YAESU

FT DX 9000 SERIES
CAT OPERATION
REFERENCE BOOK

VERTEX STANDARD CO., LTD.

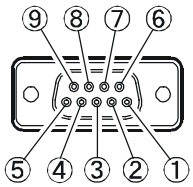
OVERVIEW

The CAT (Computer Aided Transceiver) System in the **FT DX 9000** series provides control of frequency, VFO, memory, and other settings such as dual-channel memories and diversity reception using an external personal computer. This allows multiple control operations to be fully automated as single mouse clicks or keystroke operations on the computer keyboard.

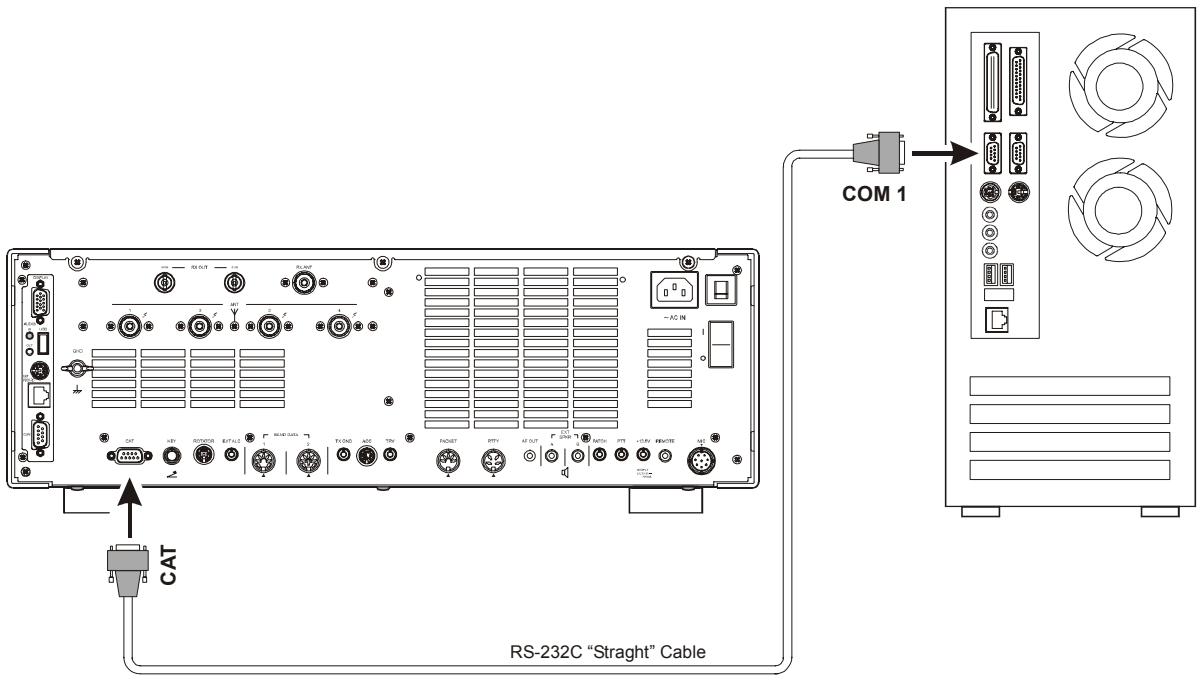
The **FT DX 9000** series has a built-in level converter, allowing direct connection from the rear-panel **CAT** jack to the serial port of your computer without the need of any external boxes. You will need a serial cable for connection to the RS-232C (serial or COM port) connector on your computer. Purchase a ***standard serial cable*** (not the so-called "null modem" type), ensuring it has the correct gender and number of pins (some serial COM port connectors use a 9-pin rather than 25-pin configuration). If your computer uses a custom connector, you may have to construct the cable. In this case, refer to the technical documentation supplied with your computer for correct data connection.

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

CAT JACK



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



CONTROL COMMAND

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

Example: Set the main band (VFO-A) frequency to 14.250000 MHz.

FA	**14250000**	**;**
↑	↑	↑
Command	Parameter	Terminator

There is three for the **FT DX 9000** Command as shown below:

Set command: Set a particular condition (to the **FT DX 9000**)

Read command: Reads an answer (from the **FT DX 9000**)

Answer command: Transmits a condition (from the **FT DX 9000**)

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

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

Alphabetical Commands

A command consists of 2 alphabetical characters.

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

Parameters

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

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

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

For example, when correct parameter is "**IS0+1000**" (IF SHIFT):

IS01000;
Not enough parameters specified (No direction (+) given for the IF shift)

IS0+100;
Not enough digits (Only three frequency digits given)

IS0_+_1000;
Unnecessary characters between parameters

IS0+10000;
Too many digits (Five frequency digits given)

Note: If a particular parameter is not applicable to the **FT DX 9000**, 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.

CONTROL COMMAND LIST

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

CONTROL COMMAND TABLES

AB — VFO-A TO VFO-B

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

AC — ANTENNA TUNER CONTROL

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

P1 0: Fixed
P2 0: Fixed
P3 0: Tuner "OFF"
1: Tuner "ON"
2: Tuning Start

AG — AF GAIN

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

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 000 - 255

AI — AUTO INFORMATION

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

P1 0: Auto Information "OFF"
1: Auto Information "ON"

This parameter is set to "0" (OFF) automatically when the transceiver is turned "OFF."

AL — AF LIMITER

	1	2	3	4	5	6	7	8	9	10
Set	A	L	P1	P2	;					
Read	A	L	P1	;						
Answer	A	L	P1	P2	;					

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: AF Limiter "OFF"
1: AF Limiter "ON"

AM — VFO-A TO MEMORY CHANNEL

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

AN — ANTENNA NUMBER

	1	2	3	4	5	6	7	8	9	10
Set	A	N	P1	P2	;					
Read	A	N	P1	;						
Answer	A	N	P1	P3	P4	;				

P1 0: Main (VFO-A) Band
1: Sub (VFO-B) Band
P2 1: ANT "1"
2: ANT "2"
3: ANT "3"
4: ANT "4"
5: ANT "RX"
P3 1: ANT "1"
2: ANT "2"
3: ANT "3"
4: ANT "4"
P4 0: ANT "RX" "OFF"
1: ANT "RX" "ON"

BA — VFO-B TO VFO-A

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

BC — AUTO NOTCH

	1	2	3	4	5	6	7	8	9	10
Set	B	C	P1	P2	;					
Read	B	C	P1	;						
Answer	B	C	P1	P2	;					

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: Auto Notch "OFF"
1: Auto Notch "ON"

CONTROL COMMAND TABLES

BD — BAND DOWN

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

P1 0: Main (VFO-A) Band
1: Sub (VFO-B) Band

BI — BREAK-IN

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

P1 0: Break-in "OFF"
1: Break-in "ON"

