

- Please read this Owner's manual & Installation manual in its entirety before proceeding with wire connection and installation.
- * After reading this manual, be sure to keep it in a handy place (e.g., glove compartment).
If you sell the motor vehicle, please leave the manual in it so that the new owner can use it.
- * Read the contents of the enclosed warranty card and keep it with this manual.

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1. PRECAUTIONS

WARNING

For your safety, the driver should not watch the TV or operate the controls while driving. Please note that watching and operating the TV while driving are prohibited by law in some countries. Also, while driving, keep the volume to a level at which external sounds can be heard.

- This equipment uses DC 12 V only. Do not use this equipment on 24 V vehicles such as large trucks.
- When driving, keep the TV tuner volume down to a level where you can hear sounds from outside the vehicle.
- If a problem occurs such as entry of a foreign object, water gets into the tuner, or it produces smoke or strange smells, stop using the tuner immediately, and consult your dealer.

■ *Tuner Handling*

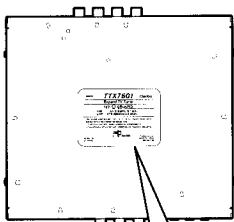
- Disconnecting the cables while the system is operating may cause a system breakdown. Always turn off the power (ACC-OFF) before you disconnect the cables.
- If the power supply to the system is stopped due to battery replacement, etc., the details you have entered into the microcomputer memory may be erased and the settings may return to the default settings. If this occurs, enter your settings again.


■ *TV broadcast reception*

When receiving the TV broadcasts, the strength of the signals changes since the car is moving, so in some cases it may not be possible to receive clear pictures.

- TV signals are strongly linear, so reception is affected by buildings, mountains and other obstacles.
 - Such external factors such as electric train lines, a high voltage lines, and signal devices may disturb the picture or cause noise.
- * If the reception is poor, switch to a station with good reception.

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 residential 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 consult the dealer or an experienced radio/TV technician for help.



MODEL	TTX7601	Clarion
Expand TV Tuner		
12V ⓪ GROUND		
VHF	54-216MHz (2-13ch)	
UHF	470-806MHz (14-69ch)	
<small>THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRABLE OPERATION.</small>		
SERIAL No. ZT-4960B	 8mm MAX	Clarion Co. Ltd MADE IN CHINA 286-9447-00

INFORMATION FOR USERS:

CHANGES OR MODIFICATIONS TO THIS PRODUCT NOT APPROVED BY THE MANUFACTURER WILL VOID THE WARRANTY AND WILL VIOLATE FCC APPROVAL.

Remote Control Unit

1. The remote control unit may fail to operate when the remote control receiver sensor is exposed to direct sunlight. Should this happen, block the path of the sunlight before using the remote control unit.
2. Replace the batteries in the remote control unit when its operating range and angle of operation start to decrease.
3. Do not leave the remote control unit in a location where it is exposed to high temperatures as this may cause failure or deformation.

For Safe Driving

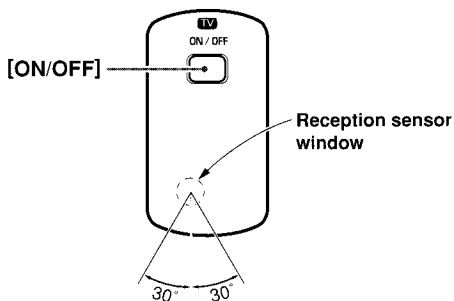
For the sake of safe driving, stop the car when you intend to watch a video.

