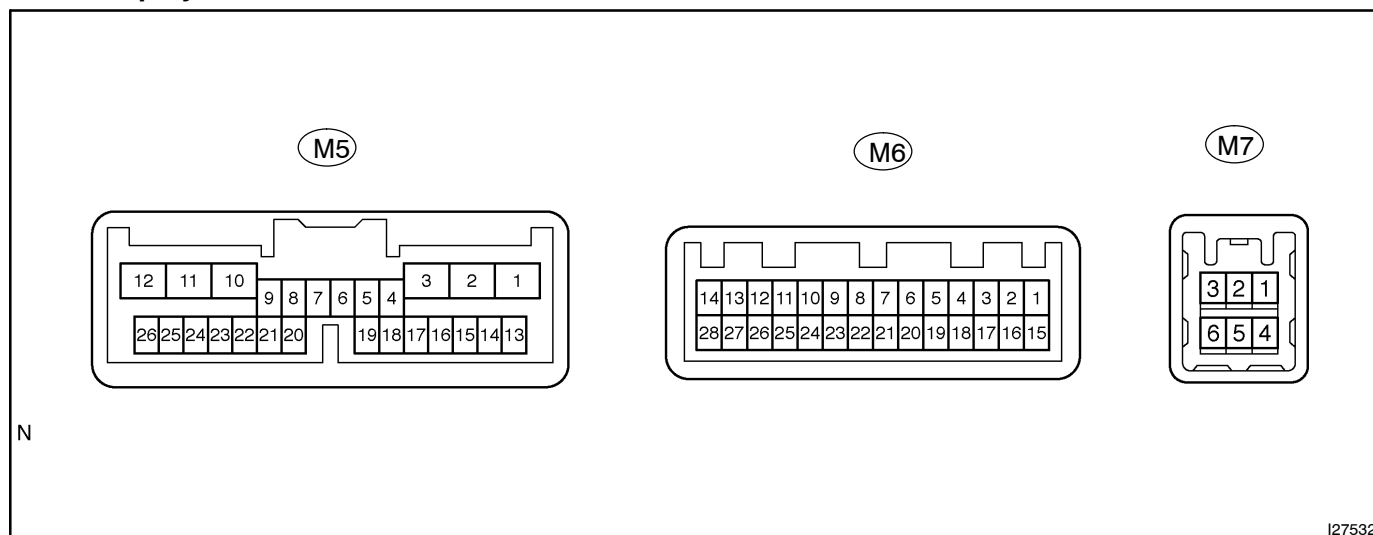


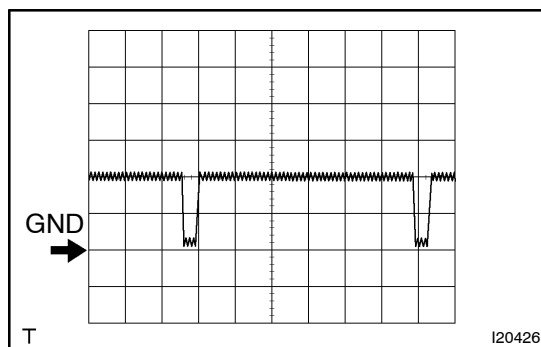
## TERMINALS OF ECU

### Multi-display:

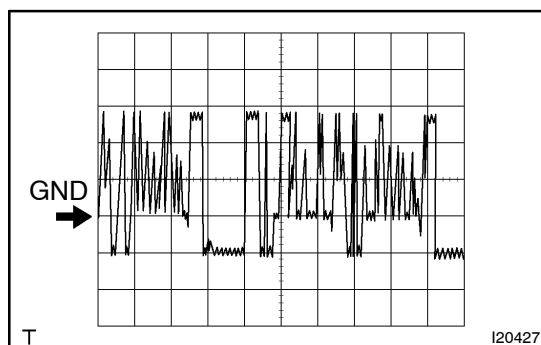


| Symbols (Terminals No.)    | Wiring Color      | Terminal Description                       | Condition                               | Specification          |
|----------------------------|-------------------|--------------------------------------------|-----------------------------------------|------------------------|
| GND1 (M5-3) – Body ground  | W-B – Body ground | Ground                                     | Always                                  | Below 1 V              |
| TX1+ (M5-4) – GND1 (M5-3)  | P – W-B           | AVC-LAN communication signal               | Turn ignition switch to ON              | 2 to 3 V               |
| TX1- (M5-5) – GND1 (M5-3)  | L-B – W-B         | AVC-LAN communication signal               | Turn ignition switch to ON              | 2 to 3 V               |
| TC (M5-7) – GND1 (M5-3)    | P-B – W-B         | Diagnosis ON signal                        | Turn ignition switch to the ON position | 9 to 14 V              |
| IG (M5-10) – GND1 (M5-3)   | B-W – W-B         | Ignition (ON)                              | Turn ignition switch OFF → ON           | Below 1 V → 10 to 14 V |
| ACC (M5-11) – GND1 (M5-3)  | GR – W-B          | Accessory (ON)                             | Turn ignition switch OFF → ACC or ON    | Below 1 V → 10 to 14 V |
| B1 (M5-12) – GND1 (M5-3)   | L-W – W-B         | Battery                                    | Always                                  | 10 to 14 V             |
| PKB (M5-16) – GND1 (M5-3)  | R-W – W-B         | Parking brake signal                       | Turn parking brake switch ON → OFF      | Below 1 V → 10 to 14 V |
| SPD (M5-25) – GND1 (M5-3)  | V – W-B           | Speed signal from combination meter        | See "vehicle signal check mode"         |                        |
| SGND (M6-3) – GND1 (M5-3)  | W-B – W-B         | Screen noise or other types of noise occur | Ignition switch OFF                     | Below 1 V              |
| MIN+ (M6-4) – GND1 (M5-3)  | B – W-B           | Microphone voice signal                    | See "microphone check"                  | –                      |
| MIN- (M6-5) – Body ground  | W – Body ground   | Microphone voice signal                    | See "microphone check"                  | –                      |
| MACC (M6-6) – GND1 (M5-3)  | Y-G – W-B         | Microphone Accessory                       | Turn ignition switch OFF → ON           | Below 1 V → 10 to 14 V |
| TX3+ (M6-11) – GND1 (M5-3) | P-L – W-B         | AVC-LAN communication signal               | Turn ignition switch to ON              | 2 to 3 V               |
| TX3- (M6-12) – GND1 (M5-3) | P-B – W-B         | AVC-LAN communication signal               | Turn ignition switch to ON              | 2 to 3 V               |
| TX+ (M6-13) – GND1 (M5-3)  | P – W-B           | AVC-LAN communication signal               | Turn ignition switch to ON              | 2 to 3 V               |
