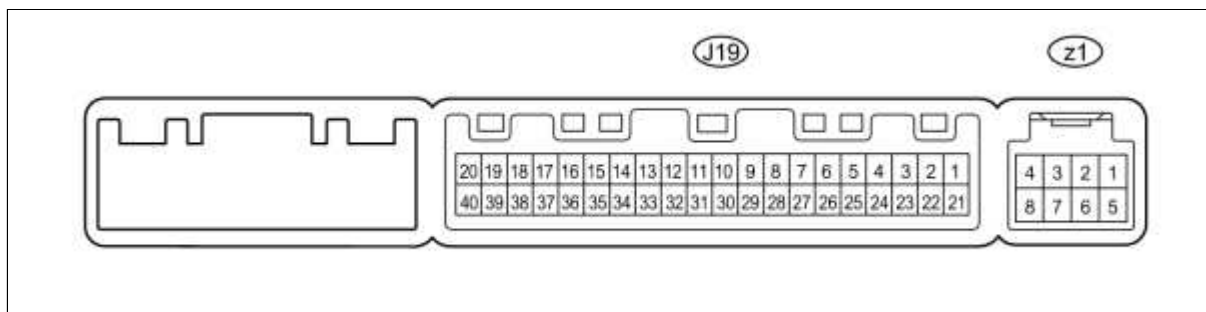


Last Modified: 5-4-2007		1.6 U
Service Category: Vehicle Interior	Section: Heating/Air Conditioning	
Model Year: 2007	Model: Tundra	Doc ID: RM000002VX6000X
Title: AIR CONDITIONING: AIR CONDITIONING SYSTEM (for Automatic Air Conditioning System): TERMINALS OF ECU (2007 Tundra)		

TERMINALS OF ECU

1. CHECK AIR CONDITIONING AMPLIFIER



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

HINT:

Check from the rear of the connector with it connected to the air conditioning amplifier.

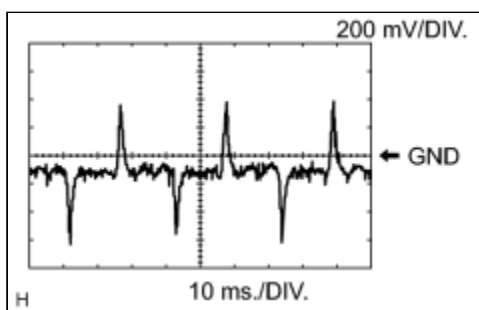
TERMINAL NO. (SYMBOLS)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
J19-1 (IG+) - J19-14 (GND)	P - W-B	Ignition power supply	Ignition switch ON	11 to 14 V
			Ignition switch OFF	Below 1 V
J19-21 (B) - J19- 14 (GND)	R - W-B	Battery power source	Always	11 to 14 V
J19-14 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
J19-5 (TAM) - J19-14 (GND)	V - W-B	A/C ambient temperature sensor signal	Ignition switch ON at 25°C (77°F)	1.35 to 1.75 V
J19-5 (TAM) - J19-14 (GND)	V - W-B	A/C ambient temperature sensor signal	Ignition switch ON at 40°C (104°F)	0.9 to 1.2 V
J19-8 (LOCK) - J19-14 (GND)	SB - W-B	A/C compressor lock sensor signal	Engine is running Blower switch LO A/C switch ON	Pulse generation (see waveform 1)
J19-23 (BLW) -		Blower motor control	Ignition switch ON	Pulse generation

J19-14 (GND)	W - W-B	signal	Blower switch LO	(see waveform 2)
J19-20 (MGC) - J19-14 (GND)	P - W-B	A/C compressor magnetic clutch operation signal	Ignition switch ON Blower switch LO A/C switch OFF	11 to 14 V
J19-20 (MGC) - J19-14 (GND)	P - W-B	A/C compressor magnetic clutch operation signal	Ignition switch ON Blower switch LO A/C switch ON	Below 1 V
J19-33 (TSD) - J19-14 (GND)	P - W-B	Driver side solar sensor signal	Ignition switch ON Solar sensor subjected to electric light	0.8 to 4.3 V
J19-32 (TSP) - J19-14 (GND)	L - W-B	Passenger side solar sensor signal	Ignition switch ON Solar sensor subjected to electric light	0.8 to 4.3 V
J19-29 (TR) - J19-34 (SG-1)	G - B	Room temperature sensor signal	Ignition switch ON Front side interior temperature: 25°C (77° F)	1.8 to 2.2 V
J19-34 (SG-1) - Body ground	B - Body ground	Ground for room temperature sensor	Always	Below 1 Ω
J19-13 (SG-2) - Body ground	G - Body ground	Ground for ambient temperature sensor	Always	Below 1 Ω
J19-37 (LIN1) - J19-14 (GND)	SB - W-B	LIN communication signal	Ignition switch ON	Pulse generation
J19-11 (CANH) - J19-14 (GND)	B - W-B	Hi-level CAN bus line	Ignition switch ON	Pulse generation (see waveform 3)
J19-12 (CANL) - J19-14 (GND)	W - W-B	Lo-level CAN bus line	Ignition switch ON	Pulse generation (see waveform 4)
z1-2 (BUS G) - Body ground	-	Ground for BUS IC	Always	Below 2 V
z1-3 (BUS) - z1-2 (BUS G)	-	BUS IC control signal	Ignition switch OFF → ON	Pulse generation
z1-4 (B BUS) - z1-2 (BUS G)	-	Power supply for BUS IC	Ignition switch OFF	Below 2 V
z1-4 (B BUS) - z1-2 (BUS G)	-	Power supply for BUS IC	Ignition switch ON	11 to 14 V
z1-5 (SGA) - Body ground	-	Ground for evaporator temperature sensor	Always	Below 2 V

z1-6 (TEA) - z1-5 (SGA)	-	A/C evaporator temperature sensor signal	Ignition switch ON Evaporator temperature at 0°C (32°F)	1.7 to 2.1 V
z1-6 (TEA) - z1-5 (SGA)	-	A/C evaporator temperature sensor signal	Ignition switch ON Evaporator temperature at 15°C (59°F)	0.7 to 1.3 V

If the result is not as specified, the ECU may have a malfunction.

