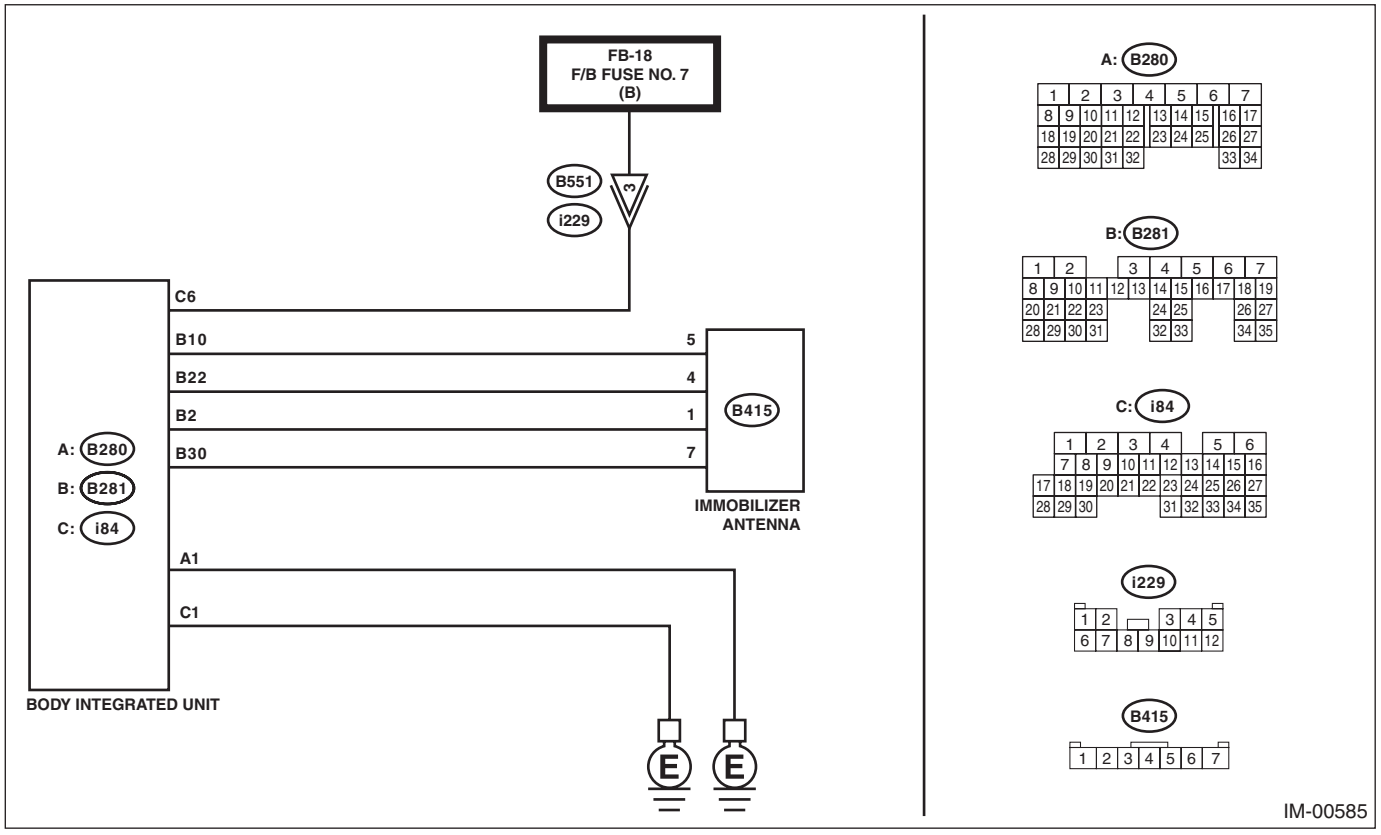
10.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC B1570 ANTENNA

DTC DETECTING CONDITION:
Faulty antenna

CAUTION:
When the body integrated unit is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".
WIRING DIAGRAM:
Immobilizer system <Ref. to WI-259, WIRING DIAGRAM, Immobilizer System.>



Step		Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Measure the voltage between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(i84) 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.
2	**CHECK BODY INTEGRATED UNIT GROUND CIRCUIT.** Measure the resistance between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 1 — Chassis ground:*** ***(i84) No. 1 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair the open circuit of the body integrated unit ground circuit.

