

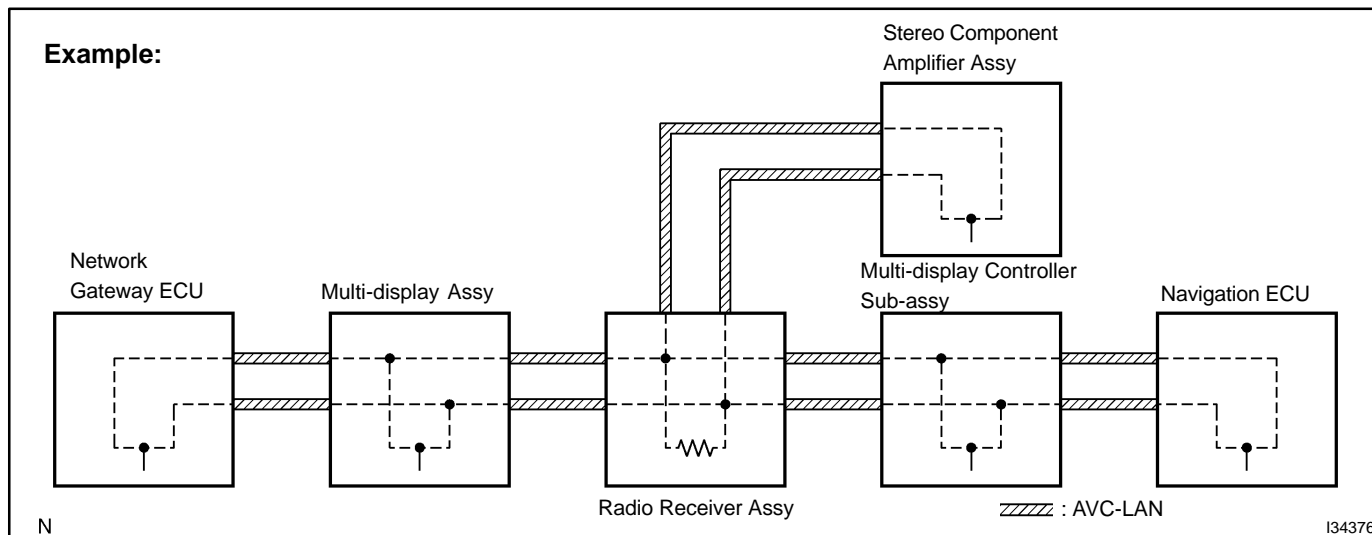
## DESCRIPTION

### 1. OUTLINE OF AVC-LAN

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

AVC-LAN is the 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.



#### (b) Objectives

Recently developments in car audio systems have been rapid and functions have been changed drastically. The conventional system has been switched to the multi-media type such as a 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.

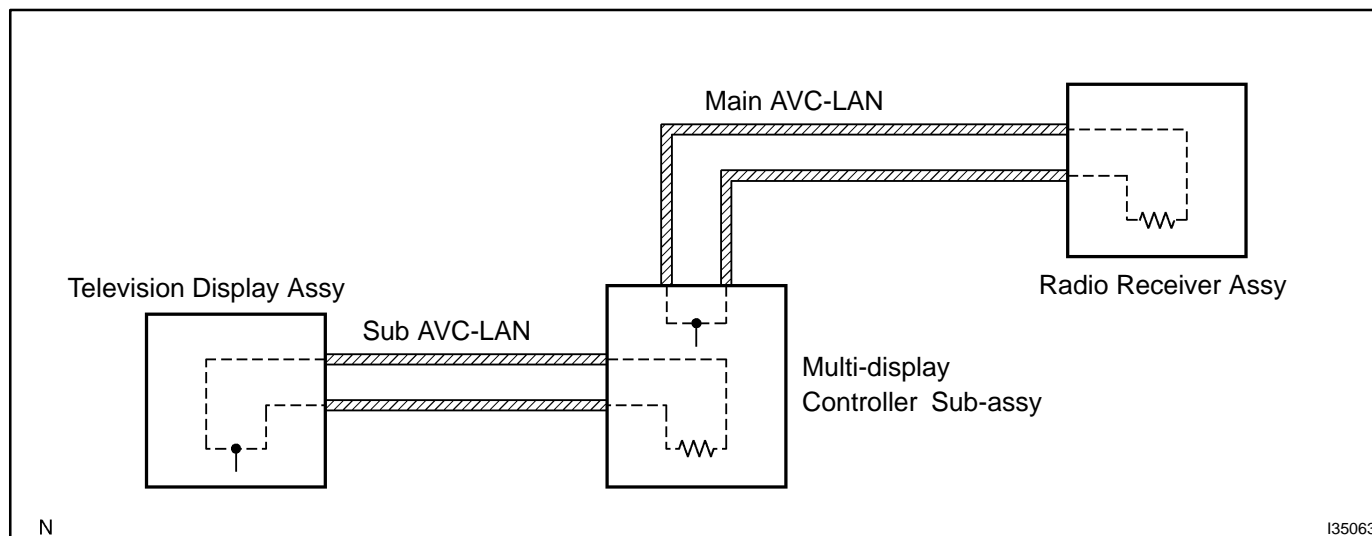
- (1) When products by different manufacturers were combined together, malfunctions such as sound failure occurred. This problem can be solved by standardization of signals.
- (2) Various types of after market products are available.
- (3) Because of the above (2), each manufacturer has been able to concentrate on developing products in their strongest field. This has enabled the development of inexpensive products.
- (4) In general, a new product developed by one particular manufacturer could not be used due to a lack of compatibility with other manufacturers' products. By developing this new standard, users can enjoy a range of compatible products from different manufacturers anytime they want.

#### HINT:

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

## 2. COMMUNICATION SYSTEM

- (a) This system performs communication between components through the Main AVC-LAN and Sub AVC-LAN.



- (b) The multi-display controller sub-assy functions as a master unit, which performs communication between the multi-display controller sub-assy and television display assy, in the Sub AVC-LAN circuit.

HINT:

Refer to "LEXUS NAVIGATION SYSTEM" (See page 05-1757 ) and "AUDIO SYSTEM" (See page 05-1615 ) for the Main AVC-LAN circuit.

- (c) The multi-display controller sub-assy is equipped with a resistor (60 to 80  $\Omega$ ) for communication.

## 3. DIAGNOSIS FUNCTION

- (a) The multi-display controller sub-assy functions as a master unit in the Sub AVC-LAN circuit on this circuit. It identifies trouble in this circuit, and the identified information is displayed on the television display assy.