BP — MANUAL NOTCH

	1	2	3	4	5	6	7	8	9	10
Set	B	P	P1	P2	P3	P3	P3	;		
Read	B	P	P1	P2	;					
Answer	B	P	P1	P2	P3	P3	P3	;		

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: Manual NOTCH "ON/OFF"
1: Manual NOTCH LEVEL
P3 When P2=0
000: OFF
001: ON
When P2=1
001 - 400 (NOTCH Frequency: x 10 Hz)

BS — BAND SELECT

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

P1 00: 1.8 MHz
01: 3.5 MHz
02: 5 MHz
03: 7 MHz
04: 10 MHz
05: 14 MHz
06: 18 MHz
07: 21 MHz
08: 24.5 MHz
09: 28 MHz
10: 50 MHz
11: GEN

BU — BAND UP

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

P1 0: Main (VFO-A) Band
1: Sub (VFO-B) Band

BY — BUSY

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

P1 0: Main (VFO-A) Band BUSY "OFF"
1: Main (VFO-A) Band BUSY "ON"
P2 0: Sub (VFO-B) Band BUSY "OFF"
1: Sub (VFO-B) Band BUSY "ON"

CA — CLASS-A

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

P1 0: CLASS-A Operation "ON" and "OFF"
1: BIAS LEVEL
P2 When P1=0
000: CLASS-A Operation "OFF"
001: CLASS-A Operation "ON"
When P1=1
001 - 255

CH — CHANNEL UP/DOWN

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

P1 0: Memory Channel "UP"
1: Memory Channel "DOWN"

CM — ACM

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

P1 0: ACM "OFF"
1: ACM "ON"

CONTROL COMMAND TABLES

CN — CTCSS TONE FREQUENCY

	1	2	3	4	5	6	7	8	9	10
Set	C	N	P1	P2	P2	;				
Read	C	N	P1	;						
Answer	C	N	P1	P2	P2	;				

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0 - 49: Tone Frequency Number (See "CTCSS Tone Chart" Below)

CO — CONTOUR/APF

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

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: CONTOUR/APF "ON/OFF"
1: CONTOUR FREQUENCY
P3 When P2=0,
00: CONTOUR/APF "OFF"
01: CONTOUR "ON"
02: APF "ON"
When P2=1,
01 - 40 (CONTOUR Frequency)

CS — CW SPOT

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

P1 0: OFF
1: ON

CT — CTCSS

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

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: CTCSS "OFF"
1: CTCSS ENC/DEC "ON"
2: CTCSS ENC "ON"

DA — DIMMER

	1	2	3	4	5	6	7	8	9	10
Set	D	A	P1	P1	P2	P2	;			
Read	D	A	;							
Answer	D	A	P1	P1	P2	P2	;			

P1 00 - 15: VFD Backlight Brightness Level
P2 00 - 15: Meter (except VFD) Brightness Level

DN — MIC DWN

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

DP — DISPLAY

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

P1 0: World Clock Display
1: Band Scope Display
2: AF Oscilloscope/Spectrum Analyzer Display
3: Log Book Display
4: Temperature/SWR Display
5: Rotator Display
6: Memory Channel List Display

※: This command does not activates when the optional Data Managemnt Unit is not attached.

DS — DIMMER SWITCH

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

P1 0: DIMMER "OFF"
1: DIMMER "ON"

CTCSS TONE CHART

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

CONTROL COMMAND TABLES

ED	ENCORDER DOWN										
Set	1	2	3	4	5	6	7	8	9	10	P1 0: MAIN ENCORDER 1: SUB ENCORDER P2 01-99: Steps
	E	**D**	P1	P2	P2	;					
Read	1	2	3	4	5	6	7	8	9	10	
Answer	1	2	3	4	5	6	7	8	9	10	

EK	ENT KEY									
Set	1	2	3	4	5	6	7	8	9	10
	E	**K**	;							
Read	1	2	3	4	5	6	7	8	9	10
Answer	1	2	3	4	5	6	7	8	9	10

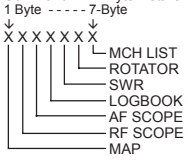
EU	ENCORDER UP										
Set	1	2	3	4	5	6	7	8	9	10	P1 0: MAIN ENCORDER 1: SUB ENCORDER P2 01-99: Steps
	E	**U**	P1	P2	P2	;					
Read	1	2	3	4	5	6	7	8	9	10	
Answer	1	2	3	4	5	6	7	8	9	10	

EX	MENU										
Set	1	2	3	4	5	6	7	8	nn	**	P1 : 001-176 (MENU Number) P2 : Parameter See Table 1, Table 2, and Table 3.
	E	**X**	P1	P1	P1	P2	P2	~	P2	;	
Read	1	2	3	4	5	6	7	8	9	10	
	E	**X**	P1	P1	P1	;					
Answer	1	2	3	4	5	6	7	8	nn	**	
	E	**X**	P1	P1	P1	P2	P2	~	P2	;	

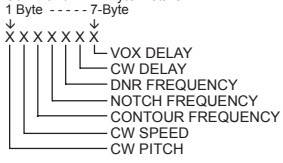
TABLE 1

P1	FUNCTION	P2	BYTE
001	MAIN BAND AGC FAST DELAY	0020 ~ 4000 msec (20 msec/step)	4
002	MAIN BAND AGC FAST HOLD	0000 ~ 2000 msec (20 msec/step)	4
003	MAIN BAND AGC MID DELAY	0020 ~ 4000 msec (20 msec/step)	4
004	MAIN BAND AGC MID HOLD	0000 ~ 2000 msec (20 msec/step)	4
005	MAIN BAND AGC SLOW DELAY	0020 ~ 4000 msec (20 msec/step)	4
006	MAIN BAND AGC SLOW HOLD	0000 ~ 2000 msec (20 msec/step)	4
007	SUB BAND AGC FAST DELAY	0020 ~ 4000 msec (20 msec/step)	4
008	SUB BAND AGC FAST HOLD	0000 ~ 2000 msec (20 msec/step)	4
009	SUB BAND AGC MID DELAY	0020 ~ 4000 msec (20 msec/step)	4
010	SUB BAND AGC MID HOLD	0000 ~ 2000 msec (20 msec/step)	4
011	SUB BAND AGC SLOW DELAY	0020 ~ 4000 msec (20 msec/step)	4
012	SUB BAND AGC SLOW HOLD	0000 ~ 2000 msec (20 msec/step)	4
013	TFT COLOR	0: COOL BLUE 1: CONTRAST BLUE 2: FLASH BLUE 3: CONTRAST UMBER 4: UMBER	1
014	DIMMER-METER	00 ~ 15	2
015	DIMMER-VDF	00 ~ 15	2
016	BAR DISPLAY SELECT	0: CLARIFIER OFFSET 1: CW TUNING 2: VRF/µTUNE PEAK POSITION 3: NOTCH	1
017	ROTATOR START UP	0: 0° 1: 90° 2: 180° 3: 270°	1
018	ROTATOR OFFSET ADJ	00 ~ 30 (00 ~ –30°, 2° step)	2
019	RIGHT TX METER	0: ALC 1: VDD	1
020	QMB MAKER	0: OFF 1: ON	1
021	MY SCREEN	0: OFF 1: ON (See Below)	7
022	LEVEL INDICATOR	0: OFF 1: ON (See Below)	7
023	BEACON TIME	000 (OFF) ~ 255 sec	3
024	NUMBER STYLE	0: 1290 1: AunO 2: Aunt 3: A2nO 4: A2nt 5: 12nO 6: 12nt	1
025	CONTEST NUMBER	0000 ~ 9999	4
026	CW MEMORY “1” MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY	1
027	CW MEMORY “2” MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY	1
028	CW MEMORY “3” MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY	1
029	CW MEMORY “4” MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY	1
030	CW MEMORY “5” MEMORY TYPE	0: TEXT MEMORY 1: MESSAGE MEMORY	1
031	ANTENNA SELECTION MODE	0: BAND 1: STACK	1
032	BEEP LEVEL	000 ~ 255	3
033	CAT BAUD RATE	0: 4800 bps 1: 9600 bps 2: 19200 bps 3: 38400 bps	1
034	CAT TIME-OUT TIMER	0: 10 msec 1: 100 msec 2: 1000 msec 3: 3000 msec	1
035	CAT RTS PORT	0: OFF 1: ON	1
036	CAT DATA INDICATOR	0: OFF 1: ON	1
037	MEMORY GROUP	0: OFF 1: ON	1
038	QUICK SPLIT TUNING OFFSET	–20 ~ +00 (or –00) ~ +20 kHz	3
039	VFO TRACK	0: OFF 1: BAND 2: FREQUENCY	1

