10.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P0513 INCORRECT IMMOBILIZER KEY

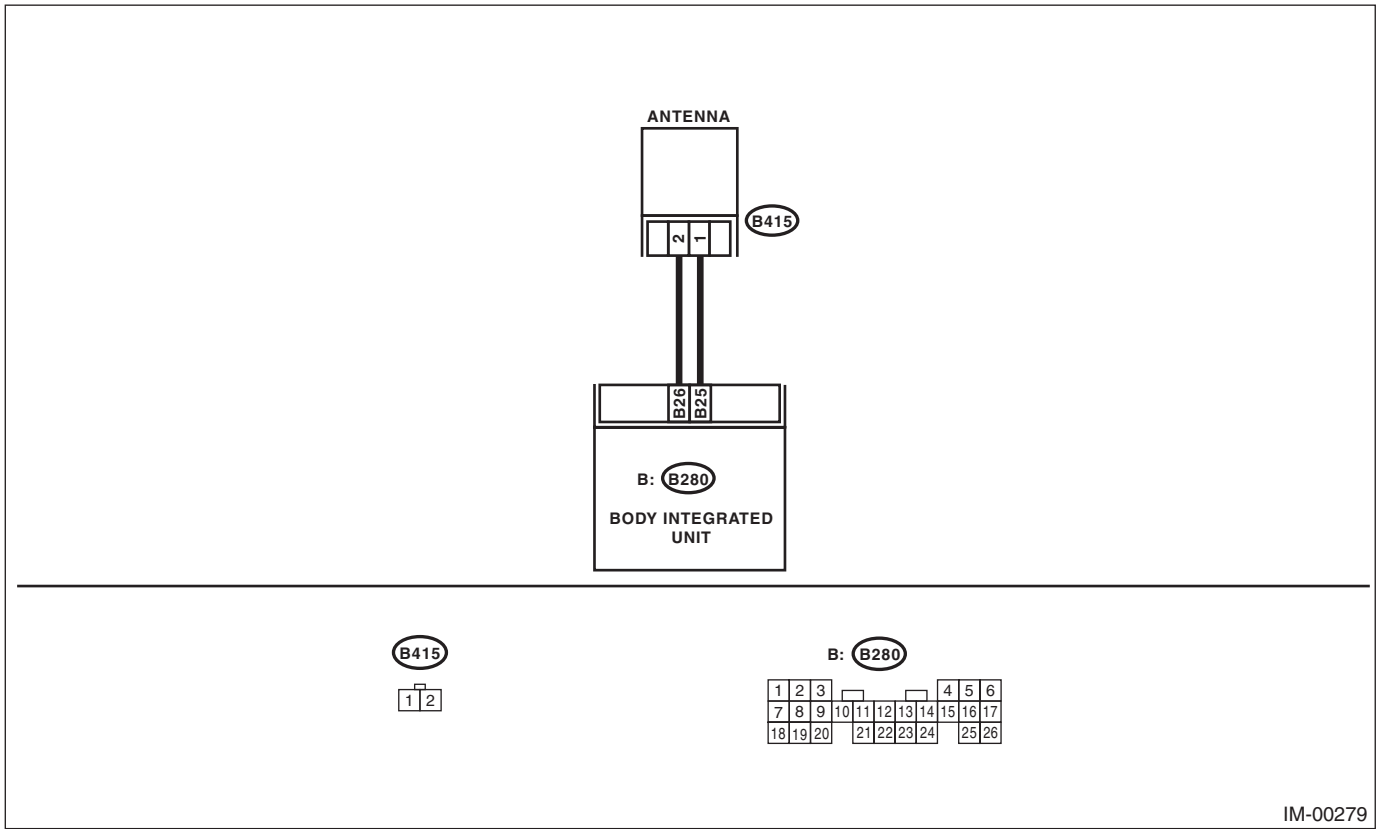
DTC DETECTING CONDITION:

Incorrect immobilizer key (Use of unregistered key in body integrated unit)

	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	End.	Replace ignition keys (transponder) which cannot be registered. Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	End.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