2. CONTROLS

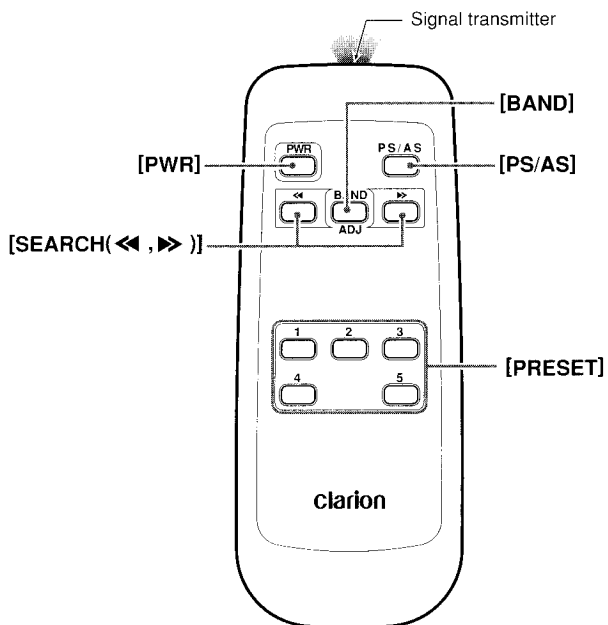
Remote control sensor unit

● Remote control operation

Aim the remote control unit at the remote control sensor (supplied) within a 30° horizontal and vertical angle.



Remote control unit



3. NOMENCLATURE

Names of Buttons

Note:

- Be sure to read this chapter referring to the front diagrams of chapter "2. CONTROLS" on page 5 (unfold).

■ Remote control sensor unit

[ON/OFF] button:

- Press and hold this button for 1 second or longer to turn on and off the power.

■ Remote control unit

[PWR] button:

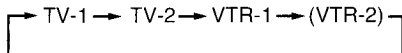
- Turns the power on and off.

[◀], [▶] button:

- Manual tuning.
- When pressed and held for 0.5 seconds: Seek tuning.

[BAND] button:

- Switches reception band.



- When this button is pressed and held for about 2 seconds the unit enters the FM transmitter frequency switching mode.

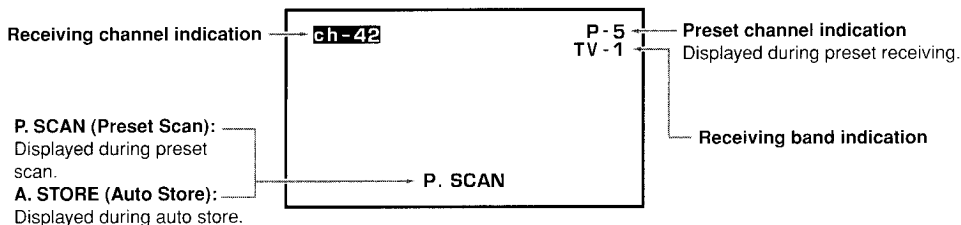
[PS/AS] button:

- Preset scan.
- When pressed and held for 2 seconds: Auto store.

[PRESET] button(1 to 5):

- Recalling a preset station.
- When pressed and held for 2 seconds: Preset memory.

Screen display



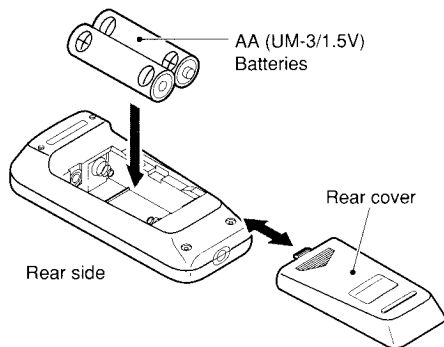
Inserting the Batteries

1. Turn the remote control unit over, then slide the rear cover in the direction of the arrow.
2. Insert the AA (UM-3/1.5V) batteries that came with the remote control unit facing in the directions shown in the figure, then close the rear cover.

Notes:

Using batteries improperly can cause them to explode. Take note of the following points:

- When replacing batteries, replace both batteries with new ones.
- Do not short-circuit, disassemble or heat batteries.
- Do not dispose of batteries into fire or water.
- Dispose of spent batteries properly.



- After the channel is selected or setting mode is operated, the above screen is displayed for 5 seconds. After that, if no operation is performed, the indications on the screen are cleared.