Menu Item 021 MY SCREEN
Command P2 7-Byte Details
1 Byte - - - - - 7-Byte



Menu Item 022 LEVEL INDICATOR
Command P2 7-Byte Details
1 Byte - - - - - 7-Byte



CONTROL COMMAND TABLES

TABLE 2

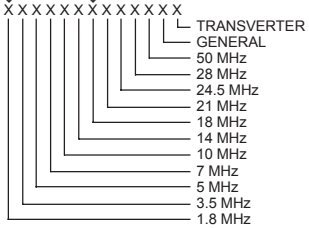
P1	FUNCTION	P2	BYTE
040	TX TIME OUT TIMER	0: OFF 1: 5 min 2: 10 min 3: 15 min 4: 20 min 5: 25 min 6: 30 min	1
041	TRANSVERTER FREQUENCY DISPLAY	30 ~ 49 MHz	2
042	μ-TUNE DIAL STEP	0: STEP-2 1: STEP-1 2: OFF	1
043	MIC SCAN	0: OFF 1: ON	1
044	SCAN RESUME	0: PAUSE 1: TIME	1
045	AF/RF DIAL SWAP	0: NORMAL 1: SWAP	1
046	AM MIC GAIN	1000: MIC KNOB 0000 ~ 0255 (FIX)	4
047	AM MIC SELECT	0: FRONT JACK 1: DATA JACK 2: PC JACK 3: REAR	1
048	FRONT PANEL KEY JACK TYPE	0: OFF 1: BUG 2: IAMBIC KEYER W/O ACS 3: IAMBIC KEYER W/ACS	1
049	FRONT PANEL KEY JACK WIRING	0: NORNAL 1: REVERSE	1
050	REAR PANEL KEY JACK TYPE	0: OFF 1: BUG 2: IAMBIC KEYER W/O ACS 3: IAMBIC KEYER W/ACS	1
051	REAR PANEL KEY JACK WIRING	0: NORNAL 1: REVERSE	1
052	CW AUTO MODE	0: OFF 1: 50 MHz ONLY 2: ON	1
053	CW BFO INJECTION SIDE	0: USB 1: LSB 2: AUTO	1
054	CW BREAK-IN MODE	0: SEMI BREAK-IN 1: FULL BREAK-IN	1
055	CW CARRIER WAVE FORM SHAPE	0: 1 msec 1: 2 msec 2: 4 msec 3: 6 msec	1
056	CW WEIGHT	25 (1:2.5) ~ 45 (1:4.5)	2
057	CW FREQUENCY DISPLAY	0: DIRECT FREQUENCY 1: PITCH OFFSET	1
058	CW PC KEYING	0: OFF 1: ON	1
059	CW QSK TIME	0: 15 msec 1: 20 msec 2: 25 mesc 3: 30 msec	1
060	DATA INPUT PORT	0: DATA JACK 1: PC JACK	1
061	DATA INPUT LEVEL	000 ~ 255	3
062	DATA OUTPUT BAND	0: MAIN (VFO-A) BAND 1: SUB (VFO-B) BAND	1
063	DATA VOX DELAY TIME	0030 ~ 3000 msec	4
064	DATA VOX GAIN	000 ~ 255	3
065	FM MIC GAIN	1000: MIC KNOB 0000 ~ 0255 (FIX)	4
066	FM MIC SELECT	0: FRONT JACK 1: DATA JACK 2: PC JACK 3: REAR	1
067	28 MHz REPEATER SHIFT	0000 ~ 1000 kHz (10 Hz/step)	4
068	50 MHz REPEATER SHIFT	0000 ~ 4000 kHz (10 Hz/step)	4
069	SSB PACKET MODE DISPLAY FREQUENCY	–3000 ~ +0000 (or –0000) ~ +3000 kHz (10 Hz/step)	5
070	SSB PACKET GAIN	000 ~ 255	3
071	SSB PACKET MODE SHIFT FREQUENCY	–3000 ~ +0000 (or –0000) ~ +3000 kHz (10 Hz/step)	5
072	RTTY MODE RX POLARITY (MARK/SPACE)	0: NORNAL 1: REVERSE	1
073	RTTY MODE TX POLARITY (MARK/SPACE)	00.: NORNAL 1: REVERSE	1
074	RTTY MODE SHIFT FREQUENCY	1: 170 Hz 1: 200 Hz 2: 425 Hz 3: 850 Hz	1
075	RTTY MODE MARK FREQUENCY	1: 1275 Hz 2: 2125 Hz	1
076	SSB MIC SELECT	0: FRONT JACK 1: DATA JACK 2: PC JACK 3: REAR	1
077	SSB MODE TX BPF BANDWIDTH	0: 50 - 3000 Hz 1: 100 - 2900 Hz 2: 200 - 2800 Hz 3: 300 - 2700 Hz 4: 400 - 2600 Hz 5: 3000WB	1
078	LSB RX CARRIER POINT	–200 ~ +000 (or –000) ~ +200 Hz (10 Hz/step)	4
079	LSB TX CARRIER POINT	–200 ~ +000 (or –000) ~ +200 Hz (10 Hz/step)	4
080	USB RX CARRIER POINT	–200 ~ +000 (or –000) ~ +200 Hz (10 Hz/step)	4
081	USB TX CARRIER POINT	–200 ~ +000 (or –000) ~ +200 Hz (10 Hz/step)	4
082	AGC GAIN CURVE	0: NORMAL 1: SLOPED	1
083	HEADPHONE MIX	0: SEPARATE 1: COMBINE-1 2: COMBINE-2	1
084	SPEAKER MIX	0: SEPARATE 1: COMBINE	1
085	MAIN BAND CONTOUR LEVEL	–40 ~ +00 (or –00) ~ +20 dB	3
086	MAIN BAND CONTOUR WIDTH	01 ~ 11	2
087	SUB BAND CONTOUR LEVEL	–40 ~ +00 (or –00) ~ +20 dB	3
088	SUB BAND CONTOUR WIDTH	01 ~ 11	2
089	IF NOTCH WIDTH	0: NARROW 1: WIDE	1
090	MAIN BAND CW FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
091	MAIN BAND CW FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
