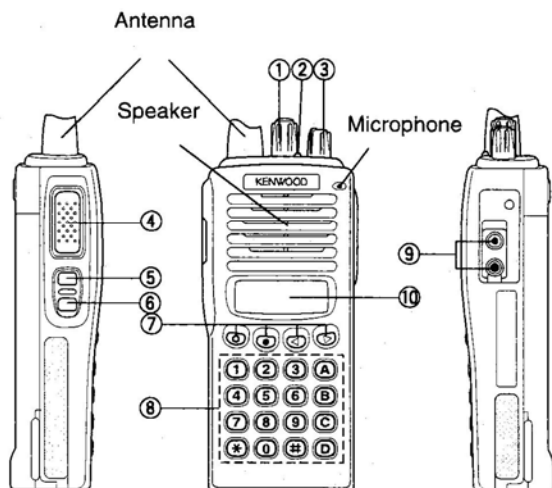


TK-278G

OPERATING FEATURES

1. Operation Features



The transceiver is shown with the optional KNB-14 battery pack.

① Rotary encoder

Your dealer can program the encoder as either Group Up/Down or Channel Up/Down (default setting). Rotate to select a group or channel. Also rotate to adjust the squelch in Squelch Adjustment mode.

② LED indicator

Lights red while transmitting. Lights green while receiving. Flashes orange while receiving a Code Squelch code or a Selective Call code, or a 2-Tone or DTMF signal that matches the one set up in your transceiver. Flashes red when the battery power is low while transmitting.

③ Power switch/ Volume control

Turn clockwise to switch ON the transceiver. Rotate to adjust the volume. To switch OFF the transceiver, turn counterclockwise fully.

④ PTT (Push-to-Talk) switch

Press this switch, then speak into the microphone to call a station.

⑤ Side 1 key

This is a PF (Programmable Function) key. Press it to activate its auxiliary function (page 5).

⑥ Side 2 key

This is a PF (Programmable Function) key. Press it to activate its auxiliary function (page 5).

⑦ O, ●, ◀, ▶ keys

These are PF (Programmable Function) keys. Press each key to activate its auxiliary function.

⑧ DTMF keypad

Used for storing and transmitting DTMF numbers.

⑨ SP/MIC jacks

Connect an optional speaker/ microphone here.

⑩ Display

(See page 7.)

Note: The PF keys are programmed with default functions:

- **Side 1 key:** Lamp
- **Side 2 key:** Monitor A
- **O key:** Scan
- **● key:** Scan Del/Add
- **◀ key:** Reverse
- **▶ key:** RF Power Lo

Programmable Auxiliary Functions

Side 1, Side 2, O, ●, ◀, and ▶ can be programmed with the auxiliary functions listed below.

- Channel Down
- Channel Up
- Display Character
- Group Down
- Group Up
- Home Channel
- Key Lock
- Lamp
- Monitor A (Monitor Unmute-Momentary)
- Monitor B (Monitor Unmute-Toggle)
- Monitor C (Carrier Squelch-Momentary)
- Monitor D (Carrier Squelch-Toggle)
- None
- Redial
- Reverse
- RF Power Lo
- Scan
- Scan Del/Add
- Scrambler
- Selectable QT
- 2-Tone Encode Select

2. Programmable keys

The functions the FPU programs to the function keys are described in the following sections.

1) Channel up/down

When the key is pressed each time, the channel number to be selected is incremented/decremented and repeats if held for one second or longer.

This key functions as the voice scrambler code selector in the voice scrambler code select mode.

2) Display character

This key switches the LCD display between the group/channel number and group/channel name.

3) Group up/down

When the key is pressed each time, the group number to be selected is incremented/decremented and repeats if held for one second or longer.

4) Home Channel

Press this key once, the channel switches to the pre-programmed home channel.

5) Key lock

When the KEY LOCK switch is held down for one second or more, keys other than [PTT], [LAMP], [MONI], [VOL], [POWER], and KEY LOCK are locked.

When 12/16 KEY LOCK is set with the FPU, the DTMF key is locked and when front-panel KEY LOCK is set, the DTMF key and the [PF] key are locked.

6) Lamp

This key illuminates the LCD and keys on the front panel. When the key is pressed, the LED lamp goes on.

When it is released, the lamp goes off after about five seconds. If any key is pressed while the LED lamp is on, the lamp is kept on for five seconds.

7) Monitor

Used to release signalling or squelch when operating in conventional mode. It is also used to reset option signalling.

8) Reverse (REV)

When the REV switch is pressed, transmission can be performed with the receive frequency and receive signaling, and reception can be performed with the transmit frequency and transmit signalling.

When REV is on, HORN ALERT and PUBLIC ADDRESS do not work.

9) Selectable QT (SEL QT)

When the SEL QT switch is pressed, QT frequency can be temporarily changed with the CH switch.

