Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029IN0
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: LIGHTING (INT): LIGHTING SYSTEM: Ambient Illumination Light Circuit; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

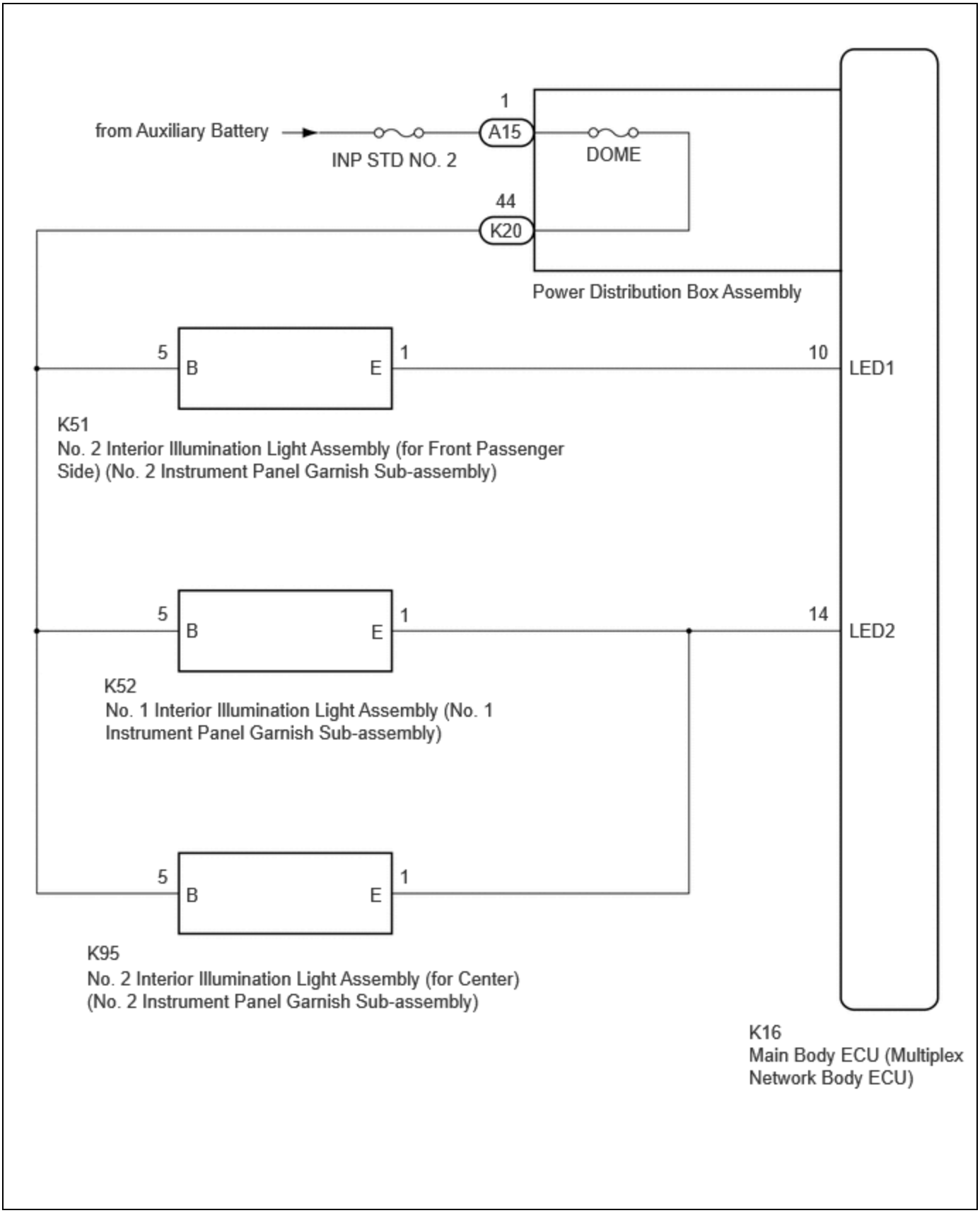
Ambient Illumination Light Circuit

DESCRIPTION

The main body ECU (multiplex network body ECU) controls the operation of the following lights:

- No. 1 Interior Illumination Light Assembly (No. 1 Instrument Panel Garnish Sub-assembly)
- No. 2 Interior Illumination Light Assembly (for Front Passenger Side) (No. 2 Instrument Panel Garnish Sub-assembly)
- No. 2 Interior Illumination Light Assembly (for Center) (No. 2 Instrument Panel Garnish Sub-assembly)

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following procedure.
- Before replacing the main body ECU (multiplex network body ECU), refer to Registration.

Click here INFO

PROCEDURE

1.	**PERFORM ACTIVE TEST USING GTS**

(a) Perform the Active Test according to the display on the GTS.