| TX- (M6-14) – GND1 (M5-3)  | L – W-B           | AVC-LAN communication signal               | Turn ignition switch to ON              | 2 to 3 V               |

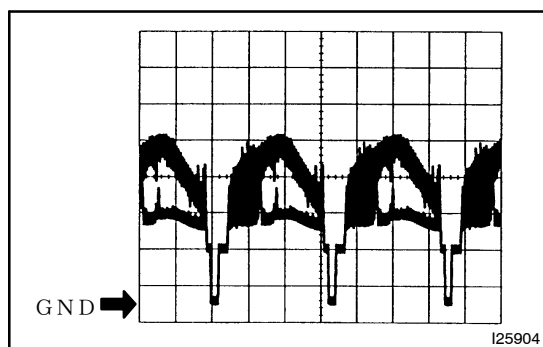
|                            |                        |                                            |                                      |                     |
|----------------------------|------------------------|--------------------------------------------|--------------------------------------|---------------------|
| SGND (M6-17) – GND1 (M5-3) | Shielded – W-B         | Screen noise or other types of noise occur | Ignition switch OFF                  | Below 1 V           |
| MCO+ (M6-18) – GND1 (M5-3) | B – W-B                | Microphone voice signal                    | See "microphone check"               | –                   |
| MCO– (M6-19) – GND1 (M5-3) | W – W-B                | Microphone voice signal                    | See "microphone check"               | –                   |
| IVO+ (M6-21) – GND1 (M5-3) | O – W-B                | Telephone voice signal (buletooth)         | See "microphone check"               | –                   |
| IVO– (M6-22) – GND1 (M5-3) | W – W-B                | Telephone voice signal (buletooth)         | See "microphone check"               | –                   |
| VR (M6-23) – GND1 (M5-3)   | B – W-B                | Video return signal                        | Turn ignition switch OFF             | Below 1 V           |
| R (M6-24) – GND1 (M5-3)    | Y – W-B                | Display signal (red)                       | Navigation display is on             | Pulse generation *2 |
| G (M6-25) – GND1 (M5-3)    | W – W-B                | Display signal (green)                     | Navigation display is on             | Pulse generation *2 |
| B (M6-26) – GND1 (M5-3)    | R – W-B                | Display signal (blue)                      | Navigation display is on             | Pulse generation *2 |
| SYNC (M6-27) – GND1 (M5-3) | G – W-B                | Display signal (synchronize)               | Navigation display is on             | Pulse generation *1 |
| VG (M6-28) – Body ground   | Shielded – Body ground | Shielded ground                            | Always                               | Below 1 V           |
| NTSC (M7-1) – GND1 (M5-3)  | W – W-B                | DVD screen is in disorder                  | Ignition switch ON and DVD displayed | Pulse generation *3 |
| SGD1 (M7-4) – GND1 (M5-3)  | B – W-B                | Screen noise or other types of noise occur | Ignition switch OFF                  | Below 1 V           |
| SGND (M7-5) – GND1 (M5-3)  | Shielded – W-B         | Screen noise or other types of noise occur | Ignition switch OFF                  | Below 1 V           |



- \*1: Oscilloscope wave  
Terminal to be measured: SYNC – GND1  
Setting for measurement: 500 mV/DIV 10  $\mu$ s/DIV  
Condition: Navigation display is displayed.

