USERS MANUAL

SC- 980, SC- 980A

UHF TRUNKING / CONVENTIONAL TRANSCEIVER

SC- 780

VHF TRUNKING / CONVENTIONAL TRANSCEIVER

- FCC NOTICE -

SAFETY INFORMATION

This radio is restricted to occupational use, work related operations only where the radio operator must have the knowledge to control its RF exposure conditions.

When the Push-to-Talk (PTT) button is pushed, the transceiver sends out radio frequency (RF) signals. In August 1996, the Federal Communications Commission adopted RF exposure guidelines with safety levels for hand-held wireless devices.

The device is authorized to operate at a duty factor not to exceed 50%.

WARNING

This equipment generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a reasonable installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
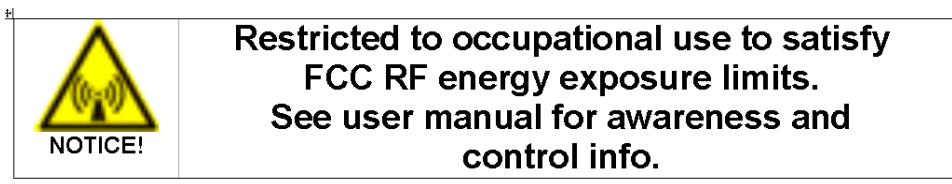- Consult the dealer or an experienced electronics technician for help.

CAUTION TO USERS

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This device is approved with emissions having a source-based time-averaging duty factor not exceeding 50%.

Vehicle – Antenna Installation:
- Antennas used for this transmitter must not exceed an antenna gain of 3 dBi with a minimum cable loss of 1dB.
- For rear deck trunk and roof top installations, the antenna must be located at least 96.20 cm (37.87 inches) away from rear-seat passengers and bystanders in order to comply with the FCC RF exposure requirements.

The following label will be mounted in conspicuous view on the radio.

NOTICE!

Restricted to occupational use to satisfy
FCC RF energy exposure limits.
See user manual for awareness and
control info.

Failure to observe these restrictions will result in exceeding the FCC RF exposure limits.

CONTENTS

GENERAL INFORMATION

The SC-980 series and SC-780 transceiver is a combination conventional and trunking radio.

As the trunking radio, the radio is capable of operating on up to 32 trunking system, and it can operate on E.F.Johnson LTR ® trunking protocol.

LTR® is a registered trademark of E. F. Johnson Company.

As the conventional radio, the radio is capable of operating on up to 250 channels.

Simplex (talk around) and semi-duplex operation are allowed on any system. The radio contains an automatic power control that maintains constant RF power output, and temperature compensating circuitry to maintain stable frequencies over varying temperatures.

PRECAUTIONS: Observe the following precautions to prevent fire, personal injury, and transceiver damage.

・ Do not attempt to configure the transceiver while driving; it is too dangerous.

・ Do not disassemble or modify the transceiver for any reason.

・ Do not expose the transceiver to long periods of direct sunlight, nor place it near heating appliances.

・ If abnormal odor or smoke is detected coming from the transceiver, switch the transceiver power off immediately, and contact your dealer.

・ Use of the transceiver while you are driving may be against traffic laws. Please check and observe the vehicle regulations in your area.

CAUTION

◆ The transceiver operates in 12 V negative ground systems only! Check the battery polarity and voltage of the vehicle before installing the transceiver.

◆ Use only the supplied DC power cable.

◆ Do not cut and/or remove the fuse holder on the DC power cable.

WARNING

For passenger safety, install the transceiver securely using the supplied mounting bracket and screw set so transceiver will not break loose in the event of a collision.

SUPPLIED ACCESSORIES

The following accessories

Microphone (with cable)	…………………………1	
Microphone hanger	…………………………1	
DC power cable (with Fuse)	…………………………1 (15A Fuse X2)	
Mounting bracket (with screw)	…………………………1 (screw set)	
Instruction manual	…………………………1	

PREPARATION

POWER CABLE CONNECTION

> **CAUTION**
>
> The transceiver operates in 12 V negative ground systems only! Check the battery polarity and voltage of the vehicle before installing the transceiver.
>
> Do not cut and/or remove the fuse holder on the DC power cable.

1. Check for an existing hole, conveniently located in the firewall, where the power cable can be passed through. If no hole exists, use a circle cutter to drill the firewall, then install a rubber grommet.
2. Run the two power cable leads through the firewall and into the engine compartment, from the passenger compartment.
3. Connect the red lead to the positive (+) battery terminal and the black lead to the negative (-) battery terminal.
   - ・Locate the fuse as close to the battery as possible.
4. Coil and secure the surplus cable with a retaining band.
   - ・Be sure to leave enough slack in the cables so the transceiver can be removed for servicing while keeping the power applied.

INSTALLING

WARNING

For passenger safety, install the transceiver securely using the supplied mounting bracket and screw set so the transceiver will not break loose in the event of a collision.

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1. Mark the position of the holes in the dash by using the mounting bracket as a template. Drill the holes, then attach the mounting bracket using the supplied the screws.
   - ・Be sure to mount the transceiver in a location where the controls are within easy reach of the user and where there is sufficient space at the rear of the transceiver for cable connections.
2. Connect the antenna and the supplied power cable to the transceiver.
3. Slide the transceiver into the mounting bracket and secure it using the supplied the screws.
4. Mount the microphone hanger, using the supplied self-tapping screws, in a location where it will be within easy reach of the user.
   - ・The microphone and microphone cable should be mounted in a place where they will not interfere with the safe operation of the vehicle.

