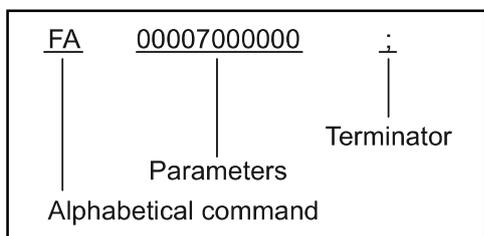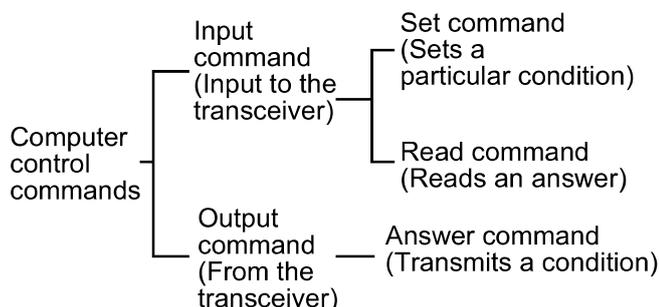## COMPUTER CONTROL COMMANDS

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

EXAMPLE: Command to set VFO A to 7 MHz

```
FA      00007000000        ;
 |           |             |
 |           |          Terminator
 |        Parameters
Alphabetical command
```

Commands can be classified as shown below:

```
                   ┌── Input          ┌── Set command
                   │   command        │   (Sets a
                   │   (Input to the──┤   particular condition)
                   │   transceiver)   │
Computer ──────────┤                  └── Read command
control            │                      (Reads an answer)
commands           │
                   └── Output          ── Answer command
                       command            (Transmits a condition)
                       (From the
                       transceiver)
```

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

• To set the frequency to 7 MHz, the following command is sent from the computer to the transceiver:

"FA00007000000;"   **(Set command)**

• To read the frequency of VFO A, 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:

"FA00007000000;"   **(Answer command)**

Note:

◆ *Do not use the control characters 00 to 1Fh since they are either ignored or cause a "?" answer.*

◆ *Program execution may be delayed while turning the **Tuning** control rapidly.*

◆ *Receive data is not processed if the frequency is entered from the keypad.*

■ 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 {page 115}.

■ 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 Computer Control Commands and the PC Control Command Tables {page 115} to configure the appropriate parameters.

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

(correct parameter: "IS+1000")

IS1000;   Not enough parameters specified
              (No direction given for the IF shift)

IS+100;   Not enough digits
              (Only three frequency digits given)

IS ␣ + ␣ 1000; Unnecessary characters between
                parameters

IS+10000;   Too many digits
              (Five frequency digits given)

Note: If a particular parameter is not applicable to this transceiver, 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.

■ Error Messages

In addition to the Answer command, the transceiver can send the following error messages.

Error Message	Reason for Error
?;	• Command syntax was incorrect. • Command was not executed due to the current status of the transceiver (even though the command syntax was correct). *Note: Occasionally this message may not appear due to microprocessor transients in the transceiver.*
E;	A communication error occurred such as an overrun or framing error during a serial data transmission.
O;	Receive data was sent but processing was not completed.

PC CONTROL COMMAND TABLES

AC

Sets or reads the internal antenna tuner status.

	1	2	3	4	5	6	7	8	9	10
Set	A	C	P1	P2	P3	;				

	1	2	3	4	5	6	7	8	9	10
Read	A	C	;							

	1	2	3	4	5	6	7	8	9	10
Answer	A	C	P1	P2	P3	;				

Parameters:
P1
  0: RX-AT THRU
  1: RX-AT IN
P2
  0: TX-AT THRU
  1: TX-AT IN
P3
  0: Stop tuning (Set)/ Tuning is stopped (Answer)
  1: Start Tuning (Set)/ Tuning is active (Answer)
  2: Tuning cannot be completed

AG

Sets or reads the AF gain.

	1	2	3	4	5	6	7	8	9	10
Set	A	G	P1	P2	P2	P2	;			

	1	2	3	4	5	6	7	8	9	10
Read	A	G	P1	;						

	1	2	3	4	5	6	7	8	9	10
Answer	A	G	P1	P2	P2	P2	;			

Parameters:
P1
  0: Main transceiver
  1: Sub-receiver
P2
  000 (min.) ~ 255 (max.)

AI

Sets or reads the Auto Information (AI) function ON/ OFF.

	1	2	3	4	5	6	7	8	9	10
Set	A	I	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	A	I	;							

	1	2	3	4	5	6	7	8	9	10
Answer	A	I	P1	;						

Parameters:
P1
  0: AI OFF
  1: Only old AI format is ON
  2: Only extended AI format is ON
  3: Both formats are ON

When the extended AI format is selected, the transceiver automatically sends the parameters.

AL

Sets or reads the Auto Notch level.

	1	2	3	4	5	6	7	8	9	10
Set	A	L	P1	P1	P1	;				

	1	2	3	4	5	6	7	8	9	10
Read	A	L	;							

	1	2	3	4	5	6	7	8	9	10
Answer	A	L	P1	P1	P1	;				

Parameters:
P1
  000 ~ 004

AM

Sets or reads the Auto Mode ON/ OFF.

	1	2	3	4	5	6	7	8	9	10
Set	A	M	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	A	M	;							

	1	2	3	4	5	6	7	8	9	10
Answer	A	M	P1	;						

Parameters:
P1
  0: Auto Mode function is OFF
  1: Auto Mode function is ON

AN

Selects the antenna connector ANT1/ ANT2.

	1	2	3	4	5	6	7	8	9	10
Set	A	N	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	A	N	;							

	1	2	3	4	5	6	7	8	9	10
Answer	A	N	P1	;						

Parameters:
P1
0: Reads the current antenna selection
1: Selects ANT1
2: Selects ANT2

AR

Sets or reads the ASC function ON/ OFF.
Reports the status of the ASC function.

	1	2	3	4	5	6	7	8	9	10
Set	A	R	P1	P2	P3	;				

	1	2	3	4	5	6	7	8	9	10
Read	A	R	P1	;						

	1	2	3	4	5	6	7	8	9	10
Answer	A	R	P1	P2	P3	;				

Parameters:
P1
0: Main transceiver
1: Sub-receiver
P2
0: ASC OFF
1: ASC ON
P3
0: Simplex contact is possible
1: Simplex contact is not possible
P2 parameter is valid only to "CTRL" band. When ASC function is OFF, the response is unknown.

AS

Sets or reads the Auto Mode function parameters.

	1	2	3	4	5	6	7	8	9	10
Set	A	S	P1	P2	P2	P3	P3	P3	P3	P3
	11	12	13	14	15	16	17	18	19	20
	P3	P3	P3	P3	P3	P3	P4	;		

	1	2	3	4	5	6	7	8	9	10
Read	A	S	P1	P2	P2	;				

	1	2	3	4	5	6	7	8	9	10
Answer	A	S	P1	P2	P2	P3	P3	P3	P3	P3
	11	12	13	14	15	16	17	18	19	20
	P3	P3	P3	P3	P3	P3	P4	;		

Parameters:
P1
0: HF ~ 50 MHz band
1: 144 MHz band
2: 430/ 440 MHz band
3: 1.2 GHz band
P2
00 ~ 99
00 ~ 28: HF ~ 50 MHz band (28 points)
00 ~ 08: 144 MHz, 430/ 440 MHz, 1.2 GHz band (8 points for each band)
P3
Frequency in Hz (11-digit)
P4
0: Reserved
1: LSB
2: USB
3: CW
4: FM
5: AM
6: FSK
7: CW-R
8: Reserved
9: FSK-R

BC

Sets or reads the Beat Canceller function status.

	1	2	3	4	5	6	7	8	9	10
Set	B	C	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	B	C	;							

	1	2	3	4	5	6	7	8	9	10
Answer	B	C	P1	;						

Parameters:
P1
0: Beat Canceller OFF
1: Auto Beat Canceller ON
2: Manual Beat Canceller ON

BD

Moves down the frequency band.

	1	2	3	4	5	6	7	8	9	10
Set	B	D	;							

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
None

BP

Sets or reads the Manual Beat Canceller frequency settings.