10) 2-Tone Encode Select

- ① Press the key programmed as 2-tone Encode Select.
 - A pre-programmed 2-tone code name appears on the display.
- ② Press the key programmed as Channel Up and Channel Down to select you desired 2-tone code name.
- ③ Press PTT switch and 2-Tone Encode Select key to transmit and release them to receive.

Note:

You cannot change the tone in step ② by using the Channel Up and Channel Down keys.

11) Redial

Pressing this key when Group/Channel is shown, displays the previously transmitted DTMF code. Pressing [PTT] at this time, transmits the code that is currently displayed.

12) RF power low

Used to temporarily switch transmission output to low power. Turning the function on enables:

Hi→Low, Low→Low

Key states are backed up, except in the PC mode when they are reset.

13) Scan

Pressing this key starts scanning. Pressing this key again stops scanning.

14) Scan Del/Add

This key switches the currently displayed channel between "Delete" and "Add".




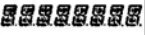
The "Add" channel is contained in the scan sequence, the "Delete" channel is not contained. In the scan mode, this key switches the channel between delete or add, temporarily.

15) None

An error operation beep sounds, and no action will occur. Use this function when the transceiver is required to be operated more simply.

3. Display / 显示



Icon	Description
	Not used in this transceiver.
	Appears when the selected channel is busy.
	Appears when QT, DQT, DTFM, or 2-Tone decoding is deactivated (by pressing the Monitor key).
CALL	Appears when you receive a Code Squelch, Selective Call, 2-Tone, or DTMF Signalling call. Also appears when you transmit using Code Squelch or Selective Call.
SCN	Appears while scanning.
LO	Appears when using low power on the selected channel.
A	Appears when the selected channel is included in the scanning sequence.
	Displays the selected channel, the squelch level, DTMF digits (when entering digits, confirming digits, or making a call), and messages received via Selective Call.

4. Scan Operating

1) Scan types

• Single Group Scan

You can scan all valid (ADD) channels in the displayed group that can be selected with the group selector.

• Multiple Group Scan

You can scan all valid (ADD) channels in all valid (ADD) groups.

2) Scan Start Condition

One or more non-priority channels must be added to all channels that can be scanned. The transceiver must be in normal receive mode (PTT off).

When you activate the key programmed to the scan function, scan starts. The scan icon ("SCN") lights and "SCAN" is indicated on display.

3) Scan Stop Condition

The scan stops temporarily if the following conditions are satisfied.

- ① The receiving signal matches the signalling code in your radio that is set by the programming software (KPG-56D).
- ② When the monitor key is depressed.

4) Scan Channel Types

- ① Priority channel is the most important channel for scan, and always detects a signal during scan and when the scan stops temporarily.
- ② Non-priority channels detect a signal during scan. For the channels that can be selected with the group or channel selector when the scan does not occur, the "A" icon lights.

5) Priority Channel Setting

A priority channel can be set as follows with the programming software (KPG-56D).

- ① Specify a priority channel as a fixed priority channel.
- ② Make a selected channel a priority channel.
Specify the initial channel before the operator changes it.

6) Scan Type According to the Priority Channel

- ① When no priority channel is set : Only the non-priority channels are scanned.

If a non-priority channel stops temporarily, it stops until there is no signal on the channel.

- ② When priority channel is set : Either priority channel is scanned.

If a non-priority channel stops temporarily, a priority channel signal is detected at certain intervals.

If a priority channel stops temporarily, it stops until there is no signal on the priority channel.

7) Revert Channel

The revert channel is used to transmit during scanning and set by the programming software (KPG-56D).

- ① Priority

The transceiver reverts to the priority channel.

- ② Priority with talkback

The transceiver reverts to the priority channel.

If you press PTT during a resume timer (dropout delay time, TX dwell time) or calling, you can transmit on the current channel to answer to the call however revert channel is set to priority channel.

After resume time, scan re-starts and the transmission channel returns to the priority channel.

- ③ Selected channel

The transceiver reverts to the channel before scanning or the channel that you changed during scan.

- ④ Last called channel

The transceiver reverts to the last called channel during scan.

- ⑤ Last used channel

The transceiver reverts to the last used (transmitted) channel during scan. "Last used" revert channel includes talkback function.

- ⑥ Selected with talkback

The transceiver reverts to the channel before scanning or the channel that you changed during scan.

8) Scan End

When you reactivate the key programmed to the scan function during scan mode, scan ends.

The scan icon ("SCN") and "SCAN" or revert channel (programmable) display goes off.

9) Temporarily Delete/Add

It is possible to delete or add a channel temporarily during scan. When scan stops on an unnecessary channel, for example by interference of the other party, press the delete/add key, then that channel is deleted temporarily and scan will re-start immediately.

When you would like to add a deleted channel temporarily to the scan sequence, select the desired (deleted) channel during scan, and press the delete/add key before scan re-starts.

That channel is added temporarily to the scan sequence.

