KENWOOD

TS-950S
TS-950S DIGITAL

EXTERNAL CONTROL INSTRUCTION MANUAL

KENWOOD CORPORATION

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1. SPECIFICATIONS

■ Interface

Communication method ... Serial interface, fullduplex
Transfer rate ..... 4800 BPS (bits per second)
Synchronization ..... Start-stop (Asynchronous)
Bit construction ..... 1 start bit, 8 character bits, 2 stop bits
Parity ..... None
Signal format ..... TTL level

■ Terminal Connections

Pin No.	Signal Name		I/O
1	GND	Signal ground	
2	$\overline{\text{TXD}}$	Transmit data	Output
3	$\overline{\text{RXD}}$	Receive data	Input
4	CTS	Transmit enable	Input
5	RTS	Receive enable	Output
6	NC	No connection	

GND: This is the signal ground terminal.

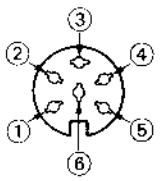
$\overline{\text{TXD}}$: The transmit data is the serial data from the transceiver to the computer. The output utilizes negative logic.

$\overline{\text{RXD}}$: The receive data is the serial data from the computer to the transceiver. The input utilizes negative logic.

CTS: This signal is supplied from the computer, and is used to inhibit transmit data from the transceiver when the computer is not ready to receive. The input utilizes positive logic. (Transmit data is stopped by a logic low.)

RTS: This signal is applied to the computer, and is used to inhibit transmit data from the computer when the transceiver is not ready to receive it. The output utilizes positive logic. (Inhibit is requested when the level is low.)

Connector pin configuration



(Viewed from the rear)

2. OPERATION

Caution:
Turn the POWER switch OFF before making connections.

2-1. PRECAUTIONS FOR COMPUTER-CONNECTED OPERATION

When connecting the transceiver with a computer, check the following points.

1. Are the connections correct ?
   The transceiver output should be connected to the computer input and the transceiver input to the computer output.
   Example:
   Transceiver's transmission data — Computer's receive data
   Transceiver's RTS — Computer's CTS
2. Is the computer's transmission rate 4800 BPS (bits per second)?
3. Is the computer's bit configuration correct?
   1 start bit, 8 character bits, 2 stop bits, no parity.

2-2. CONTROL OPERATION

Most computers handle data in the form of "bits", and "bytes". A bit is the smallest piece of information that the computer can handle. A byte is composed of 8 bits. This is the most convenient form for most computer data. This data may be sent in the form of either serial or parallel data strings. The parallel mode is faster, but more complicated, while the serial form is slower it requires less complicated equipment, and therefore is less expensive.

Serial transmission of data occurs over a single line using time-division methods. This use of a single line also offers the advantage of reducing the number of errors due to line noise.

For control of the transceiver via the computer only three lines are theoretically required: transmit data ($\overline{\text{TXD}}$), receive data ($\overline{\text{RXD}}$), and ground (GND). From a practical standpoint it is also necessary to incorporate some means of controlling when this data transfer will occur. We don't want the computer and transceiver sending information at the same time! This is controlled by the RTS and the CTS lines.

The IF-232C is used in conjunction to provide voltage conversion. RS-232C deals in voltages above and below TTL levels, and must be converted to prevent damage to the transceiver. This interface/conversion is handled by the IF-232C.

The actual command sequence would be similar to those described below:

For example, the radio is placed into the transmit mode whenever the character string "TX" is sent from the computer. The character string "TX" is called a command. It tells the transceiver to do something. There are 37 different commands available for control of the transceiver. These commands may be incorporated into a computer program written in BASIC or any other high level language such as PASCAL, etc. Programming methods vary from computer to computer so please refer to the instruction manuals included with your terminal program, and computer.

2-3. COMMANDS

The illustration below demonstrates that a command is composed of two alphabetical characters, various parameters, and the terminator to signal the end of the command.

Example:

FA 00007000000 ; ..... Command to set VFO A to 7 MHz.

Command Parameters Terminator

2-3-1. Command Description

A command may consist of either lower or upper case alphabetical characters.

2-3-2. Parameter Description (Refer to the parameter list.)

Parameters are used to specify specific information necessary to implement the desired command. The exact number of parameters necessary for each command is predetermined. If a particular parameter is not applicable to the transceiver you are controlling the parameter digits should be filled using any character except the terminator ";".

For example the MC (Memory channel selector) command uses two parameters, 1 column to specify the memory bank number, and 2 columns to specify the memory channel number. To specify CH9 of memory bank number 1, the command would be:

"MC109;" ..... The memory bank number is not necessary when programming the TS-950 so the command could be as given above "MC109" or as:

"MC_09;" ..... In this case a blank has been used to fill the parameter block for the memory bank number.

The following are examples of bad commands:

"MC09;" ..... No memory bank specification (not enough parameters)

"MC19;" ..... Not enough digits in the memory channel parameter, i.e. CH9 should be given as "09".

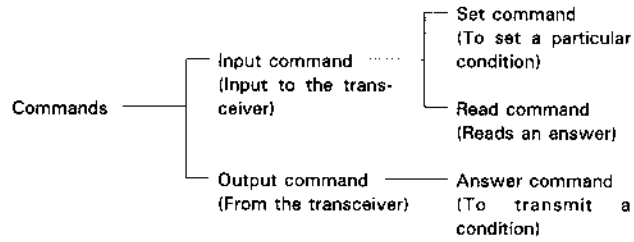
"MC_1_09_;" ..... Unnecessary characters between parameters.

