METHOD: MUX113

PARAMETER: Logical Interface

MIL-STD-1760 PARAGRAPH: B.40.1.5.2 and B.40.1.5.2.1

PURPOSE: This method verifies the AEIS BC uses and properly calculates the Mission Store Control message Checksum.

PARAMETER TYPE: ( ) ELECTRICAL (X) PROTOCOL (.) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS () INSPECTION

VALIDATION CRITERIA: The platform is considered to have passed if the BC issues the Mission Store Control message Checksum.

APPARATUS: N/A

VALIDATION METHOD: Evaluate the AEIS BC software to determine if the Mission Store Control message Checksum algorithm is properly implemented.

NOTES: N/A

FIGURE A31 - Aircraft Validation Requirement
(Method MUX113)

METHOD: MUX114

PARAMETER: Logical Interface

MIL-STD-1760 PARAGRAPH: B.40.1.5.3.1

PURPOSE: This method verifies the AEIS BC is compatible with the execution time and busy bit application for stores operation as define in paragraph B.40.1.5.3.3.

PARAMETER TYPE: ( ) ELECTRICAL (X) PROTOCOL (.) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS () INSPECTION

VALIDATION CRITERIA: The platform is considered to have passed if the AEIS BC is compatible with the execution time and busy bit application for stores operation as defined in paragraph B.40.1.5.3.3.

APPARATUS: N/A

VALIDATION METHOD: Evaluate the AEIS BC software to determine if the BC is compatible with the execution time and busy bit application for stores operation as defined in paragraph B.40.1.5.3.3.

NOTES: N/A

FIGURE A32 - Aircraft Validation Requirement
(Method MUX114)

METHOD: MUX115

PARAMETER: Logical Interface

MIL-STD-1760 PARAGRAPH: B.40.1.5.5

PURPOSE: This method verifies the AEIS BC capability to interpret the store Status Word with the Service Request Bit set to Logic 1 as a request for a transmit Vector Word Mode Command.

PARAMETER TYPE: ( ) ELECTRICAL (X) PROTOCOL (.) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS () INSPECTION

VALIDATION CRITERIA: The platform is considered to have passed if the AEIS BC generates the Transmit Vector Word mode command to the requesting store.

APPARATUS: N/A

VALIDATION METHOD: Evaluate the AEIS BC software to determine if the BC interprets the store Status Word with the Service Request Bit set to Logic 1 as a request for a transmit Vector Word Mode Command and generates the Transmit Vector Word command to the requesting store.

NOTES: N/A

FIGURE A33 - Aircraft Validation Requirement
(Method MUX115)

METHOD: MUX116

PARAMETER: Logical Interface

MIL-STD-1760 PARAGRAPH: B.40.2.1, B.40.2.1.1, and B.40.2.1.2

PURPOSE: This method verifies the AEIS BC's Message Data Format not defined by B.40.2.2 or B.40.2.3 conforms to the Base Message format defined in Tables B-VII, B-VIII, and B-IX.

PARAMETER TYPE: ( ) ELECTRICAL (X) PROTOCOL (.) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS () INSPECTION

VALIDATION CRITERIA: The platform is considered to have passed if the BC Base Message Data Format conforms to the format defined in Tables B-VII, B-VIII, and B-IX.

APPARATUS: N/A

VALIDATION METHOD: Evaluate the AEIS BC software to determine if the Base Message Data Format conforms to the format defined by Tables B-VII, B-VIII, and B-IX.

NOTES: N/A

FIGURE A34 - Aircraft Validation Requirement
(Method MUX116)

METHOD: MUX117

PARAMETER: Logical Interface

MIL-STD-1760 PARAGRAPH: B.40.2.2.1

PURPOSE: This method verifies the AEIS BC's capability to issue the Mission Store Control message and its compliance to Tables B-XI, B-XXXII and B-XXXIII.

PARAMETER TYPE: ( ) ELECTRICAL (X) PROTOCOL (.) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS () INSPECTION

VALIDATION CRITERIA: The platform is considered to have passed if the BC can issue the Mission Store Control message and it is compliant in all respects with Tables B-XI, B-XXXII and B-XXXIII..

APPARATUS: N/A

VALIDATION METHOD: Evaluate the AEIS BC software to determine if the Mission Store Control message is properly implemented and is compliant in all respects with Tables B-XI, B-XXXII and B-XXXIII.

NOTES: N/A

FIGURE A35 - Aircraft Validation Requirement
(Method MUX117)

METHOD: MUX118

PARAMETER: Logical Interface

MIL-STD-1760 PARAGRAPH: B40.2.2.2

PURPOSE: This method verifies the AEIS BC's capability to issue the transmit Mission Store Monitor Transmit command.

PARAMETER TYPE: ( ) ELECTRICAL (X) PROTOCOL (.) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS () INSPECTION

VALIDATION CRITERIA: The platform is considered to have passed if the BC can issue the Mission Store Monitor Transmit command.

APPARATUS: N/A

VALIDATION METHOD: Evaluate the AEIS BC software to determine if the transmit Mission Store Monitor command is implemented and that the AEIS BC software can properly interpret the message.