The temporarily deleted or added channels are returned to their pre-set delete/add conditions when the transceiver exits from scan mode.

5. Details of Features

1) Time-out timer

The time-out timer can be programmed in 15 seconds increments from 15 seconds to 300. If the transmitter is keyed continuously for longer than the programmed time, the transmitter is disabled and a warning tone sounds while the PTT button is held down. The alert tone stops when the PTT button is released.

2) Selective Call Alert LED

You can select whether or not the LED on the transceiver flashes orange when selective call has occurred.

Transpond is always activated when the D.B.D code is a matches. Alert is not output. An Option Signaling match is not displayed.

7. Audible user feedback tones

The transceiver outputs various combinations of tones to notify the user of the transceiver operating state. The main tones are listed below

The high tone is 1477Hz, the mid tone is 941Hz, and the low tone is 770Hz.

- **Power on tone**

This tone is output when the transceiver is turned on. (The high tone is output for 500ms.)

- **Alert tone**

This tone is output when the transceiver is in TX inhibition for TOT, battery warning and PLL unlocked. It is output until the PTT button is released. (The 697Hz tone is output.)

- **Busy Tone**

This informs the user of a busy channel lock out

- **Group Call Tone**

The group call tone informs the user of a group call in DTMF/ 2 Tone Option Signaling. This tone repeats 7 times.

770Hz		770Hz
30ms	30ms	30ms

- **Individual Tone**

Individual tone is issued on receiving selective call by DTMF/ 2 Tone Option Signaling.

2000Hz		2000Hz		2000Hz
100ms	100ms	100ms	100ms	100ms

- **Pre Alert tone**

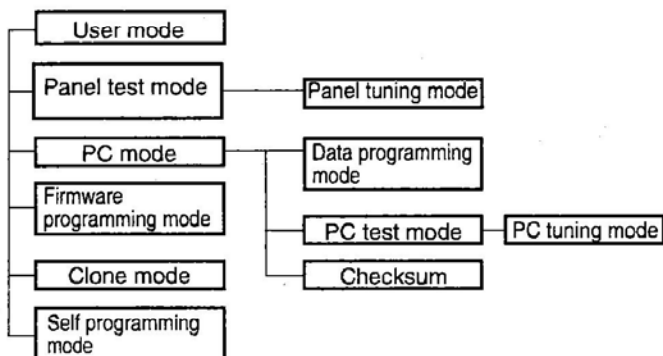
Informs the user when nearing transmit inhibit (transmit cutoff) time due to TOT.

The Pre Alert Tone is issued from the time set for TOT Pre Alert until the TOT triggers.

1633Hz		1633Hz		1633Hz
50ms	50ms	50ms	50ms	50ms

REALIGNMENT

1. Modes



Mode	Function
User mode	For normal use.
Panel test mode	Used by the dealer to check the fundamental characteristics.
Panel tuning mode	Used by the dealer to tune the radio.
PC mode	Used for communication between the radio and PC (IBM compatible).
Data programming mode	Used to read and write frequency data and other features to and from the radio.
PC test mode	Used to check the radio using the PC. This feature is included in the FPU. See panel tuning.
Firmware programming mode	Used when changing the main program of the flash memory.
Clone mode	Used to transfer programming data from one radio to another.
Self programming mode	Frequency, signalling and features.

2. How to Enter Each Mode

Mode	Operation
User mode	Power ON
Panel test mode	[◀]+Power ON (Two seconds)
PC mode	Received commands from PC
Panel tuning mode	[Panel test mode]+[○]
Firmware programming mode	[LAMP]+[MONI]+Power ON (Two seconds)
Clone mode	[LAMP]+[▶]+Power ON (Two seconds)
Self programming mode	[LAMP]+[●]+Power ON (Two seconds)

3. For the panel Test Mode

For the setting method, refer to ADJUSTMENT.

3-1. For the panel Tuning Mode

For the setting method, refer to ADJUSTMENT.

Transpond is always activated when the D.B.D code is a matches. Alert is not output. An Option Signaling match is not displayed.

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The high tone is 1477Hz, the mid tone is 941Hz, and the low tone is 770Hz.

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Individual tone is issued on receiving selective call by DTMF/ 2 Tone Option Signaling.

2000Hz		2000Hz		2000Hz
100ms	100ms	100ms	100ms	100ms

- **Pre Alert tone**

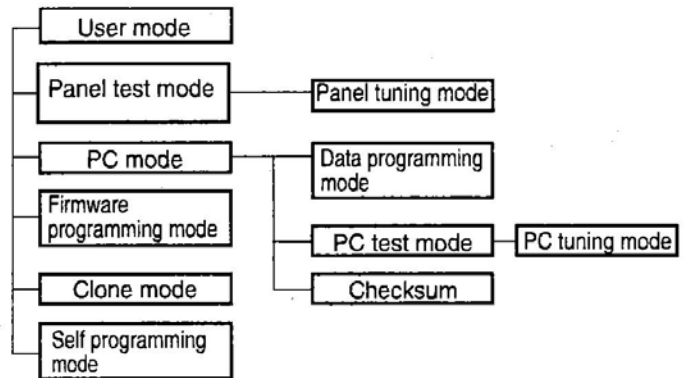
Informs the user when nearing transmit inhibit (transmit cutoff) time due to TOT.