	Step	Check	Yes	No
3	**CHECK ANTENNA POWER SUPPLY CIRCUIT.** 1) Connect the connector to body integrated unit. 2) Disconnect the connector from the antenna. 3) Insert the ignition key into the key cylinder, then measure the voltage between the antenna connector terminal and the chassis ground. ***Connector & terminal*** ***(B415) No. 1 (+) — Chassis ground (–):***	Is the voltage 5±0.5 V approx. 200 ms after inserting the ignition key into the key cylinder? And then, does the voltage return to 0 V within 2 s?	Go to step **5**.	Go to step **4**.
4	**CHECK ANTENNA POWER SUPPLY CIRCUIT.** 1) Disconnect the connector from body integrated unit. 2) Measure the resistance of body integrated unit connector terminal and antenna connector terminal. ***Connector & terminal*** ***(B281) No. 2 — (B415) No. 1:***	Is the resistance less than 10 Ω?	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>	Repair the harness or connector between body integrated unit and antenna.
5	**CHECK ANTENNA GROUND CIRCUIT.** Measure the resistance between antenna connector terminal and chassis ground. ***Connector & terminal*** ***(B415) No. 7 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **7**.	Go to step **6**.
6	**CHECK ANTENNA GROUND CIRCUIT.** 1) Disconnect the connector from body integrated unit. 2) Measure the resistance between antenna connector terminal and chassis ground. ***Connector & terminal*** ***(B281) No. 30 — (B415) No. 7:***	Is the resistance less than 10 Ω?	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>	Repair the harness or connector between body integrated unit and antenna.
7	**CHECK ANTENNA COMMUNICATION CIRCUIT.** Measure the resistance of body integrated unit connector terminal and antenna connector terminal. ***Connector & terminal*** ***(B281) No. 10 — (B415) No. 5:*** ***(B281) No. 22 — (B415) No. 4:***	Is the resistance less than 10 Ω?	Go to step **8**.	Repair the harness or connector between body integrated unit and antenna.
8	**CHECK ANTENNA.** 1) Replace the immobilizer antenna. 2) Insert the ignition key in the ignition switch. (OFF or ACC) 3) Check DTC of body integrated unit.	Is DTC B1411 detected?	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>	Antenna has a failure.

B: DTC B1571 REFERENCE CODE INCOMPATIBILITY

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

CAUTION:
When the body integrated unit is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**CONFIRM NUMBER OF REGISTERED IMMOBILIZER KEY.** Confirm the number of registered immobilizer key. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is the number of registration 0?	Go to step **2**.	Go to step **3**.
2	**PERFORM IMMOBILIZER SYSTEM REGISTRATION.** Register the immobilizer system. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Finish the diagnosis.	Go to step **4**.
3	**PERFORM ECM REGISTRATION.** Perform ECM registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Finish the diagnosis.	Go to step **4**.
4	**CHECK FOR ANY OTHER DTC ON DISPLAY.**	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Go to step **5**.
5	**PERFORM ECM REGISTRATION.** 1) Replace the ECM. 2) Perform ECM registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Finish the diagnosis.	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>

C: DTC B1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT)

DTC DETECTING CONDITION:

