1. Approving Civil Aviation. Authority/Country:	2.	3. Form Tracking Number:
FAA/UNITED STATES	**AUTHORIZED RELEASE CERTIFICATE** **FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG**	15-811

4 Organization Name and Address:	5. Work Order/Contract/Invoice Number:
Kontron America, 14118 Stowe Dr., Poway, CA, 92064 (9ALR060B/EASA.145.6365)	300031204

6. Item:	7. Description	8. Part Number:	9. Quantity	10. Serial Number:	11. Status/Work
1	LRU, Server Management Unit	73002001-002	1	00649	Tested

12. Remarks

No fault found. All repair procedures performed per Operation and Maintenance Manual SMU-73002001-CMM Rev A. Unit then tested per Factory Acceptance Test procedure 73002001-FAT Rev L with passing results.
RO# W26499

Kontron certifies that the work specified in Blocks 11/12 was carried out in accordance with EASA Part 145 and, with respect to that work, The component is considered ready for release to service under EASA Part 145 Approval Number EASA.145.6365.

13a. Certifies the items identified above were manufactured in conformity to: ☐ Approved design data and are in a condition for safe operation. ☐ Non-approved design data specified in Block 12.		14a. ☒ 14CFR 43.9 Return to Service ☒ Other regulations specified in Block 12 Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.	
13b. Authorized Signature:	13c. Approval/Authorization No.:	14b. Authorized Signature: A 205	14c. Approval/Certificate No.: 9ALR060B
13d. Name (Typed or Printed):	13e. Date (dd/mmm/yyyy):	14d. Name (Typed or Printed) Teofilo Gallendo	14e. Date (dd/mmm/yyyy): 25 Sep 2015

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article.

Where the user /installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in block 1.

Statements in Blocks 13a and 14a do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.

ROW 44
acctspayable@row44.com
4353 PARK TERRACE DRIVE
WESTLAKE VILLAGE CA 91361
UNITED STATES

kontron

Repair Report

Date: 09-24-2015

Repair Technician : Eleazar Gallendo
Email : eleazar.gallendo@kontron.com

RMA # **300031204**

Our material # : 73002001-002MOD4 MODIFIED LRU SERVER ASSY, ROW
Serial # 649

Customer Reported Symptom

No Fault Found

Kontron Detected Symptom

No Problem Found / CND - No Fault found

Defect causes

No Problem Found (NPF) - No Fault found
Unit came in as Rev.H Mod 4,10,12. No Problem Found

Corrective Actions

Return As-Is, Kontron declines - No Fault found
All repair procedures performed per Operation and Maintenance Manual ,SMU-73002001-CMM Rev A. Unit then tested per Factory Acceptance Test procedure 73002001-FAT Rev L with passing results.

A
205

SEP 25 2015

Remarks

REV	REVISION HISTORY	APPROVAL	DATE
A	Initial Release	ET	12/31/10
B	Updated per ECO # 3650	ET	02/03/11
C	Updated per ECO # 3678	ET	02/24/11
D	ECO # 3785	JDM	05/23/11
E	ECO # 3846	JDM	07/14/11
F	ECO # 3885	MC	08/11/11
G	ECO # SM-04025	MC	01/23/12
H	ECO # SM-04145	MC	04/10/12
J	ECO #SM-04296	MC	07/16/12
K	ECO #SM-05270	CM	03/10/14
L	ECO #SM-05376	CM	05/16/14

NOTE UNLESS OTHERWISE SPECIFIED

MASTER COPY

2:16 pm, May 19, 2014

S/N: 00649

73002001- 001 (-001 , -002 , -003)

Revision: H

MOD Level: 4, 10, 12 (or N/A)

ROW 44 RESTRICTED

THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL. ALL INFORMATION IS TO BE KEPT IN CONFIDENCE.