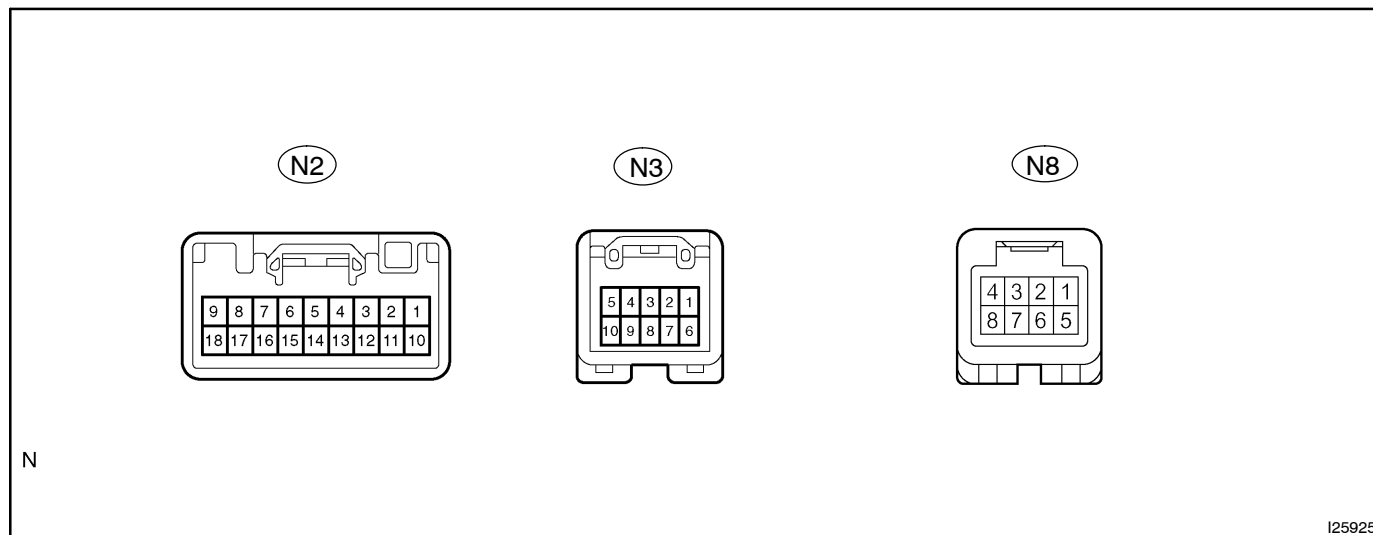


- \*2: Oscilloscope wave  
Terminal to be measured: R, G, B – GND1  
Setting for measurement: 200 mV/DIV 10  $\mu$ s/DIV  
Condition: Navigation map is switched.



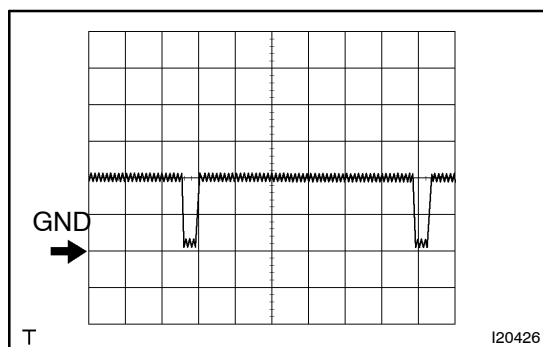
- \*3: Oscilloscope wave  
Terminal to be measured: NTSC – SGD1  
Setting for measurement: 0.2 mV/DIV, 0.2  $\mu$ s/DIV  
Condition: Ignition switch ON and DVD displayed.

