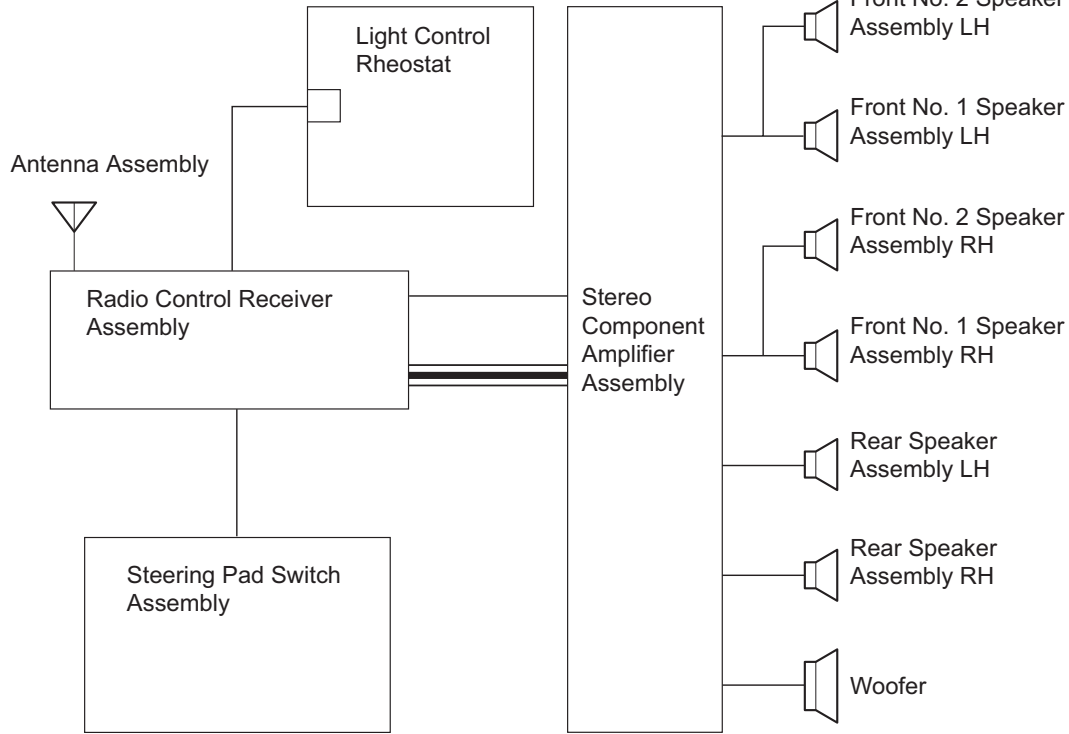


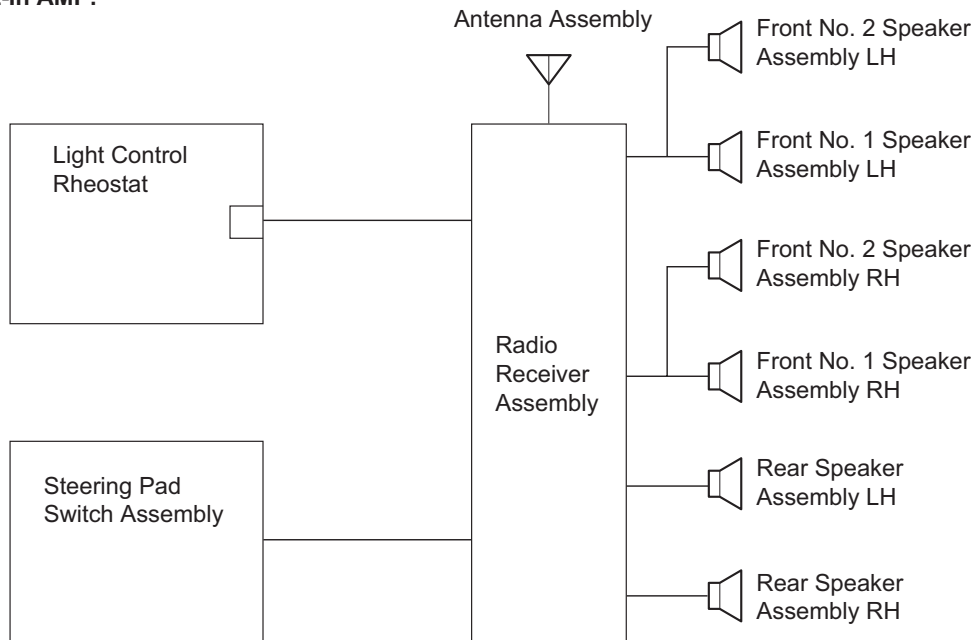
# SYSTEM DIAGRAM

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### Separate AMP:



### Built-In AMP:



==== : AVC-LAN

## SYSTEM DESCRIPTION

### 1. COMPACT DISC PLAYER

- (a) Compact Disc (hereafter called CD) players use a laser beam pick-up to read the digital signals recorded on CDs and reproduce analog signals of the music etc. 4.7 in. (12 cm) and 3.2 in. (8 cm) discs are available for the CD player.

**HINT:**

Never disassemble or apply oil to any part of the player unit. Do not insert any objects other than discs into the CD player.

**NOTICE:**

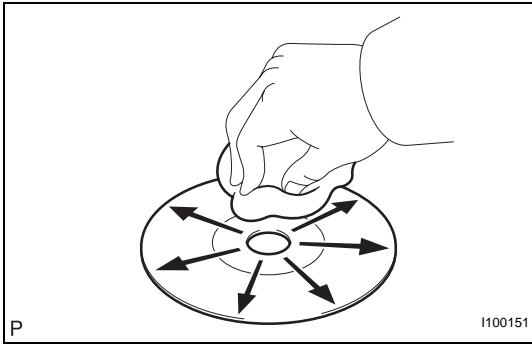
**CD players use an invisible laser beam which could cause hazardous radiation exposure. Be sure to operate the player correctly as instructed.**

### 2. MAINTENANCE CD Player/Disc Cleaning

- (a) If the disc gets dirty, clean the disc by wiping the surface from the center to the outside, in a radial direction, with a soft cloth as shown in the illustration.