CONTRACT NO. NA

APPROVALS		DATE
ORG	E. Tarter	12/31/10
CHK	E. Tarter	12/31/10
PE	E. Tarter	12/31/10
PM	M. Clarke	12/31/10
QA	D. Benson	12/31/10

kontron

Kontron America, Inc.
14118 Stowe Drive
Poway, CA 92064-7147

TITLE:

FACTORY ACCEPTANCE TEST PROCEDURE, SMU (ACE Flight)

SIZE	CAGE CODE	DWG NO.	REV
A	0AYU9	73002001-FAT	L

SCALE: NONE

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1 Introduction

1.1 Purpose

The purpose of this document is to define the Factory Acceptance Test Procedure used on the Server Management Unit (SMU) production systems. The SMU is defined by Kontron PNs:

- 73002001-001 LRU, Server, SMU, 1x80GB, 1x160GB SSDs
- 73002001-002 LRU, Server, SMU, 1x80GB, 2x160GB SSDs
- 73002001-003 LRU, Server, SMU, 3x600GB SSDs (same as a 73002001-002MOD4)

This document also contains the template to be completed for the Factory Acceptance Test Report on each production SMU.

1.2 Scope

This document covers the overall procedure for running the factory acceptance test and specifies the criteria for successful completion of the test.

1.3 Intended Audience

Technical personnel tasked with running the Factory Acceptance Test. It is required that this personnel be familiar with Windows based PCs and basic lab test equipment.

1.4 Electro-Static Discharge Protection

Electro-Static Discharge (ESD) precautions are to be followed when performing any of the following tasks:

- Jumper setting on Circuit Boards.
- Handling Circuit Boards.
- Handling Peripheral components such as cables or memory devices.
- Manipulating cables/components internal to the chassis.
- Installing/Removing electronic components such as boards or peripherals.

At minimum the operator is to be connected via an ESD wrist strap and cable to earth ground. All boards/cards should be stored in static-free bags when not installed in the chassis or being worked on. All work on electronic components should be performed on a static-free workstation with ESD protection.

2 Test Procedure

2.1 Required Equipment

Note-1: Ensure SMU-Test-Box has been calibrated within the last 6 months per latest revision of calibration procedure document 5006143-1-TP

The following items are required for running the SMU Factory Acceptance Test:

Item	Description	Qty	Manufacturer	Model Number	Calibration Req'd?
1	Unit Under Test: Server Management Unit (SMU)	1	Kontron	73002001-001 or -002 or -003	N
2	Test PC, w/ Windows O/S	1	Chips & Memory or equiv	Asus P5K 64 WS or equiv	N
3	Gigabit Ethernet interface, 6-port, PCI Card	2	Hot Lava Systems or equiv	Vesuvius 6CGNIC-e or equiv	N
4	Digital Voltmeter, PCI Card	2	Signametrics or equiv	SM2040 or equiv	Y
5	Converter, USB to Serial	1	Sabrent	SBT-USC1 or equiv	N
6	PSU – 115V / 400Hz	1	Behlman	P1359 or equiv	N
7	SMU Test Harness, Input Power	1	AP Labs/Kontron	5005622-1 5005622-11	N
8	SMU Test Harness, MDU Interface Power	1	AP Labs/Kontron	5005622-2	N
9	SMU Test Harness, Aircraft & Control Panel Interfaces	1	AP Labs/Kontron	5005622-3 5005622-9	N
10	SMU Test Harness, Maintenance Port	1	AP Labs/Kontron	5005622-14 5005622-15	N
11	SMU Test Harness, ARINC 429 Loopback	1	AP Labs/Kontron	5005622-5 5005622-8	N
12	SMU Test Harness, 1000BT Ethernet, Quadrax	1	AP Labs/Kontron	5005622-6	N
13	SMU Test Harness, 100BT Ethernet, Quadrax	1	AP Labs/Kontron	5005622-7	N
14	Terrestrial Modem Antenna	1	Cell Antenna Corp	CA4MW or equiv	N
15	Multimeter	1	Fluke or equiv	77III or equiv	Y
16	SMU Test-Box (See Note-1 above)	1	AP Labs/Kontron	5006143-1	Y
17	USB/Sata drive with SMU test software	1	AP Labs/Kontron	Test software load per 5140320-SSCD	N

2.2 Setup

The Unit Under Test (UUT) must be configured with software installed as per the System Configuration Information (SCI) drawing, Baseboard Assembly, SMU (Kontron document number 5140325-SCI).

The test equipment listed in Section 2.1 above shall be configured as shown in described in Appendix A of this document – Operational Test Setup.