Body Electrical > Main Body > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	DIAGNOSTIC NOTE
Extended Illumination 1	Turns on the following lights: • No. 2 Interior Illumination Light Assembly (for Front Passenger Side) (No. 2 Instrument Panel Garnish Sub-assembly)	OFF or ON	Perform the Active Test with the vehicle stopped and ignition switch ON.
Extended Illumination 2	Turns on the following lights: • No. 1 Interior Illumination Light Assembly (No. 1 Instrument Panel Garnish Sub-assembly) • No. 2 Interior Illumination Light Assembly (for Center) (No. 2 Instrument Panel Garnish Sub-assembly)	OFF or ON	Perform the Active Test with the vehicle stopped and ignition switch ON.

Body Electrical > Main Body > Active Test

TESTER DISPLAY
Extended Illumination 1

Body Electrical > Main Body > Active Test

TESTER DISPLAY
Extended Illumination 2

RESULT	PROCEED TO
OK	A
NG (No. 2 interior illumination light assembly (for front passenger side) (No. 2 instrument panel garnish sub-assembly) does not come on)	B
NG (No. 1 interior illumination light assembly (No. 1 instrument panel garnish sub-assembly) does not come on)	C

RESULT	PROCEED TO
NG (No. 2 interior illumination light assembly (for center) (No. 2 instrument panel garnish sub-assembly) does not come on)	D
NG (No. 1 interior illumination light assembly (No. 1 instrument panel garnish sub-assembly) and No. 2 interior illumination light assembly (for center) (No. 2 instrument panel garnish sub-assembly) do not come on)	E
NG (All lights do not come on)	F

A ▶ **USE SIMULATION METHOD TO CHECK**

C ▶ **GO TO STEP 5**

D ▶ **GO TO STEP 8**

E ▶ **GO TO STEP 11**

F ▶ **GO TO STEP 13**

B

▼

2.	**INSPECT NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for FRONT PASSENGER SIDE) (NO. 2 INSTRUMENT PANEL GARNISH SUB-ASSEMBLY)**

Click here INFO

NG ▶ **REPLACE NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for FRONT PASSENGER SIDE) (NO. 2 INSTRUMENT PANEL GARNISH SUB-ASSEMBLY)**

OK

▼

3.	**CHECK HARNESS AND CONNECTOR (NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for FRONT PASSENGER SIDE) - MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU))**

(a) Disconnect the K16 main body ECU (multiplex network body ECU) connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K16,K51)
Click Connector(K16)
Click Connector(K51)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K16-10 (LED1) - K51-1 (E)	Always	Below 1 Ω
K16-10 (LED1) or K51-1 (E) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

4.	**CHECK HARNESS AND CONNECTOR (NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for FRONT PASSENGER SIDE) - POWER DISTRIBUTION BOX ASSEMBLY)**

(a) Disconnect the K20 power distribution box assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K51,K20)
Click Connector(K51)
Click Connector(K20)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K51-5 (B) - K20-44	Always	Below 1 Ω
K51-5 (B) or K20-44 - Body ground	Always	10 kΩ or higher

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)** INFO

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

5.	**INSPECT NO. 1 INTERIOR ILLUMINATION LIGHT ASSEMBLY (NO. 1 INSTRUMENT PANEL GARNISH SUB-ASSEMBLY)**

Click here INFO

NG ▶ **REPLACE NO. 1 INTERIOR ILLUMINATION LIGHT ASSEMBLY (NO. 1 INSTRUMENT PANEL GARNISH SUB-ASSEMBLY)**

OK ▼

6.	**CHECK HARNESS AND CONNECTOR (NO. 1 INTERIOR ILLUMINATION LIGHT ASSEMBLY - MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU))**

(a) Disconnect the K16 main body ECU (multiplex network body ECU) connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K16,K52)
Click Connector(K16)
Click Connector(K52)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K16-14 (LED2) - K52-1 (E)	Always	Below 1 Ω
K16-14 (LED2) or K52-1 (E) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

7.	**CHECK HARNESS AND CONNECTOR (NO. 1 INTERIOR ILLUMINATION LIGHT ASSEMBLY - POWER DISTRIBUTION BOX ASSEMBLY)**

(a) Disconnect the K20 power distribution box assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K52,K20)
Click Connector(K52)
Click Connector(K20)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K52-5 (B) - K20-44	Always	Below 1 Ω
K52-5 (B) or K20-44 - Body ground	Always	10 kΩ or higher

OK ▶ **USE SIMULATION METHOD TO CHECK**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

8.	**INSPECT NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for CENTER) (NO. 2 INSTRUMENT PANEL GARNISH SUB-ASSEMBLY)**

Click here INFO

NG ▶ **REPLACE NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for CENTER) (NO. 2 INSTRUMENT PANEL GARNISH SUB-ASSEMBLY)**

OK ▼

9.	**CHECK HARNESS AND CONNECTOR (NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for CENTER) - MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU))**