CAUTION

When replacing the fuse in the DC power cable, be sure to replace it with a fuse of the same value. Never replace a fuse with a fuse that has a higher value.

CONTROL AND CONNECTIONS

POWER SWITCH / VOLUME CONTROL

Push the transceiver on and off, and adjusts the volume.

SYSTEM/CONTROL

In the conventional and LTR® trunking system, it selects Systems.

TX/BUSY LED INDICATOR

Lights red during transmission, green during reception or when busy.

LCD (Liquid Crystal Display)

Indicates Monitor mode, System and Group number, alphanumeric description, in-range, scan memory, telephone interconnect, phone numbers, and key lock.

H (HOME) KEY

In the conventional and LTR® trunking system, it returns the radio working system to the programmed HOME system and group.

S (SCAN) KEY

Pressing this key for longer than 2 seconds changes the radio operation between the conventional / LTR® trunking system.

In the conventional and LTR® trunking system, the S (scan) key initiates scanning and is used for storing channels in scan memory.

DOWN (F1) KEY

In the conventional and LTR® trunking system, when the SYSTEM/GROUP control is set to the "F" position, pressing this key decreases the Group number, or decreases the System number in the shift mode.

UP (F2) KEY

In the conventional and LTR® trunking system, when the SYSTEM/GROUP control is set to the "F" position, pressing this key increases the Group number, or increases the System number in the shift mode.

PTT SWITCH

Enables transmit mode.

SHIFT KEY

Enables or disables the SHIFT mode. Pressing this key for the longer than 2seconds will enable or disable keypad operation.

16 KEY (DTMF Microphone use only)

Press the keys on the 16 keypad to make DTMF calls or to activate programmable functions.

PROGRAMMABLE KEY FUNCTIONS

The following key functions can be programmed by your dealer. Each function can be programmed to any key. Refer to your dealer for programming and operating instructions.

Programmable key

Key function	AUX	SHIFT+AUX	H	SHIFT+H	S	SHIFT+S
A/D	-	-	-	O	-	O
TA	-	-	-	O	-	O
TRANSPOND	-	-	-	O	-	O
PHONE	O	O	-	O	-	O
MONITOR	O	O	-	O	-	O
H/L	O	O	-	O	-	O
NET	O	O	-	O	-	O
OPTION (Voice scrambler)	O	O	-	O	-	O
VOICE_MEN	O	O	-	O	-	O
PA	O	O	-	O	-	O
HORN	O	O	-	O	-	O

O: can be programmed, -: can not be programmed.

ACCESSORY JACK

Interface for connecting PA speaker, Horn Alert, Ignition. Ext Emergency Switch and VAT Switch.

MODULAR JACK

Interface for connecting microphone (Normal Microphone / DTMF Microphone).

EXTERNAL SPEAKER JACK

Interface for connecting external speaker ($\geqq$10W@4ohm)

GPS ANTENNA JACK

Interface for connecting GPS Antenna (need in optional GPS unit).

BASIC OPERATION

1. Push the power switch / volume control clockwise to switch the transceiver on.

   Push the Power switch / volume control counterclockwise to switch the transceiver off.

2. Rotate the power switch / volume control to adjust the volume.

   Clockwise increase the volume.

   Counter clockwise decrease the volume.

LTR OPERATION

Push the key, or rotate System control to select the desired system channel and talk group.

Note: Systems, groups and their functions are programmed by your dealer.

RECEIVING: When a call is received, the transceiver will automatically change to correct group and you will hear the call.

TRANSMITTING: Press and hold the PTT switch and speaking into the microphone.

Release the PTT switch to receive.

CONVENTIONAL OPERATION

Push the key, or rotate System / Group control to select the desired system channel and talk group.

Note: Systems, groups and their functions are programmed by your dealer.

RECEIVING: When you hear the caller's voice, adjust the volume.

TRANSMITTING: Press the programmable **Monitor** key. Check the channel.

If Channel is busy, wait until it becomes free.

Press and hold the PTT switch and speaking into the microphone.

Release the PTT switch to receive.

EMERGENCY

When Ext Emergency Switch is pushed more than 2sec, the DTMF emergency signal is automatically transmitted.
Note: An emergency functions are programmed by your dealer.

To exit emergency mode, press and hold Ext Emergency Switch again or turn off the power switch.

OPTION (VOICE SCRAMBLER)

When the programmed key is pushed, the Option function can be used.
Function on : "▼" appears on the display.
Function off : "▼" disappears on the display.

The voice scrambler function provides private communication between stations.

Note: Option function is programmed by your dealer. Ask your dealer Voice scrambler details.

DIMMER
The LCD backlight can set to low or high levels.
Note: Dimmer function is programmed by your dealer.

PA (PUBLIC ADDRESS)
This function causes all audio input via the microphone to be amplified and output from the PA speaker.
To use the PA system:
1. Press the key programmed as **Public Address.**
2. Press the **PTT** switch, then speak into the microphone.
   ・Use the **UP** and **DOWN** of Rotary selector to adjust the audio output from the PA speaker.
3. Press the Public Address key again to return to normal operation.

VOICE MEMORY

The voice memory function allows you to record receiving message.

RECORD

Press and hold the key programmed as Voice memory for 2seconds. (The recording storage area retains 20seconds.)

PLAY

Press and hold the key programmed as Voice memory less than 2seconds.