Set

1	2	3	4	5	6	7	8	9	10
B	P	P1	P1	P1	;				

Read

1	2	3	4	5	6	7	8	9	10
B	P	;							

Answer

1	2	3	4	5	6	7	8	9	10
B	P	P1	P1	P1	;				

Parameters:
P1
  000 ~ 063

BU

Moves up the frequency band.

Set

1	2	3	4	5	6	7	8	9	10
B	U	;							

Read

1	2	3	4	5	6	7	8	9	10

Answer

1	2	3	4	5	6	7	8	9	10

Parameters:
None

BY

Reads the busy signal status.

Set

1	2	3	4	5	6	7	8	9	10

Read

1	2	3	4	5	6	7	8	9	10
B	Y	;							

Answer

1	2	3	4	5	6	7	8	9	10
B	Y	P1	P2	;					

Parameters:
P1
Main transceiver
 0: Not busy
 1: Busy
P2
Sub-receiver
 0: Not Busy
 1: Busy

When the Sky Command function is ON, only the P1 parameter is used.

CA

Sets and reads the CW AUTO TUNE function status.

Set

1	2	3	4	5	6	7	8	9	10
C	A	P1	;						

Read

1	2	3	4	5	6	7	8	9	10
C	A	;							

Answer

1	2	3	4	5	6	7	8	9	10
C	A	P1	;						

Parameters:
P1
 0: Cancels CW AUTO TUNING function/ Not active
 1: Activates CW AUTO TUNING function/ Active

CG

Sets and reads the CARRIER GAIN status.

Set

1	2	3	4	5	6	7	8	9	10
C	G	P1	P1	P1	;				

Read

1	2	3	4	5	6	7	8	9	10
C	G	;							

Answer

1	2	3	4	5	6	7	8	9	10
C	G	P1	P1	P1	;				

Parameters:
P1
 000 (min.) ~ 100 (max.)

CH

Sets the current frequency to the CALL channel.

	1	2	3	4	5	6	7	8	9	10
Set	C	H	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
P1
0: Move the MULTI/ CH control 1 step up
1: Move the MULTI/ CH control 1 step down

CI

Sets the current frequency to the CALL channel.

	1	2	3	4	5	6	7	8	9	10
Set	C	I	;							

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
None

While in VFO mode or Memory recall mode, it sets the frequency to the CALL channel.

CM

Sets or reads the PACKET CLUSTER TUNE function ON/OFF.

	1	2	3	4	5	6	7	8	9	10
Set	C	M	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	C	M	;							

	1	2	3	4	5	6	7	8	9	10
Answer	C	M	P1	;						

Parameters:
P1
0: Packet Cluster Tune function OFF
1: Packet Cluster Tune function ON

CN

Sets and reads the CTCSS function.

	1	2	3	4	5	6	7	8	9	10
Set	C	N	P1	P1	;					

	1	2	3	4	5	6	7	8	9	10
Read	C	N	;							

	1	2	3	4	5	6	7	8	9	10
Answer	C	N	P1	P1	;					

Parameters:
P1
01 ~ 38

Refer to page 35 for the CTCSS tone numbers.

CT

Sets and reads the CTCSS function status.

	1	2	3	4	5	6	7	8	9	10
Set	C	T	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	C	T	;							

	1	2	3	4	5	6	7	8	9	10
Answer	C	T	P1	;						

Parameters:
P1
0: CTCSS function OFF
1: CTCSS function ON

DC

Sets and reads the TX band status.

Set

1	2	3	4	5	6	7	8	9	10
D	C	P1	P2	;					

Read

1	2	3	4	5	6	7	8	9	10
D	C	;							

Answer

1	2	3	4	5	6	7	8	9	10
D	C	P1	P2	;					

Parameters:
P1
  0: Sets TX band to the main transceiver
  1: Sets TX band to the sub-receiver ON
P2
  0: Sets CONTROL band to the main transceiver
  1: Sets CONTROL band to the sub-receiver

When the P1 parameter changes, the same parameter is set to P2.

DN

Emulates the microphone DWN key.

Set

1	2	3	4	5	6	7	8	9	10
D	N	P1	P1	;					

Read

1	2	3	4	5	6	7	8	9	10

Answer

1	2	3	4	5	6	7	8	9	10

Parameters:
P1
  00 ~ 99

If no P1 paramter is specified, the command is interpreted as 1 step down.
In Memory mode and Quick Memory mode, the command without a parameter is treated as a Memory channel down command. With parameters, it is treated as the frequency down command.

DQ

Sets and reads the DCS function status.

Set

1	2	3	4	5	6	7	8	9	10
D	Q	P1	;						

Read

1	2	3	4	5	6	7	8	9	10
D	Q	;							

Answer

1	2	3	4	5	6	7	8	9	10
D	Q	P1	;						

Parameters:
P1
  0: DCS function OFF
  1: DCS function ON

EX

Sets or reads the Extension Menu.

Set

1	2	3	4	5	6	7	8	9	10
E	X	P1	P1	P1	P2	P2	P3	P4	P5

11	12	13	14	15	16	17	18	19	20
P5	P5	P5	P5	P5	P5	P5	P5	P5	P5

21	22	23	24	25	26	27	28	29	30
P5	P5	P5	P5	P5	;				

Read

1	2	3	4	5	6	7	8	9	10
E	X	P1	P1	P1	P2	P2	P3	P4	;

Answer

1	2	3	4	5	6	7	8	9	10
E	X	P1	P1	P1	P2	P2	P3	P4	P5

11	12	13	14	15	16	17	18	19	20
P5	P5	P5	P5	P5	P5	P5	P5	P5	P5

21	22	23	24	25	26	27	28	29	30
P5	P5	P5	P5	P5	;				

Parameters:
P1
  000 ~ 999: Menu No. (1st)
P2
  00 ~ 99: Menu No. (2nd)
P3
  0 ~ 9: Menu No. (3rd)
P4
  0 ~ 9: Menu No. (4th)
P5
  A string of characters
  (Variable length)

If the 2nd and 3rd menus are not available, set "00".
Specify 1 digit only.
  Display brightness:
  EX00000000; (Dimmer OFF).
  EX00000003; (Dimmer level 2).
Menu 29B, 31, 33, 51A ~ E, 59 and 62C have 2-digit parameters.
Menu 61C (P5): 000 ~ 999 (3-digit).
Menu 62A ~ B (P5): A maximum of 8 characters.
Menu 45A (P3): 0 ~ 9 for DTMF Memory channel number.
Menu 45A (P4): 0 (DTMF), 1 (Code)
Menu 45A (P5): A maximum of 16 digits. If the first character is a space character, the name will be cleared. 62A and 62B become "NO CALL".
Although you can turn Menu No. 55 ON, using the EX command, you must use the TC 1; command to turn it OFF.

