PROBLEM SYMPTOMS TABLE

HINT:

- Before performing verification listed in the table below, check the fuse and relay.
- Check the circuits for each problem symptom in the order given in the table below, and proceed to the relevant page.

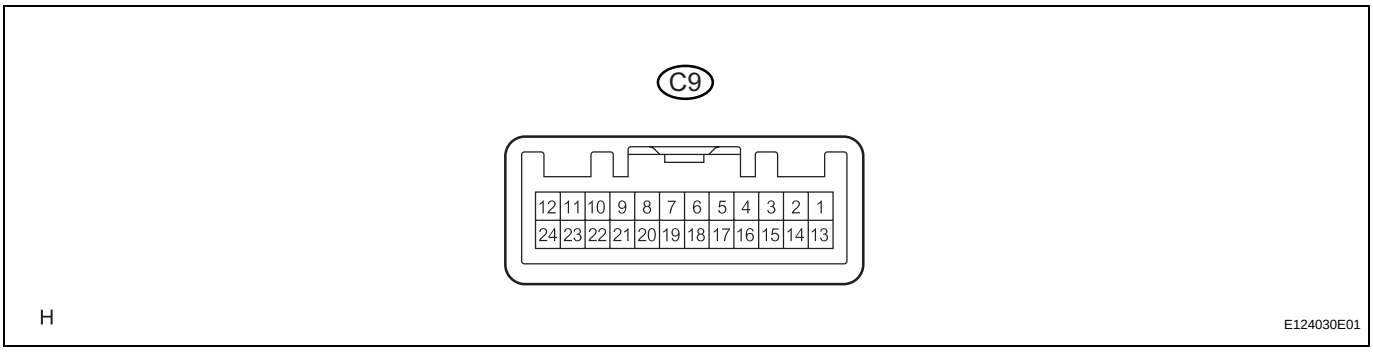
CLEARANCE SONAR SYSTEM:

Symptom	Suspected area	See page
Entirely inoperative (Self check does not function).	1. Power source of clearance warning ECU circuit	PM-70
	2. Clearance warning ECU (*1)	PM-14
	3. Clearance warning ECU (*2)	PM-14
Only back sonar does not function (Self check functions normally).	1. Back sonar sensor LH circuit	PM-55
	2. Back sonar sensor RH circuit	PM-57
	3. Clearance warning ECU (*1)	PM-14
	4. Clearance warning ECU (*2)	PM-14
Only clearance sonar does not functions (Self check functions normally).	1. Front clearance sonar LH circuit (*1)	PM-59
	2. Front clearance sonar RH circuit (*1)	PM-59
	3. Rear clearance sonar LH circuit	PM-61
	4. Rear clearance sonar RH circuit	PM-63
	5. Clearance warning ECU (*1)	PM-14
	6. Clearance warning ECU (*2)	PM-14
Although detection can be done, no buzzer sounds sometimes (Back sonar, Rear clearance sonar).	1. No. 2 clearance warning buzzer	PM-74
	2. Clearance warning ECU (*2)	PM-14
Although detection can be done, no buzzer sounds sometimes (Front clearance sonar).	1. No. 1 clearance warning buzzer (*1)	PM-67
	2. Clearance warning ECU (*1)	PM-14
Although detection can be done, the indicator does not light sometimes.	1. Indicator circuit	PM-78
	2. Clearance warning ECU (*1)	PM-14
	3. Clearance warning ECU (*2)	PM-14
"Disconnected" or "Frozen" is displayed in the self check function.	1. Back sonar sensor LH circuit	PM-55
	2. Back sonar sensor RH circuit	PM-57
	3. Front clearance sonar LH circuit (*1)	PM-59
	4. Front clearance sonar RH circuit (*1)	PM-61
	5. Rear clearance sonar LH circuit	PM-63
	6. Rear clearance sonar RH circuit	PM-65
	7. Clearance warning ECU (*1)	PM-14
	8. Clearance warning ECU (*2)	PM-14
	9. Sensor is wetted or frozen	-
The system operates with the shift lever not in the R position, or does not operate with the shift lever in the R position (Back sonar and rear clearance sonar).	1. Park / Neutral position switch circuit	PM-48
	2. Clearance warning ECU (*2)	PM-14
The system operates with the shift lever in the P position, or does not operate with the shift lever not in the P position (Front clearance sonar).	1. Park / Neutral position switch circuit	PM-48
	2. Clearance warning ECU (*1)	PM-14
Detection can be done although the vehicle speed is 10 km/h (6 mph) or more.	1. Speed signal circuit	PM-51
	2. Clearance warning ECU (*2)	PM-14
Buzzer volume is too low.	Adjust buzzer volume	PM-47

