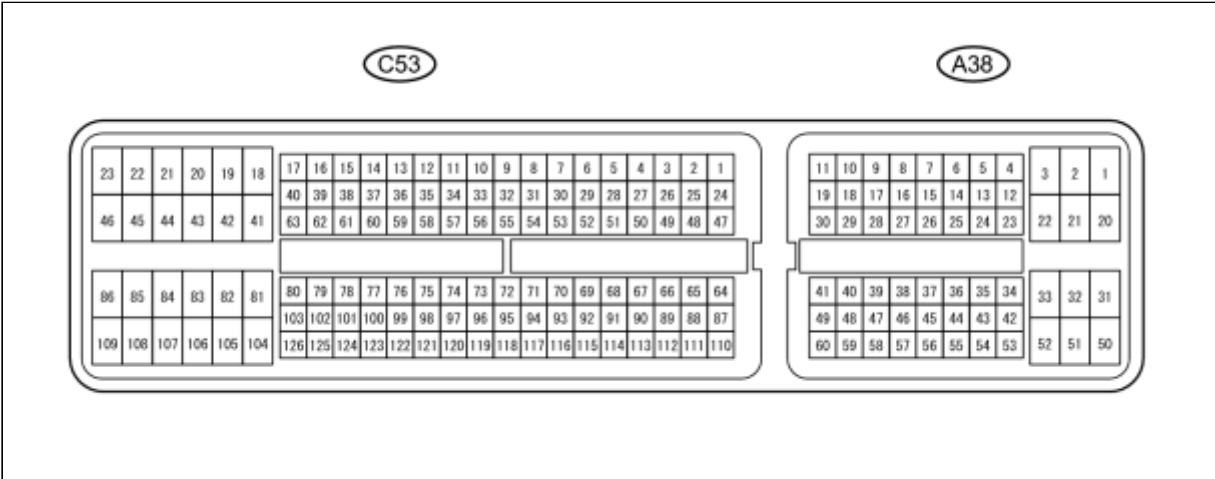


Last Modified: 11-27-2007		1.6 U
Service Category: Engine/Hybrid System	Section: Cruise Control	
Model Year: 2008	Model: LX570	Doc ID: RM000000PLR013X
Title: CRUISE CONTROL: DYNAMIC RADAR CRUISE CONTROL SYSTEM: TERMINALS OF ECU (2008 LX570)		

TERMINALS OF ECU

1. CHECK ECM



HINT:

As the ECM connector is a waterproof connector, it is not possible to check the voltage of each terminal or check the waveform with an oscilloscope while the ECM is installed in the vehicle.

- (a) Disconnect the A38 and C53 ECM connectors.
- (b) Measure the voltage and resistance according to the value(s) in the table below.

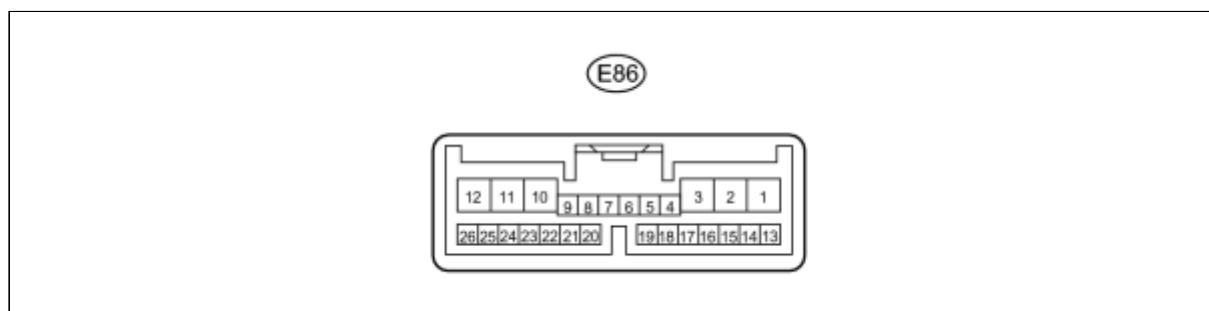
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A38-16 (TC) - Body ground	V-W - Body ground	Terminal TC of DLC3	Engine switch on (IG)	11 to 14 V
			Engine switch off	Below 1 V
C53-81 (E1) - Body ground	W-B - Body ground	ECM ground	Always	Below 1 Ω
C53-27 (D) - Body ground	G - Body ground	Park/neutral position switch signal	Engine switch on (IG) Shift lever in D	11 to 14 V
			Engine switch on (IG) Shift lever not in D	Below 1 V
A38-38 (SFTU) - Body ground	Y - Body ground	Park/neutral position switch signal	Engine switch on (IG) Shift lever in S	Below 1 Ω
			Engine switch on (IG) Shift lever in +	10 kΩ or higher

