *Key-lock*

Set:            LK [ON|OFF]<CR>  
 Read:          LK<CR>  
 Response:     LK [ON|OFF]<CR>

Parameter:    [ON|OFF]  
                   0: OFF  
                   1: ON  
                   2: All lock ON

Note:           The radio outputs LK command when it changed by radio operation while AI function is ON.

**MAC**     *Call sign color for VC-H1*

Set:            MAC [color]<CR>  
 Read:          MAC<CR>  
 Response:     MAC [color]<CR>

Parameter:    [color]  
                   0: Black  
                   1: Blue  
                   2: Red  
                   3: Magenta  
                   4: Green  
                   5: Cyan  
                   6: Yellow  
                   7: White

Note:           The radio outputs MAC command when it changed by radio operation while AI function is ON.

**MC**       *Memory channel number*

Set:            MC [band],[channel number]<CR>  
 Read:          MC [band]<CR>  
 Response:     MC [band],[channel number]<CR>

Parameter:    [band]  
                   0: A band  
                   1: B band  
                   [channel number]

The memory channel must be assigned 3 bytes ASCII data between "000" and "199".  
 The program scan memory must be assigned ASCII data between "L0", "U0" – "L9" and "U9".

Note:           The radio replies an error command when the radio is not in the MR mode.  
 The radio outputs MC command when it changed by radio operation while AI function is ON.

**MCL**     *Memory channel lockout*

Set:            MCL [Band],[ON|OFF]<CR>  
 Read:          MCL [Band]<CR>  
 Response:     MCL [Band],[ON|OFF]<CR>

Parameter:    [Band]  
                   0: A band

1: B band  
 [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio replies an error command when the radio is not in the MR mode.  
 When the A/B band shows same memory channel on the display, the radio replies an error command.  
 The radio outputs MCL command when it changed by radio operation while AI function is ON.

**MCNT** *Mic-remote control*

Set: MCNT [ON|OFF]<CR>  
 Read: MCNT<CR>  
 Response: MCNT [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs MCNT command when it changed by radio operation while AI function is ON.

**MD** *Receiving mode*

Set : MD [Mode]<CR>  
 Read: MD<CR>  
 Response: MD [Mode]<CR>

Parameter: [Mode]  
 0: FM  
 1: AM

Note: This command affects only for 118MHz and 220MHz band  
 The radio outputs MD command when it changed by radio operation while AI function is ON.

**MES** *Power-on message*

Set : MES [Message]<CR>  
 Read : MES<CR>  
 Response : MES [Message]<CR>

Parameter: [Message]  
 Up to 8 bytes ASCII data  
 The character can be programmed between 20h and 7Eh.

Note: "MES <CR>" command deletes the Power-on message text.  
 The radio outputs MES command when it changed by radio operation while AI function is ON.

**MHZ** *MHz mode*

Set: MHZ [ON|OFF]<CR>  
 Read: MHZ<CR>  
 Response: MHZ [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON



Note: The radio outputs MHZ command when it changed by radio operation while AI function is ON.

**MIN** *Storing memory channel from the radio displaying frequency*

Set: MIN [Channel number]<CR>

Read:

Response: MIN<CR>

Parameter: [Channel number]

The radio can program 3 digits number between "000" and "199". Or the program scan memory can program "L0" – "U9".

**MNA** *Memory name*

Set: MNA 0,[Channel number],[Character]<CR>

Read: MNA 0,[Channel number]<CR>

Response: MNA 0,[Channel number],[Character]<CR>

Parameter: [Channel number]

"000" – "199"

The program-scan memory is between "L0", "U0" – "L9" and "U9".

[Character]

Up to 8 bytes ASCII data

The character can be programmed between 20h and 7Eh.

Note: "MNA 0,[Channel number],<CR>" command deletes the memory name of the designated channel.

The display is not reload even memory name was changed.

The radio outputs MNA command when it changed by radio operation while AI function is ON.

**MON** *Monitor*

Set: MON [ON|OFF]<CR>

Read: MON<CR>

Response: MON [ON|OFF]<CR>

Parameter: [ON|OFF]

0: OFF

1: ON

Note: This command affects on receiving band only.

**MP** *My position*

Set: MP [Channel number],[Latitude & Longitude]<CR>

Read: MP [Channel number]<CR>

Response: MP [Channel number],[Latitude & Longitude]<CR>

Parameter: [Channel number]

1 digit of ASCII code "1" to "5"

[Latitude & Longitude]

Latitude: 7 bytes data (00° 00.000 - 90° 59.990')

North|South: 0: North Latitude

1: South Latitude

Longitude: 8 bytes data (000° 00.000' - 180° 59.990')

East|West: 0: East Longitude

1: West Longitude

Note: The accurate to the thousands place of the Longitude and Latitude must be "0".  
The radio outputs MP command when it changed by radio operation while AI function is ON.

**MPNA** *My position name*

Set: MPNA [Channel number],[Character]<CR>  
Read: MPNA [Channel number]<CR>  
Response: MPNA [Channel number],[Character]<CR>

Parameter: [Channel number]  
"1" – "5"  
[Character]  
Up to 8 bytes ASCII data  
The character can be program between 20h and 7Eh.

Note: "MPNA [Channel number],<CR>" command deletes the position name of the designated channel.  
The radio outputs MPNA command when it changed by radio operation while AI function is ON.