092	MAIN BAND CW FILTER BANDWIDTH	00: 25 Hz 01: 50 Hz 02: 100 Hz 03: 200 Hz 04: 300 Hz 05: 400 Hz	2
093	MAIN BAND PACKT FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
094	MAIN BAND PACKT FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
095	MAIN BAND PACKT FILTER BANDWIDTH	00: 25 Hz 01: 50 Hz 02: 100 Hz 03: 200 Hz 04: 300 Hz 05: 400 Hz	2
096	MAIN BAND RTTY FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
097	MAIN BAND RTTY FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
098	MAIN BAND RTTY FILTER BANDWIDTH	0: 25 Hz 1: 50 Hz 2: 100 Hz 3: 200 Hz 4: 300 Hz 5: 400 Hz	2
099	MAIN BAND SSB FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
100	MAIN BAND SSB FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
101	MAIN BAND SSB NARROW FILTER BANDWIDTH	00: 200 Hz 01: 400 Hz 02: 600 Hz 03: 850 Hz 04: 1100 Hz 05: 1350 Hz 06: 1500 Hz 07: 1650 Hz 08: 1800 Hz 09: 1950 Hz 10: 2100 Hz 11: 2250 Hz	2
102	SUB BAND CW FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
103	SUB BAND CW FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
104	SUB BAND CW FILTER BANDWIDTH	00: 25 Hz 01: 50 Hz 02: 100 Hz 03: 200 Hz 04: 300 Hz 05: 400 Hz	2
105	SUB BAND PACKT FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
106	SUB BAND PACKT FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
107	SUB BAND PACKT FILTER BANDWIDTH	00: 25 Hz 01: 50 Hz 02: 100 Hz 03: 200 Hz 04: 300 Hz 05: 400 Hz	2
108	SUB BAND RTTY FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
109	SUB BAND RTTY FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
110	SUB BAND RTTY FILTER BANDWIDTH	00: 25 Hz 01: 50 Hz 02: 100 Hz 03: 200 Hz 04: 300 Hz 05: 400 Hz	2
111	SUB BAND SSB FILTER PASSBAND CHARACTER	0: SOFT 1: SHARP	1
112	SUB BAND SSB FILTER SHAPE FACTOR	0: STEEP 1: MEDIUM 2: GENTLE	1
113	SUB BAND SSB NARROW FILTER BANDWIDTH	00: 200 Hz 01: 400 Hz 02: 600 Hz 03: 850 Hz 04: 1100 Hz 05: 1350 Hz 06: 1500 Hz 07: 1650 Hz 08: 1800 Hz 09: 1950 Hz 10: 2100 Hz 11: 2250 Hz	2
114	MAIN BAND SPECTRUM SCOPE SCAN START FREQ (1.8 MHz)	01800 ~ 01999 (1.800 MHz ~ 1.999 MHz)	5
115	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (3.5 MHz)	03500 ~ 03999 (3.500 MHz ~ 3.999 MHz)	5
116	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (5.0 MHz)	05250 ~ 05499 (5.250 MHz ~ 5.499 MHz)	5
117	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (7.0 MHz)	07000 ~ 07299 (7.000 MHz ~ 7.299 MHz)	5
118	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (10 MHz)	10100 ~ 10149 (10.100 MHz ~ 10.149 MHz)	5
119	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (14 MHz)	14000 ~ 14349 (14.000 MHz ~ 14.349 MHz)	5
120	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (18 MHz)	18000 ~ 18199 (18.000 MHz ~ 18.199 MHz)	5
121	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (21 MHz)	21000 ~ 21449 (21.000 MHz ~ 21.449 MHz)	5
122	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (24.5 MHz)	24800 ~ 24989 (24.800 MHz ~ 24.989 MHz)	5
123	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (28 MHz)	28000 ~ 29699 (28.000 MHz ~ 29.699 MHz)	5
124	MAIN BAND SPECTRUM SCOPE SCAN START FREQ. (50 MHz)	50000 ~ 53999 (50.000 MHz ~ 53.999 MHz)	5
125	SUB BAND SPECTRUM SCOPE SCAN START FREQ (1.8 MHz)	01800 ~ 01999 (1.800 MHz ~ 1.999 MHz)	5