2.3 Test Steps

Test	Test Description
1	**Mechanical Inspection** ☑ With the UUT on the bench, perform visual mechanical inspection. ▪ Visually inspect for loose or missing hardware. ▪ Check screws, nuts and bolts on exterior connectors for tightness. ▪ Visually inspect exterior finish and silkscreen.
2	**Power / Ground Isolation Test** ☑ Record calibration info here: Portable Voltmeter: Control Number: 99-343 Cal. Due Date 17/4/18 DC Voltmeter 1: Control Number: 99-432 Cal. Due Date 11/06/16 DC Voltmeter 2: Control Number: 99-444 Cal. Due Date 11/06/16 With the UUT on the bench, perform power and ground isolation tests using a Multimeter. J1-C (Line) to E1 (Chassis Ground) Expect > 10 K-Ohm Observed OL ☑ PASS J1-C (Line) to J1-B (Neutral) Expect > 10 K-Ohm Observed 3.15 ☑ PASS J1-B (Neutral) to E1 (Chassis Ground) Expect > 10 K-Ohm Observed OL ☑ PASS J1-A (Ground) to E1 (Chassis Ground) Expect < 1 Ohm Observed .2 ☑ PASS

Test	Test Description
3	**Ground Bonding Measurements** ☑ Record calibration info here: Milli-Ohm Meter: Control Number: 99-227 Cal. Due Date 11/3/15 With the UUT on the bench, perform Ground Bonding tests using a Milli-Ohm Meter. **J7** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .46 ☑PASS **J6** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .78 ☑PASS **J1** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .19 ☑PASS **J8** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .42 ☑PASS **J9** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .35 ☑PASS **J2** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed 1.92 ☑PASS **J5** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .38 ☑PASS **J4** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .92 ☑PASS **J3** Connector Shell to **E1 (Chassis Ground)** Expect Less Than 2.5 Milli-Ohms Observed .83 ☑PASS

Test	Test Description
4	**UUT Hardware Revision, MOD LEVEL Identification** ☑ Locate the UUT Hardware Revision on the exterior of the SMU and record below. ▪ 73002001-001 Rev H, or ▪ 73002001-002 Rev_____, or ▪ 73002001-003 Rev_____ ☑ Locate the UUT Hardware MOD LEVEL Identification on the exterior and record below. ▪ MOD LEVEL 4 8 9 12 (a number or series of numbers; eg. 3,4,10) N/A (or circle N/A if no MOD) ▪ **IMPORTANT NOTE:** If the MOD for this UNIT involves replacing the USIM for a Specific Airline, (like MOD1, MOD11, MOD12, etc) **REPLACE THE USIM NOW** as indicated in the correlating MOD Instruction.

Test	Test Description
5	**Operational Test Setup** With UUT power OFF, perform the following steps: ▪ Connect the UUT to the test equipment as shown in Appendix A ▪ J1 – SMU Test Harness, Input Power ▪ J8 – Terrestrial Modem Antenna ▪ J2 – SMU Test Harness, MDU Interface Power ▪ J5 – SMU Test Harness, ARINC429 Loopback ▪ J4 – SMU Test Harness, Maintenance Port with USB/Sata Memory installed ▪ J3 – SMU Test Harness, Aircraft & Control Panel Interfaces ▪ J6 – SMU Test Harness, 1000BT Ethernet, Quadrax ▪ J7 – SMU Test Harness, 100BT Ethernet, Quadrax ▪ Verify Test PC is powered up and operational ▪ Verify the Test PC is setup for "X-Windows" • On Test-PC Desktop, Double-Click on **CYGWIN** icon (named "SMU Start") which will pop up a new window. • Type "***stx***" <ENTER> in that new window. This pops up another window that will report "access control disabled"... (Note: If not started; it may be necessary to retry this step up to 10 times. Therefore, if the step fails retry up to 10 times before alerting engineering. • Do NOT close/exit any of these windows (just minimize them) ▪ Verify the Test PC is setup as an "Ethernet IPERF Server" • On bottom-left border of Test-PC Desktop, click on Command Prompt icon which will pop up an "Administrator – Command Prompt" window • Type the following in that new window: "***cd Desktop***" <ENTER> "***iperf –s***" <ENTER> • Verify that the "iperf" session is now ready by verifying the following message appears "Server listening on TCP port 5001" • Do NOT close/exit this iperf window (just minimize it) ▪ Verify the Test PC is setup to monitor SMU's 19.5 and 6.5VDC outputs • On Test-PC Desktop, Double-Click on **Signametrics #0 icon** (19.5VDC measurements) Double-Click on **Signametrics #1 icon** (6.5VDC measurements) • Select "Min/Max Deviation" under both display's Tool menu which pops up a mini Min-Max window. Click on Green-Ball in each Min-Max to refresh after each UUT power up. • Leave both of these voltage-monitoring displays up during entire FAT ▪ Verify the Terra-term Console has been setup to receive SMU serial info. The Terra-term icon is named with the correct PC COM port to use in its setup menu. Go to Setup -> Serial Port to setup the serial port to the correct PC COM port. ▪ Verify correct test-software-version label is on Test USB/Sata SSD. SSD software version must match version in SSCD (Document 5140320-SSCD) ☑ PASS