**MR** *Read the Memory channel data*

Set:  
Read: MR 0,[Split],[Channel]<CR>  
Response : MR 0,0,[Channel],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],[TONE frequency],[DCS number],[CTCSS frequency],[Offset],[FM|AM],[Lockout]<CR>  
MR 0,1,[Channel],[Frequency],[Step]<CR>

Parameter: [Split]  
0: Read the data of the receiver  
1: Read the data of the transmitter  
[Channel]  
The memory channel shows numeric data between "000" and "199".  
The program-scan memory shows between "L0", "U0" – "L9" and "U9".  
[Frequency]  
11 bytes data, unit is "Hz"  
Within the programmed VFO for each bands between "0000000000" and "9999999999"  
[Step](kHz)  
0: 5                    5: 20  
1: 6.25                6: 25  
2: 10                   7: 30  
3: 12.5                8: 50  
4: 15                   9: 100  
[Shift]  
0: Simplex  
1: +Shift  
2: -Shift  
3: -7.6MHz (Europe model only)  
[Reverse]  
0: OFF  
1: ON  
[Tone]  
0: OFF  
1: ON  
[CTCSS]  
0: OFF  
1: ON  
[DCS]

0: OFF  
 1: ON  
 [TONE frequency]  
 2 bytes data: "01", "03" – "39" (refer to the TN command)  
 [DCS number]  
 DCS code "001" – "104" and 4th digits always "0" (refer to the DCSN command)  
 [CTCSS frequency]  
 2 bytes data: "01", "03" - "39" (refer to the CTN command)  
 [Offset](Hz)  
 9 bytes ASCII data  
 "000000000" to "029950000" in 50kHz step  
 [Lockout]  
 0: OFF  
 1: ON  
 [FM|AM]  
 0: FM  
 1: AM

Note: The radio replies an error "N<CR>" when designated memory channel is empty.

**MSH** *Memory Shift*

Set: MSH<CR>  
 Read:  
 Response: MSH<CR>

Parameter: none

Note: This command affects on operating band only.  
 The radio replies an error "N<CR>" when the operating band is in the VFO mode.  
 Displaying frequency is copied to the VFO.

**MUTE** *Mute*

Set: MUTE [ON|OFF]<CR>  
 Read: MUTE<CR>  
 Response: MUTE [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs MUTE command when it changed by radio operation while AI function is ON.

**MW** *Write memory channel*

Set : MW 0,[Split],[Channel],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],  
 [Tone Frequency],[DCS number],[CTCSS frequency],[Offset],[FM|AM],[Lockout]<CR>

Read:  
 Response: MW<CR>

Parameter: [Split]  
 0: Write the data to the receiving channel  
 1: Write the data to the split memory

[Channel]  
 The memory channel shows ASCII data between "000" and "149".  
 The program-scan memory shows ASCII data between "L0", "U0" – "L9" and "U9".  
 [Frequency]

11 bytes data, unit is "Hz"  
 Within the programmed VFO for each bands between "0000000000" and "9999999999"  
 [Step](kHz)  
 0: 5                    5: 20  
 1: 6.25                6: 25  
 2: 10                   7: 30  
 3: 12.5                8: 50  
 4: 15                   9: 100  
 [Shift]  
 0: Simplex  
 1: +Shift  
 2: -Shift  
 3: -7.6MHz (Europe model only)  
 [Reverse]  
 0: OFF  
 1: ON  
 [Tone]  
 0: OFF  
 1: ON  
 [CTCSS]  
 0: OFF  
 1: ON  
 [DCS]  
 0: OFF  
 1: ON  
 [TONE frequency]  
 2 bytes data: "01", "03" – "39" (refer to the TN command)  
 [DCS number]  
 DCS code "001" – "104" and 4th digits is always "0" (refer to the DCSN command)  
 [CTCSS frequency]  
 2 bytes data: "01", "03" - "39" (refer to the CTN command)  
 [Offset](Hz)  
 9 bytes ASCII data  
 "000000000" to "029950000" in 50kHz step  
 [FM|AM]  
 0: FM  
 1: AM  
 [Lockout]  
 0: OFF  
 1: ON

Note: The "MW 0,1,[Channel],[Frequency],[Step]<CR>" command will be replied when transmitting data programming of the split memory.

**MYA**    *My Alias for digipeater*

Set:            MYA [Character]<CR>  
 Read:        MYA<CR>  
 Response:   MYA [Character]<CR>

Parameter:   [Character]  
               "A" to "Z", "0" to "9" and "-"

Note:         Maximum of 9 characters can be assigned.  
               The radio can not accept improper character as the call sign.  
               Improper examples:  
               JA1YKXZ:     up to 6 characters when only alphanumeric data  
               JA1-YKX-2:    the "-" character can not be included more than 2  
               -JA1YKX:     can not assign the "-" at the top of the call sign  
               JA1YKX-19:    following number of the "-" can be program between 0 and 15

The radio outputs MYA command when it changed by radio operation while AI function is ON.

**MYC** *My Call sign for APRS*

Set: MYC [Character]<CR>  
 Read: MYC<CR>  
 Response: MYC [Character]<CR>

Parameter: [Character]  
 "A" to "Z", "0"to "9" and "-"

Note: Maximum of 9 characters can be assigned.  
 The radio can not accept improper character as the call sign.  
 Improper examples:  
 JA1YKXZ: up to 6 characters when only alphanumeric data  
 JA1-YKX-2: the "-" character can not be included more than 2  
 -JA1YKX: can not assign the "-" at the top of the call sign  
 JA1YKX-19: following number of the "-" can be program between 0 and 15  
 The radio outputs MYC command when it changed by radio operation while AI function is ON.