"MC1009" ..... No terminator

2-3-3. Terminator

To signal the end of a command it is necessary to use a special character. The character that has been selected for use is the semicolon ";". This special character must appear as the last character in a particular command string.

2-3-4. Types of Commands



Commands can be classified as shown in the chart above. For example, with the FA (Frequency of VFO A) command.

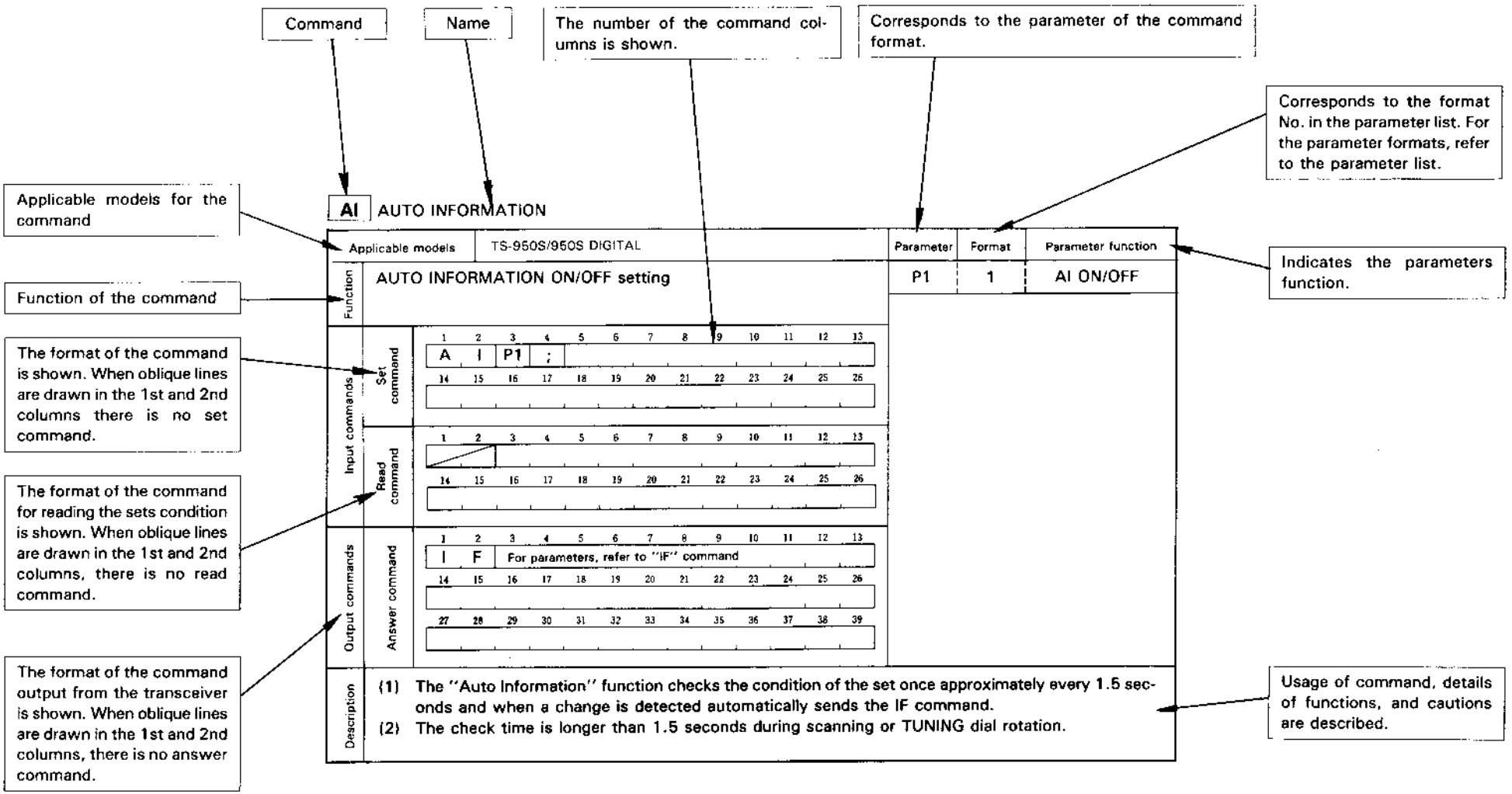
- To set the frequency at 7 MHz, the command sent from the computer to the transceiver is:
  "FA00007000000;" .....(Set command)
- To read the frequency of VFO A, the command sent from the computer to the transceiver is:
  "FA;" .....(Read command)
- When the read command, above, has been sent, the command returned to the computer is:
  "FA00007000000;" .....(Answer command)

2-3-5. Error Messages

In addition to the answer command, the transceiver will send one of the following error messages:

?;	○ When the command syntax is incorrect. ○ When the 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;	When a communication error occurs, such as an overrun error or framing error occurs during serial data transmissions.
O;	When the receive data is sent but processing cannot be completed.

