

- The identification of any stored diagnostic trouble codes (DTCs) and their status

The use of the Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

DIAGNOSTIC SYSTEM CHECK - REMOTE KEYLESS ENTRY

Test Description

The number(s) below refer to the step number(s) on the diagnostic table.

- 2:** Lack of communication may be due to a partial malfunction of the class 2 serial data circuit or due to a total malfunction of the class 2 serial data circuit. The specified procedure will determine the particular condition.
- 3:** The symptoms list in Symptoms will determine the correct diagnostic procedure to use.
- 4:** The presence of DTCs which begin with "U" indicate some other module is not communicating. The specified procedure will compile all the available information before tests are performed.

Diagnostic System Check - Remote Keyless Entry

Step	Action	Yes	No
Schematic Reference: <u>Keyless Entry Schematics</u>			
1	Install a scan tool. Does the scan tool power up?	Go to Step 2	Go to <u>Scan Tool Does Not Power Up</u> in Data Link Communications
2	1. Turn ON the ignition, with the engine OFF. 2. Attempt to establish communication with the following modules: • Driver's Door Module (DDM) • Passenger • Left Rear Door Module (LRDM) • Right Rear Door Module (RRDM) • The Dash Integration Module (DIM) • The Instrument Panel Cluster (IPC) • The Rear Integration Module (RIM) • The Radio Antenna module		Go to <u>Scan Tool Does Not Communicate with Class 2</u>

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Keyless Entry - SRX

	Does the scan tool communicate with all of the listed modules?	Go to Step 3	<u>Device</u> in Data Link Communications
3	Select the display DTC function on the scan tool for the following modules: • Driver's Door Module (DDM) • Passenger • Left Rear Door Module (LRDM) • Right Rear Door Module (RRDM) • The Dash Integration Module (DIM) • The Instrument Panel Cluster (IPC) • The Rear Integration Module (RIM) • The Radio Antenna module Does the scan tool display any DTCs?	Go to Step 4	Go to <u>Symptoms - Keyless Entry</u>
4	Does the scan tool display any DTCs which begin with a "U"?	Go to <u>Scan Tool Does Not Communicate with Class 2 Device</u> in Data Link Communications	Go to Step 5
5	Does the scan tool display DTC B1000, B1001, B1004, B1007, B1009, B1013, or B1014?	Go to <u>Diagnostic Trouble Code (DTC) List</u> in Body Control System	Go to Step 6
6	Does the scan tool display DTC B1327 or B1328?	Go to <u>Diagnostic Trouble Code (DTC) List</u> in Engine Electrical	Go to <u>Symptoms - Keyless Entry</u>

SCAN TOOL OUTPUT CONTROLS

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Keyless Entry - SRX

Scan Tool Output Controls

Scan Tool Output Control	Menu Selection	Description
One Key Fob	Program Key Fobs	The Remote Keyless Entry system (Transmitter, Radio Antenna Module, Rear Integration Module) programs one transmitter.
Two Key Fobs	Program Key Fobs	The Remote Keyless Entry system (Transmitter, Radio Antenna Module, Rear Integration Module) programs two transmitters.
Three Key Fobs	Program Key Fobs	The Remote Keyless Entry system (Transmitter, Radio Antenna Module, Rear Integration Module) programs three transmitters.
Four Key Fobs	Program Key Fobs	The Remote Keyless Entry system (Transmitter, Radio Antenna Module, Rear Integration Module) programs four transmitters.

SCAN TOOL DATA LIST

The Keyless Entry Scan Tool Data List contains all of the keyless entry related parameters that are available on the scan tool. The parameters in the list are arranged in alphabetical order. The column, Data List, indicates the location of the parameter within the scan tool menu selections. Use the Keyless Entry Scan Tool Data List as directed by a diagnostic table or in order to supplement the diagnostic procedures. Begin all of the diagnostic procedures with **Diagnostic System Check - Remote Keyless Entry**. Use the Scan Tool Data List only after the following is determined:

- There is no published DTC procedure nor published symptom procedure for the customer concern.
- The DTC or symptom diagnostic procedure indicated by the diagnostic system check does not resolve the customer concern.

The Typical Data Values are obtained from a properly operating vehicle under the conditions

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Keyless Entry - SRX

specified in the first row of the Scan Tool Data list table. Comparison of the parameter values from the suspect vehicle with the Typical Data Values may reveal the source of the customer concern.

Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition On, Engine Off			
8-Digit GM Part Number	Module Information	8 digit number	25665573
# of Fob's Programmed	Key Fob Information	number	4
Key Pressed on Fob	Key Fob Information	Lock, Unlock, Panic, Fuel, Rear Compartment	Unlock
Last Fob Used	Key Fob Information	number	1
PROM ID	Module Information	4 digit number	8073

SCAN TOOL DATA DEFINITIONS

8-Digit GM Part Number

The scan tool displays an 8 digit number which indicates the GM part number of the module.

of Fobs Programmed

The scan tool displays 1 Fob - 4 Fobs to indicate the number of keyless entry transmitters that are programmed for the system.

Key Pressed on Fob

The scan tool displays Dr. Door Unlock, Door Lock, All Door Unlock, Trunk, or Fuel Door/Alarm which indicates which keyless entry transmitter button was last pressed.

Last Fob Used

The scan tool displays Fob#1-Fob#4 which indicates the number of the last keyless entry

transmitter used.

PROM ID

The scan tool displays a 4 digit number which indicates the ID number of the PROM associated with the module.

SYMPTOMS - KEYLESS ENTRY

IMPORTANT: The following steps must be completed before using the symptom tables.

1. Perform **Diagnostic System Check - Remote Keyless Entry** before using the Symptom Tables in order to verify that all of the following are true:
 - There are no DTCs set.
 - The control module(s) can communicate via the serial data link.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to **Keyless Entry System Description and Operation** .

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the Keyless Entry System. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Panic Mode Inoperative**
- **Keyless Entry System Inoperative**

PANIC MODE INOPERATIVE

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Keyless Entry - SRX

Panic Mode Inoperative

Step	Action	Yes	No
1	Did you perform the Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Remote Keyless Entry</u>
2	With the keyless entry transmitter, attempt to operate the panic function. Do both the horns and the park lamps pulse on and off?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	Do any of the panic functions operate?	Go to Step 4	Go to <u>Keyless Entry System Inoperative</u>
4	Do the horns pulse on and off?	Go to <u>Diagnostic System Check - Lighting Systems</u> in Lighting Systems	Go to <u>Diagnostic System Check - Horns</u> in Horns

KEYLESS ENTRY SYSTEM INOPERATIVE

Keyless Entry System Inoperative

Step	Action	Yes	No
1	Did you perform the Diagnostic System Check?	Go to Step 2	Go to <u>Diagnostic System Check - Remote Keyless Entry</u>
2	Press each button of the transmitter one at a time. Does the system operate normally?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u> in Wiring Systems	Go to Step 3
3	Lock and unlock the door locks using the controls inside the vehicle. Do the locks operate properly?		Go to <u>Diagnostic System Check - Door Systems</u> in

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Keyless Entry - SRX

		Go to Step 4	Doors
4	Operate the rear compartment release from the controls inside the vehicle. Does the rear compartment release operate properly?	Go to Step 5	Go to Symptoms - Body Rear End in Body Rear End
5	IMPORTANT: Inspect that the keyless entry transmitter is the correct model for the vehicle remote system. A wrong model transmitter may pass this test, but will not activate the vehicle remote system. 1. Turn on the J 43241 Keyless Entry Tester. See Special Tools and Equipment . 2. Place the transmitter on the J 43241 test pad. See Special Tools and Equipment . 3. Press each button of the transmitter one at a time. Does a tone sound and the green light illuminate on the J 43241 after each button is pressed? See Special Tools and Equipment .	Go to Step 10	Go to Step 6
6	Do any of the buttons on the transmitter sound the tone and illuminate the green light when pressed?	Go to Step 9	Go to Step 7
7	Replace the transmitter battery. Refer to Transmitter Battery Replacement . Did you complete the replacement?	Go to Step 8	-
8	1. Turn on the J 43241 Keyless Entry Tester. See Special Tools and Equipment . 2. Place the transmitter on the J 43241 test pad. See Special Tools and Equipment . 3. Press each button of the transmitter one at a time. Does a tone sound and the green light illuminate on the J 43241 after each button is pressed? See Special Tools and Equipment .	Go to Step 10	Go to Step 9
9	Replace the transmitter.		-

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Keyless Entry - SRX

	Did you complete the replacement?	Go to Step 10	
10	IMPORTANT: All transmitters which are to be recognized by the Keyless Entry system must be programmed in a single programming sequence. If the system is placed in program mode it will erase all previously programmed transmitters upon the receipt of the programming signal from the first transmitter. Perform the programming procedure. Refer to <u>Transmitter Programming</u> .Did the locks cycle to lock then unlock?	Go to Step 12	Go to Step 11
11	IMPORTANT: When replacing the Radio Antenna Module, perform the transmitter programming procedure. Replace the Radio Antenna Module. Refer to <u>Antenna Module Replacement (Passenger Side)</u> or <u>Antenna Module Replacement (Driver Side)</u> .Did you complete the replacement?	Go to Step 12	-
12	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

REPAIR INSTRUCTIONS

TRANSMITTER BATTERY REPLACEMENT

Removal Procedure

1. Insert a coin into the slot on the battery access cover on the back of the transmitter.
2. Turn the coin counterclockwise to remove the transmitter rear cover.