The Pre Alert Tone is issued from the time set for TOT Pre Alert until the TOT triggers.

1633Hz		1633Hz		1633Hz
50ms	50ms	50ms	50ms	50ms

REALIGNMENT

1. Modes



Mode	Function
User mode	For normal use.
Panel test mode	Used by the dealer to check the fundamental characteristics.
Panel tuning mode	Used by the dealer to tune the radio.
PC mode	Used for communication between the radio and PC (IBM compatible).
Data programming mode	Used to read and write frequency data and other features to and from the radio.
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Firmware programming mode	Used when changing the main program of the flash memory.
Clone mode	Used to transfer programming data from one radio to another.
Self programming mode	Frequency, signalling and features.

2. How to Enter Each Mode

Mode	Operation
User mode	Power ON
Panel test mode	[◀]+Power ON (Two seconds)
PC mode	Received commands from PC
Panel tuning mode	[Panel test mode]+[○]
Firmware programming mode	[LAMP]+[MONI]+Power ON (Two seconds)
Clone mode	[LAMP]+[▶]+Power ON (Two seconds)
Self programming mode	[LAMP]+[●]+Power ON (Two seconds)

3. For the panel Test Mode

For the setting method, refer to ADJUSTMENT.

3-1. For the panel Tuning Mode

For the setting method, refer to ADJUSTMENT.

REALIGNMENT

4. Checksum

Executing this function, "TUNING" appears on the display of TK-278G while calculating the checksum.

When the calculation is completed, the display returns to normal and PC displays the checksum of the radio.

5. PC Mode

5-1. Preface

The TK-278G transceiver is programmed using a personal computer, a programming interface (KPG-22) and programming software (KPG-56D).

The programming software can be used with an IBM PC or compatible. Figure 1 shows the setup of an IBM PC for programming.

5-2. Connection procedure

1. Connect the TK-278G to the personal computer with the interface cable.
2. When the POWER is switched on, user mode can be entered immediately. When the PC sends a command, the radio enters PC mode.
When data is transmitted from transceiver, the red LED blink.
When data is received by the transceiver, the green LED blinks.

Notes:

- The data stored in the personal computer must match model type when it is written into the flash memory.
- Change the TK-278G to PC mode, then attach the interface cable.

5-3. KPG-22 description

(PC programming interface cable: Option)

The KPG-22 is required to interface the TK-278G to the computer. It has a circuit in its D-subconnector (25-pin) case that converts the RS-232C logic level to the TTL level.

The KPG-22 connects the SP/MIC connector of the TK-278G to the computers RS-232C serial port.

5-4. Programming software description

The KPG-56D programming disk is supplied in 3-1/2" disk format. The software on this disk allows a user to program the TK-278G radios via a programming interface cable (KPG-22).

5-5. Programming with IBM PC

If data is transferred to the transceiver from an IBM PC with the KPG-56D, the destination data (basic radio information) for each set can be modified. Normally, it is not necessary to modify the destination data because their values are determined automatically when the frequency range (frequency type) is set.

The values should be modified only if necessary. Data can be programmed into the flash memory in RS-232C format via the universal connector.

KPG-56D installation manual part No. : B62-1153-XX

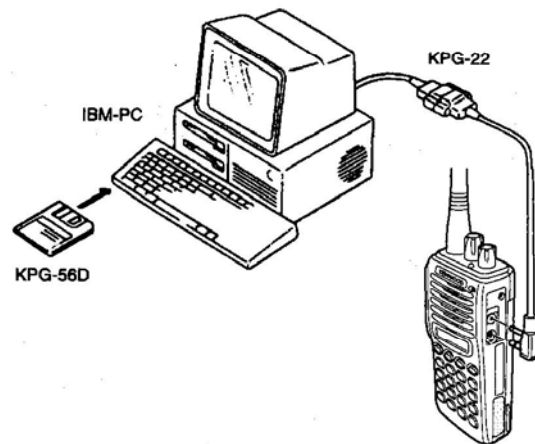


Fig. 1

6. Firmware Programming Mode

6-1. Preface

Flash memory is mounted on the TK-278G. This allows the TK-278G to be upgraded when new features are released in the future. (For details on how to obtain the firmware, contact Customer Service.)

6-2. Connection procedure

Connect the TK-278G to the personal computer (IBM PC or compatible) with the interface cable (KPG-22). (Connection is the same as in the PC Mode.)