Menu No.	Function	EX command parameter P5										
		0	1	2	3	4	5	6	7	8	9	Over
00	Display brightness	OFF	1	2	3	4						
01	Key illumination	OFF	ON									
02	Tuning control change per revolution	500	1000									
03	Tuning with the **MULTI/ CH** control	OFF	ON									
04	Rounds off VFO frequencies changed by using the **MULTI/ CH** control	OFF	ON									
05	9 kHz frequency step size for the **MULTI/ CH** control in AM mode on the AM broadcast band	OFF	ON									
06A	Memory-VFO split operation	OFF	ON									
06B	Tunable (ON) or fixed (OFF) memory channel frequencies	OFF	ON									
07	Program scan partially slowed	OFF	ON									
08	Slow down frequency range for the Program scan	100	200	300	400	500						
09	Program scan hold	OFF	ON									
10	Scan resume method	TO	CO									
11	Visual scan range	31	61	91	181							
12	Beep output level	OFF	1	2	3	4	5	6	7	8	9	
13	TX sidetone volume	OFF	1	2	3	4	5	6	7	8	9	
14	DRU-3A playback volume	OFF	1	2	3	4	5	6	7	8	9	
15	VS-3 playback volume	OFF	1	2	3	4	5	6	7	8	9	
16	Audio output configuration for EXT.SP2 or headphone	0	1	2								
17	Reverses the EXT.SP1 and EXT.SP2 (the headphone jack L/R channels) audio outputs	OFF	ON									
18	Enable an input from the HF RX ANT connector	OFF	ON									
19A	S-meter squelch	OFF	ON									
19B	Hang time for S-meter squelch	OFF	125	250	500							
20	DSP RX equalizer	OFF	H BOOST	F PASS	B BOOST	CONV-EN	USER					
21	DSP TX equalizer	OFF	H BOOST	F PASS	B BOOST	CONV-EN	USER					
22	DSP TX filter bandwidth for SSB or AM	2.0	2.2	2.4	2.6	2.8	3.0					
23	Fine transmit power tuning	OFF	ON									
24	Time-out Timer	OFF	3	5	10	20	30					
25	Transverter frequency display	OFF	ON									
26	TX hold when AT completes the tuning	OFF	ON									
27	In-line AT while receiving	OFF	O1N									
28A	Linear amplifier control delay for HF band	OFF	1	2								
28B	Linear amplifier control delay for 50 MHz band	OFF	1	2								
28C	Linear amplifier control delay for 144 MHz band	OFF	1	2								
28D	Linear amplifier control delay for 430/ 440 MHz band	OFF	1	2								
28E	Linear amplifier control delay for 1.2 GHz band	OFF	1	2								
29A	Repeat the playback	OFF	ON									
29B	Interval time for repeating the playback	0	1	2	3	4	5	6	7	8	9	~ 60 (in steps of 1)
30	Keying priority over playback	OFF	ON									

Menu No.	Function	EX command parameter P5										
		0	1	2	3	4	5	6	7	8	9	Over
31	CW RX pitch/ TX sidetone frequency	400	450	500	550	600	650	700	750	800	850	~ 1000 (in steps of 50)
32	CW rise time	1	2	4	6							
33	CW keying dot, dash weight ratio	AUTO	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	~ 4.0 (in steps of 0.1)
34	Reverse CW keying auto weight ratio	OFF	ON									
35	Bug key mode	OFF	ON									
36	Auto CW TX in SSB mode	OFF	ON									
37	Frequency correction for changing SSB to CW	OFF	ON									
38	FSK shift	170	200	425	850							
39	FSK keying polarity	NOR-MAL	INVE-RS									
40	FSK tone frequency	1275	2125									
41	Mic gain for FM	LOW	MID	HIGH								
42	Sub-tone mode for FM	BURST	CONT									
43	Auto repeater offset	OFF	ON									
44	TX hold: 1750 Hz tone	OFF	ON									
45A	DTMF number memory select	See the parameter comments.										
45B	TX speed for stored DTMF number	SLOW	FAST									
45C	Pause duration for stored DTMF number	100	250									
45D	Enable Mic remote control	OFF	ON									
46	MAIN/ SUB band: Internal TNC	MAIN	SUB									
47	Data transfer speed: Internal TNC	1200	9600									
48	DCD sensing band	TNC BAND	MAIN-&SUB									
49A	Packet Cluster Tune mode	AUTO	MAN-UAL									
49B	Packet Cluster RX confirmation tone	OFF	MOR-SE	VOICE								
50A	Packet filter bandwidth	OFF	ON									
50B	AF input level for Packet	0	1									
50C	MAIN band AF output level for packet operation	0	1									
50D	SUB band AF output level for packet operation	0	1									
50E	MAIN/ SUB band: External TNC	MAIN	SUB									
50F	Data transfer speed: External TNC	1200	9600									
51A	Front panel PF key	00 ~ 99 (2-digit) 0 ~ 62: Menu No., 63: VOICE1, 64: VOICE2, 65: RX MONI, 66: DSP MONI, 67: QUICK MEMO MR, 68: QUICK MEMO M.IN, 69: SPLIT, 70: TF-SET, 71: A/B, 72: VFO/M, 73: A=B, 74: SCAN, 75: M>VFO, 76: M.IN, 77: CW TUNE, 78: CH1, 79: CH2, 80: CH3, 81: FINE, 82: CLR, 83: CALL, 84: CTRL, 85: 1MHz, 86: ANT1/2, 87: NB, 88: N.R., 89: B.C., 90: A. N., 99: No function All menu numbers may not be available (depending on the market code).										
51B	Microphone PF1 key											
51C	Microphone PF2 key											
51D	Microphone PF3 key											
51E	Microphone PF4 key											
52	Split frequency transfer in master/ slave operation	OFF	ON									
53	Permit to write the transferred Split frequencies to the target VFOs.	OFF	ON									
54	TX inhibit	OFF	ON									
55	Packet communication mode	OFF	ON									

Menu No.	Function	EX command parameter P5										
		0	1	2	3	4	5	6	7	8	9	Over
56	COM port communication speed	4800	9600									
57	APO (Auto Power Off) function	OFF	60									
58	RC-2000 font in easy operation mode	FONT-1	FONT-2									
59	RC-2000 panel/ TS-2000(X) dot-matrix display contrast	1	2									
60	Display mode for RC-2000	NEGA-TIVE	POSI-TIVE									
61A	Repeater mode select	OFF	LOCK-ED	CROSS								
61B	Repeater TX hold	OFF	ON									
61C	Remote control ID code	000 ~ 999 (3-digit number)										
61D	Acknowledgement signal in external remote control mode	OFF	ON									
61E	External remote control	OFF	ON									
62A	Commander callsign for Sky Command II+	A maximum of 9 characters. See page 83.										
62B	Transporter callsign for Sky Command II+	A maximum of 9 characters. See page 83.										
62C	Sky Command II+ tone frequency	See page 35 for the tone number.										
62D	Sky Command II+ communication speed	1200	9600									
62E	Sky Command II+ mode	OFF	CLI-ENT	COM-MAND	T-POR-TER							

FA	Reads and sets the VFO A frequency.										Parameters: P1 Specify the frequency in Hz (11-digit). For example, 00014195000 for 14.195 MHz. The blank digits must be 0.
	1	2	3	4	5	6	7	8	9	10	
Set	F	A	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	P1	P1	P1	;							
	1	2	3	4	5	6	7	8	9	10	
Read	F	A	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	F	A	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	P1	P1	P1	;							

FB	Reads and sets the VFO B frequency.										Parameters: P1 Specify the frequency in Hz (11-digit). For example, 00014195000 for 14.195 MHz. The blank digits must be 0.
	1	2	3	4	5	6	7	8	9	10	
Set	F	B	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	P1	P1	P1	;							
	1	2	3	4	5	6	7	8	9	10	
Read	F	B	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	F	B	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	P1	P1	P1	;							

FC	Reads and sets the sub-receiver's VFO frequency.										Parameters: P1 Specify the frequency in Hz (11-digit). For example, 00144195000 for 144.195 MHz. The blank digits must be 0. If the invalid frequency step size is used in the P1 parameter, the transceiver automatically sets the nearest frequency.
	1	2	3	4	5	6	7	8	9	10	
Set	F	C	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	P1	P1	P1	;							
	1	2	3	4	5	6	7	8	9	10	
Read	F	C	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	F	C	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	P1	P1	P1	;							

FD	Reads the filter display dot pattern.										Parameters:
											P1
											  00000000 ~ FFFFFFFD (32-bit)
											  The filter width display has 30 dots.
											  MSB represents a dot on the left. The last 2 bits are unused.
											  These bits are set to 0.

	1	2	3	4	5	6	7	8	9	10	
Set											
	1	2	3	4	5	6	7	8	9	10	
Read	F	D	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	F	D	P1	P1	P1	P1	P1	P1	P1	P1	
	11	12	13	14	15	16	17	18	19	20	
	;										

FR — Selects or reads the receiver VFO, M. CH or CALL/ COM.

	1	2	3	4	5	6	7	8	9	10
Set	F	R	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	F	R	;							

	1	2	3	4	5	6	7	8	9	10
Answer	F	R	P1	;						

Parameters:
P1
0: VFO A
1: VFO B
2: M.CH
3: CALL

The command is applied to the current CTRL (Control) band.

FS — Selects or reads the FINE function status.

