Note
• "iPod" is a registered trademark of Apple Inc. in the United States and other countries.

Outline
• The audio system has an on-board diagnostic function and diagnostic assist function to facilitate audio system diagnosis.

Function
• The on-board diagnostic function consists of the following functions: A malfunction detection function, which detects overall malfunctions in the audio system-related parts; a memory function, which stores detected DTCs; and a display function, which indicates system malfunctions via a DTC display.
• There are two methods for DTC output and clearing; one using the Mazda Modular Diagnostic System (M-MDS) and one which does not use it. Because the DTCs differ depending on whether the M-MDS is used or not, use both methods. (with color LCD)
• The diagnostic assist function is a function for forcibly operating audio system related parts to verify their connection condition and operation status. In addition, the specifications for the audio system related parts are displayed in the audio display to enable their verification.

On-board diagnostic function
Malfunction detection function
• Detects malfunctions in the audio system.

Memory function
• If the audio unit detects a malfunction in the audio system, a maximum of 3 DTCs are recorded in the audio unit. If the audio unit has already stored 3 DTCs (without color LCD)/20 DTCs (with color LCD) and detects another malfunction, it clears the oldest DTC and stores the new DTC.
• DTCs stored in the audio unit are cleared if the negative battery cable is disconnected (if backup power is interrupted).

Display Function
Mazda Modular Diagnostic System (M-MDS) not used
• To display DTCs in the audio unit display that have been recorded in the memory function, activate the on-board diagnostic function by operating the audio unit. Refer to the Workshop Manual for the activation procedure of the on-board diagnostic function.
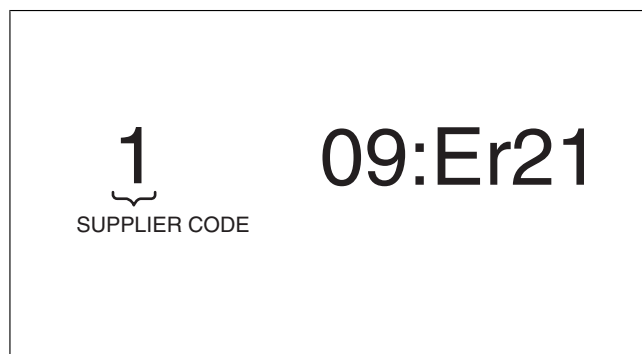 **The DTCs consist of the following:**
  — Supplier code (supplier name)
  — Device code (malfunction location)
  — Error code (malfunction contents)

Supplier code	Supplier name
01	SANYO Automedia
02	Panasonic
03	CLARION
04	PIONEER
05	VISTEON

Device code	Device name
09	Audio unit
10	AM/FM tuner/MP3/WMA (Windows Media Audio)/AAC (Advanced Audio Coding) applicable CD player
16	CAN system
26	Bluetooth unit
28	Auxiliary jack/USB port
29	iPod

Error code	Malfunction contents
01	Mechanical malfunction
02	Servo malfunction
07	Poor data read-outs
10	BUS line (communication line) error

1   09:Er21

SUPPLIER CODE

ac5wzw00000735

Error code	Malfunction contents
11	CAN line (communication line) error
12	CAN line (communication line) error
20	Insufficient power supply
21	Amplifier related circuit
22	Tuner error

With Using Mazda Modular Diagnostic System (M-MDS)
- When a DTC inspection is performed using the Mazda Modular Diagnostic System (M-MDS), the malfunction diagnostics for the audio system and Bluetooth system (hands-free telephone (HF/TEL) system) is initiated. A maximum of 20 DTCs detected by the malfunction diagnostics are displayed. Refer the Workshop Manual for the DTC inspection procedure.

× : Applicable
— : Not applicable

DTC table

With color LCD (Before IPM)