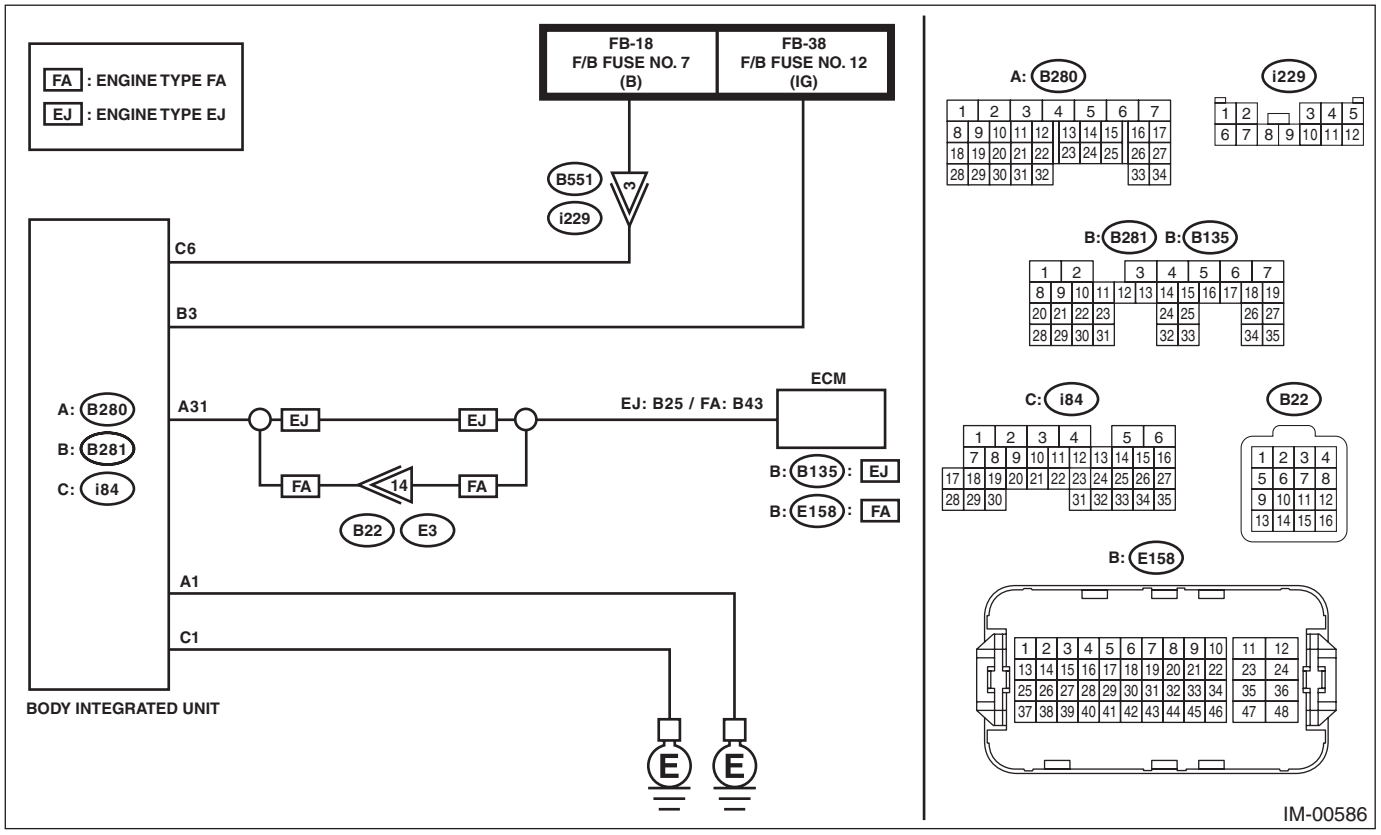
Communication failure between body integrated unit and ECM

CAUTION:

When the body integrated unit is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

WIRING DIAGRAM:

Immobilizer system <Ref. to WI-259, WIRING DIAGRAM, Immobilizer System.>



Step		Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Measure the voltage between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(i84) 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.
2	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(B281) No. 3 (+) — 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.