**NOTICE:**

**Do not use a conventional record cleaner or anti-static preservative.**

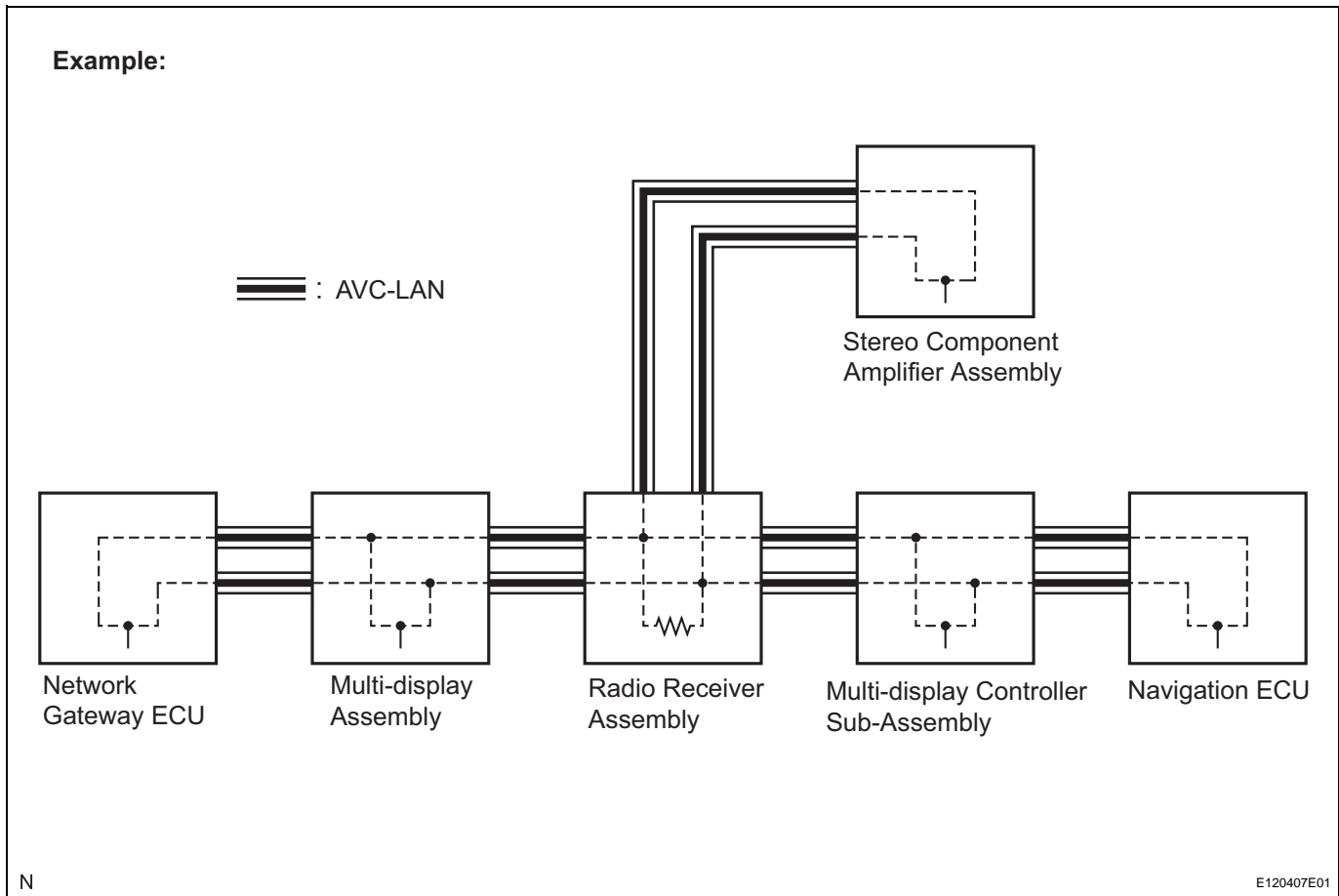


### 3. OUTLINE OF AVC-LAN

#### (a) What is AVC-LAN?

AVC-LAN is an abbreviation for Audio Visual Communication-Local Area Network. This is a unified standard co-developed by 6 audio manufacturers associated with Toyota Motor Corporation. The unified standard includes signals, such as audio, visual and signals for switch indication and communication.

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#### (b) Objectives

Recent development in car audio systems has been rapid and functions have been changed drastically. The conventional system has been switched to a multi-media type such as the navigation system. At the same time customers want to upgrade their audio systems. This is the factor that lies behind this standardization.

The concrete objectives are explained below.

- (1) When products of different manufacturers are combined together, malfunctions such as sound failure can occur. This problem can be solved by the standardization of signals.
- (2) Various types of after market products are available.

- (3) In general, new products developed by particular manufacturers could not be used due to a lack of compatibility with other manufacturer's products. By developing this new standard, users can enjoy a range of compatible products from different manufacturers.

HINT:

- When a +B short or GND short is detected in the AVC-LAN circuit, communication stops, and the audio system does not function.
- When the audio system is not equipped with a navigation system, the audio head unit is the master unit. When the audio system is equipped with a navigation system, the multi-display is the master unit.
- The radio receiver assembly is equipped with a resistor (60 to 80  $\Omega$ ) for communication.
- All car audio systems using AVC-LAN circuits have diagnostic functions.
- Each unit has its own specified number called a physical address (three-digit number). Numbers are also allotted to each function, which are called logical addresses (two-digit number).

#### 4. COMMUNICATION SYSTEM

- (a) Components in the audio system communicate with each other through the AVC-LAN. (Radio receiver with CD changer control function)
- (b) When a short circuit or circuit breakdown occurs in the AVC-LAN circuit, the audio system does not operate normally due to the communication cutoff.

#### 5. DIAGNOSTIC FUNCTION

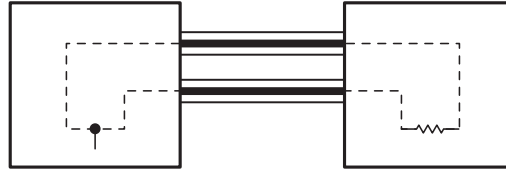
- (a) The audio system has a diagnostic function (the diagnostic result is displayed on the LCD of the radio receiver assembly). (Radio receiver with CD changer control function)
- (b) The component code (physical address), or three-digit number (in hexadecimal) is set for each component comprising AVC-LAN.
- (c) The logical address, or two-digit number (in hexadecimal) is set for each function and component unit in each component.

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AVC-LAN:

Stereo Component  
Amplifier Assembly

Radio Receiver  
Assembly



≡ : AVC-LAN

Y

E120408E01

### 6. DIAGNOSTIC TROUBLE CODE CHART

Terms	Description
Physical address	Three-digit code (shown in hexadecimal) which is given to each component comprising AVC-LAN. Corresponding to the function, individual symbols are specified.
Logical address	Two-digit code (shown in hexadecimal) which is given to each function comprising inner system of AVC-LAN.

HINT:

Titles for each unit are stated in the following order:  
physical address (part name).