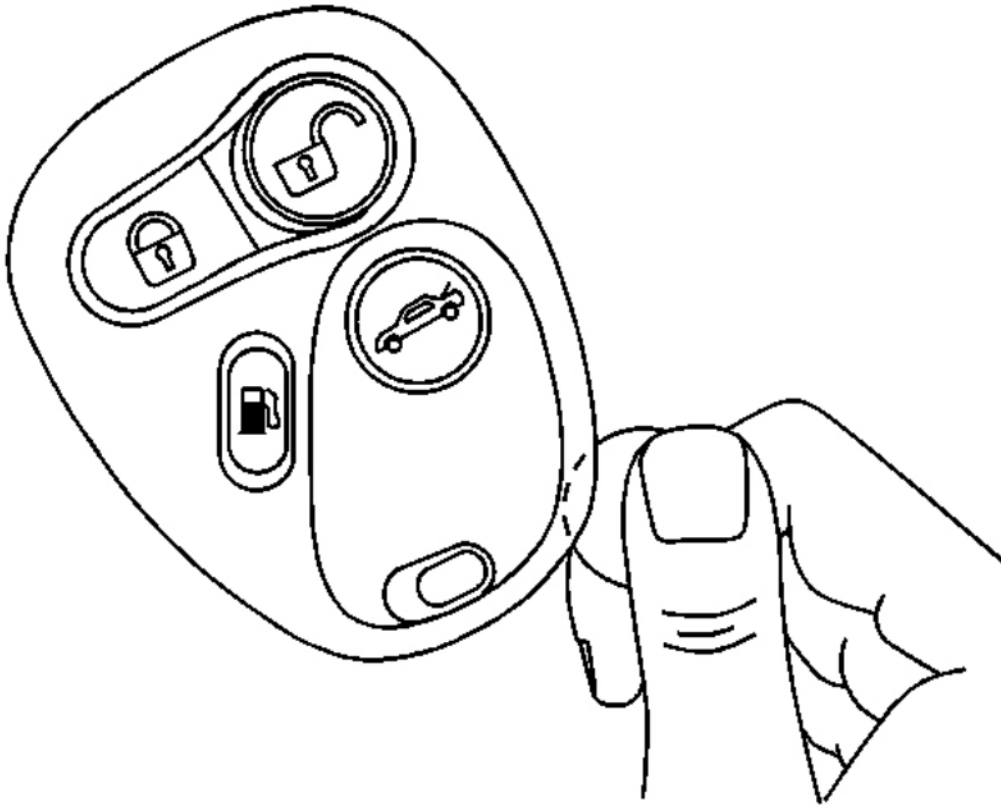


Fig. 2: Removing Transmitter Rear Cover
Courtesy of GENERAL MOTORS CORP.