4. FEATURES

- **Compact size**
The unit's compact size of 7" (width) × 1" (height) × 6-5/16" (depth) permits flexibility in selecting the installation location.
- **Equipped with image and audio input terminals, and a security camera connection terminal**
You can connect your unit to an external video camera (*) or Clarion security camera.
* Connection requires a Clarion conversion cord CCA-389 (mini DIN 8P → RCA3P) which is sold separately.
- **Equipped with RCA image output terminal**
The image output terminal is a non-magnetic terminal to prevent signal deterioration and aged deterioration.
- **Rapid tuning in to your desired TV station**
You can easily tune in to your favorite TV stations when travelling by using preset tuning (10 VHF/ UHF stations in total), manual tuning, and seek tuning.
- **Equipped with 4-line diversity**
With the separately-sold antenna connected, 4-line diversity receiving is enabled.
- **Auto store function that allows easy presetting of 10 TV stations in total (5 stations each for band TV1 and TV2)**
- **Preset scan function that enables receiving in the order of the stored stations**

5. PACKAGE CONTENTS

1. TV tuner unit (TTX7601)	
2. Owner's Manual / Installation Manual	1
3. Remote control sensor unit (CCA-372-110)	1
4. Remote control unit (RCB-130-106)	1
5. Power supply lead	1
6. Velcro tape	2
7. Cord clamp	1
8. AA battery (SUM-3)	1
9. Warranty card	1

6. OPERATIONS

Basic Operations

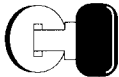
Note: Be sure to read this chapter referring to the front diagrams of chapter "2. CONTROLS" on page 5 (unfold).

⚠ CAUTION

When the unit is turned on, starting and stopping the engine with its volume raised to the maximum level may harm your hearings. Be careful about adjusting the volume.

Note:

- Use this unit after starting the engine.



ACC or engine
ON position

Turning on and off the power

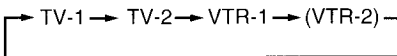
Note:

• Be careful about using this unit for a long time without running the engine. If you drain the car's battery too far, you may not be able to start the engine and this can reduce the service life of the battery.

1. Press and hold the [ON/OFF] button on the remote control sensor unit for 1 second to turn on and off the power.
Otherwise, press the [PWR] button on the remote control unit to turn on and off the power.

Selecting a mode

1. Press the [BAND] button to change the mode of operation.
2. Each time you press the [BAND] button, the mode of operation changes in the following order:



Setting the frequency of the FM transmitter

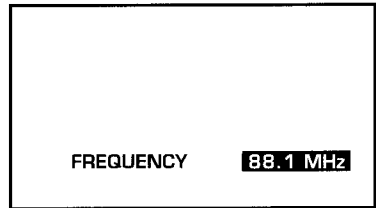
* As the TV audio is output using the FM transmitter system, you can enjoy it from the FM radio of the car audio.

1. Press and hold the [BAND] button for about 2 seconds to switch to the FM transmitter frequency setting screen.

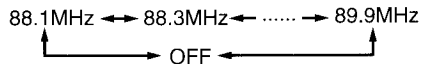
The frequency can be set within the range of 88.1 to 89.9 MHz (10 steps, 0.2 MHz for each).

Note:

- The FM transmitter frequency setting screen is displayed for about 5 seconds.



2. Press the [◀] or [▶] button to switch the FM transmitter frequency. Each time you press the [◀] or [▶] button, the frequency changes in the following order:



* By adjusting the FM frequency of the car audio to the set frequency, you can enjoy the TV audio.

Note:

- The TV video/audio may be disturbed depending on the selected frequency. In this case, change the FM transmitter frequency to another.

⚠ WARNING

For your safety, the driver should not watch the TV or operate the controls while driving. Please note that watching and operating the TV while driving are prohibited by law in some countries.

Seek tuning

Press and hold the [◀◀] or [▶▶] button for about 0.5 seconds.

- * When you press and hold the [◀◀] or [▶▶] button, seek tuning starts. Seek tuning stops automatically when the channel receiving a TV broadcast is found.
- * If seek tuning stops before or after the broadcasting channel, press the tuning button again.