	1	2	3	4	5	6	7	8	9	10
Set	F	S	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	F	S	;							

	1	2	3	4	5	6	7	8	9	10
Answer	F	S	P1	;						

Parameters:
P1
0: FINE function OFF
1: FINE function ON

FT — Selects or reads the transmitter's VFO, M. CH or CALL/ COM.

	1	2	3	4	5	6	7	8	9	10
Set	F	T	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	F	T	;							

	1	2	3	4	5	6	7	8	9	10
Answer	F	T	P1	;						

Parameters:
P1
0: VFO A
1: VFO B
2: M.CH
3: CALL

The command is applied to the current TX band.

FW — Selects or reads the DSP receive filter width.

	1	2	3	4	5	6	7	8	9	10
Set	F	W	P1	P1	P1	P1	;			

	1	2	3	4	5	6	7	8	9	10
Read	F	W	;							

	1	2	3	4	5	6	7	8	9	10
Answer	F	W	P1	P1	P1	P1	;			

Parameters:
P1
0000 ~ 9999 (in Hz)
CW: 50, 80, 100, 150, 200, 300, 400, 500, 600, 1000, 2000
FSK: 250, 500, 1000, 1500
FM/AM: 0000=Narrow, 0001=Wide

In SSB mode, you cannot use the FW command. Use the SL or SH command instead.

GT — Selects or reads the AGC constant status.

	1	2	3	4	5	6	7	8	9	10
Set	G	T	P1	P1	P1	;				

	1	2	3	4	5	6	7	8	9	10
Read	G	T	;							

	1	2	3	4	5	6	7	8	9	10
Answer	G	T	P1	P1	P1	;				

Parameters:
P1
000=OFF
001 (min.) ~ 020 (max.)

GT commands cannot be used in FM mode. The transceiver responds with 3 spaces when the GT command is used in FM mode.

ID

	Reads the transceiver ID number.										Parameters: P1 019: TS-2000
	1	2	3	4	5	6	7	8	9	10	
	1	2	3	4	5	6	7	8	9	10	
Read	I	D	;								
	1	2	3	4	5	6	7	8	9	10	
Answer	I	D	P1	P1	P1	;					

IF

	Retrieves the transceiver status.										Parameters:
	1	2	3	4	5	6	7	8	9	10	P1 Specify the frequency in Hz. (11-digit) The blank digits must be "0".
Set											P2 Frequency step size.
	1	2	3	4	5	6	7	8	9	10	P3 RIT/ XIT frequency ±99999 in Hz
Read	I	F	;								P4 0: RIT OFF, 1: RIT ON
	1	2	3	4	5	6	7	8	9	10	P5 0: XIT OFF, 1: XIT ON
	I	F	P1	P1	P1	P1	P1	P1	P1	P1	P6, P7: Specify the channel bank number. See MC command.
	11	12	13	14	15	16	17	18	19	20	P8 0: RX, 1: TX
	P1	P1	P1	P2	P2	P2	P2	P3	P3	P3	P9 Operating mode. See MD commands for details. P10 See FR and FT commands.
Answer	21	22	23	24	25	26	27	28	29	30	P11 Scan status. See SC command.
	P3	P3	P3	P4	P5	P6	P7	P7	P8	P9	P12 Split operation status. See SP command. P13 0: OFF, 1: TONE, 2: CTCSS, 3: DCS
	31	32	33	34	35	36	37	38	39	40	P14 Tone frequency. See TN command. P15 Shift status. See OS command.
	P10	P11	P12	P13	P14	P14	P15	;			While operating Sky Command II+, the P2 and P15 parameters become blank. The P2 parameter length changes to 5 bytes and the P3 parameter length becomes 5 bytes.

IS

	Sets and reads the IF SHIFT function status.										Parameters: P1 space
	1	2	3	4	5	6	7	8	9	10	P2 0400 ~ 1000 (in steps of 50) in CW mode
Set	I	S	P1	P2	P2	P2	P2	;			
	1	2	3	4	5	6	7	8	9	10	IS commands cannot be used while in SSB, FSK, FM, or AM mode.
Read	I	S	;								
	1	2	3	4	5	6	7	8	9	10	
Answer	I	S	P1	P2	P2	P2	P2	;			

KS

	Sets and reads the keying speed of the electric keyer.										Parameters: P1 010 (min.) ~ 060 (max.) [in WPM]
	1	2	3	4	5	6	7	8	9	10	
Set	K	S	P1	P1	P1	;					
	1	2	3	4	5	6	7	8	9	10	
Read	K	S	;								
	1	2	3	4	5	6	7	8	9	10	
Answer	K	S	P1	P1	P1	;					

KY

Converts the characters into Morse code.

	1	2	3	4	5	6	7	8	9	10
Set	K	Y	P1	P2	P2	P2	P2	P2	P2	P2
	11	12	13	14	15	16	17	18	19	20
	P2	P2	P2	P2	P2	P2	P2	P2	P2	P2
	21	22	23	24	25	26	27	28	29	30
	P2	P2	P2	P2	P2	P2	P2	;		

	1	2	3	4	5	6	7	8	9	10
Read	K	Y	;							

	1	2	3	4	5	6	7	8	9	10
Answer	K	Y	P1	;						

Parameters:
P1
 0: Character buffer is available
 1: Character buffer is not available
(Answer command only. A space is used for Set command.)
P2
Enter characters and numbers
Available characters are:
ABCDEFGHIJKLMNOPQRSTUVWXYZ _ (space)
0123456789
" ' ( ) * + , − . / : = ?

The fixed 24-byte length is used for the P2 parameter.
_ (space) character must be used for the unused characters.
These space characters will not be not converted.

LK

Sets and reads the key lock function status.

	1	2	3	4	5	6	7	8	9	10
Set	L	K	P1	P2	;					

	1	2	3	4	5	6	7	8	9	10
Read	L	K	;							

	1	2	3	4	5	6	7	8	9	10
Answer	L	K	P1	P2	;					

Parameters:
P1
 0: Lock function OFF (TS-2000/ TS-B2000)
 1: F.LOCK function ON (TS-2000/ TS-B2000)
 2: A.LOCK function ON (TS-2000/ TS-B2000)
P2
 0: LOCK function OFF (RC-2000)
 1: LOCK function ON (RC-2000)

LM

Sets and reads the DRU-3A unit or electric keyer recording status.

	1	2	3	4	5	6	7	8	9	10
Set	L	M	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	L	M	;							

	1	2	3	4	5	6	7	8	9	10
Answer	L	M	P1	;						

Parameters:
P1
 0: Stop recording (Set command only)
 0: Recording function is inactive
 1: Start recording to CH1
 2: Start recording to CH2
 3: Start recording to CH3

LT

Sets and reads the ALT function status.

	1	2	3	4	5	6	7	8	9	10
Set	L	T	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	L	T	;							

	1	2	3	4	5	6	7	8	9	10
Answer	L	T	P1	;						

Parameters:
P1
 0: ALT function OFF
 1: ALT function ON

MC

Recalls or reads the Memory channel.

	1	2	3	4	5	6	7	8	9	10
Set	M	C	P1	P2	P2	;				

	1	2	3	4	5	6	7	8	9	10
Read	M	C	;							

	1	2	3	4	5	6	7	8	9	10
Answer	M	C	P1	P2	P2	;				

Parameters:
P1
 _ (space): No bank number
 0 ~ 2: Memory bank number
P2
 00 ~ 99: Channel number

Memory channel numbers from 00 to 99 are treated as Memory bank 0. Memory channel numbers from 100 to 199 are treated as Memory bank 1. Memory channel numbers from 200 to 299 are treated as Memory bank 2.

MD — Recalls or reads the operating mode status.

	1	2	3	4	5	6	7	8	9	10
Set	M	D	P1	;						
	1	2	3	4	5	6	7	8	9	10
Read	M	D	;							
	1	2	3	4	5	6	7	8	9	10
Answer	M	D	P1	;						

Parameters:
P1
1: LSB
2: USB
3: CW
4: FM
5: AM
6: FSK
7: CR-R
8: Reserved
9: FSK-R

MF — Sets or reads Menu A or B.