(a) 190 (RADIO RECEIVER ASSEMBLY)

#### Logical address: 01 (Communication control)

DTC	Diagnosis Item	Diagnostic Content	Troubleshooting
D5 *1	Registered Component Disconnected	Component shown by sub code is or was disconnected from system with ignition switch in ACC or ON. Communication with component shown by sub code is not ensured when engine is started.	<ul style="list-style-type: none"> <li>Check harness for power supply system of component shown by sub code.</li> <li>Check harness for communication system of component shown by sub code.</li> </ul>
D6 *1	Absence of Master	Component in which this code is recorded was disconnected from system or master component with ignition switch in ACC or ON.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for communication system of radio receiver assembly.</li> </ul>
D7 *5	Connection Check Error	Component in which this code is recorded was disconnected from system or master component with ignition switch in ACC or ON.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for communication system of radio receiver assembly.</li> </ul>
D8 *2	No Response to Connection Check	Component shown by sub code is or was disconnected from system after engine start.	<ul style="list-style-type: none"> <li>Check harness for power supply system of component shown by sub code.</li> <li>Check harness for communication system of component shown by sub code.</li> </ul>

DTC	Diagnosis Item	Diagnostic Content	Troubleshooting
D9 *1	Last Mode Error	Audio or visual component operated before engine stop is or was disconnected with ignition switch in ACC or ON.	<ul style="list-style-type: none"> <li>Check harness for power supply system of component shown by sub code.</li> <li>Check harness for communication system of component shown by sub code.</li> </ul>
DA	No Response to ON/OFF Instruction	No response is identified when changing mode (audio and visual mode change). Sound and picture do not change by button operation.	<ul style="list-style-type: none"> <li>Check harness for power supply system of component shown by sub code.</li> <li>Check harness for communication system of component shown by sub code.</li> <li>If error occurs again, replace component shown by sub code.</li> </ul>
DB *1	Mode Status Error	Dual alarm is detected.	<ul style="list-style-type: none"> <li>Check harness for power supply system of component shown by sub code.</li> <li>Check harness for communication system of component shown by sub code.</li> </ul>
DC *3	Transmission Error	Transmission to component shown by sub code has failed. (Detecting this DTC does not necessarily mean actual failure.)	If same sub code is recorded in other component, check harness for power supply and communication systems of all components shown by code. (If not, delete DTC and recheck.)
DD *4	Master Reset (Momentary Interruption)	After engine was started, master component was disconnected from system.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for communication system of radio receiver assembly.</li> <li>If this error occurs frequently, replace radio receiver assembly.</li> </ul>
DE *4	Slave Reset (Momentary Interruption)	After engine was started, component shown by sub code was disconnected from system.	<ul style="list-style-type: none"> <li>Check harness for power supply system of component shown by sub code.</li> <li>Check harness for communication system of component shown by sub code.</li> </ul>
DF *4	Master Error	Due to defective condition of component with display, master function is switched to audio equipment.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for communication system of radio receiver assembly.</li> </ul>
E0 *1	Registration Completion Instruction Error	Registration completion instruction command from master cannot be received.	Since this DTC is provided for engineering purposes, it may be set when no actual failure exists.
E1 *1	Voice Processing Device ON Error	Amp device records that amp output does not function even while source device is operating.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for communication system of radio receiver assembly.</li> </ul>
E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from master component.	Replace radio receiver assembly.

DTC	Diagnosis Item	Diagnostic Content	Troubleshooting
E3 *1	Registration Request Transmission	Registration request command is output from component shown by sub code. Receiving connection check instruction, Registration request command is output from sub-master component.	Since this DTC is provided for engineering purposes, it may be set when no actual failure exists.
E4 *1	Multiple Frame Abort	Multiple frame transmission is aborted.	Since this DTC is provided for engineering purposes, it may be set when no actual failure exists.
22	RAM Error	Abnormal condition of RAM is detected.	Replace radio receiver assembly.

**HINT:**

- \*1: This DTC may be recorded depending on the battery condition or engine start voltage even if no failure is detected.
- \*2: If the power connector is disconnected after the engine starts, this DTC is recorded after 180 seconds.
- \*3: This DTC may be stored if the ignition key is turned to the START position again when the engine is already running.
- \*4: This DTC may be stored if the ignition key is held in the START position for one minute or more before returning to the ON position.
- \*5: The DTC is stored 210 seconds after the master component power supply connector is disconnected with the ignition switch in ACC or IG.