CONTROL COMMAND TABLES

TABLE 3

P1	FUNCTION	P2	BYTE
126	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (3.5 MHz)	03500 ~ 03999 (3.500 MHz ~ 3.999 MHz)	5
127	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (5.0 MHz)	05250 ~ 05499 (5.250 MHz ~ 5.499 MHz)	5
128	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (7.0 MHz)	07000 ~ 07299 (7.000 MHz ~ 7.299 MHz)	5
129	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (10 MHz)	10100 ~ 10149 (10.100 MHz ~ 10.149 MHz)	5
130	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (14 MHz)	14000 ~ 14349 (14.000 MHz ~ 14.349 MHz)	5
131	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (18 MHz)	18000 ~ 18199 (18.000 MHz ~ 18.199 MHz)	5
132	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (21 MHz)	21000 ~ 21449 (21.000 MHz ~ 21.449 MHz)	5
133	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (24.5 MHz)	24800 ~ 24989 (24.800 MHz ~ 24.989 MHz)	5
134	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (28 MHz)	28000 ~ 29699 (28.000 MHz ~ 29.699 MHz)	5
135	SUB BAND SPECTRUM SCOPE SCAN START FREQ. (50 MHz)	50000 ~ 53999 (50.000 MHz ~ 53.999 MHz)	5
136	DIAL STEP	0: 1 Hz 1: 5 Hz 2: 10 Hz	1
137	CW FINE TUNING	0: OFF 1: ON	1
138	SUB VFO-B KNOB MHz STEP	0: 1 MHz 1: 100 kHz	1
139	AM CH STEP	0: 2.5 kHz 1: 5 kHz 2: 9 kHz 3: 10 kHz 4:12.5 kHz	1
140	FM CH STEP	0: 5 kHz 1: 6.25 kHz 2: 10 kHz 3: 12.5 kHz 4: 25 kHz	1
141	FM DIALSTEP	0: 10 Hz 1: 100 Hz	1
142	MY BAND SELECT	0: OFF 1: ON (See Below)	13
143	FRONT MIC EQUAQLIZER CENTER FREQUENCY (LOW RANGE)	00: OFF 01: 100 Hz 02: 200 Hz 03: 300 Hz 04: 400 Hz 05: 500 Hz 06: 600 Hz 07: 700 Hz	2
144	FRONT MIC EQUAQLIZER GAIN (LOW RANGE)	–10 ~ +00 (or –00) ~ +10	3
145	FRONT MIC EQUAQLIZER BANDWIDTH (LOW RANGE)	01 ~ 10	2
146	FRONT MIC EQUAQLIZER CENTER FREQUENCY (MID RANGE)	00: OFF 01: 700 Hz 02: 800 Hz 03: 900 Hz 04: 1000 Hz 05: 1100 Hz 06: 1200 Hz 07: 1300 Hz 08: 1400 Hz 09: 1500 Hz	2
147	FRONT MIC EQUAQLIZER GAIN (MID RANGE)	–10 ~ +00 (or –00) ~ +10	3
148	FRONT MIC EQUAQLIZER BANDWIDTH (MID RANGE)	01 ~ 10	2
149	FRONT MIC EQUAQLIZER CENTER FREQUENCY (HIGH RANGE)	00: OFF 01: 1500 Hz 02: 1600 Hz 03: 1700 Hz 04: 18000 Hz 05: 1900 Hz 06: 2000 Hz 07: 2100 Hz 08: 2200 Hz 09: 2300 Hz 10: 2400 Hz 11: 2500 Hz 12: 2600 Hz 13: 2700 Hz 14: 2800 Hz 15: 2900 Hz 16: 3000 Hz 17: 3100 Hz 18: 3200 Hz	2
150	FRONT MIC EQUAQLIZER GAIN (HIGH RANGE)	–10 ~ +00 (or –00) ~ +10	3
151	FRONT MIC EQUAQLIZER BANDWIDTH (HIGH RANGE)	01 ~ 10	2
152	REAR MIC EQUAQLIZER CENTER FREQUENCY (LOW RANGE)	00: OFF 01: 100 Hz 02: 200 Hz 03: 300 Hz 04: 400 Hz 05: 500 Hz 06: 600 Hz 07: 700 Hz	2
153	REAR MIC EQUAQLIZER GAIN (LOW RANGE)	–10 ~ +00 (or –00) ~ +10	3
154	REAR MIC EQUAQLIZER BANDWIDTH (LOW RANGE)	01 ~ 10	2
155	REAR MIC EQUAQLIZER CENTER FREQUENCY (MID RANGE)	00: OFF 01: 700 Hz 02: 800 Hz 03: 900 Hz 04: 1000 Hz 05: 1100 Hz 06: 1200 Hz 07: 1300 Hz 08: 1400 Hz 09: 1500 Hz	2
156	REAR MIC EQUAQLIZER GAIN (MID RANGE)	–10 ~ +00 (or –00) ~ +10	3
157	REAR MIC EQUAQLIZER BANDWIDTH (MID RANGE)	01 ~ 10	2
158	REAR MIC EQUAQLIZER CENTER FREQUENCY (HIGH RANGE)	00: OFF 01: 1500 Hz 02: 1600 Hz 03: 1700 Hz 04: 18000 Hz 05: 1900 Hz 06: 2000 Hz 07: 2100 Hz 08: 2200 Hz 09: 2300 Hz 10: 2400 Hz 11: 2500 Hz 12: 2600 Hz 13: 2700 Hz 14: 2800 Hz 15: 2900 Hz 16: 3000 Hz 17: 3100 Hz 18: 3200 Hz	2
159	REAR MIC EQUAQLIZER GAIN (HIGH RANGE)	–10 ~ +00 (or –00) ~ +10	3
160	REAR MIC EQUAQLIZER BANDWIDTH (HIGH RANGE)	01 ~ 10	2
161	SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY (LOW RANGE)	00: OFF 01: 100 Hz 02: 200 Hz 03: 300 Hz 04: 400 Hz 05: 500 Hz 06: 600 Hz 07: 700 Hz	2
162	SPEECH PROCESSOR EQUAQLIZER GAIN (LOW RANGE)	–10 ~ +00 (or –00) ~ +10	3
163	SPEECH PROCESSOR EQUAQLIZER BANDWIDTH (LOW RANGE)	01 ~ 10	2
164	SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY (MID RANGE)	00: OFF 01: 700 Hz 02: 800 Hz 03: 900 Hz 04: 1000 Hz 05: 1100 Hz 06: 1200 Hz 07: 1300 Hz 08: 1400 Hz 09: 1500 Hz	2
165	SPEECH PROCESSOR EQUAQLIZER GAIN (MID RANGE)	–10 ~ +00 (or –00) ~ +10	3
166	SPEECH PROCESSOR EQUAQLIZER BANDWIDTH (MID RANGE)	01 ~ 10	2
167	SPEECH PROCESSOR EQUAQLIZER CENTER FREQUENCY (HIGH RANGE)	00: OFF 01: 1500 Hz 02: 1600 Hz 03: 1700 Hz 04: 18000 Hz 05: 1900 Hz 06: 2000 Hz 07: 2100 Hz 08: 2200 Hz 09: 2300 Hz 10: 2400 Hz 11: 2500 Hz 12: 2600 Hz 13: 2700 Hz 14: 2800 Hz 15: 2900 Hz 16: 3000 Hz 17: 3100 Hz 18: 3200 Hz	2
168	SPEECH PROCESSOR EQUAQLIZER GAIN (HIGH RANGE)	–10 ~ +00 (or –00) ~ +10	3
169	SPEECH PROCESSOR EQUAQLIZER BANDWIDTH (HIGH RANGE)	01 ~ 10	2
170	MAXIMUM OUTPUT POWER LIMIT	FT DX 9000D/Contest 0: 10 W 1: 50 W 2: 100 W 3: 200 W FT DX 9000MP 0: 50 W 1: 100 W 2: 200 W 3: 400 W	1
171	RF PWR KNOB FUNCTION	0: ALL MODE 1: CARRIER	1
172	TX-GND JACK	0: DISABLE 1: ENABLE	1
173	TUNER DRIVEING POWER	FT DX 9000D/Contest 0: 10 W 1: 50 W 2: 100 W 3: 200 W FT DX 9000MP 0: 50 W 1: 100 W 2: 200 W 3: 400 W	1
174	FULL DUPLEX OPERATION	0: SIMPLEX 1: DUPLEX	1
175	VOX OPERATION	0: MIC INPUT 1: DATA INPUT	1
176	EMERGENCY CHANNEL	0: DISABLE 1: ENABLE	1

Menu Item 142 MY BAND SELECT
Command P2 13-Byte Details
1 Byte ---------- 13-Byte