	1	2	3	4	5	6	7	8	9	10
Set	M	F	P1	;						
	1	2	3	4	5	6	7	8	9	10
Read	M	F	;							
	1	2	3	4	5	6	7	8	9	10
Answer	M	F	P1	;						

Parameters:
P1
0: Menu A
1: Menu B

MG — Sets or reads the Microphone gain status.

	1	2	3	4	5	6	7	8	9	10
Set	M	G	P1	P1	P1	;				
	1	2	3	4	5	6	7	8	9	10
Read	M	G	;							
	1	2	3	4	5	6	7	8	9	10
Answer	M	G	P1	P1	P1	;				

Parameters:
P1
000 (min.) ~ 100 (max.)

ML — Sets or reads the MONITOR function level.

	1	2	3	4	5	6	7	8	9	10
Set	M	L	P1	P1	P1	;				
	1	2	3	4	5	6	7	8	9	10
Read	M	L	;							
	1	2	3	4	5	6	7	8	9	10
Answer	M	L	P1	P1	P1	;				

Parameters:
P1
000: MONITOR OFF
001 (min.) ~ 009 (max.)

MO — Sets the MONITOR function ON/ OFF in Sky Commander mode.

	1	2	3	4	5	6	7	8	9	10
Set	M	O	P1	;						
	1	2	3	4	5	6	7	8	9	10
Read										
	1	2	3	4	5	6	7	8	9	10
Answer	M	O	P1	;						

Parameters:
P1
0: MONITOR OFF
1: MONITOR ON

MR — Reads the Memory channel data.

Set

1	2	3	4	5	6	7	8	9	10

Read

1	2	3	4	5	6	7	8	9	10
M	R	P1	P2	P3	P3	;			

Answer

1	2	3	4	5	6	7	8	9	10
M	R	P1	P2	P3	P3	P4	P4	P4	P4

11	12	13	14	15	16	17	18	19	20
P4	P4	P4	P4	P4	P4	P4	P5	P6	P7

21	22	23	24	25	26	27	28	29	30
P8	P8	P9	P9	P10	P10	P10	P11	P12	P13

31	32	33	34	35	36	37	38	39	40
P13	P13	P13	P13	P13	P13	P13	P13	P14	P14

41	42	43	44	45	46	47	48	49	50
P15	P16	P16	P16	P16	P16	P16	P16	P16	;

Parameters:
P1
  0: RX frequency, 1: TX frequency
P2, P3
  Bank and channel number. See MC command.
P4
  Frequency in Hz (11-digit).
P5
  Mode. See MD command.
P6
  Lockout status. 0: Lockout OFF, 1: Lockout ON.
P7
  0: OFF, 1: TONE, 2: CTCSS, 3: DCS.
P8
  Tone Number. See page 35.
P9
  CTCSS tone number. See CN command.
P10
  DCS code. See QC command.
P11
  REVERSE status.
P12
  SHIFT status. See OS command.
P13
  Offset frequency. See OS command.
P14
  Step size. See ST command.
P15
  Memory Group number (0 ~ 9).
P16
Memory name. A maximum of 8 characters.

Memory channel 290 ~ 299:
P1=0 (start frequency), P1=1 (end frequency)

MU — Sets or reads the Memory Group data.

Set

1	2	3	4	5	6	7	8	9	10
M	U	P1	P2	P3	P4	P5	P6	P7	P8

11	12	13	14	15	16	17	18	19	20
P9	P10	;							

Read

1	2	3	4	5	6	7	8	9	10
M	U	;							

Answer

1	2	3	4	5	6	7	8	9	10
M	U	P1	P2	P3	P4	P5	P6	P7	P8

11	12	13	14	15	16	17	18	19	20
P9	P10	;							

Parameters:
P1
  Memory Group 0
P2
  Memory Group 1
P3
  Memory Group 2
P4
  Memory Group 3
P5
  Memory Group 4
P6
  Memory Group 5
P7
  Memory Group 6
P8
  Memory Group 7
P9
  Memory Group 8
P10
  Memory Group 9

0: Unselected, 1: Selected

MW — Store the data to the Memory channel.

	1	2	3	4	5	6	7	8	9	10
Set	M	W	P1	P2	P3	P3	P4	P4	P4	P4
	11	12	13	14	15	16	17	18	19	20
	P4	P4	P4	P4	P4	P4	P4	P5	P6	P7
	21	22	23	24	25	26	27	28	29	30
	P8	P8	P9	P9	P10	P10	P10	P11	P12	P13
	31	32	33	34	35	36	37	38	39	40
	P13	P13	P13	P13	P13	P13	P13	P13	P14	P14
	41	42	43	44	45	46	47	48	49	50
	P15	P16	P16	P16	P16	P16	P16	P16	P16	;

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
P1
  0: RX frequency, 1: TX frequency
P2, P3
  Bank and channel number. See MC command.
P4
  Frequency in Hz (11-digit).
P5
  Mode. See MD command.
P6
  Lockout status. 0: Lockout OFF, 1: Lockout ON
P7
  0: OFF, 1: TONE, 2: CTCSS, 3: DCS
P8
  Tone Number. See page 35.
P9
  CTCSS tone number. See CN command.
P10
  DCS code. See QC command.
P11
  REVERSE status.
P12
  SHIFT status. See OS command.
P13
  Offset frequency. See OS command.
P14
  Step size. See ST command.
P15
  Memory Group number (0 ~ 9).
P16
Memory name. A maximum of 8 characters.

Memory channel 290 ~ 299:
P1=0 (start frequency), P1=1 (end frequency)

NB — Set or reads the NB (Noise Blanker) function status.

	1	2	3	4	5	6	7	8	9	10
Set	N	B	P1	;						
Read	N	B	;							
Answer	N	B	P1	;						

Parameters:
P1
  0: NB OFF
  1: NB ON

NL — Set or reads the NB (Noise Blanker) level.

	1	2	3	4	5	6	7	8	9	10
Set	N	L	P1	P1	P1	;				
Read	N	L	;							
Answer	N	L	P1	P1	P1	;				

Parameters:
P1
  001 (min.) ~ 010 (max.)

000 is treated as 001.
010 ~ 999 are treated as 010.

NR — Sets or reads the NR (Noise Reduction) function status.

	1	2	3	4	5	6	7	8	9	10
Set	N	R	P1	;						
Read	N	R	;							
Answer	N	R	P1	;						

Parameters:
P1
  0: NR OFF
  1: NR1 ON
  2: NR2 ON

NT

Sets or reads the Auto Notch function status.

Set

1	2	3	4	5	6	7	8	9	10
N	T	P1	;						

Read

1	2	3	4	5	6	7	8	9	10
N	T	;							

Answer

1	2	3	4	5	6	7	8	9	10
N	T	P1	;						

Parameters:
P1
  0: Auto Notch OFF
  1: Auto Notch ON

OF

Sets or reads the Offset frequency information.

Set

1	2	3	4	5	6	7	8	9	10
O	F	P1	P1	P1	P1	P1	P1	P1	P1
11	12	13	14	15	16	17	18	19	20
P1	;								

Read

1	2	3	4	5	6	7	8	9	10
O	F	;							

Answer

1	2	3	4	5	6	7	8	9	10
O	F	P1	P1	P1	P1	P1	P1	P1	P1
11	12	13	14	15	16	17	18	19	20
P1	;								

Parameters:
P1
  000000000 ~ 059950000 in steps of 50000
  Offset frequency in Hz (9-digit).
  Unused digits must be 0.

OI

Reads the Memory channel data.

Set

1	2	3	4	5	6	7	8	9	10

Read

1	2	3	4	5	6	7	8	9	10
O	I	;							

Answer

1	2	3	4	5	6	7	8	9	10
O	I	P1	P1	P1	P1	P1	P1	P1	P1
11	12	13	14	15	16	17	18	19	20
P1	P1	P1	P2	P2	P2	P2	P3	P3	P3
21	22	23	24	25	26	27	28	29	30
P3	P3	P3	P4	P5	P6	P7	P7	P8	P9
31	32	33	34	35	36	37	38	39	40
P10	P11	P12	P13	P14	P14	P15	;		

Parameters:
P1
Specify the frequency in Hz (11 digits)
The blank digits must be "0".
P2
Frequency step size
P3
RIT/ XIT frequency ±99999 in Hz
P4
  0: RIT OFF, 1: RIT ON
P5
  0: XIT OFF, 1: XIT ON
P6, P7: Specify the channel bank number. See MC command.
P8
  0: RX, 1: TX
P9
  Operating mode. See MD commands for details.
P10
  See FR and FT commands.
P11
  Scan status. See SC command.
P12
  Split operation status. See SP command.
P13
  0: OFF, 1: TONE, 2: CTCSS, 3: DCS
P14
  Tone frequency. See TN command.
P15
  Shift status. See OS command.