*1: with Front Clearance Sonar
*2: without Front Clearance Sonar

TERMINALS OF ECU

1. CLEARANCE WARNING ECU



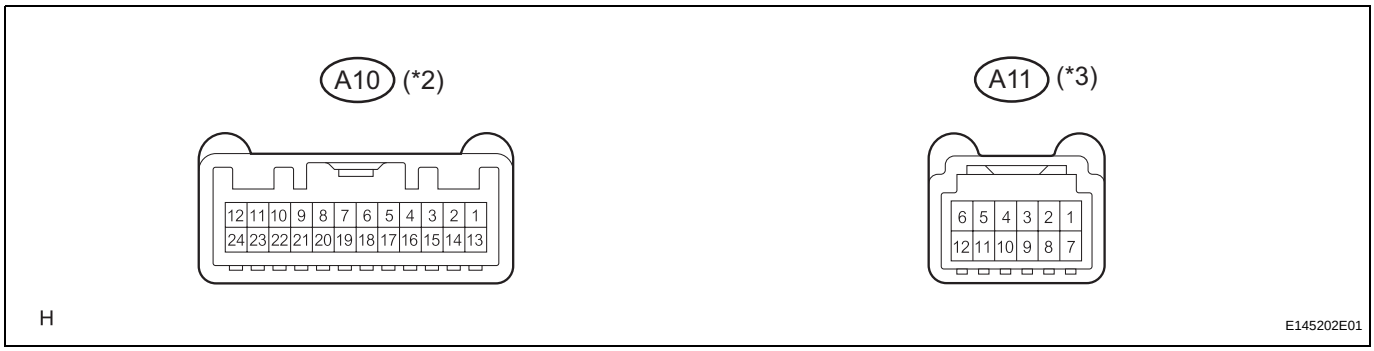
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
RL (C9-3) - E (C9-7)	R-B - W-B	Reverse signal	Ignition switch ON, shift lever in other than R position	Below 1 V
RL (C9-3) - E (C9-7)	R-B - W-B	Reverse signal	Ignition switch ON, shift lever in R position	10 to 14 V
CBZ (C9-4) - E (C9-7) (*1)	Y-R - W-B	Clearance warning buzzer	Clearance sonar sounding (when the front clearance sonar senses something)	Pulse generation Refer to waveform 1
L5 (C9-5) - E (C9-7)	L-B - W-B	Back sonar indicator	Back sonar indicator OFF	10 to 14 V
L5 (C9-5) - E (C9-7)	L-B - W-B	Back sonar indicator	Back sonar indicator ON	Below 3 V
L3 (C9-6) - E (C9-7)	O - W-B	Rear clearance sonar indicator LH	Rear clearance sonar indicator LH OFF	10 to 14 V
L3 (C9-6) - E (C9-7)	O - W-B	Rear clearance sonar indicator LH	Rear clearance sonar indicator LH ON	Below 3 V
E (C9-7) - Body ground	W-B - Body ground	Ground	Always	Below 1 V
SPD (C9-8) - E (C9-7)	V-W - W-B	Speed signal	Ignition switch ON, drive wheels are turned slowly	Pulse generation
E1 (C9-9) - E (C9-7) (*1)	P-L - W-B	Front clearance sonar sensor ground	Always	Below 1 V
S5 (C9-10) - E (C9-7)	G-O - W-B	Back sonar sensor RH signal	When signals are transmitted from the ECU to the back sonar sensor RH	Pulse generation Refer to waveform 2
S3 (C9-11) - E (C9-7)	G-B - W-B	Rear clearance sonar sensor LH signal	When signals are transmitted from the ECU to the rear clearance sonar sensor LH	Pulse generation Refer to waveform 3
S1 (C9-12) - E (C9-7)	G-W - W-B	Rear clearance sonar sensor RH signal	When signals are transmitted from the ECU to the rear clearance sonar sensor RH	Pulse generation Refer to waveform 3
+B (C9-13) - E (C9-7)	LG-B - W-B	Power source	Ignition switch ON, clearance sonar main switch OFF	Below 1 V
+B (C9-13) - E (C9-7)	LG-B - W-B	Power source	Ignition switch ON, clearance sonar main switch ON	10 to 14 V
PL (C9-15) - E (C9-7)	L-Y - W-B	Parking position signal	Shift lever in P position	10 to 14 V
BBZ (C9-16)- E (C9-7)	R - W-B	Clearance warning buzzer	Clearance sonar sounding (when the back sonar or rear clearance sonar senses something)	Pulse generation Refer to waveform 1