CONTROL COMMAND TABLES

FA — FREQUENCY VFO-A

	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
	;									
Read	1	2	3	4	5	6	7	8	9	10
	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 00300000 - 60000000 (Hz)

FB — FREQUENCY VFO-B

	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
	;									
Read	1	2	3	4	5	6	7	8	9	10
	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 00300000 - 60000000 (Hz)

FK — FUNCTION KEY

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

P1 1: F1
2: F2
3: F3
4: F4
5: F5
6: F6
7: F7

FR — FUNCTION RX

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

P1 0: Main (VFO-A) Band Receiver: RX, Sub (VFO-B) Band Receiver: "OFF"
1: Main (VFO-A) Band Receiver: Mute, Sub (VFO-B) Band Receiver: "OFF"
2: Main (VFO-A) Band Receiver: RX, Sub (VFO-B) Band Receiver: RX
3: Main (VFO-A) Band Receiver: Mute, Sub (VFO-B) Band Receiver: RX

FS — FAST STEP

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

P1 0: FAST Key "OFF"
1: FAST Key "ON"

FT — FUNCTION TX

	1	2	3	4	5	6	7	8	9	10
Set	F	T	P1	;						
Read	1	2	3	4	5	6	7	8	9	10
	F	T	;							
Answer	1	2	3	4	5	6	7	8	9	10
	F	T	P2	;						

P1 0: TX Band = Main (VFO-A) Band ↔ Sub (VFO-B) Band (Toggle)
1: TX Band = Sub (VFO-B) Band ↔ Main (VFO-A) Band (Toggle)
2: TX Band = Main (VFO-A) Band
3: TX Band = Sub (VFO-B) Band
P2 0: TX Band = Main (VFO-A) Band
1: TX Band = Sub (VFO-B) Band

GT — AGC FUNCTION

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

P1 0: Main (VFO-A) Band
1: Sub (VFO-B) Band
P2 0: AGC "OFF"
1: AGC "FAST"
2: AGC "MID"
3: AGC "SLOW"
4: AGC "AUTO"
P3 0: AGC "OFF"
1: AGC "FAST"
2: AGC "MID"
3: AGC "SLOW"
4: AGC "AUTO-FAST"
5: AGC "AUTO-MID"
6: AGC "AUTO-SLOW"

ID — IDENTIFICATION

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

P1 0101: FTDX9000D
0102: FTDX9000Contest
0103: FTDX9000MP

CONTROL COMMAND TABLES

IF — INFORMATION

Set	1	2	3	4	5	6	7	8	9	10	
Read	1	2	3	4	5	6	7	8	9	10	
	I	F	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	I	F	P1	P1	P1	P2	P2	P2	P2	P2	
	11	12	13	14	15	16	17	18	19	20	
	P2	P2	P2	P3	P3	P3	P3	P3	P4	P5	
	21	22	23	24	25	26	27	28	29	30	
	P6	P7	P8	P9	P9	P10	;				

P1 000-117 (Memory Channel) P2 VFO-A Frequency (Hz)
P3 Clarifier Direction +: Plus Shift, –: Minus Shift
Clarifier Offset: 0000 - 9999 (Hz)
P4 0: RX CLAR "OFF" 1: RX CLAR "ON"
P5 0: TX CLAR "OFF" 1: TX CLAR "ON"
P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
B: FM-N C: PKT-U
P7 0: VFO 1: Memory 2: Memory Tune 3: Quick Memory Bank (QMB) 4: QMB-MT
P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC
P9: Tone Number (See page 6: "CTCSS Tone Chart")
P10 0: Simplex 1: Plus Shift 2: Minus Shift

IS — IF-SHIFT

Set	1	2	3	4	5	6	7	8	9	10	
	I	S	P1	-/+	P2	P2	P2	P2	;		
Read	1	2	3	4	5	6	7	8	9	10	
	I	S	P1	;							
Answer	1	2	3	4	5	6	7	8	9	10	
	I	S	P1	-/+	P2	P2	P2	P2	;		

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 –1000 ~ +1000 Hz

KC — KEY COMMAND

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

P1 00: B-DISP "OFF"
01: VDD (Contest/MP only)
01: BIAS (Contest/MP only)
01: TEMP (Contest/MP only)
01: SWR (Contest/MP only)
P2 0 (Fixed)
P3 0: OFF
1: ON

KM — KEYER MEMORY

Set	1	2	3	4	5	6	7	~	53	**	
	K	M	P1	P2	P2	P2	P2	~	P2	;	
Read	1	2	3	4	5	6	7	8	9	10	
	K	M	P1	;							
Answer	1	2	3	4	5	6	7	~	53	**	
	K	M	P1	P2	P2	P2	P2	~	P2	;	

P1 1 - 5 : Keyer Memory Channel Number
P2 Message Characters (up to 50 characters)

KP — KEY PITCH

Set	1	2	3	4	5	6	7	8	9	10	
	K	P	P1	P1	;						
Read	1	2	3	4	5	6	7	8	9	10	
	K	P	;								
Answer	1	2	3	4	5	6	7	8	9	10	
	K	P	P1	P1	;						

P1 00: 300 Hz 07: 650 Hz 14: 1000 Hz
01: 350 Hz 08: 700 Hz 15: 1050 Hz
02: 400 Hz 09: 750 Hz
03: 450 Hz 10: 800 Hz
04: 500 Hz 11: 850 Hz
05: 550 Hz 12: 900 Hz
06: 600 Hz 13: 950 Hz

KR — KEYER

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

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

KS — KEY SPEED

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

P1 004 - 060 (WPM)

KY — CW KEYING

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

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

CONTROL COMMAND TABLES

LK — LOCK

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

P1 0: DIAL Lock "OFF"
1: DIAL Lock "ON"

LM — LOAD MESSEGE

	1	2	3	4	5	6	7	8	9	10
Set	L	M	P1	P2	;					
Read	L	M	P1	;						
Answer	L	M	P1	P2	;					

P1 0: DVS
1: P. B

P2 When P1=0
0: DVS (Recording Stop)
1: DVS (CH "1" Recording Start/Stop)
2: DVS (CH "2" Recording Start/Stop)
3: DVS (CH "3" Recording Start/Stop)
4: DVS (CH "4" Recording Start/Stop)
5: DVS (CH "5" Recording Start/Stop)

When P1=1
0: P.B (Recording Stop)
1: P.B (Recording Start)

MA — MEMORY CHANNEL TO VFO-A

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

MC — MEMORY CHANNEL

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

P1 001 - 117: Memory Channel Number
001 - 099: Regular Memory Channel
100: P1L
101: P1U
≀
116: P9L
117: P9U

MD — OPERATING MODE

	1	2	3	4	5	6	7	8	9	10
Set	M	D	P1	P2	;					
Read	M	D	P1	;						
Answer	M	D	P1	P2	;					