Test	Test Description
6	**Power On Test** (For First Time Setup Only) Verify that the 115VAC/400Hz power supply's output at its main output connector are within the following tolerances: • 115VAC (+/- 5 VAC) ☑PASS • 400Hz (+/- 1 Hz) ☑PASS Configure the switches on the SMU Test-Box in this manner (OFF=Down, ON=Up): **PCS_ENB_IN** : 1 = OFF 2 = OFF 3 =OFF MDU FAN = ON **CONFIG:** 0 = OFF 1 = OFF 2 = OFF SPARE = ON ☑PASS With the SMU Test Box System-Enable push-button switch in the OFF position, turn ON the 115VAC/400Hz power supply and verify SMU system does **NOT** power on. ☑PASS ☑**Connect External SMU FAT USB/Sata-SSD** to SMU's Maintenance cable USB Port ☑**Press the SMU SysEnable** push-button switch inward so that it is in the **ON** position and verify that all of the following indications occur upon power up (after 5 seconds): a. SMU Test-Box: SYSTEM-ENABLE switch illuminates GREEN b. SMU Test-Box: CONTROL PANEL STATUS Illuminates ORANGE c. UUT INTERNAL FANS (2) are operational (using hand, verify airflow is being exhausted from both fans) d. UUT STATUS LED Illuminates ORANGE e. UUT ENABLE LED Illuminates GREEN f. UUT FAULT BALL Remains BLACK (indicates no fault) g. UUT SMU Boot Messages from CPU serial console are displayed in Console monitor window (Terra-term). Enter BIOS and make changes as follows in order to Boot-Up. 1) As soon as serial data begins to show up in the SMU console window, interrupt the Boot by continuously tapping the **Delete-Key** in order to enter into the BIOS setup. 2) In BIOS "**Exit" menu**, select "**Load Optimal Defaults**" and <ENTER> to "**OK**" 3) In BIOS "**Boot" menu**, Set/Verify correct boot order of the Boot Device in the BIOS. The USB Device needs to be **First/Top item** listed to boot the external USB SSD. 4) In BIOS "**Exit" menu**, select "**Save Changes and Exit**" and <ENTER> to "**OK**" 5) The SMU UUT will now restart and this time let the **SMU Boot-Up** (takes 1 minute). User needs to hit the <ENTER> key once when the following final message appears. "*Starting GNOME Display Manager*" to get the "**aplabs-desktop login**:" prompt. ☑PASS Verify that the Boot-Up from Test-USB/SSD does NOT hang or delay. Note: The entire boot, starting from hitting "OK" to the "Save Changes and Exit" selection in BIOS until full boot-up (where '*Starting GNOME Display Manager*' message appears) only takes **1 minute**. If the boot time is greater than 1 minute + 10 seconds, re-flash with latest version of BIOS 771-190-XX ☑PASS