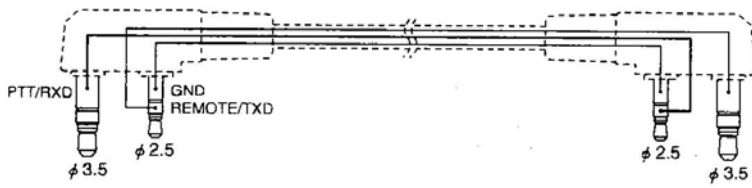
6-3. Programming

1. Start up the programming software (KPG-56D), select "firmware program" in the "Program" item, and press the Return key on your personal computer. This starts up the firmware programmer.
2. The top screen is displayed. Press any key to advance to the next screen.
3. Set the communications speed (normally, 57600 bps) and communications port in the Setup item.
4. Set the firmware to be updated by File select (=F1).
5. Hold down the [LAMP] and [MON] switches on the TK-278G, and press the power switch.
When the [LAMP] and [MON] switches are held down for two seconds, "PROG 576" appears on the display and the LED lights orange. When "PROG 576" is displayed, release the switches.
6. Check the connection between the TK-278G and the personal computer, and make sure that the TK-278G is in Program mode.
7. Press F10 on the personal computer. A window opens on the display to indicate the writing progress. When the TK-278G begins to receive data, the LED lights green.
8. When data is received successfully, a checksum appears on the display.
9. If you want to continue programming other TK-278G, repeat steps 5 to 8.

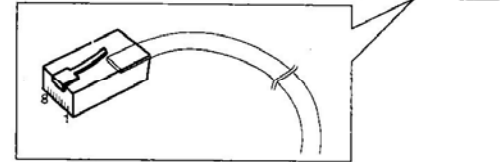
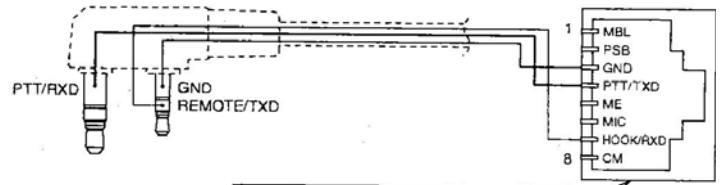
REALIGNMENT

Cloning cable parts No.

E30-3410-05 (TK-278G → TK-278G)



E30-3411-05 (TK-278G → TK-768G)



Cloning cable

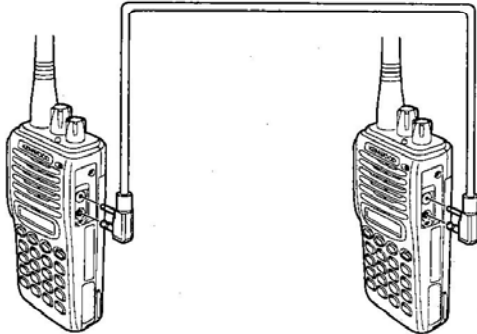


Fig. 2

8. Self Programming Mode

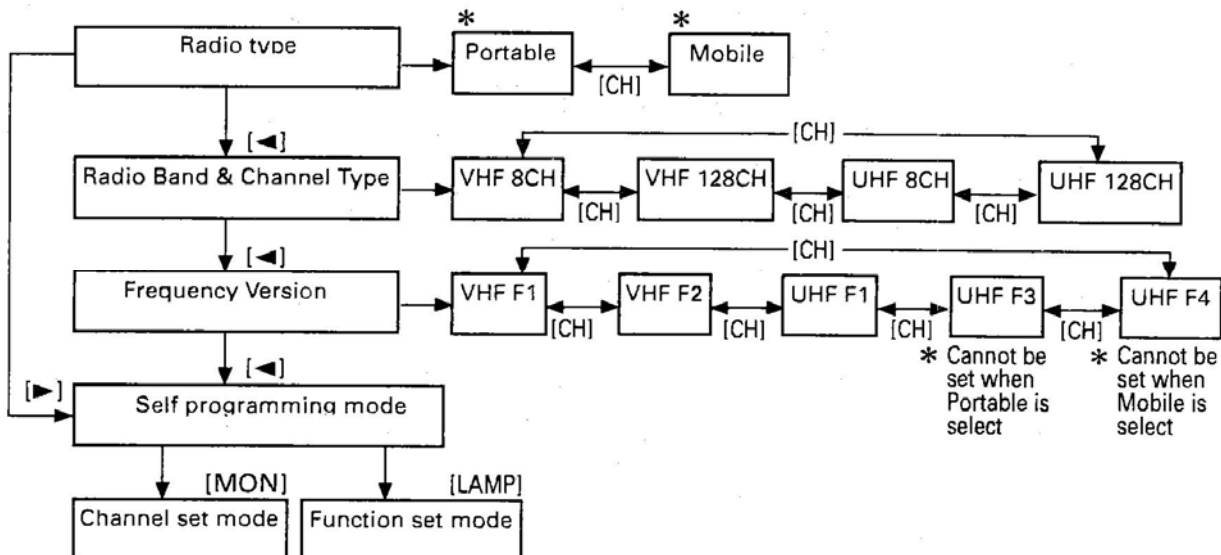
Write mode for frequency data and signalling etc. Mainly used by the person maintaining the user equipment.