3. Remove the battery.

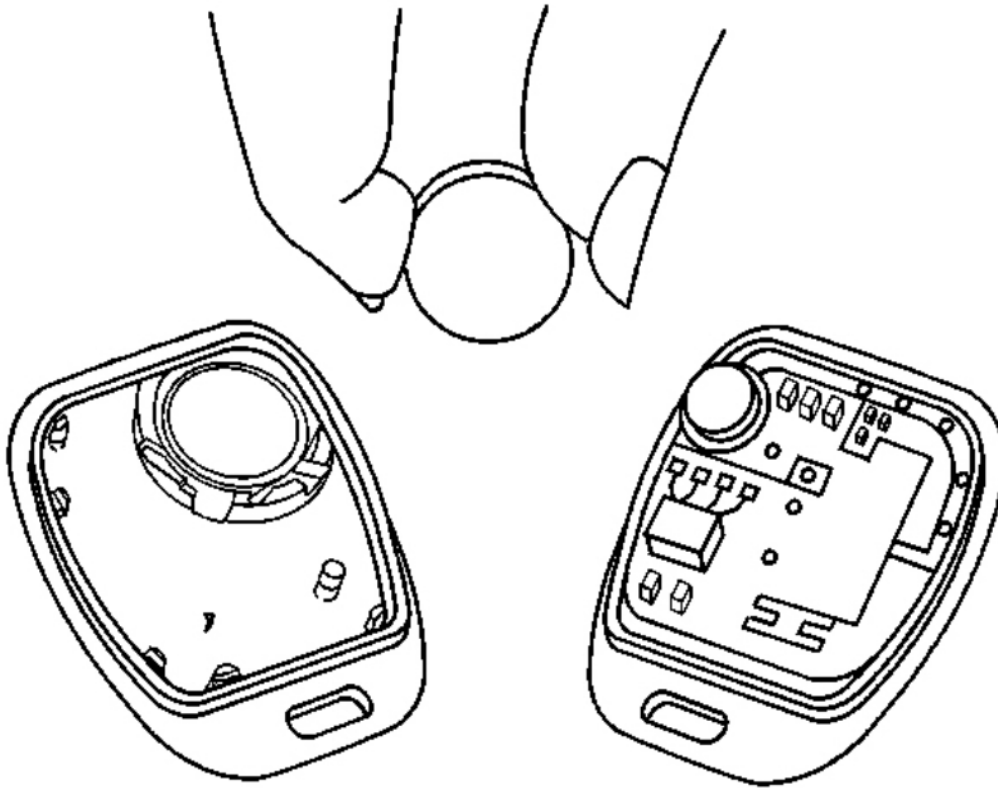


Fig. 3: View Of Transmitter Battery
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

IMPORTANT: Use the proper battery size or damage to the transmitter may result.

1. Install a GM P/N 90541381 battery type or equivalent.

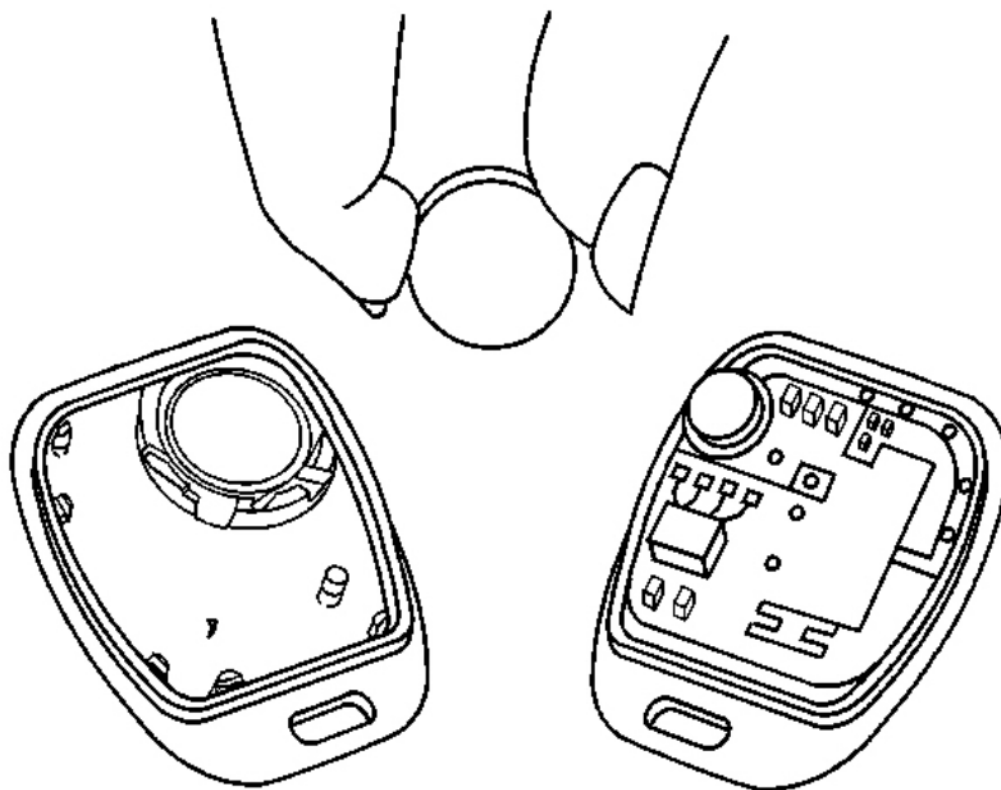


Fig. 4: View Of Transmitter Battery
Courtesy of GENERAL MOTORS CORP.