	Step	Check	Yes	No
3	**CHECK BODY INTEGRATED UNIT GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 1 — Chassis ground:*** ***(i84) No. 1 — 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 (OPEN CIRCUIT) BETWEEN BODY INTEGRATED UNIT AND ECM.** 1) Disconnect the connector from ECM. 2) Measure the resistance between body integrated unit connector terminal and ECM connector terminal. ***Connector & terminal*** ***Engine type: FA*** ***(B280) No. 31 — (E158) No. 43:*** ***Engine type: EJ*** ***(B280) No. 31 — (B135) No. 25:***	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 COMMUNICATION LINE HARNESS (SHORT CIRCUIT TO POWER SUPPLY).** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 31 (+) — Chassis ground (–):***	Is the voltage 6 V or more?	Repair the harness between body integrated unit and ECM.	Go to step **7**.
7	**CHECK COMMUNICATION CIRCUIT HARNESS (SHORT CIRCUIT TO GROUND).** 1) Turn the ignition switch to OFF. 2) Measure the resistance between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 31 — Chassis ground:***	Is the resistance less than 10 Ω?	Repair the harness between body integrated unit and ECM.	Go to step **8**.
8	**CHECK ECM.** 1) Replace the ECM. (Do not perform ECM registration.) 2) Turn the ignition switch to ON. 3) Wait for 5 seconds. 4) Read the DTC relating the ECM using the Subaru Select Monitor.	Is DTC B1572 detected?	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>	ECM has a failure. Perform ECM registration. Refer to the “REGISTRATION MANUAL FOR IMMOBILIZER”.

D: DTC B1574 KEY COMMUNICATION FAILURE

DTC DETECTING CONDITION:

Communication failure between key and body integrated unit

CAUTION:

When the body integrated unit is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**CHECK IGNITION KEY.** 1) Remove the ignition key from the ignition switch. 2) Insert the ignition key into the ignition switch, and then turn the ignition switch to ON. 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1410 detected?	Go to step **2**.	Even if DTC is detected, the circuit has returned to a normal condition at this time. Reproduce the failure, and then perform the diagnosis again. NOTE: In this case, temporary poor contact of connector, temporary open or short circuit of harness may be the cause.
2	**CHECK IGNITION KEY.** 1) Prepare another ignition key. 2) Insert the ignition key into the ignition switch, and then turn the ignition switch to ON. 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1410 detected?	Go to step **3**.	Ignition key unit was defective.
3	**CHECK IMMOBILIZER ANTENNA.** 1) Replace the immobilizer antenna. 2) Insert the ignition key into the ignition switch, and then turn the ignition switch to ON. 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1410 detected?	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>	Immobilizer antenna was defective.

E: DTC B1575 INCORRECT IMMOBILIZER KEY

DTC DETECTING CONDITION:
Incorrect immobilizer key (use of unregistered key in body integrated unit)

CAUTION:
When the body integrated unit is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**PERFORM IGNITION KEY REGISTRATION.** Perform key registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration of all keys complete?	Finish the diagnosis.	Replace ignition keys (including transponder) which cannot be registered. Go to step **2**.
2	**PERFORM IGNITION KEY REGISTRATION.** Perform key registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration of all keys complete?	Finish the diagnosis.	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.> After replacing, perform key registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

F: DTC B1576 EGI CONTROL MODULE EEPROM

DTC DETECTING CONDITION:
- ECM malfunctioning
- Failed to access ROM in ECM during key registration.

CAUTION:
When the ECM is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**PERFORM ECM REGISTRATION.** Perform ECM registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Finish the diagnosis.	Go to step **2**.
2	**PERFORM ECM REGISTRATION.** Perform ECM registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Finish the diagnosis.	Go to step **3**.
3	**PERFORM ECM REGISTRATION.** Perform ECM registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Finish the diagnosis.	Replace the ECM. <Ref. to FU(w/o STI)-132, Engine Control Module (ECM).> <Ref. to FU(STI)-56, Engine Control Module (ECM).>

G: DTC B1577 IMM CONTROL MODULE EEPROM

DTC DETECTING CONDITION:

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

CAUTION:
When the body integrated unit is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**PERFORM ECM REGISTRATION.** Perform ECM registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Finish the diagnosis.	Go to step **2**.
2	**PERFORM ECM REGISTRATION.** 1) Perform the Clear Memory Mode. (ECM and body integrated unit) 2) Perform ECM registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Even if DTC is detected, the circuit has returned to a normal condition at this time. Reproduce the failure, and then perform the diagnosis again. NOTE: In this case, temporary poor contact of connector, temporary open or short circuit of harness may be the cause.	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>

H: DTC B1578 METER FAILURE

DTC DETECTING CONDITION:

- Except for C0 model

Reference code incompatibility between combination meter and body integrated unit or communication failure between body integrated unit and ECM

- C0 model

Reference code incompatibility between security control module and body integrated unit or communication failure between body integrated unit and ECM

	Step	Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is any of DTC B1401, B1405, B1406, B1407, B1408 or B1409 detected?	Perform the diagnosis according to the DTC.	<Ref. to IM(diag)-19, DTC B1572 IMM CIRCUIT FAILURE (EXCEPT ANTENNA CIRCUIT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

I: DTC B1401 M COLLATION NG

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

CAUTION:
When the combination meter is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is any of DTC B1407 or B1408 detected?	Perform the diagnosis according to the DTC.	Go to step **2**.
2	**CHECK COMBINATION METER REGISTRATION.** Perform registration of combination meter. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Currently, it is normal. (Combination meter registration is not complete.)	Go to step **3**.
3	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is any of DTC B1407 or B1408 detected?	Perform the diagnosis according to the DTC.	Replace the combination meter. <Ref. to IDI-13, Combination Meter.>

J: DTC B1402 IMMOBILIZER KEY COLLATION NG

DTC DETECTING CONDITION:
- Incorrect immobilizer key (use of unregistered key in body integrated unit)
- Faulty antenna
- Communication failure between key and body integrated unit

	Step	Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is any of DTC B1410 or B1411 detected?	Perform the diagnosis according to the DTC.	<Ref. to IM(diag)-22, DTC B1575 INCORRECT IMMOBILIZER KEY, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC B1405 SCU COLLATION NG

DTC DETECTING CONDITION:

Reference code incompatibility between security control module and body integrated unit

CAUTION:

When the security control module is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is any of DTC B1406 or B1409 detected?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**PERFORM SECURITY CONTROL MODULE REGISTRATION.** Perform security control module registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".	Is registration complete?	Currently, it is normal. (Security control module registration is not complete.)	Go to step **3**.
3	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is any of DTC B1406 or B1409 detected?	Perform the diagnosis according to DTC.	Replace the security control module. <Ref. to SL-72, Security Control Module.>

L: DTC B1406 SCU_EEPROM_NG

DTC DETECTING CONDITION:

- Defective security control module
- ROM of security control module cannot be accessed

CAUTION:

When the security control module is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**PERFORM SECURITY CONTROL MODULE REGISTRATION.** 1) Perform security control module registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER". 2) Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1406 detected?	Replace the security control module. <Ref. to SL-72, Security Control Module.>	Finish the diagnosis.

M: DTC B1407 M COMMUNICATION ABNORMAL

DTC DETECTING CONDITION:
Communication failure between body integrated unit and combination meter

CAUTION:
When the combination meter is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**CHECK DTC.** Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC of the body integrated unit except for DTC B1407 displayed?	Perform the diagnosis according to the DTC.	Replace the combination meter. <Ref. to IDI-13, Combination Meter.>