## Navigation ECU

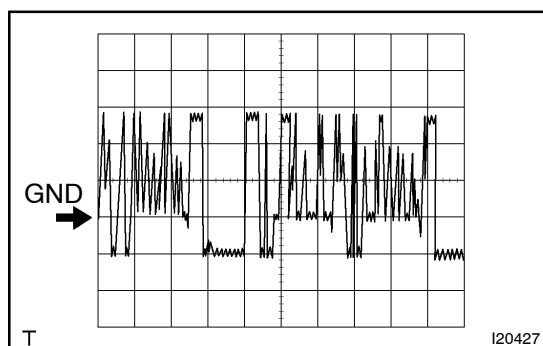


| Symbols (Terminals No.)    | Wiring Color           | Terminal Description                  | Condition                                                           | Specification         |
|----------------------------|------------------------|---------------------------------------|---------------------------------------------------------------------|-----------------------|
| AUI+ (N2-1) – GND (N2-17)  | P – W-B                | Sound signal (input)                  | Audio system is playing                                             | –                     |
| AUO+ (N2-2) – GND (N2-17)  | P – W-B                | Sound signal (output)                 | Audio system is playing                                             | –                     |
| SLD1 (N2-3) – Body ground  | Shielded – Body ground | Shielded ground                       | Always                                                              | Below 1.0 V           |
| SPD (N2-5) – GND1 (N2-17)  | V – W-B                | Speed signal from combination meter   | See "Vehicle Signal Check Mode" (see page <a href="#">DI-1562</a> ) | –                     |
| +B (N2-9) – GND (N2-17)    | L-Y – W-B              | Battery                               | Always                                                              | 10 to 14 V            |
| AUI– (N2-10) – GND (N2-17) | V – W-B                | Sound signal (input)                  | Audio system is playing                                             | –                     |
| AUO– (N2-11) – GND (N2-17) | V – W-B                | Sound signal (output)                 | Audio system is playing                                             | –                     |
| VOI+ (N2-12) – Body ground | O – Body ground        | Telephone voice signal (buletooth)    | See "microphone check"                                              | –                     |
| VOI– (N2-13) – Body ground | W – Body ground        | Telephone voice signal (buletooth)    | See "microphone check"                                              | –                     |
| REV (N2-14) – GND (N2-17)  | R-B – W-B              | Reverse signal from combination meter | See "Vehicle Signal Check Mode" (see page <a href="#">DI-1562</a> ) | –                     |
| GND (N2-17) – Body ground  | W-B – Body ground      | Ground                                | Always                                                              | Below 1 V             |
| ACC (N2-18) – GND (N2-17)  | GR – W-B               | Accessory (ON)                        | Turn ignition switch OFF → ACC or ON                                | Below 1 V → 10 – 14 V |
| VR (N3-1) – GND (N2-17)    | B – W-B                | Video return signal                   | Turn ignition switch OFF                                            | Below 1 V             |
| R (N3-2) – GND (N2-17)     | Y – W-B                | Display signal (red)                  | Navigation display is on                                            | Pulse generation *2   |
| B (N3-3) – GND (N2-17)     | R – W-B                | Display signal (blue)                 | Navigation display is on                                            | Pulse generation *2   |
| TX+ (N3-5) – GND (N2-17)   | P – W-B                | AVC-LAN communication signal          | Turn ignition switch to ACC                                         | 2 to 3 V              |
| VG (N3-6) – Body ground    | Shielded – Body ground | Shielded ground                       | Always                                                              | Below 1 V             |
| G (N3-7) – GND (N2-17)     | W – W-B                | Display signal (green)                | Navigation display is on                                            | Pulse generation *2   |
| SYNC (N3-8) – GND (N2-17)  | G – W-B                | Display signal (synchronize)          | Navigation display is on                                            | Pulse generation *1   |
| TX– (N3-10) – GND (N2-17)  | L-B – W-B              | AVC-LAN communication signal          | Turn ignition switch to ACC                                         | 2 to 3 V              |

|                           |                      |                         |                        |           |
|---------------------------|----------------------|-------------------------|------------------------|-----------|
| MIC+ (N8-3) – GND (N2-17) | B – W-B              | Microphone voice signal | See "microphone check" | –         |
| MIC- (N8-5) – GND (N2-17) | W – W-B              | Microphone voice signal | See "microphone check" | –         |
| SNSE (N8-7) – Body ground | W-B –<br>Body ground | Ground                  | Always                 | Below 1 V |