2. Install the transmitter rear cover.
3. Test the transmitter operation.

TRANSMITTER PROGRAMMING

IMPORTANT: All transmitters which are to be recognized by the radio antenna module must be programmed in a single programming sequence. If the system is placed in program mode it will erase all previously programmed transmitters upon the receipt of the programming signal from the first transmitter. Up to 4 transmitters can be programmed. Do not operate or program the transmitters in the vicinity of other vehicles that are in keyless

entry program mode. This prevents the programming of the transmitters to the incorrect vehicle. The order in which the transmitters are programmed is important. The first transmitter programmed will become Driver #1, and the second transmitter programmed will become Driver #2. The number on the back of the transmitter is for reference only. Additional unnumbered transmitters are also available. Use care to program the transmitters correctly.

To program transmitters:

1. Install a scan tool.
2. Turn ON the ignition, with the engine OFF.
3. Use the scan tool menu Body, RFA, Special Functions, Program Key Fobs in order to access transmitter programming.
4. Follow the directions on the scan tool in order to program the transmitters.
5. Operate the transmitter functions of each transmitter in order to verify correct system operation.

DESCRIPTION AND OPERATION

KEYLESS ENTRY SYSTEM DESCRIPTION AND OPERATION

The keyless entry system is a supplementary vehicle entry device. Radio frequencies or discharged batteries may disable the system.

Keyless entry allows you to operate the following components:

- The door locks, including the rear compartment
- The illuminated entry lamps
- The panic alarm

The keyless entry system has the following main components:

- The transmitters
- The radio antenna module

When you press a button on a transmitter, the transmitter sends a RF signal to the radio antenna module. The module interprets the signal and activates the requested function via a class 2

message over the serial data line.

Unlock Driver Door Only

Momentarily press the UNLOCK button in order to perform the following functions:

- Unlock the driver door only.
- Illuminate the interior lamps for a predetermined amount of time or until the ignition is turned ON.
- Flash the exterior lights (if selected ON in personalization).
- Disarm the content theft deterrent (CTD) system.
- Deactivate the CTD system when in the Alarm Mode.
- Recall the memory seat and memory mirror positions for that driver.

Unlock All Doors (Second Operation)

Momentarily press the UNLOCK button a second time (within 2 seconds of the first press) in order to perform the following functions:

- Unlock the remaining doors.
- Illuminate the interior lamps for a predetermined amount of time or until the ignition is turned ON.
- Flash the exterior lights (if selected ON in personalization).
- Chirp the horn (if selected ON in personalization).
- Recall the memory seat and memory mirror positions for that driver.

Lock All Doors

Press the LOCK button in order to perform the following functions:

- Lock all of the doors.
- Momentarily illuminate the interior lamps.
- Flash the exterior lights (if selected ON in personalization).
- Chirp the horn (if selected ON in personalization).
- Arm the content theft deterrent (CTD) system.

Panic Alarm

IMPORTANT: On export vehicles, the alarm function may not automatically

reset after 30 seconds. The operator must cancel the alarm using one of the methods listed below.

A single press of the panic button performs the following functions:

- Illuminates the interior lamps.
- Pulses the horn.
- Flashes the head lamps.

All of the above will continue for 30 seconds or until any of the following conditions occur:

- The panic button is pressed again.
- The ignition switch is turned to the RUN position with a valid key.
- The vehicle is unlocked with the key.

Keyless Entry Personalization

The exterior lamps and horn chirp may be personalized for two separate drivers as part of remote activation verification. For mode descriptions and programming instructions, refer to **Driver Personalization** in Personalization.

Rolling Code

The Keyless Entry system uses rolling code technology. Rolling code technology prevents anyone from recording the message sent from the transmitter and using the message in order to gain entry to the vehicle. The term rolling code refers to the way that the keyless entry system sends and receives the signals. The transmitter sends the signal in a different order each time. The transmitter and the radio antenna module are synchronized to the appropriate order. If a programmed transmitter sends a signal that is not in the order that the radio antenna module expects, then the transmitter is out of synchronization. This occurs after 256 presses of any transmitter button when it is out of range of the vehicle.

Automatic Synchronization

The keyless entry transmitters do not require a manual synchronization procedure. If needed, the transmitters automatically resynchronize when any button on the transmitter is pressed within range of the vehicle. the transmitter will operate normally after the automatic synchronization.

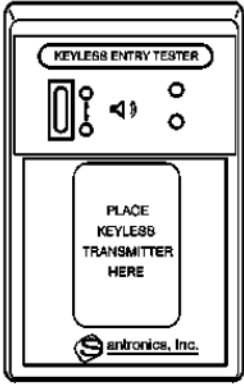
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

2004 Cadillac SRX

2004 ACCESSORIES & EQUIPMENT Keyless Entry - SRX

Special Tools

Illustration	Tool Number/ Description
	J 43241 Keyless Entry Tester