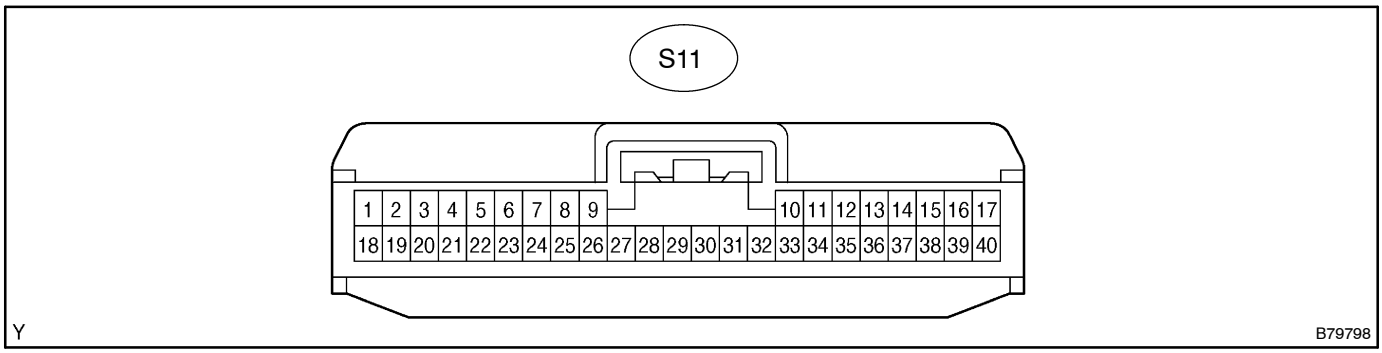
05IBE–01

TERMINALS OF ECU

1. CHECK SMART ECU



(a) Disconnect the S11 ECU connector.

(b) Measure the resistance and voltage between each terminal of the wire harness side connector and body ground.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
+B1 (S11–1) – Body ground	R – Body ground	+B power supply	Constant	10 to 14 V
IG (S11–18) – Body ground	B – Body ground	Ignition power supply	Power switch OFF → ON (IG)	0 V → 10 to 14 V
E (S11–17) – Body ground	W–B – Body ground	Ground	Constant	Below 1 Ω
TSW1 (S11–5) – Body ground	B – Body ground	Outside door handle LH lock switch signal	Lock switch OFF → ON	10 kΩ or higher → Below 1 Ω
TSW2 (S11–6) – Body ground	R – Body ground	Outside door handle RH lock switch signal	Lock switch OFF → ON	10 kΩ or higher → Below 1 Ω
TSW6 (S11–8) – Body ground	B – Body ground	Back door lock switch signal	Back door lock switch OFF → ON	10 kΩ or higher → Below 1 Ω
CNSL (S11–25) – Body ground	W–B – Body ground	Smart entry system cancel switch signal	Cancel switch OFF → ON	10 kΩ or higher → Below 1 Ω

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

(c) Reconnect the S11 ECU connector.

(d) Measure the voltage and frequency of each terminal of the connector.