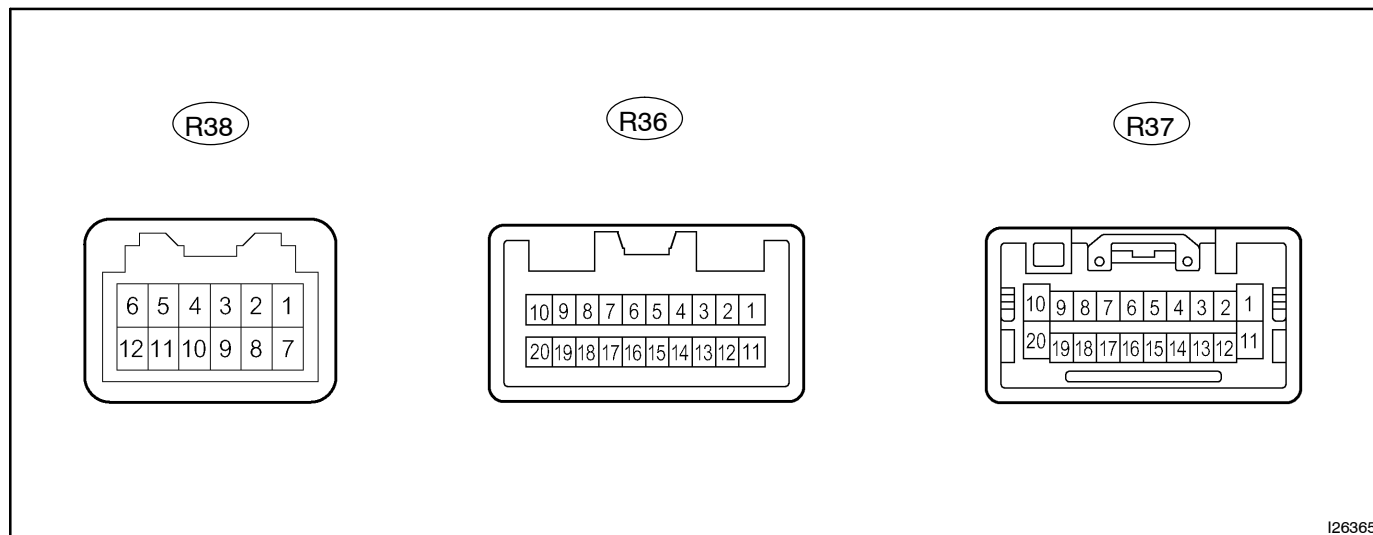


- \*1: Oscilloscope wave  
Terminal to be measured: SYNC – GND1  
Setting for measurement: 500mV/DIV 10  $\mu$ s/DIV  
Condition: Navigation display is displayed



- \*2: Oscilloscope wave  
Terminal to be measured: R, G, B – GND1  
Setting for measurement: 200mV/DIV 10  $\mu$ s/DIV  
Condition: Navigation map is switched.