P1 0: Main (VFO-A) Band
1: Sub (VFO-B) Band

P2 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
B: FM-N C: PKT-U

MG — MIC GAIN

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

P1 000 - 255

MK — MODE KEY

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

P1 KEY 0: LSB
1: USB
2: CW
3: AM
4: FM
5: RTTY
6: PKT

ML — MONITOR LEVEL

	1	2	3	4	5	6	7	8	9	10
Set	M	L	P1	P2	P2	P2	;			
Read	M	L	P1	;						
Answer	M	L	P1	P2	P2	P2	;			

P1 0: MONI "ON/OFF"
1: MONI Level

P2 When P1=0
000: MONI "OFF"
001: MONI "ON"
When P1=1
001 - 255

CONTROL COMMAND TABLES

MR — MEMORY CHANNEL READ

	1	2	3	4	5	6	7	8	9	10
Set										
Read	1	2	3	4	5	6	7	8	9	10
	M	**R**	P1	P1	P1	;				
Answer	1	2	3	4	5	6	7	8	9	10
	M	**R**	P1	P1	P1	P2	P2	P2	P2	P2
	11	12	13	14	15	16	17	18	19	20
	P2	P2	P2	P3	P3	P3	P3	P3	P4	P5
	21	22	23	24	25	26	27	28	29	30
	P6	P7	P8	P9	P9	P10	;			

P1 Memory Channel Number P2 Memory Channel Frequency (Hz)
P3 Clarifier Direction +: Plus Shift, –: Minus Shift
Clarifier Offset: 0000 - 9999 (Hz)
P4 0: RX CLAR "OFF" 1: RX CLAR "ON"
P5 0: TX CLAR "OFF" 1: TX CLAR "ON"
P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
B: FM-N C: PKT-U
P7 0: VFO 1: Memory
P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC
P9: Tone Number (See page 6: "CTCSS Tone Chart")
P10 0: Simplex 1: Plus Shift 2: Minus Shift

MS — METER SW

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

P1 0: PO
1: MIC
2: IDD
3: SWR
4: COMP

MW — MEMORY CHANNEL WRITE

	1	2	3	4	5	6	7	8	9	10
Set	**M**	**W**	P1	P1	P1	P2	P2	P2	P2	P2
	11	12	13	14	15	16	17	18	19	20
	P2	P2	P2	P3	P3	P3	P3	P3	P4	P5
	21	22	23	24	25	26	27	28	29	30
	P6	P7	P8	P9	P9	P10	;			
Read	1	2	3	4	5	6	7	8	9	10
Answer	1	2	3	4	5	6	7	8	9	10

P1 Memory Channel Number P2 Memory Channel Frequency (Hz)
P3 Clarifier Direction +: Plus Shift, –: Minus Shift
Clarifier Offset: 0000 - 9999 (Hz)
P4 0: RX CLAR "OFF" 1: RX CLAR "ON"
P5 0: TX CLAR "OFF" 1: TX CLAR "ON"
P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
B: FM-N C: PKT-U
P7 0: (Fixed)
P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC
P9: Tone Number (See page 6: "CTCSS Tone Chart")
P10 0: Simplex 1: Plus Shift 2: Minus Shift

MX — MOX SET

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

P1 0: MOX "OFF"
1: MOX "ON"

NA — NARROW

	1	2	3	4	5	6	7	8	9	10
Set	**M**	**A**	P1	P2	;					
Read	1	2	3	4	5	6	7	8	9	10
	N	**A**	P1	;						
Answer	1	2	3	4	5	6	7	8	9	10
	N	**A**	P1	P2	;					

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: OFF
1: ON

NB — NOISE BLANKER STATUS

	1	2	3	4	5	6	7	8	9	10
Set	**N**	**B**	P1	P2	;					
Read	1	2	3	4	5	6	7	8	9	10
	N	**B**	P1	;						
Answer	1	2	3	4	5	6	7	8	9	10
	N	**B**	P1	P2	;					

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: Noise Blanker "OFF"
1: Noise Blanker "ON"
2: Noise Blanker (Wide) "ON"

NL — NOISE BLANKER LEVEL

	1	2	3	4	5	6	7	8	9	10
Set	**N**	**L**	P1	P2	P2	P2	;			
Read	1	2	3	4	5	6	7	8	9	10
	N	**L**	P1	;						
Answer	1	2	3	4	5	6	7	8	9	10
	N	**L**	P1	P2	P2	P2	;			

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 000 - 255

NR — NOISE REDUCTION

	1	2	3	4	5	6	7	8	9	10
Set	**N**	**R**	P1	P2	;					
Read	1	2	3	4	5	6	7	8	9	10
	N	**R**	P1	;						
Answer	1	2	3	4	5	6	7	8	9	10
	N	**R**	P1	P2	;					

P1 0: Main Band (VFO-A) Receiver
1: Sub Band (VFO-B) Receiver
P2 0: Noise Reduction "OFF"
1: Noise Reduction "ON"

CONTROL COMMAND TABLES

OI — OPPOSITE BAND INFORMATION

	1	2	3	4	5	6	7	8	9	10
Set										
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	P2	P2	P2	P2	P2
	11	12	13	14	15	16	17	18	19	20
	P2	P2	P2	P3	P3	P3	P3	P3	P4	P5
	21	22	23	24	25	26	27	28	29	30
	P6	P7	P8	P9	P9	P10	;			

P1 Current Memory Channel P2 VFO-B Frequency (Hz)
P3 Clarifier Direction +: Plus Shift, –: Minus Shift
Crarifier Offset: 0000 - 9999 (Hz)
P4 0: RX CLAR "OFF" 1: RX CLAR "ON"
P5 0: TX CLAR "OFF" 1: TX CLAR "ON"
P6 MODE 1: LSB 2: USB 3: CW 4: FM 5: AM 6: FSK (RTTY-LSB)
7: CW-R 8: PKT-L 9: FSK-R (RTTY-USB) A: PKT-FM
B: FM-N C: PKT-U
P7 0: VFO 1: Memory
P8 0: CTCSS "OFF" 1: CTCSS ENC/DEC 2: CTCSS ENC
P9: Tone Number (See page 6: "CTCSS Tone Chart")
P10 0: Simplex 1: Plus Shift 2: Minus Shift

OS — OFFSET (REPEATER SHIFT)

	1	2	3	4	5	6	7	8	9	10
Set	**O**	**S**	P1	P2	;					
Read	1	2	3	4	5	6	7	8	9	10
	O	**S**	P1	;						
Answer	1	2	3	4	5	6	7	8	9	10
	O	**S**	P1	P2	;					

P1 0: Main (VFO-A) Band
1: Sub (VFO-B) Band
P2 0: Simplex
1: Plus Shift
2: Minus Shift
※: FM mode only

PA — PRE-AMP (IPO)

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

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: IPO "ON"
1: IPO "OFF"