B: DTC P1570 ANTENNA

DTC DETECTING CONDITION:
Faulty antenna
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK ANTENNA CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from the antenna. <Ref. to SL-53, Immobilizer Antenna.> 3) Measure the resistance of antenna circuit. ***Connector & terminal*** ***(B415) No. 1 — No. 2:***	Is the resistance less than 10 Ω?	Go to step **2**.	Replace the antenna. <Ref. to SL-53, Immobilizer Antenna.>
2	**CHECK ANTENNA CIRCUIT.** 1) Disconnect the harness connector from body integrated unit. 2) Measure the resistance of harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 26 — Chassis ground:***	Is the resistance less than 10 Ω?	Repair the harness.	Go to step **3**.
3	**CHECK ANTENNA CIRCUIT.** Measure the resistance of harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 25 — Chassis ground:***	Is the resistance less than 10 Ω?	Repair the harness.	Go to step **4**.
4	**CHECK ANTENNA CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 26 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **5**.	Repair the harness between body integrated unit and antenna.

	Step	Check	Yes	No
5	**CHECK ANTENNA CIRCUIT.** Measure the voltage between harness connector and chassis ground. ***Connector & terminal*** ***(B280) No. 25 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **6**.	Repair the harness between body integrated unit and antenna.
6	**CHECK BODY INTEGRATED UNIT FUNCTION.** 1) Turn the ignition switch to OFF. 2) Connect the harness connector to body integrated unit. 3) Insert the key into the ignition switch, then measure changes in voltage between the antenna harness connectors. ***Connector & terminal*** ***(B280) No. 25 (+) — No. 26 (–):***	Is the voltage 40 V or more at maximum? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)	Go to step **7**.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.
7	**CHECK IGNITION KEY (TRANSPONDER).** 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered.	Does the engine start?	Replace the ignition key (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

C: DTC P1571 REFERENCE CODE INCOMPATIBILITY

DTC DETECTING CONDITION:

Reference code incompatibility between body integrated unit and ECM

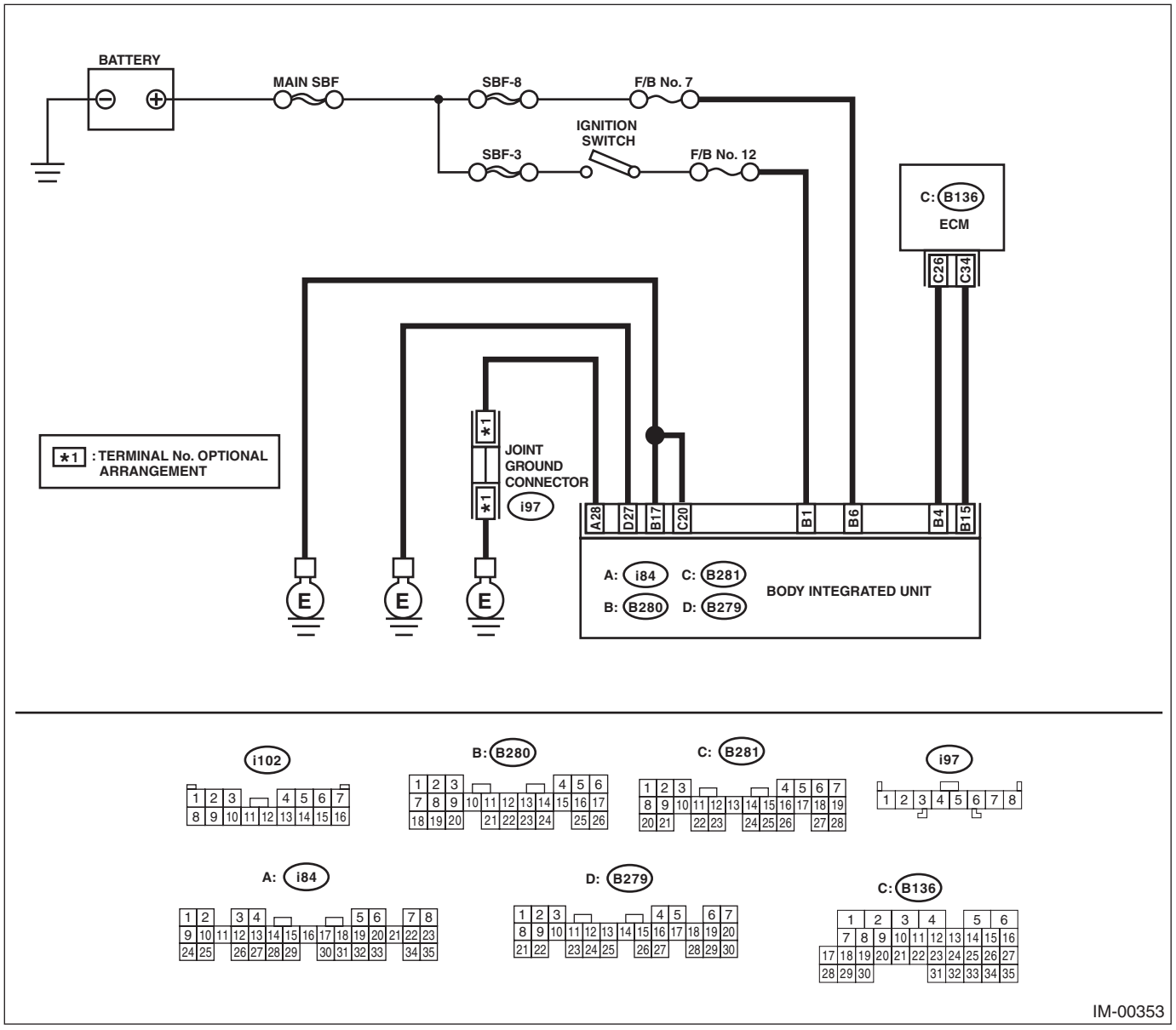
	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	End.	Go to step **2**.
2	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other immobilizer DTC displayed?	Check the appropriate DTC using the “List of Diagnostic Trouble Code (DTC)”. <Ref. to IM(diag)-15, List of Diagnostic Trouble Code (DTC).> Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.	Replace the ECM. <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).> <Ref. to SL-49, Body Integrated Unit.> Replace the body integrated unit, and replace all the ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