2-3-6. How to read the command tables



2-3-7. Parameter list

Format No.	Name	Number of columns	Format
1	SW	1	0 = OFF 1 = ON
2	MODE	1	1 = LSB 4 = FM 2 = USB 5 = AM 3 = CW 6 = FSK
3	FUNCTION	1	0 = VFO A 2 = MEMORY 1 = VFO B
4	FREQUENCY	11	Represented in Hz, using 11 columns. **Example:** 00007000000 is 7 MHz 10 GHz 1 MHz 1 kHz 1 Hz
5	RIT/XIT FREQUENCY	5	The first column is "+" or "−", and the remaining four columns indicate the frequency in Hz. **Example:** +5320 is +5.32 kHz
6	—	—	
7	MEMORY CHANNEL	2	Represented in two columns. **Example:** 02 is CH2
8	—	—	
9	MEMORY CHANNEL SPLIT SPECIFICATION	1	0 = Receive 1 = Transmit
10	MEMORY LOCKOUT	1	0 = Not locked out 1 = Locked out
11	TX/RX	1	0 = Receive 1 = Transmit
12	PASSBAND	2	Represented using two columns, from 00 to 21. "00" is the normal or wide position and "21" is the narrowest bandwidth.
13	—	—	
14	TONE FREQUENCY	2	Represented using two columns, from 01 to 39.
15	—	—	
16	MODEL NO.	3	Three column number specifying each set.
17	—	—	
18	—	—	
19	—	—	
20	—	—	
21	—	—	
22	METER	4	0000 (MIN)↔0030 (MAX)
23	SUB SW	1	0 = SUB: OFF, TF-W: OFF 1 = SUB: ON, TF-W: OFF 2 = SUB: ON, TF-W: ON
24	METER SW	1	0 = NO SELECT 3 = ALC 1 = SWR 4 = IC 2 = COMP
25	PITCH	2	Represented using two columns, from 00 to 52. "00" is the low tone and "52" is the high tone.
26	FILTER	3	000 = NO SELECT 002 = FM WIDE 003 = FM NARROW 005 = AM 007 = SSB 008 = SSB NARROW 009 = CW 010 = CW NARROW

2-3-8. Command Use Precautions

1. The control characters (00 to 1FH) when included in receive data are ignored.
2. Program execution may be delayed during rapid encoder rotation.
3. Receive data is not processed when directly entering the frequency from the keyboard.
4. To enter the transmitter frequency for split frequency operations using the MW command, enter any number from 1 thru 6 as the mode and either a "0" or a "1" to indicate the memory channel lockout statue.

2-3-9. Command List

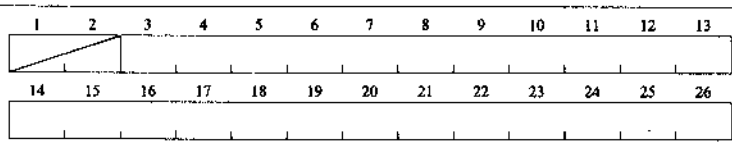
Command	Function	Page
AI	AUTO INFORMATION	7
DN/UP	DOWN/UP	7
DT	DATA	8
FA/FB/	FREQUENCY VFO A/FREQUENCY	8
FC	VFO B/FREQUENCY SUB	
FL	FILTER	9
FR/FT	FUNCTION RX/TX	9
ID	ID	10
IF	INFORMATION	10
LK	LOCK	11
MC	MEMORY CHANNEL	11
MD	MODE	12
MR	MEMORY READ	12
MW	MEMORY WRITE	13
MX	AIP	13
PT	PITCH	14
RC	RIT CLEAR	14
RD/RU	RIT DOWN/RIT UP	15
RM	READ METER	15
RT	RIT	16
RX/TX	RX/TX	16
SB	SUB	17
SC	SCAN	17
SH/SL	SLOPE TUNE HIGH/LOW	18
SM	S METER	18
ST	STEP	19
TN	TONE NUMBER	19
TO	TONE	20
VB	VBT	20
VR	VOICE RECALL	21
XT	XIT	21

AI AUTO INFORMATION

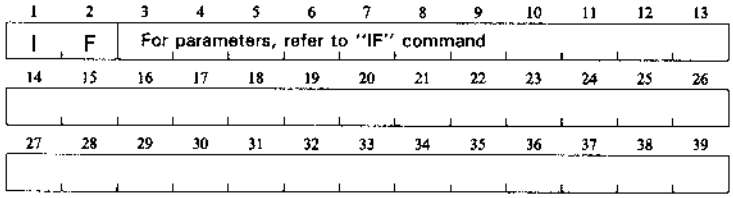
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	AUTO INFORMATION ON/OFF setting	P1	1	AI ON/OFF

Input commands — Set command

Input commands — Read command



Output commands — Answer command



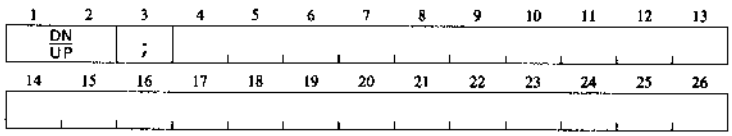
Description

(1) The "Auto Information" function checks the condition of the set once approximately every 1.5 seconds and when a change is detected automatically sends the IF command.
(2) The check time is longer than 1.5 seconds during scanning or TUNING dial rotation.

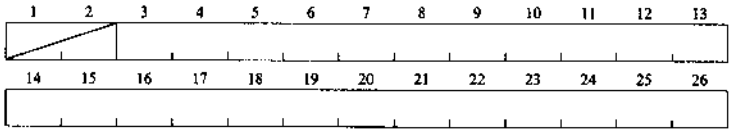
DN UP DOWN/UP

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	Same function as microphone UP/DOWN switch			

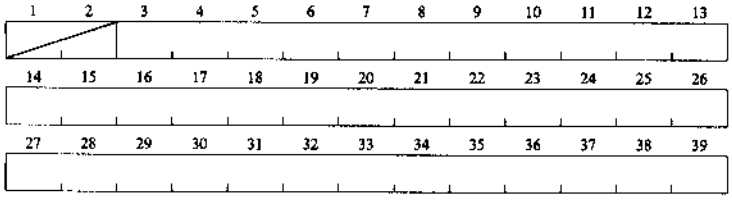
Input commands — Set command



Input commands — Read command



Output commands — Answer command



Description

DT DATA

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	DATA mode ON/OFF setting	P1	1	DATA ON/OFF