DTC No.		Security indicator light	Description	Fail-safe	Drive cycle	Self-test type[1]	Memory function
Mazda Modular Diagnostic System (M-MDS) display	Information display (On-board diagnostic test mode)						
B116A:13	—[2]	—	Open circuit in microphone circuit	—	—	C, D	×
B1188:64	10:Er07	—	Audio unit internal malfunction	—	—	C, D	×
B1D19:71	10:Er02	—	Audio unit internal malfunction	—	—	C, D	×
B1D19:79	10:Er01	—	Audio unit internal malfunction	—	—	C, D	×
B1D19:96	10:Er10	—	Audio unit internal malfunction	—	—	C, D	×
U0010:88	16:Er12	—	CAN system communication error	—	—	C, D	×
U0142:00	—[2]	—	Rear body control module (RBCM) communication error	—	—	C, D	×
U0155:00	—[2]	—	Instrument cluster communication error	—	—	C, D	×
U0197:00	—[2]	—	Communication error with Bluetooth unit	—	—	C, D	—
U2300:54	—[2]	—	Configuration error (data not received)	—	—	C, D	×
U2300:55	—[2]	—	Configuration error (not configured)	—	—	C, D	×
U2300:56	—[2]	—	Configuration error (Ineffective/ non-interchangeable data read)	—	—	C, D	×
U3000:04	09:Er22	—	Audio unit internal malfunction	×	—	C, D	×
U3000:09	09:Er21	—	Audio unit internal malfunction	×	—	C, D	×
U3003:16	09:Er20	—	Voltage decrease input from battery	—	—	C, D	×
—	28:Er01	—	Poor connection with exterior input unit, or read error	—	—	—	×
—	29:Er01	—	Audio unit internal malfunction, or iPod malfunction	—	—	—	×
—	—	—	DTCs not stored	—	—	—	—

[1] : C: CMDTC self test, D: ODDTC self test

[2] : It is not displayed in the audio display because the on-board diagnostic test mode is not available.

With color LCD (After IPM)

DTC No.		Security indicator light	Description	Fail-safe	Drive cycle	Self-test type[1]	Memory function
Mazda Modular Diagnostic System (M-MDS) display	Information display (On-board diagnostic test mode)						
B116A:13	—[2]	—	Open circuit in microphone circuit	—	—	C, D	—
B1188:64	10:Er07	—	Audio unit internal malfunction	—	—	C, D	×

DTC No.		Security indicator light	Description	Fail-safe	Drive cycle	Self-test type[1]	Memory function
Mazda Modular Diagnostic System (M-MDS) display	Information display (On-board diagnostic test mode)						
B1D19:71	10:Er02	—	Audio unit internal malfunction	—	—	C, D	×
B1D19:79	10:Er01	—	Audio unit internal malfunction	—	—	C, D	×
B1D19:96	10:Er10	—	Audio unit internal malfunction	—	—	C, D	×
U0010:88	16:Er12	—	CAN system communication error	—	—	C, D	×
U0142:00	—[2]	—	Rear body control module (RBCM) communication error	—	—	C, D	×
U0155:00	17:Er11	—	Instrument cluster communication error	—	—	C, D	×
U0197:00	—[2]	—	Communication error with Bluetooth unit	—	—	C, D	—
U2300:54	—[2]	—	Configuration error (data not received)	—	—	C, D	×
U2300:55	—[2]	—	Configuration error (not configured)	—	—	C, D	×
U2300:56	—[2]	—	Configuration error (Ineffective/ non-interchangeable data read)	—	—	C, D	×
U3000:04	09:Er22	—	Audio unit internal malfunction	×	—	C, D	×
U3000:09	09:Er21	—	Audio unit internal malfunction	×	—	C, D	×
U3003:16	09:Er20	—	Voltage decrease input from battery	—	—	C, D	×
—	—	—	DTCs not stored	—	—	—	—