8.1 Self programming mode setting

Hold down the [LAMP]+[●] switches and turn the power switch on.

When the self programming mode is entered, [SELF] appears on the display. The mode changes automatically to Model Select Mode and "PORTABLE" is displayed in about one second.

• Flow Chart



Note :

IF the radio type of TK-278G was temporarily set to "Mobile" for the cloning purposes, "UNPROG" is displayed (at User Mode) when the TK-278G is turned on.

In this case, please set the radio type back to "Portable" at Model Select Mode menu.

8-2. Channel Setting Mode

This is a mode for making channel settings with the panel keys without using the FPU.

Pressing [MON] when "SELF" is displayed, sets Channel Setting Mode.

Select an item set using [▶] then change the selection with the encoder.

The data displayed using [◀] is stored in the memory and then proceeds to the next item. Pressing [▶] proceeds to the next item without storing it in the memory.

Press [MON] to set the display to "SELF" and return to reset (default) status.

No.	Function	Choices	Display	Remarks			
	Select Channel	1-128	_1_1_	[▶] : Group selection/ Channel selection change			
	Select Group	1-128	_1_1_				
1	RX frequency	Step 2.5kHz-1MHz	STP_250 STP_1000	Display when an item is selected or when a step is changed (about 0.5 seconds) [●] Step change UHF : 5.0,6.25kHz,7.5kHz,1MHz,Step			
		Blank	---		[LAMP] : Freq On/Blank switching		
		100.0000- 550.0000MHz	R.100.0000		The rightmost dot indicates 50Hz digit (On=5; Off=0).		
2	Rx Signaling	OFF	---	[LAMP] : Off/QT/DQT switching			
		QT 67.0-250.3Hz (EIA Mode)	QT_67.0_	[●] : Mode switching [○] : Normal/Inverse switching			
		QT 67.0-250.3Hz (0.1Hz Step Mode)	QT_67.0*				
		DQT 000-777 (Normal) (1 Step Mode)	DQT000N*				
		DQT 023-754 (Normal) (Standard Table Mode)	DQT023N DQT754N				
		DQT 000-777 (Inverse) (1 Step Mode)	DQT000I*				
		DQT 023-754 (Inverse) (Standard Table Mode)	DQT023I DQT754I				
		3	TX frequency		Step 2.5kHz-1MHz	STP_250 STP_1000	Same as RX frequency.
		Blank	---				
100.0000- 550.0000MHz	T.100.0000						
4	TX Signaling		Same as RX signaling.				
5	Option Signaling	OFF	NONE__	← Default			
		DTMF	DTMF__				
		2-TONE	2TONE__				

8-3. Function Setting Mode

This is a mode for using the panel keys to make function settings without using the FPU, that operate on all channels.

Pressing the [LAMP] when "SELF" is displayed, sets the Function Setting Mode.

Select an item set using [▶] then change the selection with the encoder.

The data displayed using [◀] is stored in the memory and then proceeds to the next item. Pressing [▶] proceeds to the next item without storing it in memory.

Press [LAMP] to display "SELF" and return to reset (default) status.

No.	Function	Choices	Display	Remarks
6	ID	000-9999999999	__ID__	Display when an item is selected (about 0.5 seconds)
			12345678	Display of the current setting (If it is 8 or more digits, scroll it.)
			—987	Display when a code is input (Input it with DTMF key.)
		Blank	—	[LAMP] : Data clear
7	Busy Channel Lockout	NO	BCL_NO_	← Default
		Type 1	BCL_1_	BCL_YES for K type
		Type 2	BCL_2_	N/A for K type
8	Beat shift	No	SHFT_NO_	← Default
		Yes	SHFT_YES	
9	RF Power	High Power	PWR_H_	← Default
		Low Power	PWR_L_	
10	Wide/Narrow	Wide	WIDE_	
		Narrow	NARROW_	
11	Scan Delete/ADD	DELETE	SCAN_DEL	Not used for TK-278G
		ADD	SCAN_ADD	← Default
12	Priority Channel	No	P.CH_NO_	Not used when (Scan) Priority is not Fixed.
		Yes	P.CH_YES_	
13	Home Channel	No	H.CH_NO_	Not used when Home Channel is not set in Key Assignment.
		Yes	H.CH_YES_	
14	Compander	No	COMP_NO_	Not used when Wide is selected.
		Yes	COMP_YES_	
15	PTT ID	OFF	P.ID_OFF	
		Begin of TX	P.ID_1	
		End of TX	P.ID_2	
		Both	P.ID_3	
16	Begin of TX ID	000-9999999999999999	__BOT_ID__	Not valid if Dial ID=Disable and PTT ID=OFF, or EOT is set. Display when an item is selected (about 0.5 seconds)
			12345678	Display of the current setting (If it is 8 or more digits, scroll it.)
			—987	Display when a code is input (Input it with DTMF key.)
		Blank	—	[LAMP] : Data clear
17	END of TX ID	000-9999999999999999	__EOT_ID__	Not valid if Dial ID=Disable and PTT ID=OFF, or BOT is set. Display when an item is selected (about 0.5 seconds)
			12345678	Display of the current setting (If it is 8 or more digits, scroll it.)
			—987	Display when a code is input (Input it with DTMF key.)
		Blank	—	[LAMP] : Data clear