Test	Test Description
7	**MDU Output Power Test** ☑ Click on the Green-Ball of each Min-Max window to refresh the Min-Max values. Observe the two Signametrics windows (these monitor the Digital Voltmeter cards installed in the Test PC) and record the levels of the two DC output voltages that are running from the SMU to the SMU Test Box. Verify that these voltages are within range. Card 0 MDU 19.5V Output Expect 18.5V – 19.5V Observed 19.23 ☑ PASS Card 1 MDU 6.5V Output Expect 5.5V – 6.5V Observed 5.76 ☑ PASS
8	**System Identification Information** ☑ **Log into the SMU** serial console (Terra-Term) with the following parameters: Username: ***root*** Password: ***ready2go*** Login prompt now appears as "**root@aplabs-desktop:~#**" **Check and Execute both of the following steps:** ☑ **Enter** the System Identification Information via "**systemId –s**" command **And** ☑ **Verify** the System Information by entering the "**systemId**" command Type the following command "***systemId -s***" to enter the 4 informational lines **root@aplabs-desktop:~# systemId -s** ICAO : **xxxxxxxxxxxxx** >> Update to "xxxx" SMU Serial # (5 Chars) : **xxxxxxxxxxxxx** >> Update to 5 digit SMU Serial# (ex. "00123") SMU Part Number : **xxxxxxxxxxxxx** >> Update to the SMU's Part No (ex. "73002001-001") SMU Hardware Version : **xxxxxxxxxxxxx** >> Update to the SMU Revision/Mod (ex. "F", "F-1", "G") Type the following command "***systemId***" to verify the retained information **root@aplabs-desktop:~# systemId** ICAO : **xxxx** example SMU Serial # (5 Chars) : **00123** example SMU Part Number : **73002001-001** example SMU Hardware Version : **G** example System Manufacturer : To Be Filled By O.E.M. example System Product Name : To Be Filled By O.E.M. example Processor Manufacturer : Intel example Processor Version : Intel(R) Core(TM)2 Duo CPU P9300 @ 2.26GHz example Bios Vendor : American Megatrends Inc. example Bios Version : RW44R105 example Bios Release Date : 12/13/2011 example Baseboard Manufacturer : Kontron Embedded Modules GmbH example BaseboardProductName: ETXexpress-PC example Disk /dev/sda1 : Device Model: INTEL SSDSA2M080G2GN example Disk /dev/sda1 : Serial Number: BTPO127001CL080JGN example Linux Kernel : 2.6.28-19-server example

Test	Test Description
9	**Configure Sixnet Switch to Row44 Configuration via "switchprep" Utility** Set the internal Ethernet switch to the Row 44 specifications. Follow the procedures below to make the change. *<In the SMU console session run the following commands>* ***smuUtil*** *<select **menu option 4** for the **switchprep** option>* *<press enter>* Verify the switch is in the **default Kontron configuration**. **Checking Kontron configuration... FOUND** **Checking Row 44 configuration... NOT FOUND** ("NOT READY FOR SHIPPING") ☑ **PASS** ☑ **Now change the configuration to the Row 44 standard configuration** *<select **menu option 1** for the **Change_Configuration** option>* *<press enter>* Follow the steps as outlined by the script. (Note: Login is **admin** and Password is **admin**) When asked to choose the configuration to be loaded on, refer to the **5140320-SSCD** document, "`CFE -- Row44 Sixnet Switch Configuration Image for Aircraft Operation`" Browse/choose the filename as indicated in that document. Example Row-44 configuration file: **sn_swch_cfg_1-1_fw5plus.tgz**" After 30 seconds, Verify the switch now reports that it is in the **Row-44 Configuration**: **Checking Kontron configuration... NOT FOUND** **Checking Row 44 configuration... FOUND** ("READY TO SHIP") ☑ **PASS** Note: If the UUT displays as per the above, continue. (If not **repeat** this Step) Once it is confirmed the system successfully changed to the Row-44 configuration follow the steps below to exit out of the network configuration utility: *<select **menu option 2** for **Finished** option>* *<press enter>*