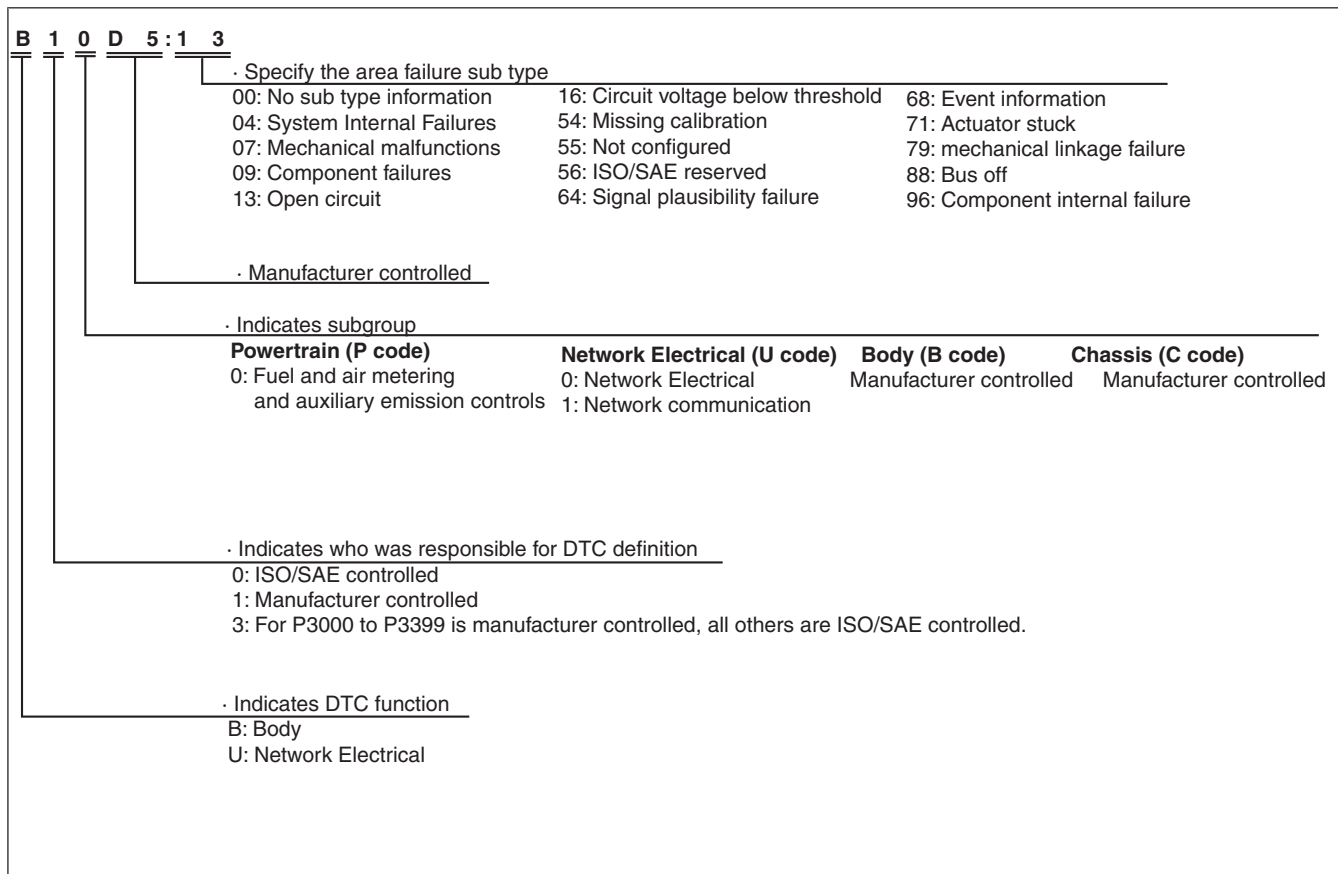[1] : C: CMDTC self test, D: ODDTC self test

[2] : It is not displayed in the audio display because the on-board diagnostic test mode is not available.

Without color LCD

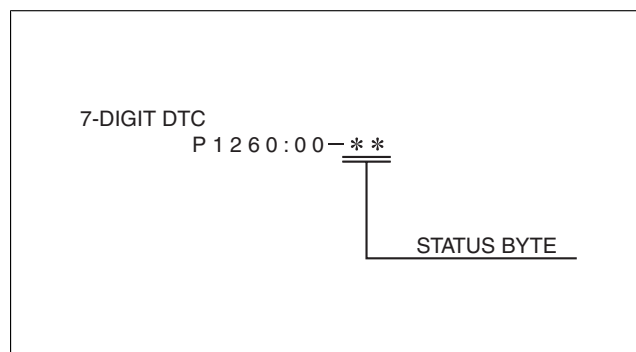| DTC	Security indicator light	Description	Fail-safe	Drive cycle	Memory function
09:Er20	—	Voltage decrease input from battery	—	—	×
09:Er21	—	Audio unit internal malfunction	—	—	×
09:Er22	—	Audio unit internal malfunction	—	—	×
10:Er01	—	Audio unit internal malfunction	—	—	×
10:Er02	—	Audio unit internal malfunction	—	—	×
10:Er07	—	Audio unit internal malfunction	—	—	×
10:Er10	—	Audio unit internal malfunction	—	—	×
28:Er01	—	Poor connection with exterior input unit, or read error	—	—	×
29:Er01	—	Audio unit internal malfunction, or iPod malfunction	—	—	×
No Err	—	DTCs not stored	—	—	—

DTC 7-digit code definition
• When related systems or components have failed, the CM stores the DTC of the malfunctioning part in the CM memory, and allows for the retrieval of the store data using scanning tool when necessary. The DTCs are indicated using seven digits. Each digit indicates the following.

```
B  1  0  D  5 : 1  3
```