**NP** *Negative/ Positive display*

Set: NP [ON|OFF]<CR>  
 Read: NP<CR>  
 Response: NP [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs NP command when it changed by radio operation while AI function is ON.

**OS** *Offset frequency*

Set: OS [Offset]<CR>  
 Read: OS<CR>  
 Response: OS [Offset]<CR>

Parameter: [Offset] (Hz)  
 9 bytes ASCII data  
 "000000000" to "029950000" in 50[kHz] step

Note: This command affects on the operating band.  
 The radio outputs OS command when it changed by radio operation while AI function is ON.

**PAMB** *Position Ambiquity for APRS*

Set: PAMB [digit]<CR>  
 Read: PAMB<CR>  
 Response: PAMB [digit]<CR>

Parameter: [digit]  
 0: OFF  
 1: 1 digit  
 2: 2 digits  
 3: 3 digits  
 4: 4 digits

Note: The radio outputs PAMB command when it changed by radio operation while AI function is ON.

**PF** *Programmable Function key*

Set: PF [PF number],[Function]<CR>  
 Read: PF [PF number]<CR>  
 Response: PF [PF number],[Function]<CR>

Parameter: [PF number]  
 1: PF 1  
 2: PF 2  
 3: PF 3  
 4: PF 4  
 [Function]  
 00: Power SW 10: CALL 20: M.IN 30: TNC  
 01: A/B 11: MHz 21: C.IN 31: LIST  
 02: MONITOR 12: TONE 22: LOCK 32: P.MON  
 03: ENTER 13: REV 23: T.SEL 33: BCON  
 04: VOICE 14: LOW 24: SHIFT 34: MSG  
 05: 1750 15: MUTE 25: STEP 35: POS  
 06: PM 16: CTRL 26: VISUAL  
 07: MENU 17: PM.IN 27: DIM  
 08: VFO 18: A.B.C. 28: SUB-BAND SEL  
 09: MR 19: M>V 29: DX

Note: The "Power SW" function can be set to the PF1 only.  
 The radio outputs PF command when it changed by radio operation while AI function is ON.

**PC** *Transmission power*

Set: PC [Band],[Power]<CR>  
 Read: PC [Band]<CR>  
 Response: PC [Band],[Power]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [Power]  
 0: High  
 1: MID  
 2: Low

Note: The radio outputs PC command when it changed by radio operation while AI function is ON.

**PKSA** *Packet speed for APRS*

Set: PKSA [bps]<CR>  
 Read: PKSA<CR>  
 Response: PKSA [bps]<CR>

Parameter: [bps]  
 0: 1200bps  
 1: 9600bps

Note: The radio outputs PKSA command when it changed by radio operation while AI function is ON.

**PIN**    *Storing Programmable Memory*

Set:            PIN [PM number]&lt;CR&gt;

Read:

Response:    PIN [PM number]&lt;CR&gt;

Parameter:   [PM number]

1: PM 1

2: PM 2

3: PM 3

4: PM 4

5: PM 5

Note:            The radio outputs PIN command when it changed by radio operation while AI function is ON.

**PM**        *Programmable Memory*

Set:            PM [PM number]&lt;CR&gt;

Read:           PM&lt;CR&gt;

Response:    PM [PM number]&lt;CR&gt;

Parameter:   [PM number]

0: PM OFF

1: PM 1

2: PM 2

3: PM 3

4: PM 4

5: PM 5

Note:            The radio outputs PM command when it changed by radio operation while AI function is ON.

**PMM**    *Auto PM Store*

Set:            PMM [Auto|Manual]&lt;CR&gt;

Read:           PMM&lt;CR&gt;

Response:    PMM [Auto|Manual]&lt;CR&gt;

Parameter:   [Auto|Manual]

0: Auto

1: Manual

Note:            The radio outputs PMM command when it changed by radio operation while AI function is ON.

**POSC**   *Position Comment*

Set:            POSC [Comment number]&lt;CR&gt;

Read:           POSC&lt;CR&gt;

Response:    POSC [Comment number]&lt;CR&gt;

Parameter:   [Comment number]

00: Off Duty

01: Enroute

02: In Service

03: Returning

04: Committed

05: Special

06: PRIORITY

07: CUSTOM 0

08: CUSTOM 1  
 09: CUSTOM 2  
 10: CUSTOM 3  
 11: CUSTOM 4  
 12: CUSTOM 5  
 13: CUSTOM 6  
 14: EMERGENCY !

Note: The radio outputs POSC command when it changed by radio operation while AI function is ON.

**PP** *Packet Path*

Set: PP [Path]<CR>  
 Read: PP<CR>  
 Response: PP [Path]<CR>

Parameter: [Path]  
 Maximum 79 characters of the ASCII code "A" to "Z", "0" to "9", "-" and ".".

Note: The packet path will be cleared by entering the "PP <CR>" command.  
 The radio outputs PP command when it changed by radio operation while AI function is ON.

**PS** *Radio power status*

Set: PS [ON|OFF]<CR>  
 Read: PS<CR>  
 Response: PS [ON|OFF]

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: To turn ON the radio, send any 1 byte command first then send the "PS 1<CR>" command within 2.5 seconds.