Test	Test Description
10	**AC Fail Test** Enter the following command in the Console Window. *[root@smu ~]# **./fat.sh smu-aceflight-acfail*** Follow the command line instructions to press <ENTER> when ready. Verify that the screen shows (continuously scrolling "H" characters): ACFAIL=H ACFAIL=H ACFAIL=H Etc. ☑ PASS At the 400Hz main circuit panel, turn the **400Hz AC Power Switch OFF**. Verify the command line changing to (continuously scrolling "L" characters): ACFAIL=L ACFAIL=L ACFAIL=L Etc. ☑ PASS
11	**Turn AC Power back ON and Log back into SMU after system boots up again** ☑ **Reapply power** to SMU by turning **400Hz PSU AC power switch ON** (Note: The System-Enable switch should still be ON from previous steps.) ☑ Log into the SMU serial console (Terra-Term) with the following parameters: Username: ***root*** Password: ***ready2go*** Login prompt now appears as "**root@aplabs-desktop:~#**"

Test	Test Description
12	**Verify and then Reconfigure Sixnet to KONTRON Configuration via 'switchprep'**

☑ **Type** the ***smuUtil*** command and select **menu option 4** to execute '***switchprep'***

☑ **Confirm** the switch reports that it is currently still in the "**Row-44 Configuration**":

Checking Kontron configuration... NOT FOUND
Checking Row 44 configuration... FOUND
("READY TO SHIP")

☑ Choose **menu option1** of Sixnet Switch Prep Utility to **Change Configuration** of the Sixnet Switch to the (**default**) "Kontron Configuration"

Note: Select "**factorydefault.tgz**" in order to put Switch into the default Kontron config.

Verify the Switch is now in the default Kontron Configuration:

Checking Kontron configuration... FOUND
Checking Row 44 configuration... NOT FOUND
("NOT READY FOR SHIPPING")

☑ **PASS**

Once it is confirmed the system successfully changed to the KONTRON configuration follow the steps below to exit out of the network configuration utility:

*<select **menu option 2** for **Finished** option>*
<press enter>

SMU system is now prepared to run the Kontron Automated FAT (go to next Section)

Test	Test Description
13	**Automated FAT Script** The FAT is executed by an automatic test script that will be logged on the Test-PC. To initiate the test sequence, type one of the following commands: ***./fat.sh smu-73002001-001*** **or** ***./fat.sh smu-73002001-002*** **or** ***./fat.sh smu-73002001-003*** ☑ Fill in Requested information when prompted: Enter Name Of Test (No spaces) : * **FAT** example Enter Name of Test Operator : **mike smith** example Enter Serial Number of Unit : **00306** example Logging to file /mnt/share/post_00306 Serial Nbr 5140256-2 Enet Assembly : **5027322** example Serial Nbr 5005601-1 Pwr Supply Unit : **00366** example Serial Nbr 5140325-1 Baseboard Assembly : **110465** example Serial Nbr P1-00324-001 PWA Sig Int Board : **026097-017** example '* For "Enter Name Of Test (No spaces)" field, utilize either "**FAT**" or "**FAT-MOD#**" (where '**#**' is the Mod-Number being performed to a UUT in production) When entering the data, use of a barcode scanner is preferred. If typing the serial numbers, use precisely 5 digits, so include leading zeros, as shown on the label eg. 00078 When entering the Revision, also add the MOD Level numbers (if assigned); first adding a hyphen after the letter, then adding the numbers. eg: **H-3,4,10**, or **h-3,4,10**. If no MOD is applicable just enter the revision letter with no hyphen. ☑ Confirm proper serial number and revision/mod information against the work order for the build when summary is printed for review. **NOTE 1:** Once the data is entered the test is logged automatically on the test PC under C:\Log Files **NOTE 2:** For the Ethernet switch test during the Automated FAT, Web Browser Login is as follows: Username: ***admin*** Password: ***admin*** Note: User will need to EXIT the Web Browser then go back and hit <ENTER> in the SMU Serial Console Window in order to continue the Automated FAT. ☑ Confirm full Automated FAT passes all steps (without errors) and that entire FAT log-file was created and stored successfully on the Test PC.