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A38-25 (S) - Body ground	W - Body ground	Park/neutral position switch signal	Engine switch on (IG) Shift lever in S	11 to 14 V
			Engine switch on (IG) Shift lever not in S	Below 1 V
A38-27 (SFTD) - Body ground	L - Body ground	Park/neutral position switch signal	Engine switch on (IG) Shift lever in S	10 kΩ or higher
			Engine switch on (IG) Shift lever in -	Below 1 Ω
A38-36 (STP) - Body ground	R - Body ground	Stop light signal	Engine switch on (IG) Brake pedal depressed	11 to 14 V
			Engine switch on (IG) Brake pedal released	Below 1 V
A38-35 (ST1-) - Body ground	R-W - Body ground	Stop light signal (opposite to STP terminal)	Engine switch on (IG) Brake pedal depressed	Below 1 V
			Engine switch on (IG) Brake pedal released	11 to 14 V
A38-45 (CCS) - Body ground	L - Body ground	Cruise control main switch signal	Engine switch on (IG) Main switch off	1 MΩ or higher
			Engine switch on (IG) CANCEL switch held on	1510 to 1570 Ω
			Engine switch on (IG) -SET switch held on	620 to 640 Ω
			Engine switch on (IG) +RES switch held on	235 to 245 Ω
			Engine switch on (IG) Main switch on	Below 2.5 Ω

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A38-37 (CCHG) - Body ground	P-B - Body ground	Distance control switch signal	Engine switch on (IG) Main switch on MODE switch held on	Below 1 V
			Engine switch on (IG) Main switch on MODE switch off	11 to 14 V

If the result is not as specified, there may be a malfunction on the wire harness side.

2. CHECK DISTANCE CONTROL ECU



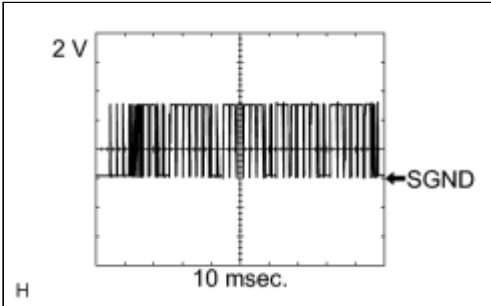
(a) Disconnect the E86 distance control ECU connector.

(b) Measure the voltage and resistance according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
E86-1 (B) - Body ground	R - Body ground	Distance control ECU power source line	Engine switch on (IG)	11 to 14 V
E86-3 (WASH) - Body ground	L - Body ground	Windshield wiper switch signal	Engine switch on (IG) Windshield wiper switch on	11 to 14 V
			Engine switch on (IG) Windshield wiper switch off	Below 1 V
E86-12 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 Ω
E86-13 (IGB) - Body ground	R - Body ground	Engine switch on signal	Engine switch on (IG)	11 to 14 V
			Engine switch off	Below 1 V
E86-16 (MODE) - Body ground	W - Body ground	Distance control switch signal	Engine switch on (IG) Distance control switch on	Below 1 V
			Engine switch on (IG)	11 to 14 V

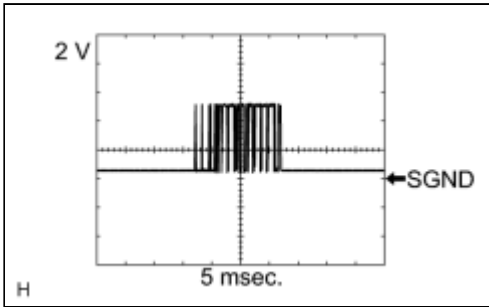
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
			Distance control switch off	
E86-22 (LRDD) - E86-10 (SGND)	B - R	Millimeter wave radar sensor input signal	Engine switch on (IG)	Pulse generation (See waveform 1)
E86-23 (LRRD) - E86-10 (SGND)	W - R	Millimeter wave radar sensor output signal	Engine switch on (IG)	Pulse generation (See waveform 2)

If the result is not as specified, there may be a malfunction on the wire harness side.