Function Setting Mode

No.	Function	Choices	Display	Remarks		
Function Key						
1	[LAMP]	No Function	LAMP_OFF			
		Display Character	LAMP_5			
		Home Channel	LAMP_7			
		Channel Down	LAMP_8			
		Channel Up	LAMP_9			
		Keylock	LAMP_10			
		Lamp	LAMP_11	← Default		
		TX Code	LAMP_16			
		Monitor A	LAMP_17			
		Monitor B	LAMP_18			
		Monitor C	LAMP_19			
		Monitor D	LAMP_20			
		RF Power Low	LAMP_21			
		Scan	LAMP_22			
		Scan DEL/ADD	LAMP_23			
		Group Down	LAMP_24			
		Group Up	LAMP_25			
		Scramble	LAMP_26	Only when scrambler is set		
		2	[MONI]	No Function	MON_OFF	
				Display Character	MON_5	
				Home Channel	MON_7	
				Channel Down	MON_8	
				Channel Up	MON_9	
				Keylock	MON_10	
				Lamp	MON_11	
				Reverse	MON_13	
Selectable QT	MON_15					
TX Code	MON_16					
Monitor A	MON_17			← Default		
Monitor B	LAMP_18					
Monitor C	LAMP_19					
Monitor D	LAMP_20					

No.	Function	Choices	Display	Remarks
2	[MONI]	RF Power Low	MON_21	
		Scan	MON_22	
		Scan DEL/ADD	MON_23	
		Group Down	MON_24	
		Group Up	MON_25	
		Scrambler	MON_26	Only when scrambler is set
		3	[O]	No Function
Display Character	KEY1_5			
Home Channel	KEY1_7			
Channel Down	KEY1_8			
Channel Up	KEY1_9			
Keylock	KEY1_10			
Lamp	KEY1_11			
TX Code	KEY1_16			
Monitor A	KEY1_17			
Monitor B	KEY1_18			
Monitor C	KEY1_19			
Monitor D	KEY1_20			
RF Power Low	KEY1_21			
Scan	KEY1_22			
Scan DEL/ADD	KEY1_23			← Default
Group Down	KEY1_24			
Group Up	KEY1_25			
Scrambler	KEY1_26	Only when scrambler is set		
4	[●]	No Function	KEY2_OFF	
		Display Character	KEY2_5	
		Home Channel	KEY2_7	
		Channel Down	KEY2_8	
		Channel Up	KEY2_9	
		Keylock	KEY2_10	
		Lamp	KEY2_11	
		Reverse	KEY2_13	
		Selectable QT	KEY2_15	
		Monitor A	KEY2_17	
		Monitor B	KEY2_18	
		Monitor C	KEY2_19	
		Monitor D	KEY2_20	
		RF Power Low	KEY2_21	
		Scan	KEY2_22	
		Scan DEL/ADD	KEY2_23	
		Group Down	KEY2_24	
Group Up	KEY2_25			
Scrambler	KEY2_26	Only when scrambler is set		

No.	Function	Choices	Display	Remarks
5	[◀]	No Function	KEY3_OFF	← Default
		Display Character	KEY3_5	
		Home Channel	KEY3_7	
		Channel Down	KEY3_8	
		Channel Up	KEY3_9	
		Keylock	KEY3_10	
		Lamp	KEY3_11	
		Reverse	KEY3_13	
		Selectable QT	KEY3_15	
		TX Code	KEY3_16	
		Monitor A	KEY3_17	
		Monitor B	KEY3_18	
		Monitor C	KEY3_19	
		Monitor D	KEY3_20	
		RF Power Low	KEY3_21	← Default
		Scan	KEY3_22	
		Scan DEL/ADD	KEY3_23	
		Group Down	KEY3_24	
		Group Up	KEY3_25	
		Scrambler	KEY3_26	Only when scrambler is set
6	[▶]	No Function	KEY4_OFF	
		Display Character	KEY4_5	
		Home Channel	KEY4_7	
		Channel Down	KEY4_8	
		Channel Up	KEY4_9	
		Keylock	KEY4_10	
		Lamp	KEY4_11	
		Reverse	KEY4_13	
		Selectable QT	KEY4_15	
		TX Code	KEY4_16	
		Monitor A	KEY4_17	
		Monitor B	KEY4_18	
		Monitor C	KEY4_19	
		Monitor D	KEY4_20	
		RF Power Low	KEY4_21	← Default
		Scan	KEY4_22	
		Scan DEL/ADD	KEY4_23	
Group Down	KEY4_24			
Group Up	KEY4_25			
Scrambler	KEY4_26	Only when scrambler is set		
7	[CH]	Channel Up/Down	CH_UP/DN	← Default
		Group Up/Down	GR_UP/DN	
		No Function	KNOB_OFF	
Optional Feature				
8	Power On Tone	YES/NO	PONT_YES	Default: YES
9	Control Tone	YES/NO	CNTT_YES	Default: YES
10	Warning Tone	YES/NO	WART_YES	Default: YES