Input commands

Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
D	T	P1	;									

14	15	16	17	18	19	20	21	22	23	24	25	26

Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
D	T	;										

14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands

Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
D	T	P1	;									

14	15	16	17	18	19	20	21	22	23	24	25	26

27	28	29	30	31	32	33	34	35	36	37	38	39

Description

FA FB FC FREQUENCY VFO A/FREQUENCY VFO B/FREQUENCY SUB

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	VFO A, VFO B and SUB frequency selection and readout	P1	4	FREQUENCY

Input commands

Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
FA/FB/FC	P1											

14	15	16	17	18	19	20	21	22	23	24	25	26
;												

Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
FA/FB/FC	;											

14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands

Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
FA/FB/FC	P1											

14	15	16	17	18	19	20	21	22	23	24	25	26
;												

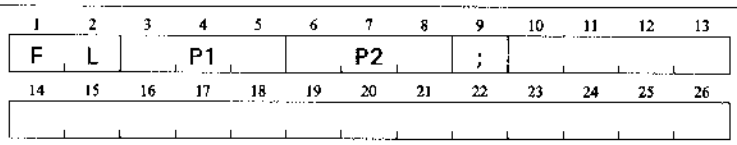
27	28	29	30	31	32	33	34	35	36	37	38	39

Description

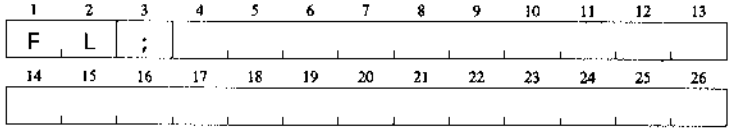
FL FILTER

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	FILTER selection	P1, P2	26	FILTER

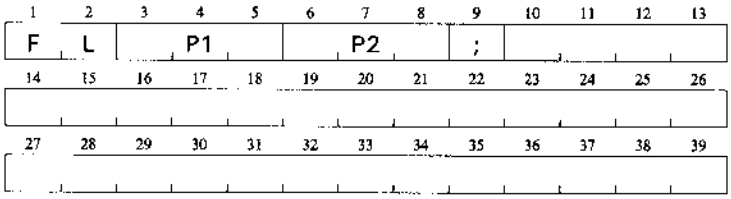
Input commands — Set command



Input commands — Read command



Output commands — Answer command

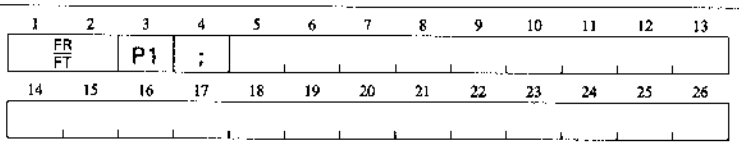


Description

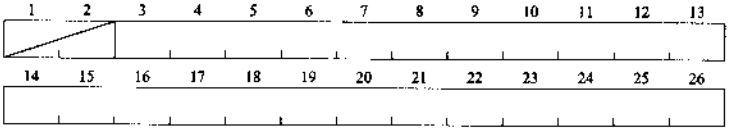
FR FT FUNCTION RX, FUNCTION TX

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	VFO A, VFO B and MEMORY CHANNEL setting	P1	3	FUNCTION

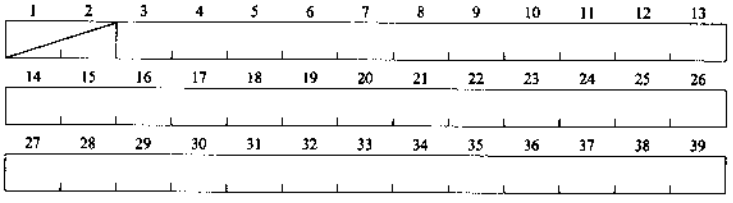
Input commands — Set command



Input commands — Read command



Output commands — Answer command



Description

ID ID

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	Model No. readout transceiver recognization.	P1	16	MODEL No. TS-950 :008

Input commands

Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26

Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
I	D	;										
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands

Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
I	D	P1			;							
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39

Description

IF INFORMATION

Applicable models	TS-950S/950S DIGITAL
Function	Display of transceivers current condition

Parameter	Format	Parameter function
P1	4	DISPLAY FREQUENCY
P2	–	
P3	5	RIT FREQUENCY
P4	1	RIT ON/OFF
P5	1	XIT ON/OFF
P6	–	
P7	7	MEMORY CHANNEL
P8	11	TX/RX
P9	2	MODE
P10	3	FUNCTION
P11	1	SCAN ON/OFF
P12	1	SPLIT ON/OFF
P13	1	TONE ON/OFF
P14	14	TONE FREQUENCY
P15	–	

Input commands

Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26

Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
I	F	;										
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands

Answer command

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

Description

LK LOCK

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	LOCK ON/OFF setting and display	P1	1	LOCK ON/OFF

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
L	K	P1	;									

14	15	16	17	18	19	20	21	22	23	24	25	26

Input commands — Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
L	K	;										

14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
L	K	P1	;									

14	15	16	17	18	19	20	21	22	23	24	25	26

27	28	29	30	31	32	33	34	35	36	37	38	39

Description

MC MEMORY CHANNEL

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	Memory channel setting	P1	—	
		P2	7	MEMORY CHANNEL

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	C	—	P2	;								