(c) Using an oscilloscope, check waveform 1.

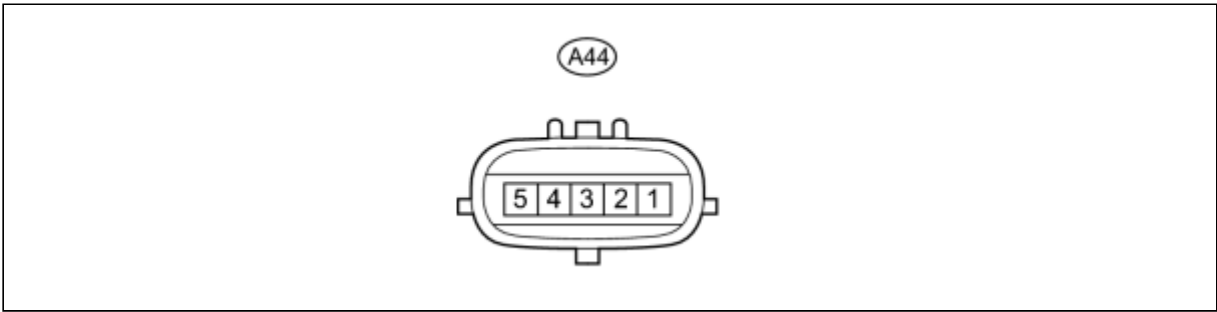
ITEM	CONTENT
Terminal No. (Symbol)	E86-22 (LRDD) - E86-10 (SGND)
Tool Setting	2 V/DIV., 10 msec./DIV.
Condition	Engine switch on (IG)



(d) Using an oscilloscope, check waveform 2.

ITEM	CONTENT
Terminal No. (Symbol)	E86-23 (LRRD) - E86-10 (SGND)
Tool Setting	2 V/DIV., 5 msec./DIV.
Condition	Engine switch on (IG)

3. CHECK MILLIMETER WAVE RADAR SENSOR

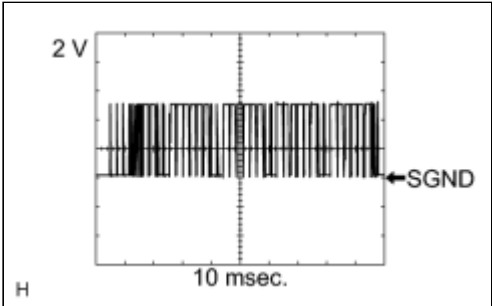


- (a) Disconnect the A44 millimeter wave radar sensor connector.
- (b) Measure the voltage according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A44-3 (LRDD) - A44-2 (SGND)	B - R-W	Millimeter wave radar sensor output signal	Engine switch on (IG)	Pulse generation (See waveform 3)
A44-4 (LRRD) - A44-2 (SGND)	W - R-W	Millimeter wave radar sensor input signal	Engine switch on (IG)	Pulse generation (See waveform 4)

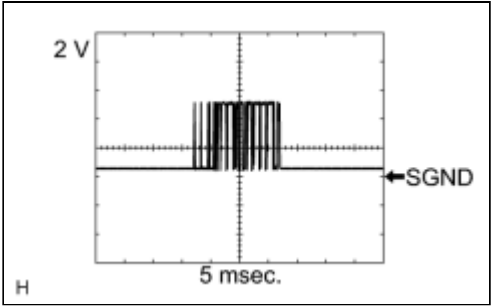
TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A44-5 (IGB) - A44-2 (SGND)	R-B - R-W	Engine switch on signal	Engine switch on (IG)	11 to 14 V
			Engine switch off	Below 1 V

If the result is not as specified, there may be a malfunction on the wire harness side.



(c) Using an oscilloscope, check waveform 3.

ITEM	CONTENT
Terminal No. (Symbol)	A44-3 (LRDD) - A44-2 (SGND)
Tool Setting	2 V/DIV., 10 msec./DIV.
Condition	Engine switch on (IG)



(d) Using an oscilloscope, check waveform 4.

ITEM	CONTENT
Terminal No. (Symbol)	A44-4 (LRRD) - A44-2 (SGND)
Tool Setting	2 V/DIV., 5 msec./DIV.
Condition	Engine switch on (IG)