Manual tuning

Press the [◀◀] or [▶▶] button.

The channel number is displayed on the upper left part of the screen.

- * Each time you press the [◀◀] or [▶▶] button, the channel number increases or decreases by one.
- * The channel number disappears after the elapse of about 5 seconds.

Recalling a preset station

A total of 10 TV stations can be stored (TV-1;5 and TV-2;5). This allows you to select your favorite TV stations and store them in memory for later recall.

1. Press the [BAND] button and select the desired TV band. (TV1 or TV2)
2. To recall a stored TV station, press the desired [PRESET] buttons to select that station.
 - * Press and hold one of the [PRESET] buttons for 2 seconds or longer to store the current station into the preset memory.

Manual memory

1. Press the [BAND] button and select the desired TV band. (TV1 or TV2)
2. Select the desired station with seek tuning, manual tuning or preset tuning.
3. Press and hold one of the [PRESET] buttons for 2 seconds or longer to store the current station to that preset memory.
 - * When the supply of the power stops due to battery replacement, etc., the memory is initialized.

Auto store

Automatically-received channels are automatically stored into the memory of preset channels. The number of preset channels that can be stored into the memory is:

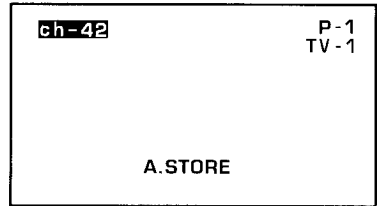
- TV1: 5 TV stations
- TV2: 5 TV stations

A total of 10 TV stations can be stored freely.

The method for preset channel setting is common to TV-1 and TV-2.

1. Press the [BAND] button to select TV-1 or TV-2.
2. Press and hold the [PS/AS] button for about 2 seconds.

The screen displays [A.STORE] and TV stations are automatically stored into the memory from the station next to the one presently being received.



3. When the desired channel is received, press the [AS/PS] button again.

Notes:

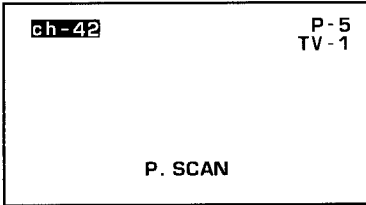
- When the supply of the power stops due to battery replacement, etc., the memory is initialized.
- Depending on the condition of the radio waves, empty channels may be stored.
- In some places where the radio waves are weak, TV stations cannot be stored in some cases.
- If TV stations cannot be stored or empty channels are stored, perform setting again while seeing "Manual memory".

Preset scan

Preset scan allows the user to view each preset position before it automatically advances to the next preset. This function is useful for searching for desired TV station in memory.

1. Press the **[AS/PS]** button.

The screen displays **[P.SCAN]** and then displays the broadcasts of the preset channels, 5 seconds for each.

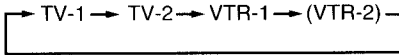


2. When the desired channel is received, press the **[AS/PS]** button again.

Watching a video

Press the **[BAND]** button to select the VTR mode.

* Each time you press the **[BAND]** button, the band switches in the following order:



- VTR-2 is switchable when a video is connected to the VRT2/CCD input terminal. To connect a video to this input terminal, a separately-sold AV conversion cord (CCA-389) is necessary.
- * For the operating instructions of the video equipment, see the operation manual of the connected device.

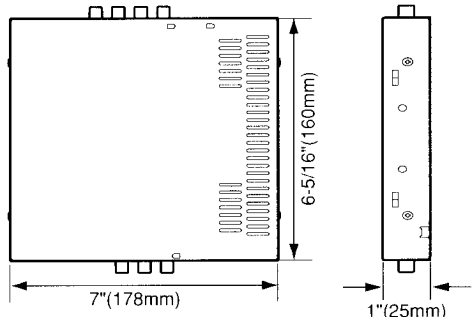
7. TROUBLESHOOTING

The following symptoms may not be the result of a breakdown, so perform the remedy suggested below before contacting your Dealer for repairs.