**PT** *Pause duration of the DTMF memory*

Set: PT [Time]<CR>  
 Read: PT<CR>  
 Response: PT [Time]<CR>

Parameter: [Time](ms)  
 0: 100  
 1: 250  
 2: 500  
 3: 750  
 4: 1000  
 5: 1500  
 6: 2000

Note: The radio outputs PT command when it changed by radio operation while AI function is ON.

**PV** *Programmable VFO frequency*

Set: PV [VFO Selection],[Lower frequency],[Upper frequency]<CR>  
 Read: PV [VFO Selection]<CR>  
 Response: PV [VFO Selection],[Lower frequency],[Upper frequency]<CR>



Parameter: [VFO Selection]  
 1: 118MHz Band VFO  
 2: 144MHz Band VFO  
 3: Sub144MHz Band VFO  
 4: 220MHz Band VFO  
 5: 300MHz Band VFO  
 6: Sub300MHz Band VFO  
 7: 440MHz Band VFO  
 8: Sub440MHz Band VFO  
 9: 1200MHz Band VFO  
 [Lower frequency]  
 5 bytes ASCII data, unit is "MHz"  
 [Upper frequency]  
 5 bytes ASCII data, unit is "MHz"

Note: The "PV 2,00144,00145<CR>" command make sense of 144.000MHz – 145.995MHz.  
 The radio outputs PV command when it changed by radio operation while AI function is ON.

**RBN** *Receiving band selection*

Set: RBN [Band]<CR>  
 Read: RBN<CR>  
 Response: RBN [Band]<CR>

Parameter: [Band]  
 1: 118MHz Band VFO  
 2: 144MHz Band VFO  
 3: Sub144MHz Band VFO  
 4: 220MHz Band VFO  
 5: 300MHz Band VFO  
 6: Sub300MHz Band VFO  
 7: 440MHz Band VFO  
 8: Sub440MHz Band VFO  
 9: 1200MHz Band VFO

Note: This command affects on the operating band.  
 The radio replies an error "N<CR>" when the radio is not in the VFO mode.  
 The radio outputs RBN command when it changed by radio operation while AI function is ON.

**RC** *External remote control*

Set: RC [ON|OFF]<CR>  
 Read: RC<CR>  
 Response: RC [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs RC command when it changed by radio operation while AI function is ON.

**RCA** *Answer back for the external remote control function*

Set: RCA [ON|OFF]<CR>  
 Read: RCA<CR>  
 Response: RCA [ON|OFF]<CR>

---

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs RCA command when it changed by radio operation while AI function is ON.

**RCC** *PIN for the external remote control*

Set: RCC [Password]<CR>  
 Read: RCC<CR>  
 Response: RCC [Password]<CR>

Parameter: [Password]  
 3 digits of the ASCII code "000" - "999".

Note: The radio outputs RCC command when it changed by radio operation while AI function is ON.

**REP** *Repeater function*

Set: REP [Type]<CR>  
 Read: REP<CR>  
 Response: REP [Type]<CR>

Parameter: [Type]  
 0: OFF  
 1: Locked-Band Repeater ON  
 2: Cross-Band Repeater ON

Note: The radio outputs REP command when it changed by radio operation while AI function is ON.

**REPH** *Repeater transmitting hold time*

Set: REPH [ON|OFF]<CR>  
 Read: REPH<CR>  
 Response: REPH [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs REPH command when it changed by radio operation while AI function is ON.

**REV** *Reverse*

Set: REV [ON|FF]<CR>  
 Read: REV<CR>  
 Response: REV [ON|FF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: This command affects on the operating band.  
 The radio outputs REV command when it changed by radio operation while AI function is ON.

**RSC** *RSV (signal report) color for VC-H1*

---

Set: RSC [Color]<CR>  
 Read: RSC<CR>  
 Response: RSC [Color]<CR>

Parameter: [Color]  
 0: Black  
 1: Blue  
 2: Red  
 3: Magenta  
 4: Green  
 5: Cyan  
 6: Yellow  
 7: White

Note: The radio outputs RSC command when it changed by radio operation while AI function is ON.

**RSV** *RSV (signal report) text for VC-H1*

Set: RSV [Character]<CR>  
 Read: RSV<CR>  
 Response: RSV [Character]<CR>

Parameter: [Character]  
 Maximum 10 characters of the ASCII code "A" to "Z", "0" to "9", "-", "/", "!", "?" and "(space)".

Note: Up to 10 characters.  
 The signal report will be cleared by entering the "RSV <CR>" command.  
 The radio outputs RSV command when it changed by radio operation while AI function is ON.

**RX** *Receiving mode*

Set: RX<CR>  
 Read:  
 Response: RX<CR>

Parameter: none

Note: This command affects on the operating band.  
 The radio outputs RX command when it changed by radio operation while AI function is ON.

**SC** *SCAN On*

Set: SC [ON]<CR>  
 Read:  
 Response: SC [ON]<CR>

Parameter: [ON]  
 0: Scan OFF  
 1: Scan ON  
 2: MHz Scan ON  
 3: Bank Scan ON

Note: This command affects on the operating band.  
 The scan which operate with parameter "1", band scan or program scan when the radio is in the VFO mode, memory scan when it is in the MR mode and CALL scan when it is in the CALL mode.  
 The MHZ Scan works only when the radio is in the VFO mode.

---

The scan stops when the radio receives any command except BC command.