While operating Sky Command II+, the P2 and P15 parameters become blank. The P2 parameter length changes to 5 bytes and the P3 parameter length becomes 5 bytes.

OS

Sets or reads the offset function status.

	1	2	3	4	5	6	7	8	9	10
Set	O	S	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	O	S	;							

	1	2	3	4	5	6	7	8	9	10
Answer	O	S	P1	;						

Parameters:
P1
  0: Simplex
  1: +
  2: −
  3: = (All E-types)

Valid only in FM mode. SPLIT function must be OFF.

PA

Sets or reads the pre-amplifier function status.

	1	2	3	4	5	6	7	8	9	10
Set	P	A	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	P	A	;							

	1	2	3	4	5	6	7	8	9	10
Answer	P	A	P1	P2	;					

Parameters:
P1
  0: Pre-amplifier OFF (main transceiver)
  1: Pre-amplifier ON (main transceiver)
P2 (Answer only)
  0: Pre-amplifier ON (sub-receiver)
  1: Pre-amplifier OFF (sub-receiver)

If same frequency band is selected for the main transceiver and the sub-receiver, both pre-amplifiers are turned ON or OFF at the same time.

PB

Sets or reads the DRU-3A or electric keyer playback status.

	1	2	3	4	5	6	7	8	9	10
Set	P	B	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	P	B	;							

	1	2	3	4	5	6	7	8	9	10
Answer	P	B	P1	;						

Parameters:
P1
  0: Inactive
  1: Playback CH1
  2: Playback CH2
  3: Playback CH3

PC

Sets or reads the output power.

	1	2	3	4	5	6	7	8	9	10
Set	P	C	P1	P1	P1	;				

	1	2	3	4	5	6	7	8	9	10
Read	P	C	;							

	1	2	3	4	5	6	7	8	9	10
Answer	P	C	P1	P1	P1	;				

Parameters:
P1
  005 ~ 100 (in steps of 1)

Refer to the Specifications for the minimum and maximum power for each operating frequency band and mode.

If the power is less than 1 watt, the next power level is used.
ex: 2.5 W = 003, 0.5 W= 001

PI

Stores in the Programable Memory channel.

	1	2	3	4	5	6	7	8	9	10
Set	P	I	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
P1
  1 ~ 5 (PM channel number)

131

PK	Reads the Packet Cluster data.										Parameters: This command is used in conjunctin with the AI command.

PK — Reads the Packet Cluster data.

Set	1	2	3	4	5	6	7	8	9	10

Read	1	2	3	4	5	6	7	8	9	10

Answer	1	2	3	4	5	6	7	8	9	10
	P	K	P1	P1	P1	P1	P1	P1	P1	P1
	11	12	13	14	15	16	17	18	19	20
	P1	P1	P1	P2	P2	P2	P2	P2	P2	P2
	21	22	23	24	25	26	27	28	29	30
	P2	P2	P2	P2	P2	P3	P3	P3	P3	P3
	31	32	33	34	35	36	37	38	39	40
	P3	P3	P3	P3	P3	P3	P3	P3	P3	P3
	41	42	43	44	45	46	47	48	49	50
	P3	P3	P3	P3	P3	P4	P4	P4	P4	P4
	51	52	53	54	55	56	57	58	59	60
	;									

Parameters:
This command is used in conjunctin with the AI command.

P1
  Frequency in Hz (11-digit)
P2
  Callsign (12-digit)
P3
  Comments (20-digit)
P4
  Time (5-digit)

PL — Sets and reads the Speech Processor input/ output level.

Set	1	2	3	4	5	6	7	8	9	10
	P	L	P1	P1	P1	P2	P2	P2	;	

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	P2	P2	P2	;	

Parameters:
P1
  Input level:
  000 (min.) ~ 100 (max.)
P2
  Output level:
  000 (min.) ~ 100 (max.)

PM — Recalls the PM (Programmable Memory).

Set	1	2	3	4	5	6	7	8	9	10
	P	M	P1	;						

Read	1	2	3	4	5	6	7	8	9	10
	P	M	;							

Answer	1	2	3	4	5	6	7	8	9	10
	P	M	P1	;						

Parameters:
P1
  0: PM OFF
  1 ~ 5 (PM channel number)

PR — Sets or reads the Speech Processor function ON/ OFF.

Set	1	2	3	4	5	6	7	8	9	10
	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	;						

Parameters:
P1
  0: Speech Processor OFF
  1: Speech Processor ON

PS

Sets or reads the Power ON/ OFF status.

Set

1	2	3	4	5	6	7	8	9	10
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	;						

Parameters:
P1
  0: Power ON
  1: Power OFF

QC

Sets or reads the DCS code.

Set

1	2	3	4	5	6	7	8	9	10
Q	C	P1	P1	P1	;				

Read

1	2	3	4	5	6	7	8	9	10
Q	C	;							

Answer

1	2	3	4	5	6	7	8	9	10
Q	C	P1	P1	P1	;				

Parameters:
P1
  All available 103 DCS codes are numbered sequentially from 000 to 103.
  ex.: 000: 023 (DCS code) ••• 103: 754 (DCS code)

QI

Store the settings in the Quick Memory.

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

Parameters:
None

QR

Sets or reads the Quick Memory channel data.

Set

1	2	3	4	5	6	7	8	9	10
Q	R	P1	P2	;					

Read

1	2	3	4	5	6	7	8	9	10
Q	R	;							

Answer

1	2	3	4	5	6	7	8	9	10
Q	R	P1	P2	;					

Parameters:
P1
  0: Quick Memory OFF
  1: Quick Memory ON
P2
  0 ~ 9: Quick Memory channel number

RA

Sets or reads the Attenuator function status.

Set

1	2	3	4	5	6	7	8	9	10
R	A	P1	P1	;					

Read

1	2	3	4	5	6	7	8	9	10
R	A	;							

Answer

1	2	3	4	5	6	7	8	9	10
R	A	P1	P1	P2	P2	;			

Parameters:
P1
  00: ATT OFF
  01 ~ 99: ATT ON

If same frequency band is selected for the main transceiver and the sub-receiver, both attenuators are turned ON or OFF at the same time.

RC

Clears the RIT offset frequency.

Parameters:
None

Set	1	2	3	4	5	6	7	8	9	10
	R	C	;							

Read	1	2	3	4	5	6	7	8	9	10

Answer	1	2	3	4	5	6	7	8	9	10

RD

Move the RIT offset frequency down.
Slow down the scan speed in Scan mode.

Parameters:
P1
  00000 ~ 99999 (the offset frequency in Hz)
P2
  1 ~ 9: Scan speed
When Scan is OFF:
If no parameter is specified, the frequency goes down 1 step.
When Scan is ON:
RD; to read the current scan speed.
RDnnnnn; (nnnnn = Any number) to slow the scan speed
1 step.

Set	1	2	3	4	5	6	7	8	9	10
	R	D	P1	P1	P1	P1	P1	;		

Read	1	2	3	4	5	6	7	8	9	10
	R	D	;							

Answer	1	2	3	4	5	6	7	8	9	10
	R	D	P2	;						

RG

Sets or read the RF gain status.

Parameters:
P1
  000 (min.) ~ 255 (max.)

Set	1	2	3	4	5	6	7	8	9	10
	R	G	P1	P1	P1	;				

Read	1	2	3	4	5	6	7	8	9	10
	R	G	;							

Answer	1	2	3	4	5	6	7	8	9	10
	R	G	P1	P1	P1	;				

RL

Sets or reads the Noise Reduction level.