## Radio receiver assembly



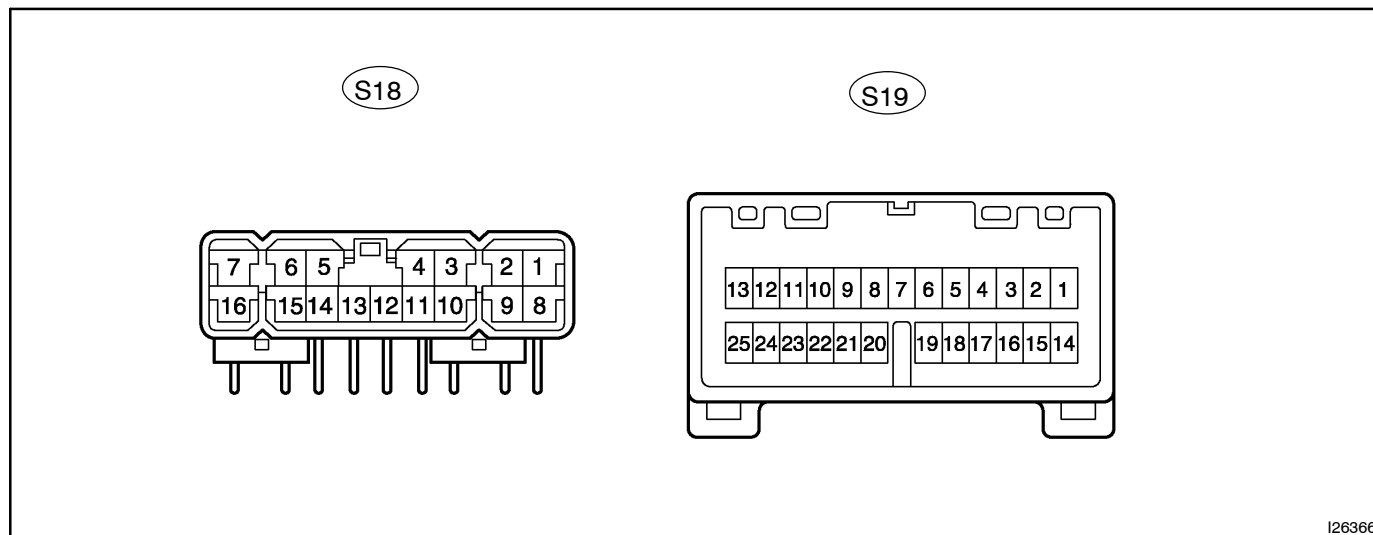
I26365

| Symbols<br>(Terminal No.)                   | Condition                        | STD Voltage (V) | Problem symptom when open circuit is detected.   |
|---------------------------------------------|----------------------------------|-----------------|--------------------------------------------------|
|                                             |                                  |                 | Problem symptoms when short circuit is detected. |
| BU ↔ GND<br>(R37-1 ↔ R37-20)                | Always                           | 10 – 14 V       | Audio system does not operate.                   |
| ILL+ ↔ GND<br>(R37-2 ↔ R37-20)              | Light control switch TAIL        | 10 – 14 V       | Audio head unit illumination does not come on.   |
| TX+<br>(R37-5)                              | AVC-LAN<br>Communication circuit | –               | Audio system does not operate.                   |
| MUTE ↔ GND<br>(R37-7 ↔ R37-20)              | –                                | –               | –                                                |
| R+ ↔ GND<br>(R37-8 ↔ R37-20)                | Always                           | 10 – 14 V       | Sound from right speaker is small                |
| L+ ↔ GND<br>(R37-9 ↔ R37-20)                | Always                           | 10 – 14 V       | Sound from left speaker is small                 |
| ACC ↔ GND<br>(R37-11 ↔ R37-20)              | Ignition switch ACC              | 10 – 14 V       | Audio system does not operate.                   |
| ILL- ↔ GND<br>(R37-12 ↔ R37-20)             | Light control switch TAIL        | Below 0.5 V     | Audio head unit illumination does not come on.   |
| ANT ↔ GND<br>(R37-13 ↔ R2-20)               | Radio switch ON                  | 10 – 14 V       | Antenna does not extend.                         |
| TX-<br>(R37-15)                             | AVC-LAN<br>Communication circuit | –               | Audio system does not operate.                   |
| R- ↔ GND<br>(R37-18 ↔ R37-20)               | Always                           | 10 – 14 V       | Sound from right side speaker is small.          |
| L- ↔ GND<br>(R37-19 ↔ R37-20)               | Always                           | 10 – 14 V       | Sound from left side speaker is small.           |
| GND ↔ Body ground<br>(R37-20 ↔ Body ground) | Always                           | Continuity      | Audio system is normal.                          |
| TX+<br>(R36-9)                              | AVC-LAN<br>Communication circuit | –               | Navigation system does not operate.              |
| TX-<br>(R36-10)                             | AVC-LAN<br>Communication circuit | –               | Navigation system does not operate.              |

## DIAGNOSTICS – LEXUS NAVIGATION SYSTEM

|                 |                               |   |                                        |
|-----------------|-------------------------------|---|----------------------------------------|
| R+<br>(R38-2)   | –                             | – | Sound from right side speaker is small |
| R-<br>(R38-3)   | –                             | – | Sound from right side speaker is small |
| L+<br>(R38-4)   | –                             | – | Sound from left side speaker is small  |
| L-<br>(R38-5)   | –                             | – | Sound from left side speaker is small  |
| MUTE<br>(R38-6) | –                             | – | Pop sound etc.                         |
|                 |                               |   | Speaker does not sound                 |
| TX+<br>(R38-9)  | AVC-LAN communication circuit | – | Audio system does not operate.         |
| TX-<br>(R38-10) | AVC-LAN communication circuit | – | Audio system does not operate.         |