14	15	16	17	18	19	20	21	22	23	24	25	26

Input commands — Read command

1	2	3	4	5	6	7	8	9	10	11	12	13

14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13

14	15	16	17	18	19	20	21	22	23	24	25	26

27	28	29	30	31	32	33	34	35	36	37	38	39

Description

MD MODE

Applicable models	TS-950S/950S DIGITAL

Function: Mode setting

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	D	P1	;									
14	15	16	17	18	19	20	21	22	23	24	25	26

Input commands — Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39

Parameter	Format	Parameter function
P1	2	MODE

Description

MR MEMORY READ

Applicable models	TS-950S/950S DIGITAL

Function: Memory display

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26

Input commands — Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	R	P1	_	P3		;						
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	R	P1	_	P3				P4				
14	15	16	17	18	19	20	21	22	23	24	25	26
				P5	P6	P7	P8		_	;		
27	28	29	30	31	32	33	34	35	36	37	38	39

Parameter	Format	Parameter function
P1	9	SPLIT SPECIFICATION
P2	—	
P3	7	MEMORY CHANNEL
P4	4	FREQUENCY
P5	2	MODE
P6	10	MEMORY LOCKOUT
P7	1	TONE ON/OFF
P8	14	TONE FREQUENCY
P9	—	

Description

All parameters are set to OFF when the memory channel is vacant.
To recall the lowest operating frequency of the section use P1 = 0, and to recall the highest operating frequency use P1 = 1.

MW MEMORY WRITE

Applicable models	TS-950S/950S DIGITAL

Function: Memory entry

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	W	P1	—	P3				P4				

14	15	16	17	18	19	20	21	22	23	24	25	26
				P5	P6	P7	P8		—	;		

Input commands — Read command

1	2	3	4	5	6	7	8	9	10	11	12	13

14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13

14	15	16	17	18	19	20	21	22	23	24	25	26

27	28	29	30	31	32	33	34	35	36	37	38	39

Parameter	Format	Parameter function
P1	9	SPLIT SPECIFICATION
P2	—	
P3	7	MEMORY CHANNEL
P4	4	FREQUENCY
P5	2	MODE
P6	10	MEMORY LOCKOUT
P7	1	TONE ON/OFF
P8	14	TONE FREQUENCY
P9	—	

Description

(1) The MW command is valid when all parameters have be correctly entered.
(2) When all effective frequency columns are "0", the memory is set to an open channel.
(3) When the split channel is open, the transceiver will be set for the same transmit and receive frequencies, i.e. simplex.
(4) To recall the lowest operating frequency of the section use P1 = 0, and to recall the highest operating frequency use P1 = 1.

MX AIP (Advanced Intercept Point)

Applicable models	TS-950S/950S DIGITAL

Function: AIP ON/OFF setting

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	X	P1	;									

14	15	16	17	18	19	20	21	22	23	24	25	26

Input commands — Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	X	;										

14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
M	X	P1	;									

14	15	16	17	18	19	20	21	22	23	24	25	26

27	28	29	30	31	32	33	34	35	36	37	38	39

Parameter	Format	Parameter function
P1	1	AIP ON/OFF

Description

PT PITCH

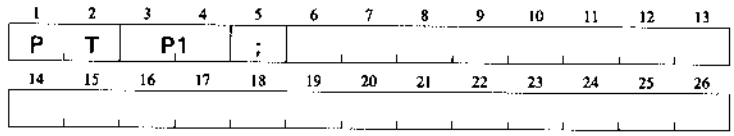
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
		P1	25	PITCH

Function

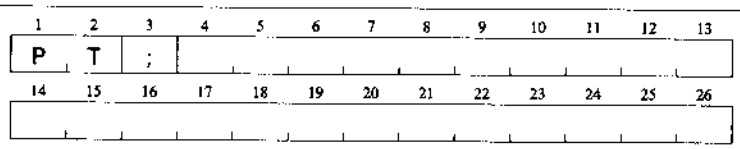
PITCH setting

Input commands

Set command

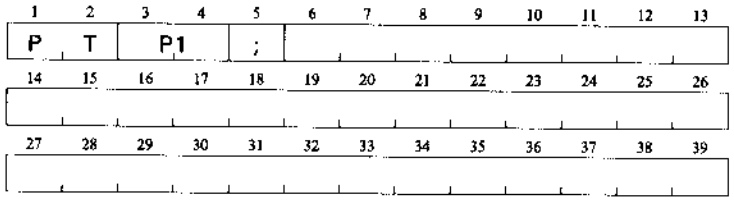


Read command



Output commands

Answer command



Description

RC RIT CLEAR

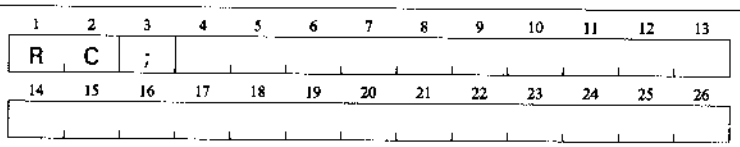
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function

Function

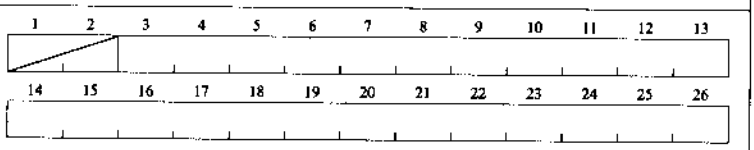
RIT/XIT frequency clearance

Input commands

Set command

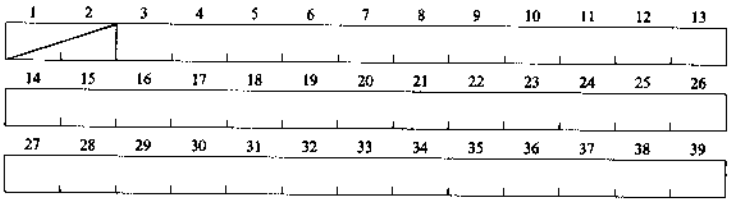


Read command



Output commands

Answer command



Description

When this command is executed both the RIT and the XIT will be cleared.