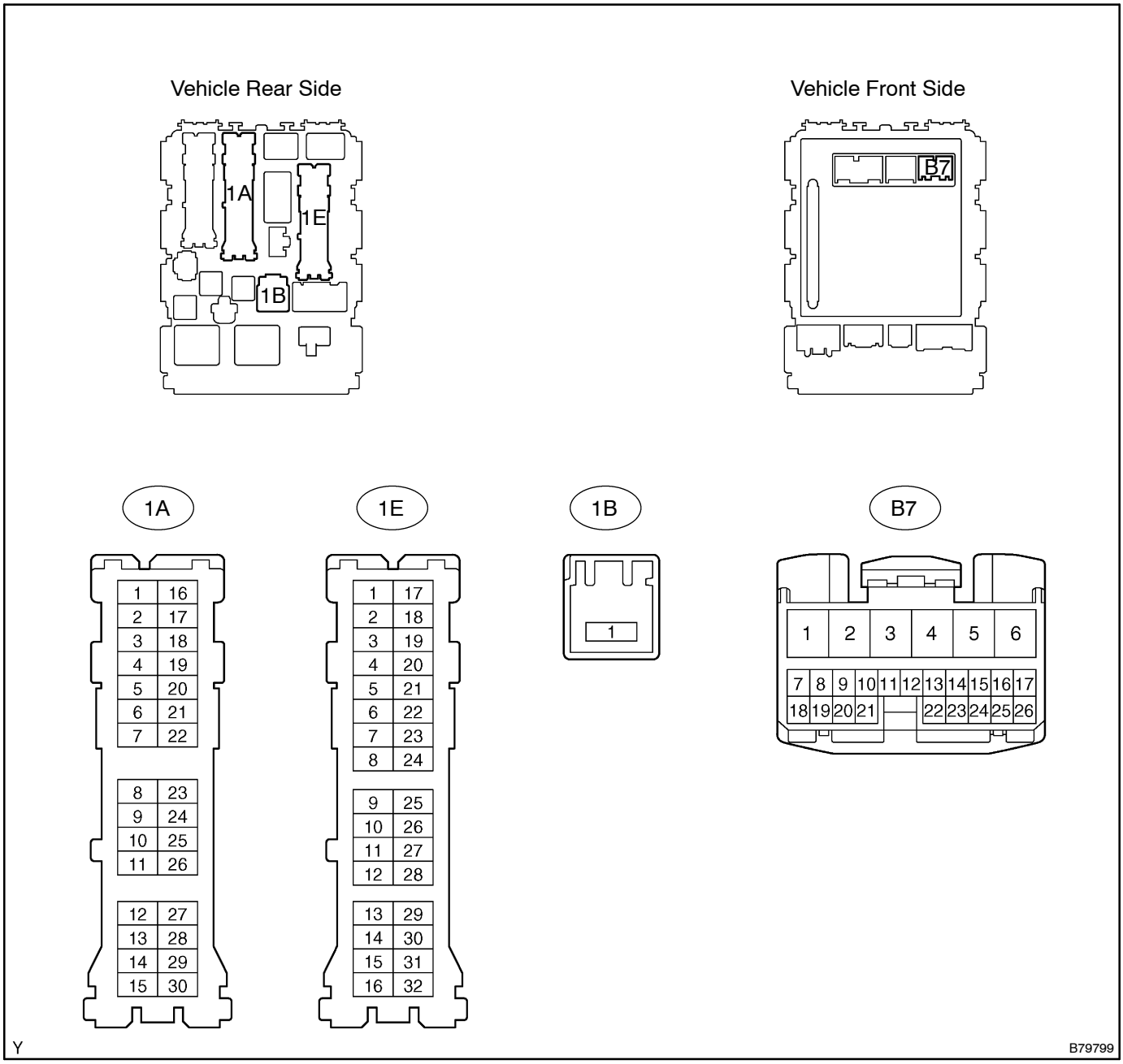
Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
CLG1 (S11–13) – E (S11–17)	P – W–B	Driver door oscillator sensor signal	All doors locked by wireless operation from outside vehicle and power switch OFF → ON (IG)	Some Hz → 0 Hz
CLG2 (S11–14) – E (S11–17)	R – W–B	Passenger door oscillator sensor signal	All doors locked by wireless operation from outside vehicle and power switch OFF → ON (IG)	Some Hz → 0 Hz
CLG5 (S11–36) – E (S11–17)	G – W–B	Room oscillator sensor signal	30 seconds after driver side door opened and closed, power switch OFF → ON (IG)	Some Hz → 0 Hz
CLG7 (S11–38) – E (S11–17)	BR – W–B	Luggage oscillator inner sensor signal	30 seconds after driver side door opened and closed, power switch OFF → ON (IG)	Some Hz → 0 Hz
CLG8 (S11–39) – E (S11–17)	O – W–B	Luggage oscillator outer sensor signal	Back door opener switch OFF → ON	Some Hz → 0 Hz

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
SEL1 (S11–23) – E (S11–17)	Y – W–B	Sensor detection signal	Smart key at least 3 m away from door → near outside door handle LH	10 to 14 V → 0 V
SEL2 (S11–24) – E (S11–17)	B – W–B	Sensor detection signal	Smart key at least 3 m away from door → near outside door handle RH	10 to 14 V → 0 V
SEN1 (S11–21) – E (S11–17)	R – W–B	Lock switch detection signal	Outside door handle LH touched → not touched	10 to 14 V → 0 V
SEN2 (S11–22) – E (S11–17)	W – W–B	Lock switch detection signal	Outside door handle RH touched → not touched	10 to 14 V → 0 V
RDA3 (S11–29) – E (S11–17)	L – W–B	Door control receiver input signal	With power switch OFF, no smart key and all doors closed, turn smart key switch OFF → ON	Below 1 V → Approx. 6 to 7 V
PRG (S11–28) – E (S11–17)	B – W–B	Door control receiver output signal	With power switch OFF, no smart key and all doors closed, turn smart key switch OFF → ON	Below 1 V → Approx. 6 to 7 V
RCO (S11–12) – E (S11–17)	L – W–B	Power source	With power switch OFF, no smart key and doors closed, turn smart key switch OFF → ON	0 to 5 V → 5 V
RSSI (S11–11) – E (S11–17)	V – W–B	Door control receiver output signal	Power switch OFF, all doors closed and smart key switch OFF → ON	0 to 5 V → Below 1 V
RDA (S11–10) – E (S11–17)	GR – W–B	Door control receiver input signal	With power switch OFF, no smart key and all doors closed, turn smart key switch OFF → ON	Below 1 V → Approx. 6 to 7 V
KSW (S11–4) – E (S11–17)	Y – W–B	Key unlock warning switch input signal	No key in key slot → Key inserted	10 to 14 V → 0 V