**SCC** *Commander call sign for SkyCommand II*

Set: SCC [Character]<CR>  
 Read: SCC<CR>  
 Response: SCC [Character]<CR>

Parameter: [Character]  
 Maximum 9 characters of the ASCII code "A" to "Z", "0" to "9" and "-".

Note: For USA and Canada models only.  
 The radio outputs SCC command when it changed by radio operation while AI function is ON.

**SCR** *Scan Resume method*

Set: SCR [TO|CO|SO]<CR>  
 Read: SCR<CR>  
 Response: SCR [TO|CO|SO]<CR>

Parameter: [TO|CO|SO]  
 0: Time operated  
 1: Carrier operated  
 2: Seek

Note: The radio outputs SCR command when it changed by radio operation while AI function is ON.

**SCT** *Transporter call sign for SkyCommand II*

Set: SCT [Character]<CR>  
 Read: SCT<CR>  
 Response: SCT [Character]<CR>

Parameter: [Character]  
 Maximum 9 characters of the ASCII code "A" to "Z", "0" to "9" and "-".

Note: For USA and Canada models only.  
 The radio outputs SCT command when it changed by radio operation while AI function is ON.

**SFT** *Shift*

Set: SFT [Shift]<CR>  
 Read: SFT<CR>  
 Response: SFT [Shift]<CR>

Parameter: [Shift]  
 0: Simplex  
 1: +Shift  
 2: -Shift  
 3: -7.6MHz (Europe model only)

Note: This command affects on the operating band.  
 The radio outputs SFT command when it changed by radio operation while AI function is ON.

**SKTN** *Tone number for SkyCommand II*

Set: SKTN [Tone number]<CR>  
 Read: SKTN<CR>  
 Response: SKTN [Tone number]<CR>

Parameter: [Tone number]  
 ASCII code "01", "03" - "39" (refer TN command for tone number)

Note: For USA and Canada models only.  
 The radio outputs SKTN command when it changed by radio operation while AI function is ON.

### **SM** *S-meter or Battery meter information*

Set:  
 Read: SM [Band]<CR>  
 Response: SM [Band],[Level]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [Level]  
 ASCII code between "00" and "07"

Note: The radio outputs SM command when it changed while AI function is ON.  
 The radio replies the number of segments of S-meter when the radio is receiving.  
 The radio replies the number of segments of power meter when the radio is transmitting.

### **SMC** *Message color for VC-H1*

Set: SMC [Color]<CR>  
 Read: SMC<CR>  
 Response: SMC [Color]<CR>

Parameter: [Color]  
 0: Black  
 1: Blue  
 2: Red  
 3: Magenta  
 4: Green  
 5: Cyan  
 6: Yellow  
 7: White

Note: The radio outputs SMC command when it changed by radio operation while AI function is ON.

### **SMSG** *Message text for VC-H1*

Set: SMSG [Message]<CR>  
 Read: SMSG<CR>  
 Response: SMSG [Message]<CR>

Parameter: [Message]  
 Maximum 9 characters of the ASCII code "A" to "Z", "0" to "9", "-", "/", "!", "?" and "(space)".

Note: The message will be deleted by entering the "SMSG <CR>" command.  
 The radio outputs SMSG command when it changed by radio operation while AI function is ON.

### **SMY** *Call sign text for VC-H1*

Set: SMY [Character]<CR>  
 Read: SMY<CR>  
 Response: SMY [Character]<CR>

Parameter: [Character]  
 Maximum 8 characters of the ASCII code "A" to "Z", "0" to "9", "-", "/", "!", "?" and "(space)".

Note: The call sign will be deleted by entering the "SMY <CR>" command.  
 The radio outputs SMY command when it changed by radio operation while AI function is ON.

**SSEL** *Speaker mode selection*

Set: SSEL [Mode]<CR>  
 Read : SSEL<CR>  
 Response : SSEL [Mode]<CR>

Parameter : [Mode]  
 1: Mode 1  
 2: Mode 2

Note: The radio outputs SSEL command when it changed by radio operation while AI function is ON.

**SSL** *S-meter squelch level*

Set: SSL [Band],[Level]<CR>  
 Read: SSL [Band]<CR>  
 Response: SSL [Band],[Level]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [Level]  
 1 character of ASCII code

Note: The radio replies an error "N<CR>" when the level can not acceptable.  
 The radio outputs SSL command when it changed by radio operation while AI function is ON.  
 The level returns as shown on squelch volume, when turn ON the radio.

**SSQ** *S-meter squelch*

Set: SSQ [Band],[ON|OFF]<CR>  
 Read: SSQ [Band]<CR>  
 Response: SSQ [Band],[ON|OFF]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs SSQ command when it changed by radio operation while AI function is ON.

**SHT** *S-meter squelch hysteresis timer*

Set: SHT [Time]<CR>

Read: SHT<CR>  
 Response: SHT [Time]<CR>

Parameter: [Time]  
 0: OFF  
 1: 125ms  
 2: 250ms  
 3: 500ms

Note: The radio outputs SHT command when it changed by radio operation while AI function is ON.

**SQ** *Squelch level*

Set: SQ [Band],[SQ Level]<CR>  
 Read: SQ [Band]<CR>  
 Response: SQ [Band],[SQ Level]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [SQ Level]  
 2 digits of ASCII code between "00 and "1F".

Note: The radio outputs SQ command when it changed by radio operation while AI function is ON.