RD RU RIT DOWN/UP

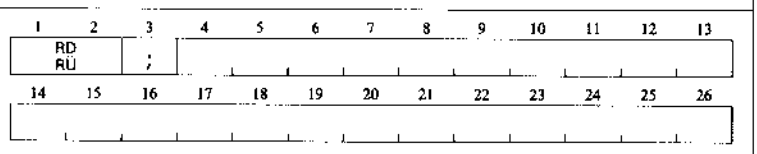
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function

Function

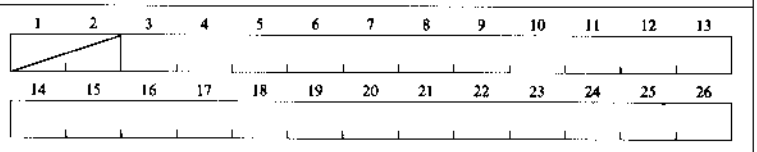
RIT/XIT frequency UP/DOWN

Input commands

Set command

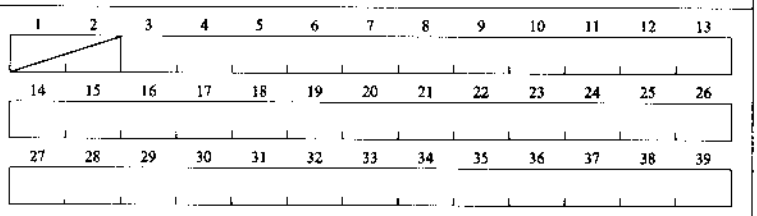


Read command



Output commands

Answer command



Description

When this command is executed both the RIT and the XIT will be changed.

RM READ METER

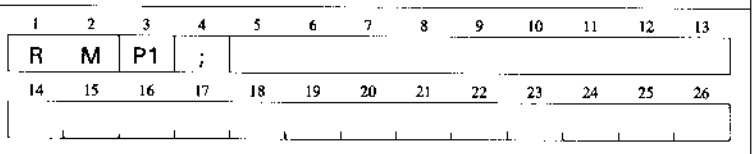
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
		P1	24	METER selection
		P2	22	METER level

Function

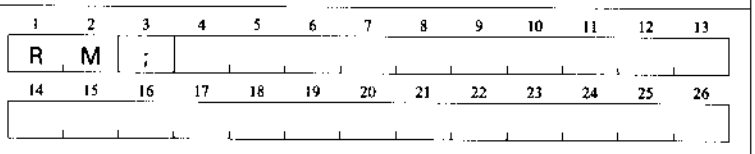
METER selection and readout

Input commands

Set command

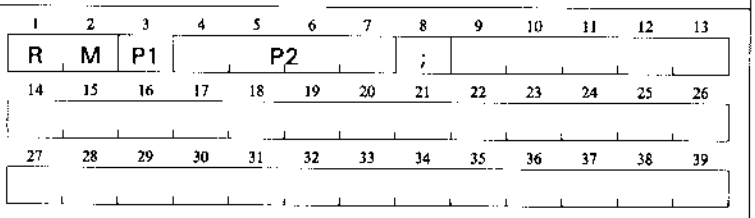


Read command



Output commands

Answer command



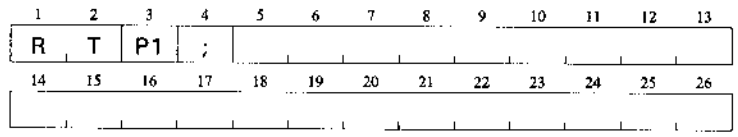
Description

RT RIT

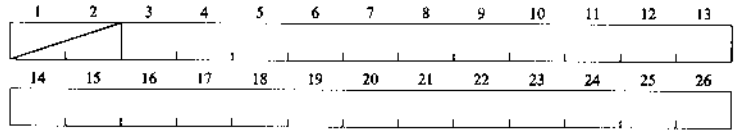
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	RIT ON/OFF setting	P1	1	RIT ON/OFF

Input commands

Set command

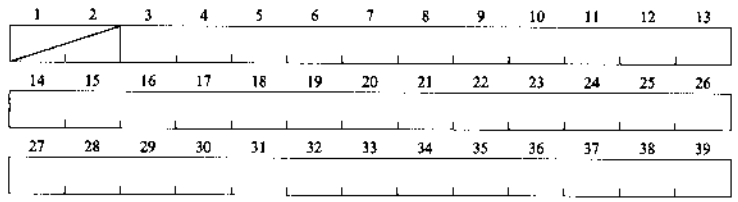


Read command



Output commands

Answer command



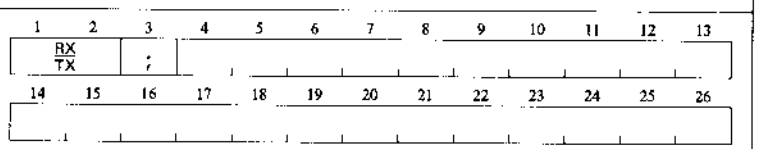
Description

RX TX RX/TX

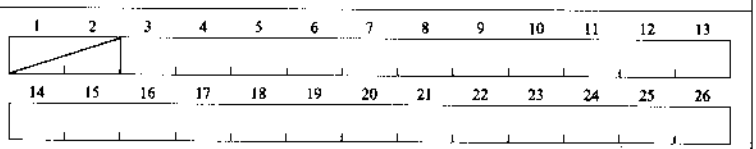
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	RX: For receive operation TX: For transmit operation			

Input commands

Set command



Read command



Output commands

Answer command

Description: Place the REC/SEND switch to REC.