## Stereo component amplifier

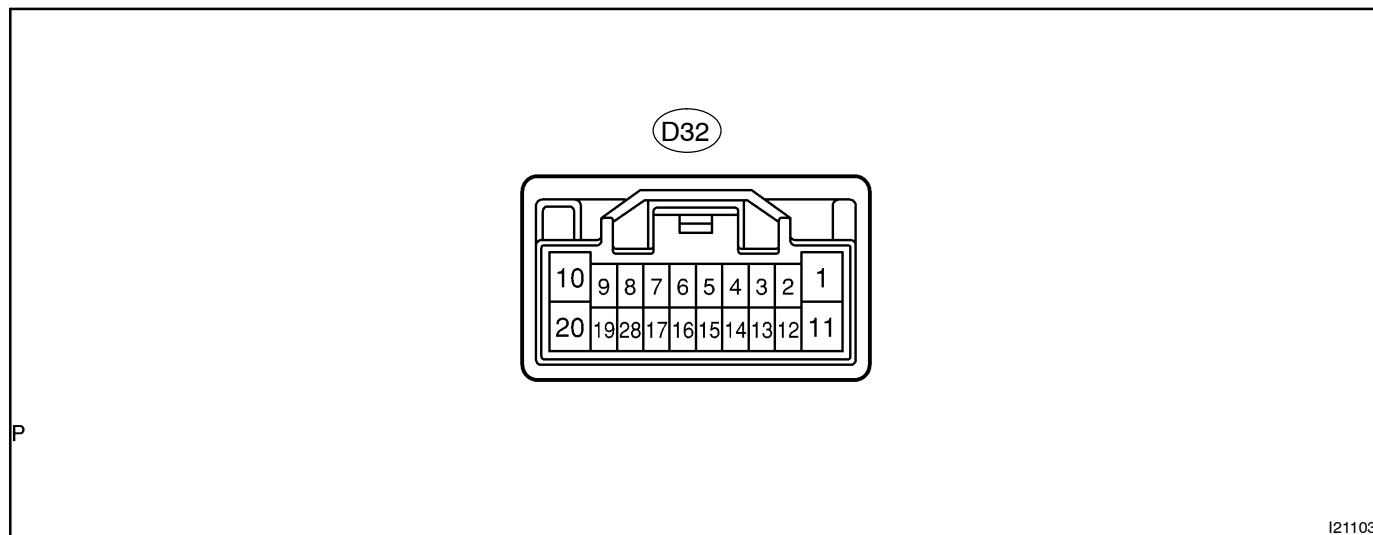


I26366

| Symbols<br>(Terminal No.)                    | Condition       | STD Voltage (V) | Problem symptom when open circuit is detected. |
|----------------------------------------------|-----------------|-----------------|------------------------------------------------|
| FR+ ↔ E<br>(S18-1 ↔ S18-12)                  | Radio switch ON | 5 – 7 V         | RH side speaker does not sound.                |
| FL+ ↔ E<br>(S18-2 ↔ S18-12)                  | Radio switch ON | 5 – 7 V         | LH side speaker does not sound.                |
| RR+ ↔ E<br>(S18-3 ↔ S18-12)                  | Radio switch ON | 5 – 7 V         | Rear RH side speaker does not sound.           |
| RL+ ↔ E<br>(S18-4 ↔ S18-12)                  | Radio switch ON | 5 – 7 V         | Rear LH side speaker does not sound.           |
| WFR+ ↔ E<br>(S18-5 ↔ S18-12)                 | Radio switch ON | 5 – 7 V         | Woofer speaker does not sound.                 |
| WFL+ ↔ E<br>(S18-6 ↔ S18-12)                 | Radio switch ON | 5 – 7 V         | Woofer speaker does not sound.                 |
| +B ↔ E<br>(S18-7 ↔ S18-12)                   | Always          | 10 – 14 V       | All speaker does not sound                     |
| FR- ↔ E<br>(S18-8 ↔ S18-12)                  | Radio switch ON | 5 – 7 V         | RH side speaker does not sound.                |
| FL- ↔ E<br>(S18-9 ↔ S18-12)                  | Radio switch ON | 5 – 7 V         | LH side speaker does not sound.                |
| RR- ↔ E<br>(S18-10 ↔ S18-12)                 | Radio switch ON | 5 – 7 V         | Rear RH side speaker does not sound.           |
| RL- ↔ E<br>(S18-11 ↔ S18-12)                 | Radio switch ON | 5 – 7 V         | Rear LH side speaker does not sound.           |
| E ↔ Body ground<br>(S18-12 ↔ Body ground)    | Always          | Continuity      | –                                              |
| GND2 ↔ Body ground<br>(S18-13 ↔ Body ground) | Always          | Continuity      | –                                              |
| WFR- ↔ E<br>(S18-14 ↔ S18-12)                | Radio switch ON | 5 – 7 V         | Woofer speaker does not sound.                 |
| WFL- ↔ E<br>(S18-15 ↔ S18-12)                | Radio switch ON | 5 – 7 V         | Woofer side speaker does not sound.            |
| +B2 ↔ GND2<br>(S18-16 ↔ S18-13)              | Always          | 10 – 14 V       | All speaker does not sound                     |