D: DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)

DTC DETECTING CONDITION:

Communication failure between body integrated unit and ECM

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from body integrated unit. 3) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 6 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **2**.	Check the harness for open or short circuit between body integrated unit and fuse.

	Step	Check	Yes	No
2	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **3**.	Check the harness for open or short circuit between the body integrated unit and ignition switch.
3	**CHECK BODY INTEGRATED UNIT GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(i84) No. 28 — Chassis ground:*** ***(B280) No. 17 — Chassis ground:*** ***(B281) No. 20 — Chassis ground:*** ***(B279) No. 27 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair the open circuit of the body integrated unit ground circuit.
4	**CHECK GROUND CIRCUIT FOR ECM.** Measure the resistance between the ECM ground terminal and engine ground.	Is the resistance less than 10 Ω?	Go to step **5**.	Repair the ECM ground circuit.
5	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND ECM.** 1) Disconnect the harness connector from the ECM and body integrated unit. 2) Measure the resistance between body integrated unit harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B280) No. 4 — (B136) No. 26:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair the open circuit of the harness between the body integrated unit and ECM.
6	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND ECM.** Measure the resistance between body integrated unit harness connector terminal and ECM harness connector terminal. ***Connector & terminal*** ***(B280) No. 15 — (B136) No. 34:***	Is the resistance less than 10 Ω?	Go to step **7**.	Repair the open circuit of the harness between the body integrated unit and ECM.
7	**CHECK COMMUNICATION CIRCUIT HARNESS.** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit harness connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 4 (+) — Chassis ground (–):*** ***(B280) No. 15 (+) — Chassis ground (–):***	Is the voltage 0 V?	Go to step **8**.	Repair the harness between body integrated unit and ECM.
8	**CHECK COMMUNICATION CIRCUIT HARNESS.** Measure the voltage between ECM harness connector terminal and engine ground. ***Connector & terminal*** ***(B136) No. 26 (+) — Engine ground (–):*** ***(B136) No. 34 (+) — Engine ground (–):***	Is the voltage 0 V?	Go to step **9**.	Repair the harness between body integrated unit and ECM.