SB SUB

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	SUB ON/OFF setting and TF-W ON/OFF setting	P1	23	SUB ON/OFF TF-W ON/OFF

Input commands

Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
S	B	P1	;									
14	15	16	17	18	19	20	21	22	23	24	25	26

Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
S	B	;										
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands

Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
S	B	P1	;									
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39

Description

SC SCAN

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	Scan ON/OFF setting	P1	1	SCAN ON/OFF

Input commands

Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
S	C	P1	;									
14	15	16	17	18	19	20	21	22	23	24	25	26

Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands

Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39

Description

SH SL SLOPE TUNE HIGH/SLOPE TUNE LOW

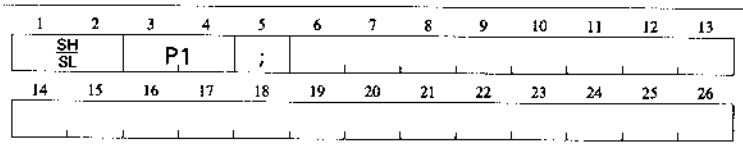
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
		P1	12	PASSBAND

Function

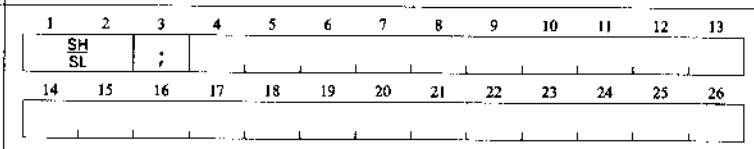
Slope tune band setting and readout.

Input commands

Set command

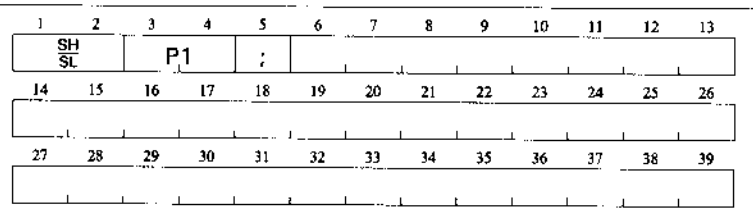


Read command



Output commands

Answer command



Description

SM S-METER

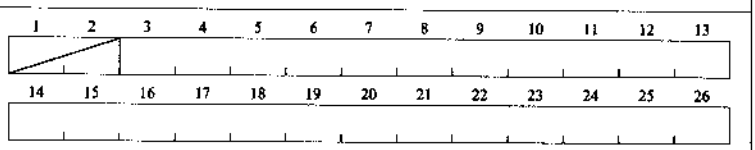
Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
		P1	22	METER level

Function

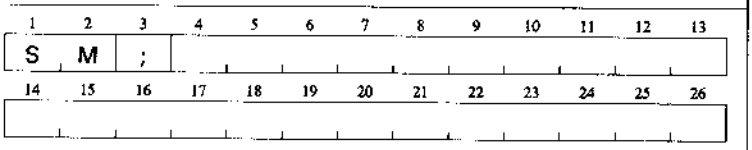
S-Meter signal output

Input commands

Set command

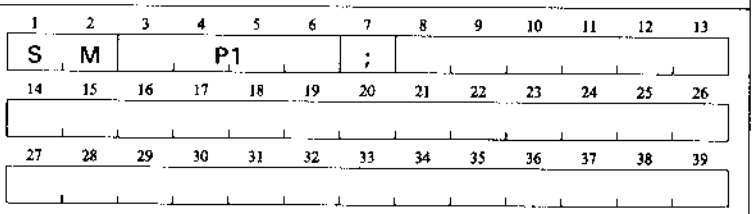


Read command



Output commands

Answer command



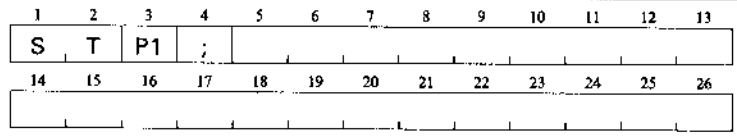
Description

During transmit, the meter displays the transmitter power output.

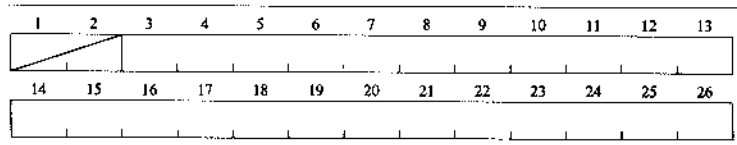
ST STEP

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	STEP ON/OFF setting	P1	1	STEP ON/OFF

Input commands — Set command



Input commands — Read command



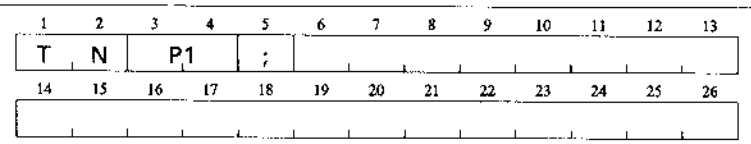
Output commands — Answer command

Description

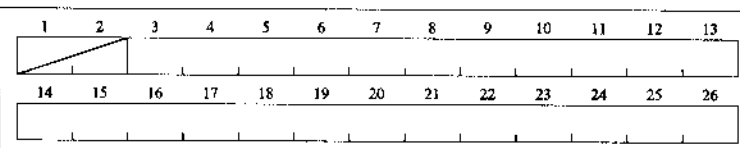
TN TONE NUMBER

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	Sub-tone frequency setting	P1	14	TONE FREQUENCY