Parameters:
P1
  When the NR1 is ON: 00 = AUTO, 01 ~ 09
  When the NR2 is ON: 00 (2 ms) ~ 09 (20 ms) in steps of
  2 ms

Set	1	2	3	4	5	6	7	8	9	10
	R	L	P1	P1	;					

Read	1	2	3	4	5	6	7	8	9	10
	R	L	;							

Answer	1	2	3	4	5	6	7	8	9	10
	R	L	P1	P1	;					

RM

Sets or reads the Meter function.

Parameters:
P1
  Selects the meter scale
  0: Unselected
  1: SWR
  2: COMP
  3: ALC
P2
  Meter value in dots: 0000 ~ 0030

Set	1	2	3	4	5	6	7	8	9	10
	R	M	P1	;						

Read	1	2	3	4	5	6	7	8	9	10
	R	M	;							

Answer	1	2	3	4	5	6	7	8	9	10
	R	M	P1	P2	P2	P2	P2	;		

RT — Sets or reads the RIT function status.

	1	2	3	4	5	6	7	8	9	10
Set	R	T	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	R	T	;							

	1	2	3	4	5	6	7	8	9	10
Answer	R	T	P1	;						

Parameters:
P1
0: RIT function OFF
1: RIT function ON

RU — Moves the RIT offset frequency up.
Speed up the scan speed in Scan mode.

	1	2	3	4	5	6	7	8	9	10
Set	R	U	P1	P1	P1	P1	P1	;		

	1	2	3	4	5	6	7	8	9	10
Read	R	U	;							

	1	2	3	4	5	6	7	8	9	10
Answer	R	U	P2	;						

Parameters:
P1
00000 ~ 99999 (the offset frequency in Hz)
P2
1 ~ 9: Scan speed
When Scan is OFF:
If no parameter is specified, the frequency goes 1 step up.
When Scan is ON:
RU; to read the current scan speed.
RUnnnnn; (nnnnn = Any number) to speed the scan speed
1 step up.

RX — Sets the receiver function status.

	1	2	3	4	5	6	7	8	9	10
Set	R	X	;							

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer	R	X	P1	;						

Parameters:
P1
0: Main transceiver
1: Sub-receiver

SA — Sets or reads the Satellite mode status.

	1	2	3	4	5	6	7	8	9	10
Set	S	A	P1	P2	P3	P4	P5	P6	P7	;

	1	2	3	4	5	6	7	8	9	10
Read	S	A	;							

	1	2	3	4	5	6	7	8	9	10
Answer	S	A	P1	P2	P3	P4	P5	P6	P7	P8
	11	12	13	14	15	16	17	18	19	20
	P8	P8	P8	P8	P8	P8	P8	;		

Parameters:
P1
0: Satellite mode OFF
1: Satellite mode ON
P2
0 ~ 9: Satellite Memory Channel number
P3
0: Main transceiver (uplink)/ Sub-receiver (downlink)
1: Main transceiver (downlink)/ Sub-receiver (uplink)
P4
0: CTRL is on the main transceiver
1: CTRL is on the sub-receiver
P5
0: TRACE OFF, 1: TRACE OFF
P6
0: TRACE REV. OFF, 1: TRACE REV ON
P7
0: MULTI/ CH control (VFO mode)
1: MULTI/ CH control (Memory channel)
P8
Satellite Channel name (8 characters)

Use the FA (downlink) or FB (uplink) command to change the
frequencies.

SB — Sets or reads the SUB, TF-W status.

	1	2	3	4	5	6	7	8	9	10
Set	S	B	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	S	B	;							

	1	2	3	4	5	6	7	8	9	10
Answer	S	B	P1	;						

Parameters:
P1
0: SUB (TF-W) OFF
1: SUB (TF-W) ON

SC — Sets or reads the SCAN function status.

	1	2	3	4	5	6	7	8	9	10
Set	S	C	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	S	C	;							

	1	2	3	4	5	6	7	8	9	10
Answer	S	C	P1	;						

Parameters:
P1
0: Scan OFF
1: Scan ON
2: MHz Scan ON
3: Visual Scan ON
4: Tone Scan ON
5: CTCSS Scan ON
6: DCS Scan ON

SD — Sets or reads the CW break-in time delay.

	1	2	3	4	5	6	7	8	9	10
Set	S	D	P1	P1	P1	P1	;			

	1	2	3	4	5	6	7	8	9	10
Read	S	D	;							

	1	2	3	4	5	6	7	8	9	10
Answer	S	D	P1	P1	P1	P1	;			

Parameters:
P1
0000 ~ 1000 ms (in steps of 50 ms)
0000 is FBK (Full break-in)

SH — Sets or reads the DSP filter settings.

	1	2	3	4	5	6	7	8	9	10
Set	S	H	P1	P1	;					

	1	2	3	4	5	6	7	8	9	10
Read	S	H	;							

	1	2	3	4	5	6	7	8	9	10
Answer	S	H	P1	P1	;					

Parameters:
P1
00 ~ 11
SSB/ FM (Hz)
00: 1400, 01: 1600, 02: 1800, 03: 2000, 04: 2200, 05: 2400, 06: 2600, 07: 2800, 08: 3000, 09: 3400, 10: 4000, 11: 5000
AM (Hz)
00: 2500, 01: 3000, 02: 4000, 03: 5000

When the Packet Filter (Menu No. 50A) is ON,
00: 170 Hz, 01: 1930, 02: 2160, 03: PSK

SI — Enters the Satellite memory name.

	1	2	3	4	5	6	7	8	9	10
Set	S	I	P1	P2	P2	P2	P2	P2	P2	P2

	11	12	13	14	15	16	17	18	19	20
	P2	;								

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
P1
0 ~ 9 (Channel number)
P2
Satellite memory channel name
(A maximum of 8 characters)

SL — Sets or reads the DSP filter settings.

	1	2	3	4	5	6	7	8	9	10
Set	S	L	P1	P1	;					

	1	2	3	4	5	6	7	8	9	10
Read	S	L	;							

	1	2	3	4	5	6	7	8	9	10
Answer	S	L	P1	P1	;					

Parameters:
P1
 00 ~ 11
SSB/ FM (Hz)
00: 10 (0), 01: 50, 02: 100, 03: 200, 04: 300, 05: 400, 06: 500
07: 600, 08: 700, 09: 800, 10: 900, 11: 1000
AM (Hz)
00: 10 (0), 01: 100, 02: 200, 03: 500

When the Packet Filter (Menu No. 50A) is ON,
00: WIDE, 01: NAR

SM — Reads the S-meter status.

	1	2	3	4	5	6	7	8	9	10
Set										

	1	2	3	4	5	6	7	8	9	10
Read	S	M	P1	;						

	1	2	3	4	5	6	7	8	9	10
Answer	S	M	P1	P2	P2	P2	P2	;		

Parameters:
P1
 0: Main transceiver
 1: Sub-receiver
 2: Main transceiver S-meter level
 3: Sub-receiver S-meter level
P2
 Meter readings
 0000 ~ 0030 (Main transceiver)
 0000 ~ 0015 (Sub-receiver)

SQ — Sets and reads the squelch level.

	1	2	3	4	5	6	7	8	9	10
Set	S	Q	P1	P2	P2	P2	;			

	1	2	3	4	5	6	7	8	9	10
Read	S	Q	P1	;						

	1	2	3	4	5	6	7	8	9	10
Answer	S	Q	P1	P2	P2	P2	;			

Parameters:
P1
 0: Main transceiver
 1: Sub-receiver
P2
 Squelch level
 000 ~ 255

SR — Resets the transceiver.

	1	2	3	4	5	6	7	8	9	10
Set	S	R	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
P1
 1: VFO reset
 2: Master reset

SS — Sets or reads the Program Scan pause frequency.

	1	2	3	4	5	6	7	8	9	10
Set	S	S	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	S	S	;							

	1	2	3	4	5	6	7	8	9	10
Answer	S	S	P1	;						

Parameters:
P1
 0: Reserved
 1: Set
 2: All clear

When selecting memory channel 290 ~ 299, use the DN or UP command to set the frequency. Then, use this command to set the Program Scan pause frequency.
Using the IF command, you can read the current frequency.

ST

Sets or reads the MULTI/ CH control frequency steps.

