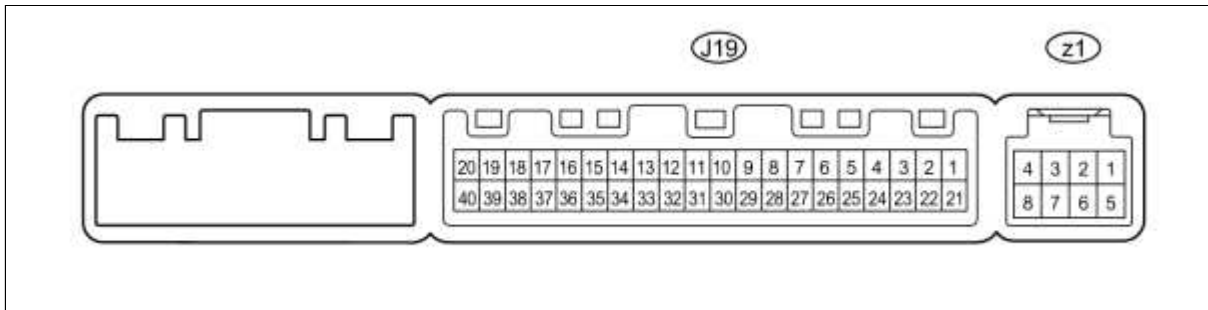


Last Modified: 5-4-2007		1.6 U
Service Category: Vehicle Interior	Section: Heating/Air Conditioning	
Model Year: 2007	Model: Tundra	Doc ID: RM000002VX6001X
Title: AIR CONDITIONING: AIR CONDITIONING SYSTEM (for Manual Air Conditioning System): TERMINALS OF ECU (2007 Tundra)		

TERMINALS OF ECU

1. CHECK AIR CONDITIONING AMPLIFIER



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

HINT:

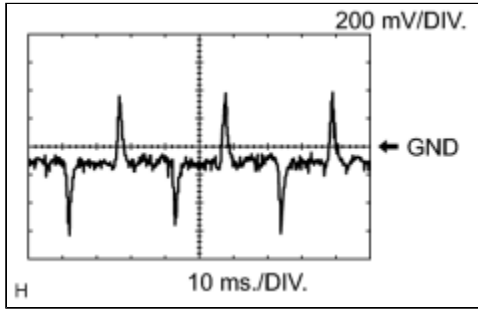
Check from the rear of the connector with it connected to the air conditioning amplifier.

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) -			Ignition switch ON	Pulse generation

J19-14 (GND)	W - W-B	Blower motor control 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
J19-13 (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.

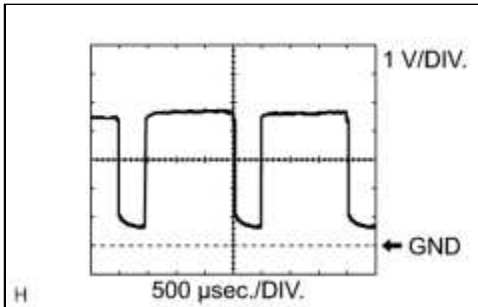
(b) Using an oscilloscope, check waveform 1.



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.

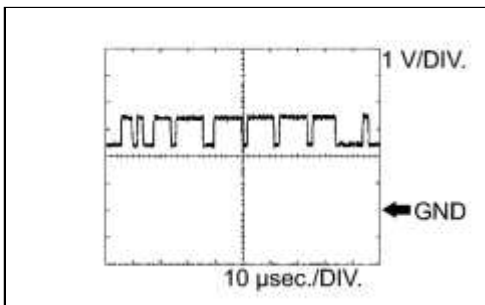


Blower motor control signal

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

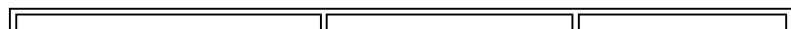
TERMINAL NO. (SYMBOLS)	TOOL SETTING	CONDITION
J19-11 (CANH) - J19-14 (GND)	1 V/DIV., 10 μsec./DIV.	Ignition switch ON

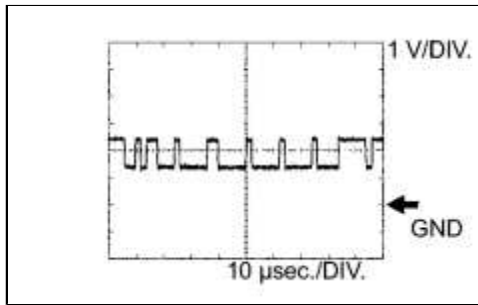
HINT:

The waveform varies depending on the CAN communication signal.

(e) Using an oscilloscope, check waveform 4.

CAN communication signal



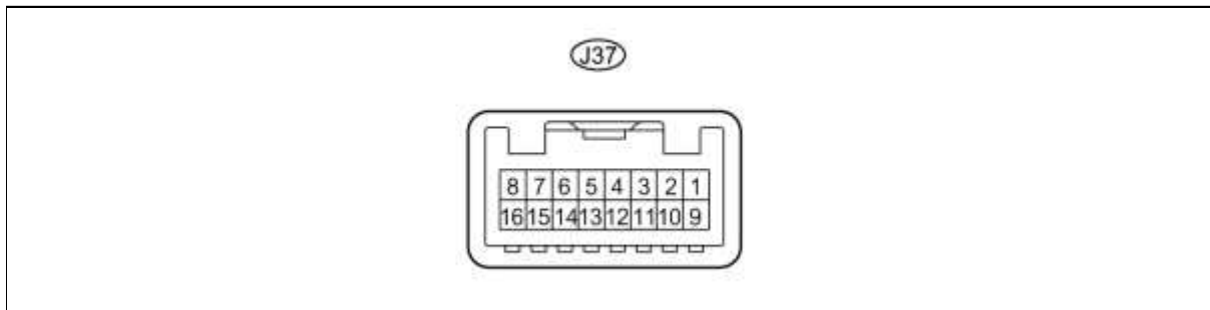


TERMINAL NO. (SYMBOLS)	TOOL SETTING	CONDITION
J19-12 (CANL) - J19-14 (GND)	1 V/DIV., 10 μsec./DIV.	Ignition switch ON

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 (GND)	SB - W-B	LIN communication signal	Ignition switch ON	Pulse generation

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