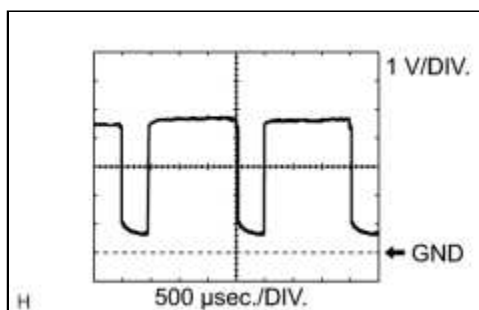
(b) Using an oscilloscope, check waveform 1.



Compressor lock signal

TERMINAL NO. (SYMBOLS)	TOOL SETTING	CONDITION
J19-8 (LOCK) - J19-14 (GND)	200 mV/DIV., 10 ms./DIV.	Engine is running Blower switch LO A/C switch ON

(c) Using an oscilloscope, check waveform 2.

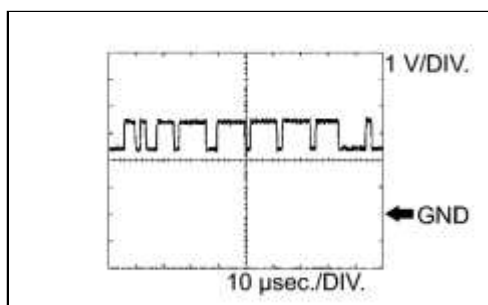


Blower motor control signal

TERMINAL NO. (SYMBOLS)	TOOL SETTING	CONDITION
J19-23 (BLW) - J19-14 (GND)	1 V/DIV., 500 μsec./DIV.	Ignition switch ON Blower switch LO

HINT:

When the blower level is increased, the duty ratio changes accordingly.



(d) Using an oscilloscope, check waveform 3.

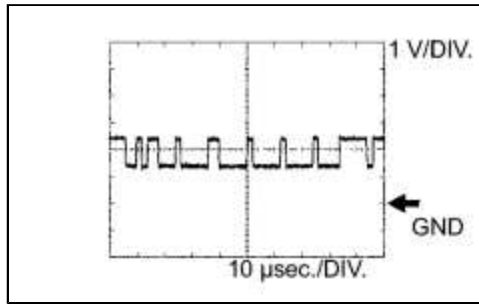
CAN communication signal

TERMINAL NO. (SYMBOLS)	TOOL SETTING	CONDITION
J19-11 (CANH) - J19-	1 V/DIV., 10	Ignition switch

14 (GND)	μsec./DIV.	ON
----------	------------	----

HINT:

The waveform varies depending on the CAN communication signal.



(e) Using an oscilloscope, check waveform 4.

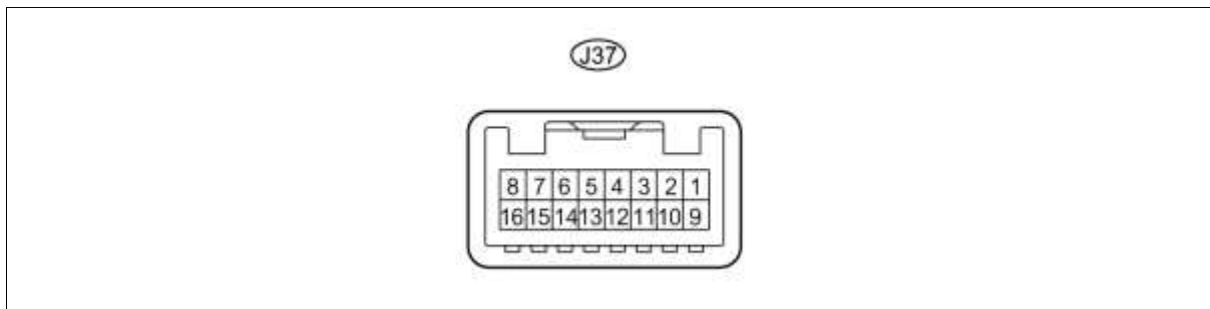
CAN communication signal

TERMINAL NO. (SYMBOLS)	TOOL SETTING	CONDITION
J19-12 (CANL) - J19-14 (GND)	1 V/DIV., 10 μsec./DIV.	Ignition switch ON

HINT:

The waveform varies depending on the CAN communication signal.

2. CHECK INTEGRATION CONTROL AND PANEL



(a) Disconnect the J37 integration control and panel connector.

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

TERMINAL NO. (SYMBOLS)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
J37-16 (IG+) - J37-1 (GND)	P - W-B	Ignition power supply	Ignition switch ON	11 to 14 V
			Ignition switch OFF	Below 1 V
J37-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
J37-3 (STX) - J37-1	SB - W-B	LIN communication	Ignition switch	Pulse generation



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