Set

1	2	3	4	5	6	7	8	9	10
S	T	P1	P1	;					

Read

1	2	3	4	5	6	7	8	9	10
S	T	;							

Answer

1	2	3	4	5	6	7	8	9	10
S	T	P1	P1	;					

Parameters:
P1
 SSB/ CW/ FSK mode: 00 ~ 03
 00: 1 kHz, 01: 2.5 kHz, 02: 5 kHz, 03: 10 kHz
 AM/ FM mode: 00 ~ 09
 00: 5 kHz, 01: 6.25 kHz, 02: 10 kHz, 03: 12.5 kHz,
 04: 15 kHz, 05: 20 kHz, 06: 25 kHz, 07: 30 kHz,
 08: 50 kHz, 09: 100 kHz

SU

Sets or reads the Program Scan pause frequency.

Set

1	2	3	4	5	6	7	8	9	10
S	U	P1	P2	P3	P4	P5	P6	P7	P8

11	12	13	14	15	16	17	18	19	20
P9	P10	P11	;						

Read

1	2	3	4	5	6	7	8	9	10
S	U	P1	;						

Answer

1	2	3	4	5	6	7	8	9	10
S	U	P1	P2	P3	P4	P5	P6	P7	P8

11	12	13	14	15	16	17	18	19	20
P9	P10	P11	;						

Parameters:
P1
 0: Program Scan group
 1: Memory Scan group
P2
Group 0. 0: Unselected, 1 ~ 9: Selected
P3
Group 1. 0: Unselected, 1 ~ 9: Selected
P4
Group 2. 0: Unselected, 1 ~ 9: Selected
P5
Group 3. 0: Unselected, 1 ~ 9: Selected
P6
Group 4. 0: Unselected, 1 ~ 9: Selected
P7
Group 5. 0: Unselected, 1 ~ 9: Selected
P8
Group 6. 0: Unselected, 1 ~ 9: Selected
P9
Group 7. 0: Unselected, 1 ~ 9: Selected
P10
Group 8. 0: Unselected, 1 ~ 9: Selected
P11
Group 9. 0: Unselected, 1 ~ 9: Selected

SV

Execute the Memory Transfer function.

Set

1	2	3	4	5	6	7	8	9	10
S	V	;							

Read

1	2	3	4	5	6	7	8	9	10

Answer

1	2	3	4	5	6	7	8	9	10

Parameters:
No parameter

TC

Sets or reads the internal TNC mode.

Set

1	2	3	4	5	6	7	8	9	10
T	C	P1	P2	;					

Read

1	2	3	4	5	6	7	8	9	10
T	C	;							

Answer

1	2	3	4	5	6	7	8	9	10
T	C	P1	P2	;					

Parameters:
P1
 _ (space) is used
P2
 0: Packet communication mode
 1: PC Control command mode

Key in "TC 0" to enter Packet communication mode.
Key in "TC 1" to return to PC Control command mode.

TD

Sends the DTMF memory channel data.

	1	2	3	4	5	6	7	8	9	10
Set	T	D	P1	P1	;					

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

Parameters:
P1
  00 ~ 09 (DTMF memory channel number)

If no data is stored in the channel, no data is sent.

TI

Reads the TNC LED status.

	1	2	3	4	5	6	7	8	9	10
Set										

	1	2	3	4	5	6	7	8	9	10
Read	T	I	;							

	1	2	3	4	5	6	7	8	9	10
Answer	T	I	P1	P2	P3	;				

Parameters:
P1
  0: 9.6k LED is OFF, 1: 9.6k LED is ON
P2
  0: STA LED is OFF, 1: STA LED is ON
P3
  0: CON LED is OFF, 1: CON LED is ON

TN

Sets or reads the sub-tone frequency.

	1	2	3	4	5	6	7	8	9	10
Set	T	N	P1	P1	;					

	1	2	3	4	5	6	7	8	9	10
Read	T	N	;							

	1	2	3	4	5	6	7	8	9	10
Answer	T	N	P1	P1	;					

Parameters:
P1
  01 ~ 39

Refer to page 35 for the tone numbers.

TO

Sets or reads the TONE function ON/ OFF.

	1	2	3	4	5	6	7	8	9	10
Set	T	O	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	T	O	;							

	1	2	3	4	5	6	7	8	9	10
Answer	T	O	P1	;						

Parameters:
P1
  0: TONE OFF
  1: TONE ON
  2: Emulates switching TONE ON (Set only)
  3: Emulates switching TONE OFF (Set only)

TS

Sets or reads the TF-SET function status.

	1	2	3	4	5	6	7	8	9	10
Set	T	S	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read	T	S	;							

	1	2	3	4	5	6	7	8	9	10
Answer	T	S	P1	;						

Parameters:
P1
  0: TF-SET OFF
  1: TF-SET ON
When the transceiver is operating in simplex mode.
P1
  0: REVERSE ON
  1: REVERSE OFF
Every time you send TS1; the REVERSE function toggles.

TX — Sets the transceiver in TX mode.

Parameters:
P1
  0: Transmits on the main transceiver's frequency band
  1: Transmits on the sub-receiver's frequency band

	1	2	3	4	5	6	7	8	9	10
Set	T	X	P1	;						

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer	T	X	P1	;						

TY — Sets or reads the microprocessor firmware type.

Parameters:
P1
  Reserved
P2
  0: Overseas type
  1: Japanese 100 W type
  2: Japanese 20 W type

	1	2	3	4	5	6	7	8	9	10
Set										

	1	2	3	4	5	6	7	8	9	10
Read	T	Y	;							

	1	2	3	4	5	6	7	8	9	10
Answer	T	Y	P1	P1	P2	;				

UL — Detects the PLL unlock status.

Parameters:
P1
  0: Lock
  1: Unlock

	1	2	3	4	5	6	7	8	9	10
Set										

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer	U	L	P1	;						

UP — Emulates the microphone UP key.

Parameters:
P1
  00 ~ 99

If no P1 parameter is specified, the command is interpreted as 1 step up.
In Memory mode and Quick Memory mode, commands without parameters are treated as Memory channel up commands. With parameters, they are treated as frequency up commands.

	1	2	3	4	5	6	7	8	9	10
Set	U	P	P1	P1	;					

	1	2	3	4	5	6	7	8	9	10
Read										

	1	2	3	4	5	6	7	8	9	10
Answer										

VD — Sets or reads the VOX delay time.

Parameters:
P1
  0000 ~ 3000 ms (in steps of 150)

	1	2	3	4	5	6	7	8	9	10
Set	V	D	P1	P1	P1	P1	;			

	1	2	3	4	5	6	7	8	9	10
Read	V	D	;							

	1	2	3	4	5	6	7	8	9	10
Answer	V	D	P1	P1	P1	P1	;			

VG	Sets or reads the VOX GAIN.										Parameters: P1 000 ~ 009
	1	2	3	4	5	6	7	8	9	10	
Set	V	G	P1	P1	P1	;					
	1	2	3	4	5	6	7	8	9	10	
Read	V	G	;								
	1	2	3	4	5	6	7	8	9	10	
Answer	V	G	P1	P1	P1	;					

VR	Emulates the VOICE1 or VOICE2 key.										Parameters:
											P1
											  0: VOICE1
											  1: VOICE2

	1	2	3	4	5	6	7	8	9	10	
Set	V	R	P1	;							
	1	2	3	4	5	6	7	8	9	10	
Read											
	1	2	3	4	5	6	7	8	9	10	
Answer											

VX	Sets or reads the VOX function status.										Parameters:
											P1
											  0: VOX OFF
											  1: VOX ON

	1	2	3	4	5	6	7	8	9	10	
Set	V	X	P1	;							
	1	2	3	4	5	6	7	8	9	10	
Read	V	X	;								
	1	2	3	4	5	6	7	8	9	10	
Answer	V	X	P1	;							

XT	Sets or reads the XIT function status.										Parameters:
											P1
											  0: XIT OFF
											  1: XIT ON

	1	2	3	4	5	6	7	8	9	10	
Set	X	T	P1	;							
	1	2	3	4	5	6	7	8	9	10	
Read	X	T	;								
	1	2	3	4	5	6	7	8	9	10	
Answer	X	T	P1	;							

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