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
L6 (C9-17) - E (C9-7)	BR-W - W-B	Power indicator	Ignition switch ON, clearance sonar main switch OFF	10 to 14 V
L6 (C9-17) - E (C9-7)	BR-W - W-B	Power indicator	Ignition switch ON, clearance sonar main switch ON	Below 3 V
L4 (C9-18) - E (C9-7) (*1)	P - W-B	Front clearance sonar indicator LH	Front clearance sonar indicator LH OFF	10 to 14 V
L4 (C9-18) - E (C9-7) (*1)	P - W-B	Front clearance sonar indicator LH	Front clearance sonar indicator LH ON	Below 3 V
L2 (C9-19) - E (C9-7) (*1)	V-R - W-B	Front clearance sonar indicator RH	Front clearance sonar indicator RH OFF	10 to 14 V
L2 (C9-19) - E (C9-7) (*1)	V-R - W-B	Front clearance sonar indicator RH	Front clearance sonar indicator RH ON	Below 3 V
L1 (C9-20) - E (C9-7)	R-L - W-B	Rear clearance sonar indicator RH	Rear clearance sonar indicator RH OFF	10 to 14 V
L1 (C9-20) - E (C9-7)	R-L - W-B	Rear clearance sonar indicator RH	Rear clearance sonar indicator RH ON	Below 3 V
E2 (C9-21) - E (C9-7)	LG - W-B	Rear clearance sonar and back sonar sensor ground	Always	Below 1 V
S6 (C9-22) - E (C9-7)	G-Y - W-B	Back sonar sensor LH signal	When signals are transmitted from the ECU to the back sonar sensor LH	Pulse generation Refer to waveform 2
S4 (C9-23) - E (C9-7) (*1)	V - W-B	Front clearance sonar sensor LH signal	When signals are transmitted from the ECU to the front clearance sonar sensor LH	Pulse generation Refer to waveform 3
S2 (C9-24) - E (C9-7) (*1)	L - W-B	Front clearance sonar sensor RH signal	When signals are transmitted from the ECU to the front clearance sonar sensor RH	Pulse generation Refer to waveform 3

*1: with Front Clearance Sonar

PM

2. AIR CONDITIONER AMPLIFIER ASSEMBLY

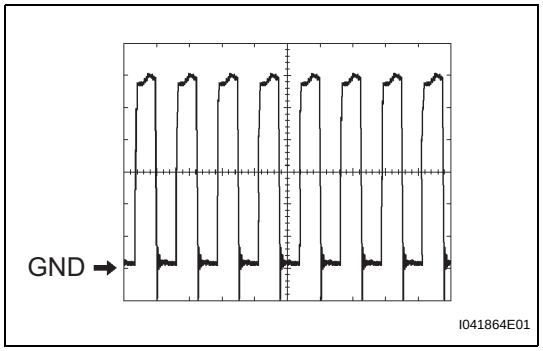


Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
BK (A10-4) - Body ground (*2)	L-B - Body ground	Back sonar indicator	Back sonar indicator OFF	10 to 14 V
BK (A10-4) - Body ground (*2)	L-B - Body ground	Back sonar indicator	Back sonar indicator ON	Below 3 V
OP (A10-5) - Body ground (*2)	BR-W - Body ground	Power indicator	Ignition switch ON, clearance sonar main switch OFF	10 to 14 V
OP (A10-5) - Body ground (*2)	BR-W - Body ground	Power indicator	Ignition switch ON, clearance sonar main switch ON	Below 3 V