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

2. CHECK INSTRUMENT PANEL J/B ASSY (MULTIPLEX NETWORK BODY ECU)



(a) Disconnect the 1A, 1B and 1E J/B connectors.

(b) Measure the voltage and resistance between each terminal of the wire harness side connector and body ground.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ECUB (1A–30) – Body ground	R – Body ground	+B (ECUB) power supply	Constant	10 to 14 V
ALTB (1B–1) – Body ground	W – Body ground	+B (power system, generator system) power supply	Constant	10 to 14 V
GND (1E–17) – Body ground	W–B – Body ground	Ground	Constant	Below 1 Ω

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

(c) Reconnect the 1A, 1B and 1E J/B ECU connectors.

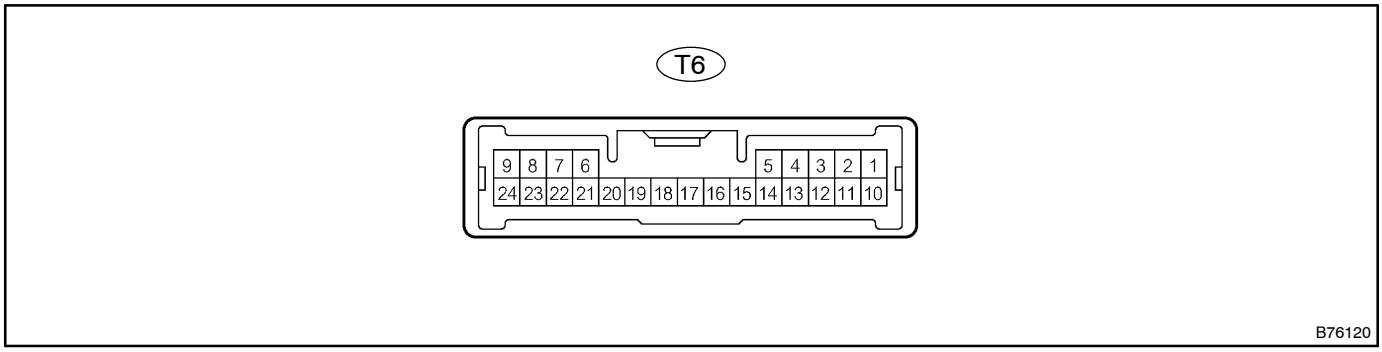
(d) Measure the voltage between each terminal of the connectors.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
PRG (B7–24) – GND (1E–17)	B – W–B	Door control receiver output signal	With power switch OFF, no smart key and all doors closed, turn smart key switch OFF → ON	0 to 5 V → 0 V
RDA (B7–23) – GND (1E–17)	L – W–B	Door control receiver input signal	With power switch OFF, no smart key and all doors closed, turn smart key switch OFF → ON	Below 1 V → Approx. 6 to 7 V

If the result is not as specified, the J/B assy (body ECU) may have a malfunction.

3. CHECK TRANSPONDER KEY ECU



(a) Disconnect the T6 ECU connector.

(b) Measure the resistance and voltage of each terminal of the wire harness side connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
CPUB (T6–3) – GND (T6–22)	L – W–B	Battery	Constant	10 to 14 V
IG (T6–4) – GND (T6–22)	O – W–B	Power switch (IG)	Power switch OFF → ON (IG)	0 V → 10 to 14 V
CUWS (T6–5) –GND (T6–22)	B – W–B	Unlock warning switch	No key in key slot → Key inserted	10 kΩ or higher → Below 1 Ω
AGND (T6–7) – GND (T6–22)	P – W–B	Ground	Constant	Below 1 Ω
GND (T6–22) – Body ground	W–B – Body ground	Ground	Constant	Below 1 Ω