No.	Function	Choices	Display	Remarks
11	Time Out Timer	OFF,15-300/15s Step	TOT_60	Default:60s
12	TOT Pre-Alert Time	OFF,1-10/1s Step	TOTP_OFF	Cannot be set when TOT is OFF. Default:OFF
13	TOT Rekey Time	OFF1-60/1s Step	TOTK_OFF	Cannot be set when TOT is OFF. Default:OFF
14	TOT Reset Time	OFF1-15/1s Step	TOTS_OFF	Cannot be set when TOT is OFF. Default:OFF
15	Clear to Transpond (BCL for Transpond)	YES NO	CTT_YES CTT_NO	← Default
16	Battery Save	ON OFF	BATT_ON BATT_OFF	← Default
17	Signaling	OR AND	SIG_OR SIG_AND	← Default
18	Squelch Level	0-9/1 Step	SQL_5	Default;5
19	Priority	None Fixed Selected	PRI_NONE PRI_FIX_ PRI_SEL_	← Default
20	Lock Back Time A	0.5-5.0/0.05	LBA_500	Default:500ms Cannot be set when Priority = none.
21	Lock Back Time B	0.5-5.0/0.05	LBB_2000	Default:2000ms Cannot be set when Priority = none.
22	Revert Channel	Selected Last Called Last Used Selected + Talk Back Priority Priority + Talk Back	REV_SEL REV_L/C_ REV_L/U_ REV_S/T_ REV_PRI_ REV_P/T_	← Default
23	Dropout Delay Time	0-300/1s	DODT__3	Default;3s
24	Dwell Time	0-300/1s	DWL__3	Default;3s
DTMF				
25	Digit Time	50-200/10ms	DIGT__50	Default;50ms
26	Inter Digit Time	50-1000/50ms	IDT__50	Default;50ms
27	First Digit Time	50-200/10ms	FDT__50	Default;50ms
28	First Digit Delay	50-1000/50ms	RIST_100	Default;100ms
29	Rise Time with QT	50-1000/50ms	RTWQ_100	Default;100ms
30	DIAL ID	Enable Disable	DID_ENA DID_DIS	← Default
31	No.of DTMF Key	12Key 16Key	NODK_12 NODK_16	← Default
32	DTMF Hold Time	ON OFF	DHT_ON DHT_OFF	← Default
33	Store and Send	Enable Disable	SAS_ENA SAS_DIS	← Default

No.	Function	Choices	Display	Remarks
34	D Key Assignment	D Code 1-16/1s	DKA_D_CD DKA_16_	← Default
35	DTMF Signaling	Code SQ SEL CALL	DTMF_CSQ DTMF_SEL	← Default
36	Inter Mediaate Code	0-9,A-D,*,#	IMC__#_	Default: # (Can be set only when DTMF signaling = SEL CALL.)
37	Group Code	A-D,*,#	GPCD_FF_	Default;OFF
38	Auto Rest Time	OFF 1-15/1s	ART_OFF_ ART__10	Default;10s
39	Call Alert/ Transpond	OFF Call Alert Transpond (Call Alert) Transpond (ID Code) Transpond (Transpond Code)	CAT_OFF_ CAT_C/A CAT_T/A CAT_T/I CAT_T/T	← Default
Others				
40	Panel Test/panel Tuning MODE	Enable Disable	PTM_ENA PTM_DIS	← Default

8-4. Memory Reset Mode

This mode is used to clear data for functions that can be set in Self Programming Mode or to return to reset values (default).

Pressing [O] when "SELF" is shown, sets the display to "CANCEL".

Turning the encoder alternately switches the display between "CANCEL" ← → "READY".

Pressing [O] when "READY" is shown, clears the data and sets the display to "CLEAR".

Pressing [O] again, returns the display to "SELF".

Pressing [O] when "CANCEL" is shown, returns the display to "SELF" without resetting the data.

When the [O] switch is pressed while "SELF" is displayed, the memory is reset.

When the memory is reset, mode data and model data are not reset.