N: DTC B1408 METER EEPROM ABNORMAL

DTC DETECTING CONDITION:
Defective combination meter

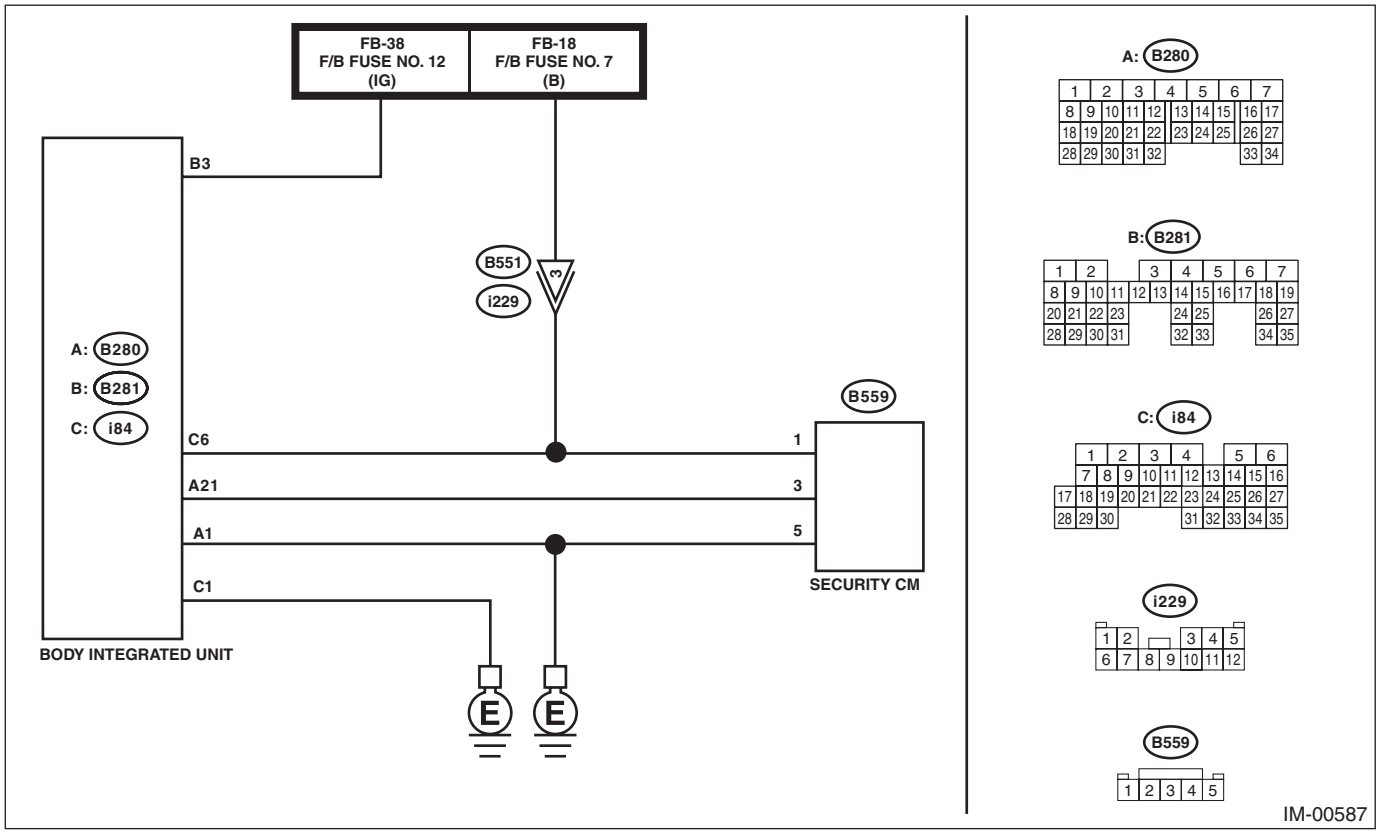
CAUTION:
When the combination meter is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

	Step	Check	Yes	No
1	**CHECK COMBINATION METER REGISTRATION.** 1) Perform the Clear Memory Mode. (Combination meter and body integrated unit) 2) Perform registration of combination meter. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER". 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1408 detected?	Replace the combination meter. <Ref. to IDI-13, Combination Meter.>	Even if DTC is detected, the circuit has returned to a normal condition at this time. Reproduce the failure, and then perform the diagnosis again. NOTE: In this case, temporary poor contact of connector, temporary open or short circuit of harness may be the cause.