(a) Disconnect the K16 main body ECU (multiplex network body ECU) connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K16,K95)
Click Connector(K16)
Click Connector(K95)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K16-14 (LED2) - K95-1 (E)	Always	Below 1 Ω
K16-14 (LED2) or K95-1 (E) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

10.	**CHECK HARNESS AND CONNECTOR (NO. 2 INTERIOR ILLUMINATION LIGHT ASSEMBLY (for CENTER) - POWER DISTRIBUTION BOX ASSEMBLY)**

(a) Disconnect the K20 power distribution box assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K95,K20)
Click Connector(K95)
Click Connector(K20)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K95-5 (B) - K20-44	Always	Below 1 Ω
K95-5 (B) or K20-44 - Body ground	Always	10 kΩ or higher

OK ▶ **USE SIMULATION METHOD TO CHECK**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

11.	**CHECK HARNESS AND CONNECTOR (NO. 1 INTERIOR ILLUMINATION LIGHT ASSEMBLY - MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU))**

(a) Disconnect the K16 main body ECU (multiplex network body ECU) connector.

(b) Disconnect the K52 No. 1 interior illumination light assembly (No. 1 instrument panel garnish sub-assembly) connector.

(c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(K16,K52)
Click Connector(K16)
Click Connector(K52)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K16-14 (LED2) - K52-1 (E)	Always	Below 1 Ω
K16-14 (LED2) or K52-1 (E) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

12.	**CHECK HARNESS AND CONNECTOR (NO. 1 INTERIOR ILLUMINATION LIGHT ASSEMBLY - POWER DISTRIBUTION BOX ASSEMBLY)**

(a) Disconnect the K20 power distribution box assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K52,K20)
Click Connector(K52)
Click Connector(K20)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K52-5 (B) - K20-44	Always	Below 1 Ω
K52-5 (B) or K20-44 - Body ground	Always	10 kΩ or higher

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)** INFO

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

13.	**CHECK HARNESS AND CONNECTOR (POWER DISTRIBUTION BOX ASSEMBLY - POWER SOURCE)**

(a) Disconnect the A15 power distribution box assembly connectors.

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

Standard Voltage:

EWD INFO

Click Location & Routing(A15)
Click Connector(A15)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A15-1 - Body ground	Ignition switch off	11 to 14 V

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

14.	INSPECT POWER DISTRIBUTION BOX ASSEMBLY

(a) Disconnect the K20 power distribution box assembly connectors.

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

Standard Resistance:

EWD INFO

Click Location & Routing(A15,K20)
Click Connector(A15)
Click Connector(K20)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A15-1 - K20-44	Always	Below 1 Ω

NG ▶ **REPLACE POWER DISTRIBUTION BOX ASSEMBLY**
INFO

OK

15.	CHECK HARNESS AND CONNECTOR (MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU) - ILLUMINATION LIGHTS)

(a) Disconnect the K16 main body ECU (multiplex network body ECU) connector.

(b) Disconnect the K51 No. 2 interior illumination light assembly (for front passenger side) (No. 2 instrument panel garnish sub-assembly) connector.

(c) Disconnect the K52 No. 1 interior illumination light assembly (No. 1 instrument panel garnish sub-assembly) connector.

(d) Disconnect the K95 No. 2 interior illumination light assembly (for center) (No. 2 instrument panel garnish sub-assembly) connector.

(e) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

EWD INFO

Click Location & Routing(K16,K51,K52,K95)
Click Connector(K16)
Click Connector(K51)

Click Connector(K52)
Click Connector(K95)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K16-10 (LED1) - K51-1 (E)	Always	Below 1 Ω
K16-14 (LED2) - K52-1 (E)	Always	Below 1 Ω
K16-14 (LED2) - K95-1 (E)	Always	Below 1 Ω
K16-10 (LED1) or K51-1 (E) - Body ground	Always	10 kΩ or higher
K16-14 (LED2) or K52-1 (E) - Body ground	Always	10 kΩ or higher
K16-14 (LED2) or K95-1 (E) - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

16.	**CHECK HARNESS AND CONNECTOR (ILLUMINATION LIGHTS - POWER DISTRIBUTION BOX ASSEMBLY)**

(a) Disconnect the K20 power distribution box assembly connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K51,K20,K52,K95)
Click Connector(K51)
Click Connector(K20)
Click Connector(K52)
Click Connector(K95)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K51-5 (B) - K20-44	Always	Below 1 Ω
K52-5 (B) - K20-44	Always	Below 1 Ω
K95-5 (B) - K20-44	Always	Below 1 Ω
K51-5 (B) or K20-44 - Body ground	Always	10 kΩ or higher
K52-5 (B) or K20-44 - Body ground	Always	10 kΩ or higher
K95-5 (B) or K20-44 - Body ground	Always	10 kΩ or higher

OK ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)** INFO

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**