· Specify the area failure sub type

00: No sub type information	16: Circuit voltage below threshold	68: Event information
04: System Internal Failures	54: Missing calibration	71: Actuator stuck
07: Mechanical malfunctions	55: Not configured	79: mechanical linkage failure
09: Component failures	56: ISO/SAE reserved	88: Bus off
13: Open circuit	64: Signal plausibility failure	96: Component internal failure

· Manufacturer controlled

· Indicates subgroup

Powertrain (P code)	Network Electrical (U code)	Body (B code)	Chassis (C code)
0: Fuel and air metering and auxiliary emission controls	0: Network Electrical 1: Network communication	Manufacturer controlled	Manufacturer controlled

· Indicates who was responsible for DTC definition
0: ISO/SAE controlled
1: Manufacturer controlled
3: For P3000 to P3399 is manufacturer controlled, all others are ISO/SAE controlled.

· Indicates DTC function
B: Body
U: Network Electrical

ac5wzn00002491

Status byte for DTC

- The status byte is the two digits (two digits after hyphen (-)) after the 7-digit DTC.
- The status byte is a code which indicates the pending code, current/past malfunction status, or warning illumination status.
- The status byte can be read by performing a CMDTC self-test using the Mazda Modular Diagnostic System (M-MDS).
- For details on the status byte, refer to the explanation on the Mazda Modular Diagnostic System (M-MDS) when reading the DTC.

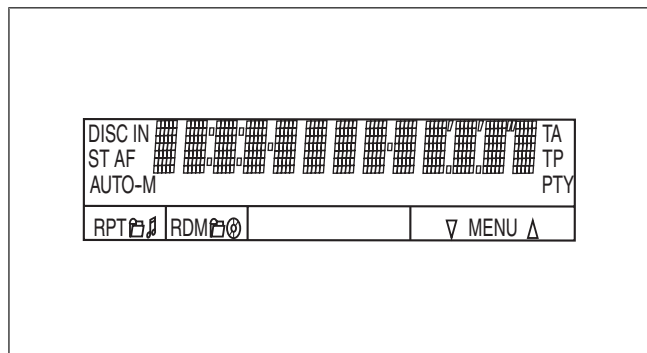7-DIGIT DTC
P 1 2 6 0 : 0 0 — ＊＊

STATUS BYTE

ac5wzn00001327

Diagnostic Assist Function

- The audio system related parts are forcibly operated to enable verification of the connection condition and operation status of the audio system related parts.In addition, the specifications for the audio system related parts are displayed in the information display to enable their verification. Refer to the Workshop Manual for the diagnostic assist function activation procedure.

Display inspection

- All characters are displayed in the audio unit display to enable examination of the display. (Without color LCD)

- By touching the audio unit display, the display color can be changed for color verification and display examination. (with color LCD)

DISC IN
ST AF
AUTO-M
RPT / RDM /
TA
TP
PTY
▽ MENU △

ac5jjn00001051

Button Inspection
- Activates a buzzer sound when a switch is operated and examines each of the switches.

Speaker Inspection
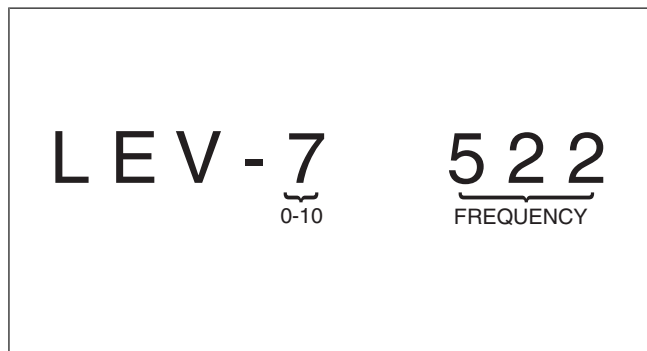- Verifies that the speakers output sound in the following order and examines each speaker or the wiring harness between the audio unit and each speaker.