O: DTC B1409 SCU COMMUNICATION ABNORMAL

DTC DETECTING CONDITION:
Communication failure between body integrated unit and security control module

CAUTION:
When the body integrated unit is replaced, registration of the immobilizer system is required. For details, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".
WIRING DIAGRAM:
Immobilizer system <Ref. to WI-259, WIRING DIAGRAM, Immobilizer System.>



Step		Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from body integrated unit. 3) Measure the voltage between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(i84) 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.
2	**CHECK BODY INTEGRATED UNIT POWER SUPPLY CIRCUIT.** 1) Turn the ignition switch to ON. 2) Measure the voltage between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(B281) No. 3 (+) — 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.

	Step	Check	Yes	No
3	**CHECK BODY INTEGRATED UNIT GROUND CIRCUIT.** 1) Turn the ignition switch to OFF. 2) Measure the resistance between the body integrated unit connector terminal and chassis ground. ***Connector & terminal*** ***(B280) No. 1 — Chassis ground:*** ***(i84) No. 1 — 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 SECURITY CONTROL MODULE POWER SUPPLY CIRCUIT.** 1) Disconnect the connector from the security control module. 2) Measure the power supply between security control module connector terminal and chassis ground. ***Connector & terminal*** ***(B559) No. 1 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **5**.	Check for an open or short circuit in the harness between security control module and fuse.
5	**CHECK SECURITY CONTROL MODULE GROUND CIRCUIT.** Measure the resistance between security control module connector terminal and chassis ground. ***Connector & terminal*** ***(B559) No. 5 — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair the open circuit of the security control module ground circuit.
6	**CHECK HARNESS (OPEN CIRCUIT) BETWEEN BODY INTEGRATED UNIT AND SECURITY CONTROL MODULE.** Measure the resistance between the body integrated unit connector terminal and security control module connector terminal. ***Connector & terminal*** ***(B280) No. 21 — (B559) No. 3:***	Is the resistance less than 10 Ω?	Go to step **7**.	Repair the harness between body integrated unit and security control module.
7	**CHECK COMMUNICATION LINE HARNESS (SHORT CIRCUIT TO POWER SUPPLY).** 1) Turn the ignition switch to ON. 2) Measure the voltage between security control module connector terminal and chassis ground. ***Connector & terminal*** ***(B559) No. 3 (+) — Chassis ground (–):***	Is the voltage 6 V or more?	Repair the harness between body integrated unit and security control module.	Go to step **8**.
8	**CHECK COMMUNICATION CIRCUIT HARNESS (SHORT CIRCUIT TO GROUND).** 1) Turn the ignition switch to OFF. 2) Measure the resistance between security control module connector terminal and chassis ground. ***Connector & terminal*** ***(B559) No. 3 — Chassis ground:***	Is the resistance less than 10 Ω?	Repair the harness between body integrated unit and ECM.	Go to step **9**.
9	**CHECK SECURITY CONTROL MODULE.** 1) Replace the security control module. (Do not perform security control module registration.) 2) Turn the ignition switch to ON. 3) Read the DTC of body integrated unit using Subaru Select Monitor.	Is DTC B1409 detected?	Replace the body integrated unit. <Ref. to SL-78, Body Integrated Unit.>	Security control module was defective. Perform security control module registration. Refer to the "REGISTRATION MANUAL FOR IMMOBILIZER".

P: DTC B1410 TRANSPONDER COMMUNICATION ABNORMAL

NOTE:
Refer to DTC B1574 for diagnostic procedure. <Ref. to IM(diag)-21, DTC B1574 KEY COMMUNICATION FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Q: DTC B1411 IMMOBILIZER ANTENNA ABNORMAL

NOTE:
Refer to DTC B1570 for diagnostic procedure. <Ref. to IM(diag)-16, DTC B1570 ANTENNA, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

LAN SYSTEM (DIAGNOSTICS)

LAN(diag)