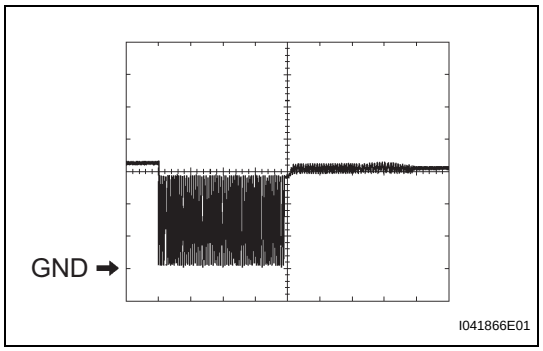
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
Z- (A10-15) - Body ground (*2)	R - Body ground	Clearance warning buzzer	Clearance sonar sounding (when the back sonar or rear clearance sonar senses something)	Pulse generation Refer to waveform 1
SK (A10-13) - Body ground (*2)	LG-B - Body ground	Power source	Ignition switch ON, clearance sonar main switch OFF	Below 1 V
SK (A10-13) - Body ground (*2)	LG-B - Body ground	Power source	Ignition switch ON, clearance sonar main switch ON	10 to 14 V
FR (A10-16) - Body ground (*1) (*2)	V-R - Body ground	Front clearance sonar indicator RH	Front clearance sonar indicator RH OFF	10 to 14 V
FR (A10-16) - Body ground (*1) (*2)	V-R - Body ground	Front clearance sonar indicator RH	Front clearance sonar indicator RH ON	Below 3 V
FL (A10-17) - Body ground (*1) (*2)	P - Body ground	Front clearance sonar indicator LH	Front clearance sonar indicator LH OFF	10 to 14 V
FL (A10-17) - Body ground (*1) (*2)	P - Body ground	Front clearance sonar indicator LH	Front clearance sonar indicator LH ON	Below 3 V
RR (A10-3) - Body ground (*2)	R-L - Body ground	Rear clearance sonar indicator RH	Rear clearance sonar indicator RH OFF	10 to 14 V
RR (A10-3) - Body ground (*2)	R-L - Body ground	Rear clearance sonar indicator RH	Rear clearance sonar indicator RH ON	Below 3 V
RL (A10-18) - Body ground (*2)	O - Body ground	Rear clearance sonar indicator LH	Rear clearance sonar indicator LH OFF	10 to 14 V
RL (A10-18) - Body ground (*2)	O - Body ground	Rear clearance sonar indicator LH	Rear clearance sonar indicator LH ON	Below 3 V
BK (A11-8) - Body ground (*3)	L-B - Body ground	Back sonar indicator	Back sonar indicator OFF	10 to 14 V
BK (A11-8) - Body ground (*3)	L-B - Body ground	Back sonar indicator	Back sonar indicator ON	Below 3 V
OP (A11-5) - Body ground (*3)	BR-W - Body ground	Power indicator	Ignition switch ON, clearance sonar main switch OFF	10 to 14 V
OP (A11-5) - Body ground (*3)	BR-W - Body ground	Power indicator	Ignition switch ON, clearance sonar main switch On	Below 3 V
Z- (A11-12) - Body ground (*3)	R - Body ground	Clearance warning buzzer	Clearance sonar sounding (when the back sonar or rear clearance sonar senses something)	Pulse generation Refer to waveform 1
SK (A11-1) - Body ground (*3)	LG-B - Body ground	Power source	Ignition switch ON, clearance sonar main switch OFF	Below 1 V
SK (A11-1) - Body ground (*3)	LG-B - Body ground	Power source	Ignition switch ON, clearance sonar main switch ON	10 to 14 V
FR (A11-3) - Body ground (*1) (*3)	V-R - Body ground	Front clearance sonar indicator RH	Front clearance sonar indicator RH OFF	10 to 14 V
FR (A11-3) - Body ground (*1) (*3)	V-R - Body ground	Front clearance sonar indicator RH	Front clearance sonar indicator RH ON	Below 3 V
FL (A11-4) - Body ground (*1) (*3)	P - Body ground	Front clearance sonar indicator LH	Front clearance sonar indicator LH OFF	10 to 14 V
FL (A11-4) - Body ground (*1) (*3)	P - Body ground	Front clearance sonar indicator LH	Front clearance sonar indicator LH ON	Below 3 V
RR (A11-9) - Body ground (*3)	R-L - Body ground	Rear clearance sonar indicator RH	Rear clearance sonar indicator RH OFF	10 to 14 V
RR (A11-9) - Body ground (*3)	R-L - Body ground	Rear clearance sonar indicator RH	Rear clearance sonar indicator RH ON	Below 3 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
RL (A11-10) - Body ground (*3)	O - Body ground	Rear clearance sonar indicator LH	Rear clearance sonar indicator LH OFF	10 to 14 V
RL (A11-10) - Body ground (*3)	O - Body ground	Rear clearance sonar indicator LH	Rear clearance sonar indicator LH ON	Below 3 V