**SR** *System reset*

Set: SR [Reset mode]<CR>  
 Read:  
 Response:

Parameter: [Reset mode]  
 1: Partial reset (VFO reset)  
 2: Full reset (All reset)  
 3: PM reset  
 4: RTC reset

Note: The AI command status will be initialized after execute the reset.

**ST** *Frequency step*

Set: ST [Step]<CR>  
 Read: ST<CR>  
 Response: ST [Step]<CR>

Parameter: [Step] (kHz)  
 0: 5                      5: 20  
 1: 6.25                  6: 25  
 2: 10                      7: 30  
 3: 12.5                  8: 50  
 4: 15                      9: 100

Note: This command affects on the operating band.  
 The radio replies an error "N<CR>" when except the VFO mode.  
 5k/ 6.25k/ 15K step will be an error when 1200MHz band.  
 The radio outputs ST command when it changed by radio operation while AI function is ON.

**STAT** *Status text for APRS*

Set: STAT [Channel],[Message]<CR>  
 Read: STAT [Channel]<CR>  
 Response: STAT [Channel],[Message]<CR>

Parameter: [Channel]  
               1 byte of ASCII code "1" - "5"  
 [Message]  
               Maximum 20 bytes of ASCII code between 20h to 7Eh.

Note: The data will be deleted by entering the "STAT [Channel],<CR>" command.  
 The radio outputs STAT command when it changed by radio operation while AI function is ON.

**STR** *Transmit ratio of the APRS status text*

Set: STR [Rate]<CR>  
 Read: STR<CR>  
 Response: STR [Rate]<CR>

Parameter: [Rate]  
               0: OFF  
               1: 1/1  
               2: 1/2  
               3: 1/3  
               4: 1/4  
               5: 1/5  
               6: 1/6  
               7: 1/7  
               8: 1/8

Note: The radio outputs STR command when it changed by radio operation while AI function is ON.

**TC/TS** *PC transceiver control*

Set: TC [ON|OFF]<CR>  
 Read:  
 Response: TS [Mode]<CR>

Parameter: [ON|OFF]  
               0: OFF  
               1: ON  
 [Mode]  
               0: Packet mode  
               1: PC Transceiver control mode

Note: "TC 1<CR>" command accepts capital letter only.  
 Default Set is Mode 1.

**TEMP** *Unit of Temperature*

Set: TEMP [°F|°C]<CR>  
 Read: TEMP<CR>  
 Response: TEMP [°F|°C]<CR>

Parameter: [°F|°C]  
               0: °F  
               1: °C



Note: The radio outputs TEMP command when it changed by radio operation while AI function is ON.

**TH** *Transmitting hold after transmission the 1750Hz*

Set: TH [ON|OFF]<CR>  
 Read: TH<CR>  
 Response: TH [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: Only for European models.  
 The radio outputs TH command when it changed by radio operation while AI function is ON.

**TIME** *Internal clock*

Set: TIME [hhmm]<CR>  
 Read: TIME<CR>  
 Response: TIME [hhmm]<CR>

Parameter: [hhmm]  
 4 characters of ASCII code

Note: The time is 24 hour indication.  
 The radio outputs TIME command when it changed by radio operation while AI function is ON.

**TN** *Tone frequency*

Set: TN [Tone number]<CR>  
 Read: TN<CR>  
 Response: TN [Tone number]<CR>

Parameter: [Tone number]

01: 67.0Hz	11: 94.8Hz	21: 131.8Hz	31: 186.2Hz
02: not used	12: 97.4Hz	22: 136.5Hz	32: 192.8Hz
03: 71.9Hz	13: 100.0Hz	23: 141.3Hz	33: 203.5Hz
04: 74.4Hz	14: 103.5Hz	24: 146.2Hz	34: 210.7Hz
05: 77.0Hz	15: 107.2Hz	25: 151.4Hz	35: 218.1Hz
06: 79.7Hz	16: 110.9Hz	26: 156.7Hz	36: 225.7Hz
07: 82.5Hz	17: 114.8Hz	27: 162.2Hz	37: 233.6Hz
08: 85.4Hz	18: 118.8Hz	28: 167.9Hz	38: 241.8Hz
09: 88.5Hz	19: 123.0Hz	29: 173.8Hz	39: 250.3Hz
10: 91.5Hz	20: 127.3Hz	30: 179.9Hz	

Note: This command affects on the operating band.  
 The radio outputs TN command when it changed by radio operation while AI function is ON.

**TNC** *Internal TNC*

Set: TNC [ON|OFF]<CR>  
 Read: TNC<CR>  
 Response: TNC [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF

1: APRS mode  
 2: Packet mode

Note: The radio outputs TNC command when it changed by radio operation while AI function is ON.

**TO** *Tone function*

Set: TO [ON|OFF]<CR>  
 Read: TO<CR>  
 Response: TO [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: This command affects on the operating band.  
 The radio outputs TO command when it changed by radio operation while AI function is ON.

**TOT** *Time-out Timer*

Set: TOT [Time]<CR>  
 Read: TOT<CR>  
 Response: TOT [Time]<CR>

Parameter: [Time](minutes)  
 0: 3  
 1: 5  
 2: 10

Note: The radio outputs TOT command when it changed by radio operation while AI function is ON.

**TSP** *Transmission speed of the DTMF memory*

Set: TSP [Slow|Fast]<CR>  
 Read: TSP<CR>  
 Response: TSP [Slow|Fast]<CR>

Parameter: [Slow|Fast]  
 0: Slow  
 1: Fast

Note: The radio outputs TSP command when it changed by radio operation while AI function is ON.