NOTES: N/A

FIGURE A36 - Aircraft Validation Requirement
(Method MUX118)

METHOD: LBW101

PARAMETER: Aircraft LB Interface

MIL-STD-1760 PARAGRAPH: 5.1.1.3

PURPOSE: This method verifies that the aircraft LB interface provides a noninverting signal connection, inverting signal connection, and a shield connection.

PARAMETER TYPE: ( ) ELECTRICAL ( ) PROTOCOL (X) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS ( ) INSPECTION

VALIDATION CRITERIA: The aircraft is considered to have passed if the ASI supplies the required connection.

APPARATUS: N/A

VALIDATION METHOD: Evaluate the aircraft's TDP to determine if the ASI provides the required connections.

NOTES:

1. Reference: Design Principles and Practices for Implementation of MIL-STD-1760 in aircraft and stores (Technical Report ASD-TR-87-5028).

FIGURE A37 - Aircraft Validation Requirement
(Method LBW101)

METHOD: LBW102

PARAMETER: Transfer Requirements

MIL-STD-1760 PARAGRAPH: 5.1.1.3.1

PURPOSE: This method verifies that the aircraft provides the LB distribution network necessary to support bi-directional signal transfer from any ASI to applicable aircraft equipment.

PARAMETER TYPE: ( ) ELECTRICAL ( ) PROTOCOL (X) PHYSICAL

VALIDATION TECHNIQUE: ( ) TEST (X) ANALYSIS ( ) INSPECTION

VALIDATION CRITERIA: The aircraft is considered to have passed if the LB distribution network provides the necessary connectivity to support signal transfer from any ASI applicable aircraft equipment to any ASI.

APPARATUS: N/A

VALIDATION METHOD: Evaluate the aircraft's TDP to determine if the aircraft LB distribution network provides the necessary connectivity to support bi-directional signal transfer from any ASI to applicable air vehicle equipment.

NOTES:

1. This method verifies that the aircraft provides the required MIL-STD- 1760 connectivity only; other validation methods verify electrical performance of the aircraft LB distribution network.

2. Reference: Design Principles and Practices for Implementation of MIL- STD-1760 in aircraft and stores (Technical Report ASD-TR-87-5028), paragraph 5.1.1.3.1, page 314.

FIGURE A38 - Aircraft Validation Requirement
(Method LBW102)

METHOD: LBW103

PARAMETER: Output Voltage

MIL-STD-1760 PARAGRAPH: 5.1.1.3.2.1 and 5.1.1.3.2.3

PURPOSE: This method verifies that the output voltage of the aircraft's LB interface is within the specified limits under maximum loading conditions (see Note 1).

PARAMETER TYPE: (X) ELECTRICAL ( ) PROTOCOL ( ) PHYSICAL

VALIDATION TECHNIQUE: (X) TEST ( ) ANALYSIS ( ) INSPECTION

VALIDATION CRITERIA: The aircraft is considered to have passed if the LB output voltage measured at the ASI is within the range of -12 to +12 V. Both line-to-line and line-to-ground voltages shall be within this limits.

APPARATUS:

a. 70 Ω load
b. Signal analyzer (0 Hz to 50 kHz)
c. Oscilloscope
d. Test cabling connecting the test equipment to the ASI
e. Other ASI peculiar test equipment, as required

VALIDATION METHOD: Initiate LB transmission to the ASI. Connect the 70 Ω load resistor across the output ASI LB interface and use the signal analyzer to verify that the output voltage is within the ±12 V limits and that the frequency spectrum is within the required 0 Hz to 50 kHz frequency range.

NOTES:

1. This method is applicable for all aircraft generated LB signals.

2. Signal characteristic: ±12.0 V maximum, 0 Hz to 50 kHz, 150 mA maximum.

3. Reference: Design Principles and Practices for Implementation of MIL-STD-1760 in aircraft and stores (Technical Report ASD-TR-87-5028), paragraph 5.1.1.3.2, page 314.

FIGURE A39 - Aircraft Validation Requirement
(Method LBW103)

METHOD: LBW104

PARAMETER: Input Current

MIL-STD-1760 PARAGRAPH: 5.1.1.3.2.1

PURPOSE: This method verifies that the aircraft's LB load current level at the ASI does not exceed the specified value of 150 mA line-to-line and line-to-ground.

PARAMETER TYPE: (X) ELECTRICAL ( ) PROTOCOL ( ) PHYSICAL

VALIDATION TECHNIQUE: (X) TEST ( ) ANALYSIS ( ) INSPECTION

VALIDATION CRITERIA: The aircraft is considered to have passed if the LB input load current level is within the range of 0 to 150 mA over the frequency range of 0 Hz to 50 kHz.

APPARATUS:

a. Oscilloscope
b. Current probe
c. Swept frequency source (0 Hz to 50 kHz)
d. Audio sine wave generator (0 Hz to 50 kHz)
e. 80 ohm load
f. Test cabling connecting the test equipment to the ASI
g. Other ASI peculiar test equipment, as required

VALIDATION METHOD: Establish an aircraft LB network configuration to support the desired test setup.

NOTES:

1. Reference: Design Principles and Practices for Implementation of MIL-STD-1760 in aircraft and stores (Technical Report ASD-TR-87-5028).

FIGURE A40 - Aircraft Validation Requirement
(Method LBW104)