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

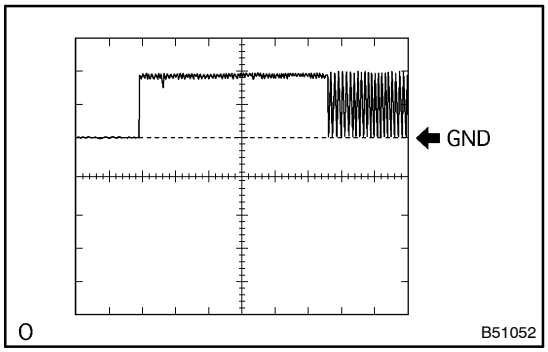
(c) Reconnect the T6 ECU connector.

(d) Measure the voltage of each terminal of the connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
CUWS (T6–5) –GND (T6–22)	B – W–B	Unlock warning switch	No key in key slot → Key inserted	10 to 14 V → Below 1 V
VC5 (T6–20) – GND (T6–22)	Y – W–B	Power source	No key in key slot → Key inserted	0 V → 4.6 to 5.4 V
CODE (T6–21) – AGND (T6–7)	L – P	Transponder key amplifier communication signal	No key in key slot → Key inserted	Pulse generation (see waveform 1)
TXCT (T6–6) – AGND (T6–7)	LG – P	Transponder key amplifier communication signal	No key in key slot → Key inserted	Pulse generation (see waveform 2)
HEV0 (T6–19) – GND (T6–22)	W – W–B	Hybrid vehicle control ECU output signal	No key in key slot → Key inserted	Pulse generation (see waveform 3)
HEV1 (T6–18) – GND (T6–22)	R – W–B	Hybrid vehicle control ECU input signal	Constant	Pulse generation (see waveform 4)

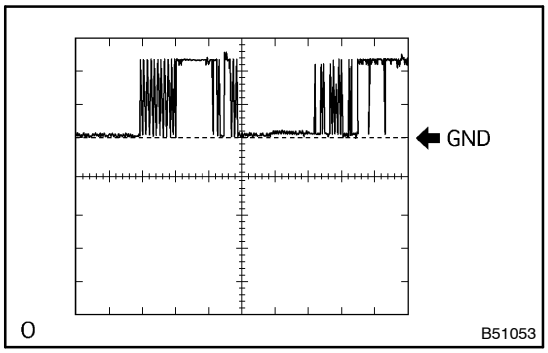
If the result is not as specified, the ECU may have a malfunction.



(e) Inspect using an oscilloscope.

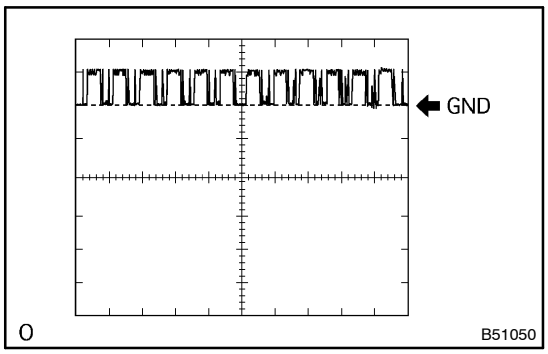
Waveform 1 (Reference):

Terminal	TXCT – GND
Tool Setting	2.5 V/DIV., 10 ms/DIV.
Condition	No key in key slot → Key inserted



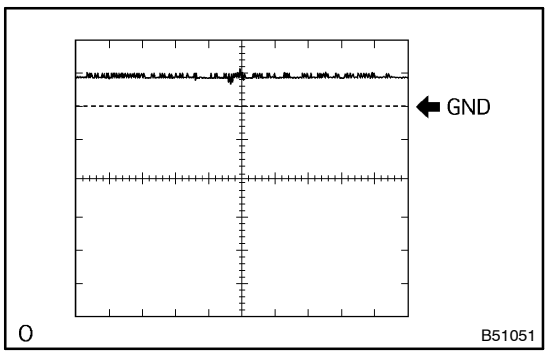
Waveform 2 (Reference):

Terminal	CODE – GND
Tool Setting	2.5 V/DIV., 20 ms/DIV.
Condition	No key in key slot → Key inserted



Waveform 3 (Reference):

Terminal	HEV0 – GND
Tool Setting	12 V/DIV., 100 ms/DIV.
Condition	No key in key slot → Key inserted



Waveform 4 (Reference):

Terminal	HEV1 – GND
Tool Setting	12 V/DIV., 100 ms/DIV.
Condition	Constant