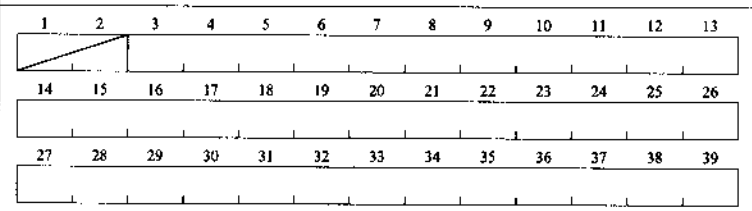
Input commands — Set command



Input commands — Read command



Output commands — Answer command



No.	Hz	No.	Hz
01	67.0	20	131.8
02	71.9	21	136.5
03	74.4	22	141.3
04	77.0	23	146.2
05	79.7	24	151.4
06	82.5	25	156.7
07	85.4	26	162.2
08	88.5	27	167.9
09	91.5	28	173.8
10	94.8	29	179.9
11	97.4	30	186.2
12	100.0	31	192.8
13	103.5	32	203.5
14	107.2	33	210.7
15	110.9	34	218.1
16	114.8	35	225.7
17	118.8	36	233.6
18	123.0	37	241.8
19	127.3	38	250.3
		39	1750.0

Description

TO TONE

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	TONE ON/OFF setting	P1	1	TONE ON/OFF

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
T	O	P1	;									
14	15	16	17	18	19	20	21	22	23	24	25	26

Input commands — Read command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

1	2	3	4	5	6	7	8	9	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39

Description

VB VBT

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	VBT passband setting and display	P1	12	PASSBAND

Input commands — Set command

1	2	3	4	5	6	7	8	9	10	11	12	13
V	B	P1		;								
14	15	16	17	18	19	20	21	22	23	24	25	26

Input commands — Read command

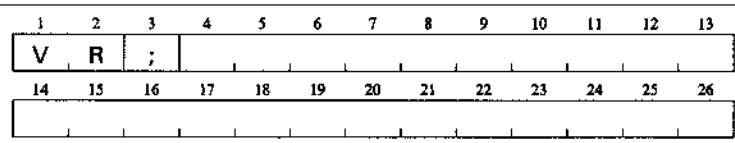
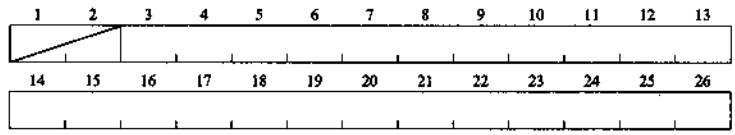
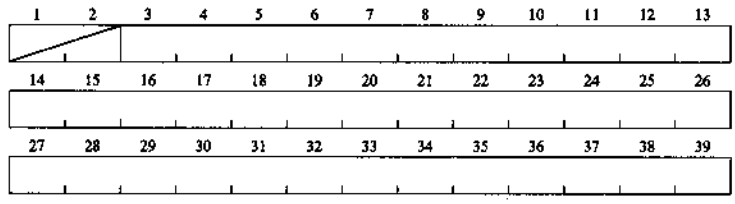
1	2	3	4	5	6	7	8	9	10	11	12	13
V	B	;										
14	15	16	17	18	19	20	21	22	23	24	25	26

Output commands — Answer command

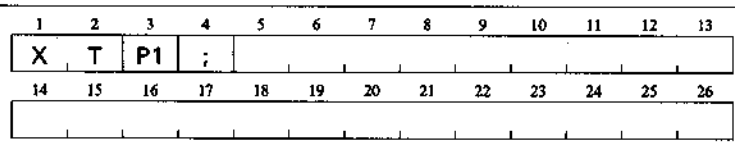
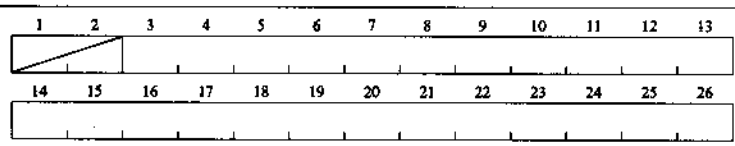
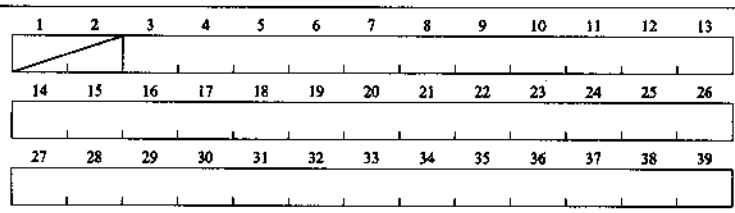
1	2	3	4	5	6	7	8	9	10	11	12	13
V	B	P1		;								
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39

Description

VR VOICE RECALL

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	Generation of synthesized voice.			
Input commands / Set command				
Input commands / Read command				
Output commands / Answer command				
Description	Requires the use of the optional VS-2 Voice Synthesizer.			

XT XIT

Applicable models	TS-950S/950S DIGITAL	Parameter	Format	Parameter function
Function	XIT ON/OFF setting	P1	1	XIT ON/OFF
Input commands / Set command				
Input commands / Read command				
Output commands / Answer command				
Description				

KENWOOD