**TT** *1750Hz tone Transmission*

Set: TT<CR>  
 Read: TT<CR>  
 Response: TT<CR>

Note: This command affects on the operating band.  
 The "RX<CR>" command makes the radio to receiving mode.  
 When the radio receives "TT<CR>" command while transmitting, the radio modulates with 1750Hz tone.  
 The radio replies an error "N<CR>" when the radio inhibits the transmission.  
 When the radio receives "TX<CR>" command while transmitting modulation with 1750Hz, the radio stops 1750Hz tone.  
 The radio outputs TT command when it changed by radio operation while AI function is ON.

**TX**      *Transmission*

Set:            TX<CR>  
 Read:  
 Response:    TX [Band]<CR>

Parameter:   [Band]  
                   0: A band  
                   1: B band

Note:            The "RX<CR>" command makes the radio to receiving mode.  
                   The radio replies an error "N<CR>" when the radio inhibits the transmission.  
                   The radio replies an error "N<CR>" when the transmission is out of range.  
                   The radio outputs TX command when it changed by radio operation while AI function is ON.

**TXI**      *Transmission interval of the APRS Beacon*

Set:            TXI [Time]<CR>  
 Read:          TXI<CR>  
 Response:    TXI [Time]<CR>

Parameter:   [Time] (minutes)  
                   0: 0.2  
                   1: 0.5  
                   2: 1  
                   3: 2  
                   4: 3  
                   5: 5  
                   6: 10  
                   7: 20  
                   8: 30

Note:            The radio outputs TXI command when it changed by radio operation while AI function is ON.

**TZ**      *Time Zone*

Set:            TZ [UTC]<CR>  
 Read:          TZ<CR>  
 Response:    TZ [UTC]<CR>

Parameter:   [UTC]  
                   2 bytes of ASCII data  
                   00: UTC -12:00  
                   01: UTC -11:30  
                   :  
                   23: UTC - 0:30  
                   24: UTC  
                   25: UTC + 0:30  
                   :  
                   47: UTC +11:30  
                   48: UTC +12:00

Note:            The radio outputs TZ command when it changed by radio operation while AI function is ON.

**UDIG**    *UIDIGI for APRS*

---

Set: UDIG [Character]<CR>  
 Read: UDIG<CR>  
 Response: UDIG [Character]<CR>

Parameter: [Character]  
 Maximum 27 characters of the ASCII code "A" to "Z", "0" to "9" and ".,".

Note: To be deleted by entering the "UDIG <CR>" command.  
 The radio outputs UDIG command when it changed by radio operation while AI function is ON.

### **UMSG** *Status text channel to use*

Set: UMSG [channel]<CR>  
 Read: UMSG<CR>  
 Response: UMSG [channel]<CR>

Parameter: [channel]  
 "1" - "5"

Note: The radio outputs UMSG command when it changed by radio operation while AI function is ON.

### **UP** *Up*

Set: UP [Step]<CR>  
 Read:  
 Response: UP<CR>

Parameter: [Step]  
 Programmable "01" – "99"

Note: The "UP<CR>" command operates one step up.

### **UPOS** *My position channel to use*

Set: UPOS [channel]<CR>  
 Read: UPOS<CR>  
 Response: UPOS [channel]<CR>

Parameter: [channel]  
 "1" - "5"

Note: The radio outputs UPOS command when it changed by radio operation while AI function is ON.

### **UPR** *Unprotocol for APRS*

Set: UPR [Character]<CR>  
 Read: UPR<CR>  
 Response: UPR [Character]<CR>

Parameter: [Character]  
 Maximum 9 characters of the ASCII code "A" to "Z", "0" to "9" and "-".

Note: Can not set when the radio is transmitting.  
 The radio outputs UPR command when it changed by radio operation while AI function is ON.

### **VCS** *Remote control transmission for the VC-H1*

---

Set: VCS [ON|OFF]<CR>  
 Read: VCS<CR>  
 Response: VCS [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs VCS command when it changed by radio operation while AI function is ON.

**VMC** *VFO, Memory and Call mode selection*

Set: VMC [Band],[VMC]<CR>  
 Read: VMC [Band]<CR>  
 Response: VMC [Band],[VMC]<CR>

Parameter: [Band]  
 0: A band  
 1: B band  
 [VMC]  
 0: VFO  
 2: MR  
 3: CALL

Note: The radio outputs VMC command when it changed by radio operation while AI function is ON.

**VO** *Voice annunciation*

Set: VO<CR>  
 Read: VO<CR>  
 Response: VO<CR>

Parameter: none

Note: The radio announces the operating band information.

**VOM** *Voice Language for VS-3*

Set: VOM [Mode]<CR>  
 Read: VOM<CR>  
 Response: VOM [Mode]<CR>

Parameter: [Mode]  
 0: OFF  
 1: English  
 2: Japanese  
 3: APRS only

Note: The radio outputs VOM command when it changed by radio operation while AI function is ON.