	Step	Check	Yes	No
9	**CHECK ECM BY COMMUNICATION SHORT CHECK.** 1) Connect the harness connector to ECM. 2) Disconnect the harness connector from body integrated unit. 3) Start the communication short check. <Ref. to IM(diag)-8, COMMUNICATION LINE CHECK, OPERATION, Subaru Select Monitor.>	Is the communication short check OK?	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".	Replace the ECM. <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).> Perform the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

NOTE:
Refer to the following inspection when DTC is detected after inspection above. <Ref. to IM(diag)-25, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

E: DTC P1574 KEY COMMUNICATION FAILURE

DTC DETECTING CONDITION:
Communication failure between key and body integrated unit

	Step	Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT FUNCTION.** Insert the key into the ignition switch (LOCK position), then measure changes in voltage between the antenna connectors. ***Connector & terminal*** ***(B415) No. 1 (+) — Chassis ground (–):***	Is the voltage 40 V or more at maximum? (Approx. 0.1 second after inserting the key) Is the voltage 0 V? (Approx. 1 second after inserting the key)	Go to step **2**.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".
2	**CHECK IGNITION KEY (TRANSPONDER).** 1) Remove the key from ignition switch. 2) Start the engine using other key which is already registered.	Does the engine start?	Replace the ignition key (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the "PC application help for Subaru Select Monitor".

F: DTC P1576 EGI CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

- ECM malfunctioning
- Inaccessible ROM in ECM during key registration.

	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **3**.
3	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Replace the ECM. <Ref. to FU(H4DOTC)-51, Engine Control Module (ECM).> Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

G: DTC P1577 IMM CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

- Body integrated unit malfunctioning
- Failed to access the ROM inside the body integrated unit.

	Step	Check	Yes	No
1	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **2**.
2	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Go to step **3**.
3	**PERFORM REGISTRATION ON IGNITION KEY.** Perform registration on all keys of the vehicle. Refer to the “PC application help for Subaru Select Monitor”.	Is registration for all keys complete?	Make sure it is possible to start the engine with all keys that have been taught. This completes the work.	Replace the body integrated unit <Ref. to SL-49, Body Integrated Unit.> Replace all ignition keys (transponder). Execute the registration procedure next. Refer to the “PC application help for Subaru Select Monitor”.

H: DTC P1578 METER FAILURE

DTC DETECTING CONDITION:
Reference code incompatibility between combination meter and body integrated unit

	Step	Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1401 detected?	Go to step **2**.	<Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
2	**CHECK LAN COMMUNICATION SYSTEM.** Inspect LAN communication system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Is DTC U1300, U1301, U1302, B1100 or B1101 of the body integrated unit displayed?	Perform the diagnosis according to the DTC. <Ref. to LAN(diag)-34, List of Diagnostic Trouble Code (DTC).>	Go to step **3**.
3	**CHECK COMBINATION METER.** 1) Perform the registration of immobilizer. Refer to the “PC application help for Subaru Select Monitor”. 2) Start the engine.	Does the engine start?	System is normal.	Replace the combination meter. <Ref. to IDI-15, REMOVAL, Combination Meter.>

NOTE:
• When the combination meter has been replaced, be sure to perform the registration procedure of immobilizer.
• When the combination meter and body integrated unit are replaced at a time, the registration can not be completed. In this case, it is necessary to rewrite the ID into the body integrated unit.

I: DTC B1401 M COLLATION NG

NOTE:
Refer to DTC P1578 “METER FAILURE” for diagnostic procedure. <Ref. to IM(diag)-25, DTC P1578 METER FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC B1402 IMMOBILIZER KEY COLLATION NG

NOTE:
For diagnostic procedures, refer to the following items.
• DTC P0513 “INCORRECT IMMOBILIZER KEY” <Ref. to IM(diag)-16, DTC P0513 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
• DTC P1570 “ANTENNA” <Ref. to IM(diag)-17, DTC P1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
• DTC P1574 “KEY COMMUNICATION FAILURE” <Ref. to IM(diag)-22, DTC P1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC B1403 E/G REQUEST NG

NOTE:
For diagnostic procedures, refer to DTC P1572 “IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)”. <Ref. to IM(diag)-20, DTC P1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

LAN SYSTEM (DIAGNOSTICS)

LAN(diag)