Symptom	Cause	Remedy
Image is unclear	Poor reception	The transmission may not be reaching you properly because you are in a valley or the shadow of a building. Check again at a location where the transmission can reach you properly.
Double or triple image	Poor reception	The image may be affected by transmission reflected from mountains or buildings. Change your location or the reception direction.
Image is spotty or striped	Electrical interference	Reception may be affected by radio interference from another vehicle, a train, high voltage or neon signs. Check your reception again at another location.
No sound	The volume has not been adjusted properly.	It is possible that the sound level has been set to the minimum. Check it again.
	The FM transmitter is off.	Set the frequency of the FM transmitter to a value within the range of 88.1 to 89.9 MHz.
No sound Noises	The antenna of the FM transmitter has not been set up to the direction of the vehicle-side antenna.	Set up the antenna of the FM transmitter to the direction of the vehicle-side antenna.
	The receiving frequency of the center unit side has not been adjusted.	Adjust the receiving frequency of the car audio to the frequency of the FM transmitter.

8. SPECIFICATIONS

Reception channels:	VHF 54 - 216 MHz (2 -13 channels) UHF 470 - 806 MHz (14 - 69 channels)
Antenna input:	75 Ω unbalanced
Voltage:	14.4 V
Grounding:	Negative terminal grounding
Power consumption:	0.5 A or less
External dimensions:	7" (Width) \times 1" (Height) \times 6-5/16" (Depth) [178 mm (Width) \times 25 mm (Height) \times 160 mm(Depth)]
Weight:	0.6 kg



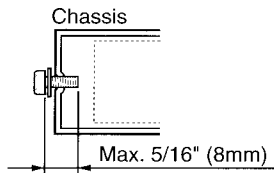
9. INSTALLATION

⚠ CAUTION

- Disconnect the battery negative cable before connecting the wiring.
- If you are making holes in the vehicle body in order to install the unit, first confirm the position of pipes, tanks and electrical wiring to avoid contact and interference.
- When installing the wiring for connection cords on a vehicle equipped with airbags, do not install the wiring where it may affect the airbag system.
- Do not cover the ventilation holes and heat-radiating parts of the tuner.

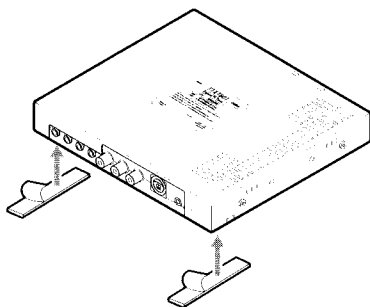
■ Installation Using Screws

1. When using the installation holes at the sides of the unit, use M4 × 8 screws. Using screws other than the specified screws may cause a malfunction.
2. If you are going to drill holes in the dashboard, make sure beforehand that there are no harnesses behind the dashboard at that position or nearby.



■ Installation Using Velcro Tape

1. Apply Velcro tape to the bottom surface of the unit.
2. Attach the unit to the floor carpet beneath the seat.



10. CAUTIONS ON WIRING

Pay particular attention to the following points when laying out the cords.

- Keep the unit's cables as far away as possible from the vehicle's wiring bundles.
- Keep the unit's RCA pin cord and the power cord separated as far as possible.

⚠ CAUTION

- When you have finished connecting the cords, secure them with clamps and insulating tape for protection.
- Make sure that the connection cables will not get caught on burrs and edges of the metal parts under the seat. It could damage the cables and cause noise from the unit.
- To assist safe driving, connect the parking brake connection terminal to the lead wire on the lamp side of the parking brake lamp switch.

11. WIRING CONNECTIONS

Connect the unit as follows.

Notes:

- *1 Connection requires a CCA-389 conversion cord (mini DIN8P → RCA3P) which is sold separately.
- *2 If you are connecting an antenna other than a 4 system diversity antenna, connect it to the MAIN terminal on the far right.
- *3 Set up the antenna of the FM transmitter to the direction of the vehicle-side antenna.