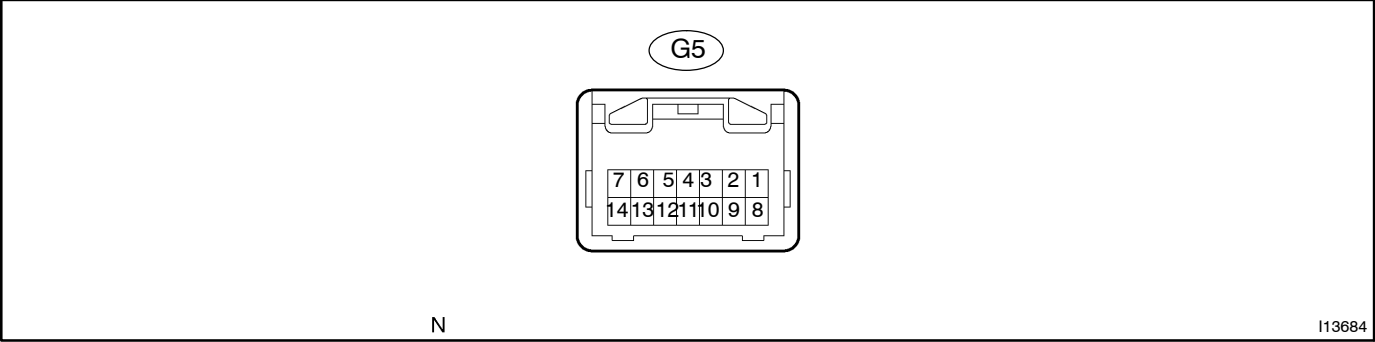
## DIAGNOSTICS – LEXUS NAVIGATION SYSTEM

|                               |                               |           |                                       |
|-------------------------------|-------------------------------|-----------|---------------------------------------|
| MR+ ↔ E<br>(S19-1 ↔ S18-12)   | Always                        | 5 – 7 V   | Sound from front RH speaker is small. |
| ML+ ↔ E<br>(S19-2 ↔ S18-12)   | Always                        | 5 – 7 V   | Sound from front LH speaker is small. |
| TMUT ↔ E<br>(S19-3 ↔ S18-12)  | Radio switch ON               | 5 – 7 V   | Audio system does not operate.        |
| BEEP<br>(S19-4)               | –                             | –         | Beep does not sound.                  |
| TX+<br>(S19-5)                | AVC–LAN communication circuit | –         | Audio system does not operate.        |
| N–MU ↔ E<br>(S19-9 ↔ S18-12)  | Radio switch ON               | 5 – 7 V   | Audio system does not operate.        |
| R+ ↔ E<br>(S19-11 ↔ S18-12)   | Always                        | 10 – 14 V | Sound from RH speaker is small.       |
| L+ ↔ E<br>(S19-12 ↔ S18-12)   | Always                        | 10 – 14 V | Sound from LH speaker is small.       |
| SPD – E<br>(S19-13 – S18-12)  | –                             | –         | –                                     |
| MR– ↔ E<br>(S19-14 ↔ S18-12)  | Always                        | 5 – 7 V   | Sound from front RH speaker is small. |
| ML– ↔ E<br>(S19-15 ↔ S18-12)  | Always                        | 5 – 7 V   | Sound from front LH speaker is small. |
| TX–<br>(S19-18)               | AVC–LAN communication circuit | –         | Audio system does not operate.        |
| ACC ↔ E<br>(S19-20 ↔ S18-12)  | Ignition switch ACC           | 10 – 14 V | Audio system does not operate.        |
| MUTE ↔ E<br>(S19-21 ↔ S18-12) | Radio switch ON               | 5 – 7 V   | Audio system does not operate.        |
| SGND ↔ E<br>(S19-22 ↔ S18-12) | –                             | –         | –                                     |
| R– ↔ E<br>(S19-23 ↔ S18-12)   | Always                        | 10 – 14 V | Sound from RH speaker is small.       |
| L– ↔ E<br>(S19-24 ↔ S18-12)   | Always                        | 10 – 14 V | Sound from LH speaker is small.       |

**DVD auto changer:**

| Symbols<br>(Terminal No.)       | Condition                     | STD Voltage (V) | Problem symptom when open circuit is detected. |
|---------------------------------|-------------------------------|-----------------|------------------------------------------------|
| ACC ↔ GND<br>(D32-1 ↔ D32-20)   | Ignition switch ACC           | 10 – 14 V       | DVD auto changer does not operate.             |
| TXM+<br>(D32-3)                 | AVC-LAN communication circuit | –               | Audio system does not operate.                 |
| CDR+<br>(D32-5)                 | –                             | –               | Sound from right side speaker is small.        |
| CDL+<br>(D32-6)                 | –                             | –               | Sound from left side speaker is small.         |
| NTSC<br>(D32-9)                 | –                             | –               | DVD auto changer does not display.             |
| +B ↔ GND<br>(D32-10 ↔ D32-20)   | Always                        | 10 – 14 V       | DVD auto changer does not operate.             |
| MUTE ↔ GND<br>(D32-11 ↔ D32-20) | DISC switch ON                | 5 – 7 V         | Pop sound etc.                                 |
|                                 |                               |                 | Speaker does not sound                         |
| TXM-<br>(D32-13)                | AVC-LAN communication circuit | –               | Audio system does not operate.                 |
| CDR-<br>(D32-15)                | –                             | –               | Sound from right side speaker is small.        |
| CDL-<br>(D32-16)                | –                             | –               | Sound from left side speaker is small.         |

Gateway ECU:



| Symbols (Terminals No.)                    | Wiring Color      | Condition                                          | STD Voltage (V) |
|--------------------------------------------|-------------------|----------------------------------------------------|-----------------|
| IG ↔ GND<br>(G5-2 ↔ G5-14)                 | B-W ↔ W-B         | Ignition switch ON.                                | 10 – 14 V       |
| MPD1<br>(G5-4)                             | B                 | Communication circuit (Gateway ECU and Center ECU) | –               |
| GTX+<br>(G5-5)                             | P-L               | AVC-LAN communication circuit                      | –               |
| CG ↔ Body ground<br>(G5-7 ↔ Body ground)   | BR ↔ Body ground  | Always                                             | Continuity      |
| BATT ↔ GND<br>(G5-8 ↔ G5-14)               | L-W ↔ W-B         | Always                                             | 10 – 14 V       |
| MPD2<br>(G5-11)                            | P-B               | Communication circuit (Gateway ECU and Center ECU) | –               |
| GTX-<br>(G5-12)                            | P-B               | AVC-LAN communication circuit                      | –               |
| GND ↔ Body ground<br>(G5-14 ↔ Body ground) | W-B ↔ Body ground | Always                                             | Continuity      |