PB — PLAY BACK

	1	2	3	4	5	6	7	8	9	10
Set	**P**	**B**	P1	P2	;					
Read	1	2	3	4	5	6	7	8	9	10
	P	**B**	P1	;						
Answer	1	2	3	4	5	6	7	8	9	10
	P	**B**	P1	P2	;					

P1 0: DVS P2 When P1=0 When P1=1
1: P.B 0: DVS (Playback Stop) 0: P.B (Playback Stop)
1: DVS (CH "1" Playback Start) 1: P.B (Playback Start)
2: DVS (CH "2" Playback Start)
3: DVS (CH "3" Playback Start)
4: DVS (CH "4" Playback Start)
5: DVS (CH "5" Playback Start)

PC — POWER CONTROL

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

P1 000 - 255

PL — SPEECH PROCESSOR LEVEL

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

P1 000 - 255

PR — SPEECH PROCESSOR

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

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

PS — POWER SWITCH

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

P1 0: POWER "OFF"
1: POWER "ON"

CONTROL COMMAND TABLES

QI — QMB STORE

	1	2	3	4	5	6	7	8	9	10
Set	Q	I	;							
Read										
Answer										

QR — QMB RECALL

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

QS — QUICK SPLIT

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

RA — RF ATTENUATOR

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

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver

P2 0: OFF
1: 3 dB
2: 6 dB
3: 12 dB
4: 18 dB

RC — CLAR CLEAR

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

RD — CLAR MINUS OFFSET

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

P1 0000 - 9999 (Hz)

RF — ROOFING FILTER

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

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver

P2 0: AUTO
1: 15 kHz
2: 6 kHz
3: 3 kHz

P3 1: 15 kHz
2: 6 kHz
3: 3 kHz
4: AUTO - 15 kHz
5: AUTO - 6 kHz
6: AUTO - 3 kHz

RG — RF GAIN

	1	2	3	4	5	6	7	8	9	10
Set	R	G	P1	P2	P2	P2	;			
Read	R	G	P1	;						
Answer	R	G	P1	P2	P2	P2	;			

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver

P2 000 - 255

RI — RADIO INFORMATION

	1	2	3	4	5	6	7	8	9	10
Set										
Read	R	I	P1	;						
Answer	R	I	P1	P2	;					

P1 0: Hi-SWR
1: MIC-EQ
2: CLASS-A
3: REC
4: PLAY
5: DUAL

P2 0: OFF
1: ON

CONTROL COMMAND TABLES

RL — NOISE REDUCTION LEVEL

	1	2	3	4	5	6	7	8	9	10
Set	R	L	P1	P2	P2	;				
Read	R	L	P1	;						
Answer	R	L	P1	P2	P2	;				

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 01 - 15

RM — READ METER

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

P1 00: Current Main Meter
01: Current Sub Meter
02: Current VDD/BIAS Meter (Contest/MP versions)
03: Current TEMP/SWR Meter (Contest/MP versions)
04: S Meter (Main)
05: S Meter (Sub)
06: COMP Meter
07: ALC Meter
08: PO Meter
09: SWR Meter
10: ID Meter
11: VDD Meter
12: MIC Meter
13: BIAS Meter
14: TEMP Meter

P2 000 - 255

RO — ROTATOR

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

P1 0: OFF
1: Counter Clockwise
2: Clockwise
3: SPEED 1 % DOWN
4: SPEED 1 % UP
P2 DIRECTION (0 - 450 degree)
P3 SPEED (0 - 100 %)

RS — RADIO STATUS

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

P1 0: NORMAL MODE
1: MENU MODE
2: MENU DATA READ (from CF Card)

RT — CLAR

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

P1 0: RX Clarifier "OFF"
1: RX Clarifier "ON"

RU — RX CLARIFIER PLUS OFFSET

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

P1 0000 - 9999 (Hz)

SC — SCAN

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

P1 0: Scan "OFF"
1: Scan "ON" (Upward)
2: Scan "ON" (Downward)

SD — CW BREAK-IN DELAY TIME

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

P1 0000: Full Break-in
0001 - 5000 mS

SF — SUB VFO-B KNOB FUNCTION

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

P1 00: OFF (Read only)
01: BAND (Main (VFO-A) Band)
02: MHz (Main (VFO-A) Band)
03: GRP
04: MCH
05: BAND (Sub (VFO-B) Band)
06: MHz (Sub (VFO-B) Band)
07: FAST (Sub (VFO-B) Band)
08: A/B
09: CLAR
10: MODE (Sub (VFO-B) Band)

CONTROL COMMAND TABLES

SH — WIDTH

	1	2	3	4	5	6	7	8	9	10
Set	**S**	**H**	P1	P2	P2	;				
Read	**S**	**H**	P1	;						
Answer	**S**	**H**	P1	P2	P2	;				

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 00 (Counter Clockwise) - 31 (Clockwise), 16 (Center)

SM — S-METER READING

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

P1 0: Main (VFO-A) Band S-meter
1: Sub (VFO-B) Band S-meter
P2 000 - 255

SQ — SQUELCLH LEVEL

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

P1 0: Main (VFO-A) Band
1: Sub (VFO-B) Band
P2 000 - 255

SV — SWAP VFO

	1	2	3	4	5	6	7	8	9	10
Set	**S**	**V**	;							
Read										
Answer										

TS — TXW

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

P1 0: TXW "OFF"
1: TXW "ON"

TX — TX SET

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

P1 0: RADIO TX "OFF" CAT TX "OFF"
1: RADIO TX "OFF" CAT TX "ON"
2: RADIO TX "ON" CAT TX "OFF" (Answer)

UL — PLL UNLOCK STATUS

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

P1 0: PLL "Lock"
1: PLL "Unlock"

UP — UP

	1	2	3	4	5	6	7	8	9	10
Set	**U**	**P**	;							
Read										
Answer										

VD — VOX DELAY TIME

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

P1 0000 - 5000 mS (20 mS multiples)

CONTROL COMMAND TABLES

VF — VRF FILTER

	1	2	3	4	5	6	7	8	9	10
Set	V	F	P1	P2	P3	P4	;			
Read	V	F	P1;							
Answer	V	F	P1	P2	P5	P5	P5	P6	;	

P1 0: Main (VFO-A) Band Receiver
1: Sub (VFO-B) Band Receiver
P2 0: OFF
1: ON
2: Default set
P3 +: Plus Shift
–: Minus Shift
P4 0 - 9 (Step)
P5 000 - 255
P6 0: VRF
1: µTUNE

VG — VOX GAIN

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

P1 000 - 255

VM — VFO-A TO MEMORY CHANNEL

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

VS — VFO SELECT

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

P1 0: VFO-A
1: VFO-B

VX — VOX STATUS

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

P1 0: VOX “OFF”
1: VOX “ON”

XT — TX CLAR

	1	21	3	4	5	6	7	8	9	10
Set	X	T	P1	;						
Read	X	T	;							
Answer	X	T	P1	;						

P1 0: TX CLAR “OFF”
1: TX CLAR “ON”

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