  #### Without Bose®
  1. Front door speaker (LH) and tweeter (LH) (6 speaker type)
  2. Front door speaker (RH) and tweeter (RH) (6 speaker type)
  3. Rear door speaker (RH)
  4. Rear door speaker (LH)

  #### With Bose®
  1. Front door speaker (LH), tweeter (LH) and front center speaker (LH)
  2. Front door speaker (RH), tweeter (RH) and front center speaker (RH)
  3. Rear door speaker (RH) and D-pillar speaker (RH)
  4. Rear door speaker (LH) and D-pillar speaker (LH)

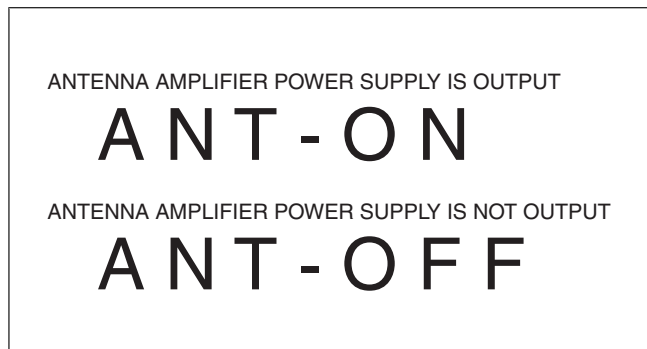### Radio Reception Condition Inspection
- Displays the radio reception status on the audio unit display and examines the center roof antenna, antenna feeder, and audio unit (tuner). (Display example when receiving AM 522kHz)

LEV-7   522
     0-10   FREQUENCY

am5ezn00001773

Antenna control inspection
- Displays the power supply output status to the center roof antenna to the audio unit display for examination of the center roof antenna, audio unit and wiring harness (between audio unit and center roof antenna).
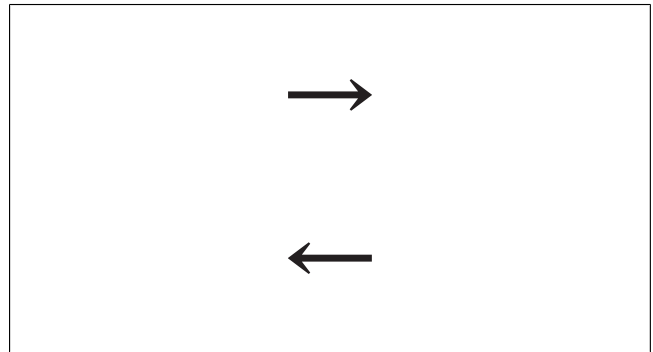

ANTENNA AMPLIFIER POWER SUPPLY IS OUTPUT

ANT-ON

ANTENNA AMPLIFIER POWER SUPPLY IS NOT OUTPUT
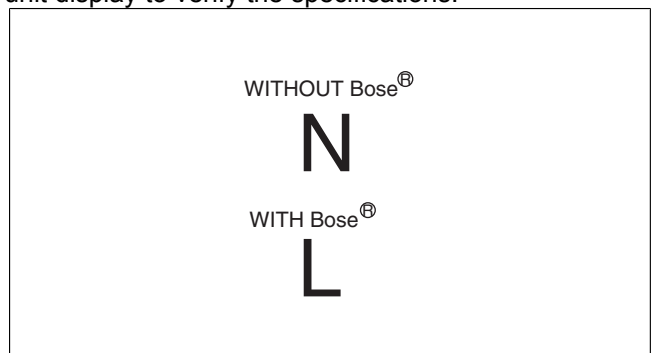
ANT-OFF

am5ezn00001775

Dial inspection
- Displays the rotation direction of the operated dial switch in the audio unit display for examination of each switch.

am3uun00000958

Audio amplifier specification verification.
- Displays the audio amplifier specifications on the audio unit display to verify the specifications.

WITHOUT Bose®

N

WITH Bose®

L

ac5wzn00002018

AUTO-M inspection (without color LCD only)
- Activates AUTO-M and displays the radio reception conditions in the audio unit display for examination of the radio unit.

CD inspection (without color LCD only)
- Displays inspection results in the audio unit and verifies whether a malfunction is audio unit or CD related.

Vehicle/NAVI signal verification (with color LCD only)
- Displays the following signal conditions, the vehicle speed, and connection conditions on the audio unit display and verifies the vehicle and NAVI signals.
    — TNS signal
    — Reverse signal
    — Parking brake signal
    — Vehicle speed
    — Steering switch connection condition
    — Commander switch connection condition
    — Connection condition of voice recognition-use microphone
    — Car-navigation unit connection condition
    — GPS antenna connection condition

Exterior device connection information clearing (with color LCD only)
- The car-navigation unit, Bluetooth unit and rear mount camera connection information stored in the audio unit can be cleared.