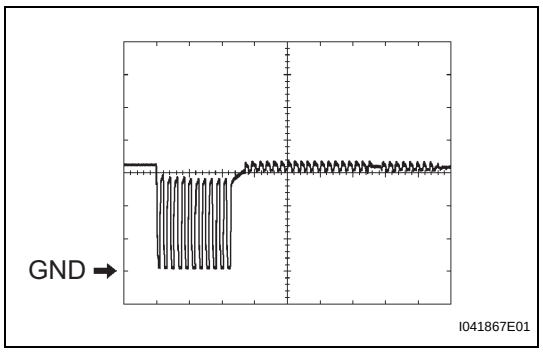
*1: with Front Clearance Sonar
*2: Manual A/C
*3: Auto A/C



(a) Reference: waveform 1
HINT:
- Terminal: CBZ - E, BBZ - E, Z- - Body ground
- Gauge set: 2 V/DIV., 500 μs/DIV.
- Condition: When the clearance sonar is detecting an object.



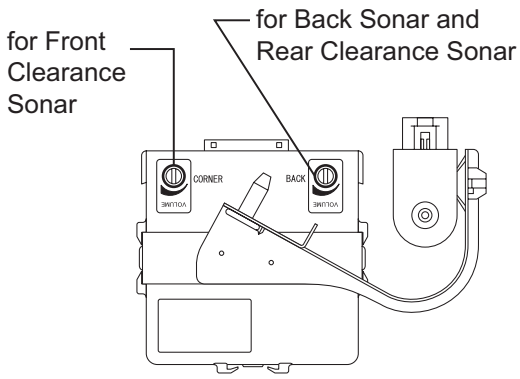
(b) Reference: waveform 2
HINT:
- Terminal: S5 - E, S6 - E
- Gauge set: 2 V/DIV., 100 μs/DIV.
- Condition: When the back sonar is not detecting an object.



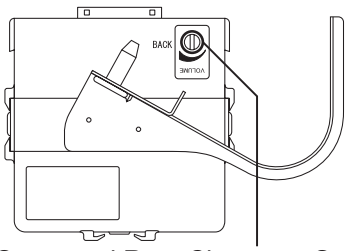
(c) Reference: waveform 3
HINT:
- Terminal: S3 - E, S1 - E, S4 - E, S2 - E
- Gauge set: 2 V/DIV., 100 μs/DIV.
- Condition: When the clearance sonar is not detecting an object.

PM

With Front Clearance Sonar:



Without Front Clearance Sonar:



for Back Sonar and Rear Clearance Sonar

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ADJUSTMENT

1. ADJUST BUZZER VOLUME

(a) Turn the knob on the clearance warning ECU to adjust the volume.