**VR** *Read the VFO information*

Set:  
 Read: VR [Band]<CR>  
 Response: VR [Band],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],[TONE frequency],[DCS number],[CTCSS frequency],[Offset],[FM|AM]<CR>

Parameter: [Band]  
 1: 118 VFO  
 2: 144 VFO  
 3: sub 144 VFO  
 4: 220 VFO  
 5: 300 VFO  
 6: sub 300 VFO  
 7: 440 VFO  
 8: sub 440 VFO  
 9: 1200 VFO

[Frequency]  
 11 bytes data, unit is "Hz"

[Step](kHz)  
 0: 5                    5: 20  
 1: 6.25                6: 25  
 2: 10                    7: 30  
 3: 12.5                8: 50  
 4: 15                    9: 100

[Shift]  
 0: Simplex  
 1: +Shift  
 2: -shift  
 3: -7.6MHz (Europe model only)

[Reverse]  
 0: OFF  
 1: ON

[Tone]  
 0: OFF  
 1: ON

[CTCSS]  
 0: OFF  
 1: ON

[DCS]  
 0: OFF  
 1: ON

[TONE frequency]  
 2 bytes data: "01", "03" – "39" (refer to the TN command)

[DCS number]  
 DCS code "001" – "104" and 4th digits is always "0" (refer to the DCSN command)

[CTCSS frequency]  
 2 bytes data: "01", "03" - "39" (refer to the CTN command)

[Offset](Hz)  
 9 bytes ASCII data  
 "000000000" to "029950000" in 50[kHz] step

[FM|AM]  
 0: FM  
 1: AM

Note: The radio receiver mode and frequency status are not changed by this command.

### **VS3** *Confirm the VS-3 (Voice Synthesizer) status*

Set:  
 Read: VS3<CR>  
 Response: VS3 [equipped|none]<CR>

Parameter: [equipped|none]  
 0: none  
 1: equipped

**VSC** *Visual scan*

Set: VSC [ON|OFF]<CR>  
 Read: VSC<CR>  
 Response: VSC [ON|OFF]<CR>

Parameter: [ON|OFF]  
 0: OFF  
 1: ON

Note: The radio outputs VSC command when the visual scan is changed by radio operation while the visual scan running.  
 The radio outputs VSC command when it changed by radio operation while AI function is ON.

**VSL** *Visual scan level information*

Set:  
 Read:  
 Response: VSL [Channel],[Level]<CR>

Parameter: [Channel]  
 The position will be shown by 3-character data: most left digit of the display is count as number 0.  
 [Level]  
 ASCII code between "00" and "07"

Note: The radio outputs VSL command when the radio level changed while AI function is ON.

**VSM** *Visual scan mode*

Set: VSM [Mode]<CR>  
 Read: VSM<CR>  
 Response: VSM [Mode]<CR>

Parameter: [Mode]  
 1: Mode 1 (31ch)  
 2: Mode 2 (61ch)  
 3: Mode 3 (91ch)  
 4: Mode 4 (181ch)

Note: The radio outputs VSM command when it changed by radio operation while AI function is ON.

**VVOL** *Annunciation Volume for VS-3 (Voice Synthesizer)*

Set: VVOL [Level]<CR>  
 Read: VVOL<CR>  
 Response: VVOL [Level]<CR>

Parameter: [Level]  
 1: Level 1  
 2: Level 2  
 3: Level 3  
 4: Level 4  
 5: Level 5  
 6: Level 6

7: Level 7

Note: The radio outputs VVOL command when it changed by radio operation while AI function is ON.

**VW** *Write VFO*

Set: VR [Band],[Frequency],[Step],[Shift],[Reverse],[Tone],[CTCSS],[DCS],[TONE frequency],[DCS number],[CTCSS frequency],[Offset],[FM|AM]<CR>

Read:

Response: VR [Band]<CR>

Parameter: [Band]

- 1: 118 VFO
- 2: 144 VFO
- 3: sub 144 VFO
- 4: 220 VFO
- 5: 300 VFO
- 6: sub 300 VFO
- 7: 440 VFO
- 8: sub 440 VFO
- 9: 1200 VFO

[Frequency]

11 bytes data, unit is "Hz".

[Step](kHz)

- |         |        |
|---------|--------|
| 0: 5    | 5: 20  |
| 1: 6.25 | 6: 25  |
| 2: 10   | 7: 30  |
| 3: 12.5 | 8: 50  |
| 4: 15   | 9: 100 |

[Shift]

- 0: Simplex
- 1: +Shift
- 2: -Shift
- 3: -7.6MHz (Europe model only)

[Reverse]

- 0: OFF
- 1: ON

[Tone]

- 0: OFF
- 1: ON

[CTCSS]

- 0: OFF
- 1: ON

[DCS]

- 0: OFF
- 1: ON

[TONE frequency]

2 bytes data: "01", "03" – "39" (refer to the TN command)

[DCS number]

DCS code "001" – "104" and 4th digits is always "0" (refer to the DCSN command)

[CTCSS frequency]

2 bytes data: "01", "03" - "39" (refer to the CTN command)

[Offset](Hz)

9 bytes ASCII data  
 "000000000" to "029950000" in 50[kHz] step

[FM|AM]

- 0: FM
- 1: AM

Note:



**WAY**    *Waypoint output*

Set:            WAY [Mode]<CR>

Read:          WAY<CR>

Response      WAY [Mode]<CR>

Parameter:    [Mode]

0: OFF

1: 6 Digits NMEA

2: 7 Digits NMEA

3: 8 Digits NMEA

4: 9 Digits NMEA

5: 6 Digits Magellan

6: DGPS

Note:          The radio outputs WAY command when it changed by radio operation while AI function is ON.