**Logical address: 62 (CD player)**

DTC	Diagnosis Item	Diagnostic Content	Troubleshooting
42	No Disc Readout	Disc cannot be read.	<ul style="list-style-type: none"> <li>Inspect CD</li> <li>Replace radio receiver assembly</li> </ul>
44	CD player Error	Error is detected in CD player.	Replace radio receiver assembly
45	EJECT Error	Disc cannot be ejected.	Replace radio receiver assembly
46	Disc has scratches on the reverse surface	CD has dirt or scratches on reverse side.	<ul style="list-style-type: none"> <li>Inspect CD</li> <li>If same code is detected, replace radio receiver assembly</li> </ul>

**Logical address: 63 (In-dash CD player)**

DTC	Diagnosis Item	Diagnostic Content	Troubleshooting
42	No Disc Readout	Disc cannot be read.	<ul style="list-style-type: none"> <li>Inspect CD</li> <li>Replace radio receiver assembly</li> </ul>
44	CD player Error	Error is detected in CD player.	Replace radio receiver assembly
45	EJECT Error	Disc cannot be ejected.	Replace radio receiver assembly
46	Disc has scratches on the reverse surface	CD has dirt or scratches on reverse side.	<ul style="list-style-type: none"> <li>Inspect CD</li> <li>If same code is detected, replace radio receiver assembly</li> </ul>
51	Elevator Error	Mechanical error occurred during elevator operation.	Replace radio receiver assembly
52	Clamp Error	Error occurs on clamp	Replace radio receiver assembly

## (b) 440 (STEREO COMPONENT AMPLIFIER ASSEMBLY)

## Logical address: 01 (Communication control)

DTC	Diagnosis Item	Diagnostic Content	Troubleshooting
D6 *1	Absence of Master	Component in which this code is recorded was disconnected from system with ignition switch in ACC or ON. Alternatively radio receiver assembly was disconnected when this code was recorded.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for power supply system of stereo component amplifier assembly.</li> <li>Check harness for communication system of stereo component amplifier assembly.</li> </ul>
D7	Communication Check Error	Component in which this code is recorded is or was disconnected from system after engine start. Alternatively radio receiver assembly was disconnected when this code was recorded.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for power supply system of stereo component amplifier assembly.</li> <li>Check harness for communication system of stereo component amplifier assembly.</li> </ul>
DC *2	Transmission Error	Transmission to component shown by sub code has failed. (Detecting this DTC does not necessarily mean actual failure.)	If same sub code is recorded in other component, check harness for power supply and communication systems of all components shown by code. (If not, delete DTC and recheck.)
DD *3	Master Reset (Momentary Interruption)	After engine was started, master component was disconnected from system.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for power supply system of stereo component amplifier assembly.</li> <li>Check harness for communication system of stereo component amplifier assembly.</li> <li>If this error occurs frequently, replace radio receiver assembly.</li> </ul>
DD *4	Master Error	Due to defective condition of component with display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component.	<ul style="list-style-type: none"> <li>Check harness for power supply of radio receiver assembly.</li> <li>Check harness for communication system of stereo component amplifier assembly.</li> <li>Check harness for communication system between multi-display assembly and sub-master component.</li> </ul>
E0 *1	Registration Completion Instruction Error	Registration completion instruction command from master cannot be received.	Since this DTC is provided for engineering purposes, it may be set when no actual failure exists.
E1 *1	Audio processor ON Error	While source device is operating, amp output stops.	<ul style="list-style-type: none"> <li>Check harness for power supply system of radio receiver assembly.</li> <li>Check harness for communication system of radio receiver assembly.</li> </ul>



DTC	Diagnosis Item	Diagnostic Content	Troubleshooting
E2	ON/OFF Instruction Parameter Error	Error occurs in ON/OFF controlling command from master component.	Replace radio receiver assembly.
E3 *1	Registration Request Transmission	Registration request command is output from slave component.	Since this DTC is provided for engineering purposes, it may be set when no actual failure exists.

AV

## HINT:

- \*1: This DTC may be recorded depending on the battery condition or engine start voltage even if no failure is detected.
- \*2: This DTC may be stored if the ignition key is turned to the START position again when the engine is already running.
- \*3: This DTC may be stored if the ignition key is held in the START position for one minute or more before returning to the ON position.
- \*4: If the device is reported as not existing during verification, check the power source circuit and AVC-LAN circuit for the device.