Test	Test Description
14	**Configure Sixnet Switch to Row44 Configuration via "switchprep" Utility** Set the internal Ethernet switch to the Row 44 specifications. Follow the procedures below to make the change. *<In the SMU console session run the following commands>* ***smuUtil*** *<select **menu option 4** for the **switchprep** option>* *<press enter>* Verify the switch is in the **default Kontron configuration**. **Checking Kontron configuration... FOUND** **Checking Row 44 configuration... NOT FOUND** ("NOT READY FOR SHIPPING") ☑ **PASS** ☑ Now change the configuration to the Row 44 standard configuration *<select **menu option 1** for the **Change_Configuration** option>* *<press enter>* Follow the steps as outlined by the script. When asked to choose the configuration to be loaded on, refer to the **5140320-SSCD** document, "`CFE -- Row44 Sixnet Switch Configuration Image for Aircraft Operation`" Browse/choose the filename as indicated in that document. Example Row-44 configuration file: **sn_swch_cfg_1-1_fw5plus.tgz**" After 30 seconds, Verify the switch now reports that it is in the **Row-44 Configuration**: **Checking Kontron configuration... NOT FOUND** **Checking Row 44 configuration... FOUND** ("READY TO SHIP") ☑ **PASS** Note: If the UUT displays as per the above, continue. (If not **repeat** this Step) Once it is confirmed the system successfully changed to the Row-44 configuration follow the steps below to exit out of the network configuration utility: *<select **menu option 2** for **Finished** option>* *<press enter>*

Test	Test Description
15	**Software Reset Power Command Test** At the prompt type the following command: *[root@smu ~]# **./fat.sh smu-aceflight-reset*** Verify the UUT successfully initiates the reset procedures after the command was issued. ☑ **PASS** Test Operator does **not** have to wait for system to reboot entirely – can go to next section. Continue to next section to turn system OFF and connect/install from GOLD LABEL SSD

Test	Test Description

18	**Row 44 SSD Image Operation Check**
	
	Type the "***kachk***" command and verify that no error or exception lines are displayed. Any lines resulting in FAIL need to be reviewed and signed-off by Engineering. Expected *sample* output is below:
	
	`<N997ZZ>:wn2-6p4:[/etc/openvpn/keys]# kachk`
	`kachk.sh: Executing switch ping check`
	`kachk.sh: Executing switch config check`
	`kachk.sh: Checking vpn key file generation`
	`kachk.sh:`
	`kachk.sh: ### Results ###`
	`kachk.sh: Enet-switch ping: PASS`
	`kachk.sh: Enet-switch config: PASS`
	`kachk.sh: VPN key file check: PASS`
	`kachk.sh:`
	`kachk.sh: ### ALL-PASS ###`
	`kachk.sh:`
	`kachk.sh: ### Validate sib-eeprom values below ###`
	
	`All SIB eeprom values::`
	`smu-sn: 000469`
	`smu-pn: 73002001-001 (aceflight)`
	`smu-hwrev: H`
	`smu-cpldrev: C`
	`kachk.sh:`
	`kachk.sh: SMU SOFTWARE VERS ==> wn2-6p4`
	`kachk.sh: Validate that the above smu swvers installed is correct for this smu`
	
	`<N997ZZ>:wn2-6p4:[/etc/openvpn/keys]#`
	`==========`
	
	☑ Type: ***date*** right after the kachk output in order to record date/time in the file
	
	☑ Under Terra-term "**File**" menu, select "**Disconnect**"" and then **Exit** the Terra-term window to end logging session (Note: Otherwise the new log file is not accessible). Move this new **switch_xxxxx** file to the "C\Logfiles\SWITCH" directory for permanent storage.
	
	☑ **PASS**
	
	☑ Set **System-Enable Switch** to **OFF** position
	
	☑ **PASS**
	
	☐ **Turn OFF 400Hz Power Supply**
	
	☑ **PASS**

Test	Test Description
16	**Install (CFE) Gold Label Software** ☑ Set **System Enable Switch** to **OFF** position to power down the SMU ☑ **Switch to the GOLD LABEL** USB-SATA SSD labeled "**5140320-CFE-SW**" (per latest rev of 5140320-CFE-SSCD) and **ensure the correct USIM-type is installed** per the appropriate SMU BOM / **MOD Instruction** (as applicable) per section 4 of this FAT. ☑ Set **System Enable** Switch to **ON** position to power up the SMU ☑ **Enter BIOS and Select the USB-SSD to boot from – Allow system to Boot up to Login** Username: ***root*** Password: ***ready2go*** Login prompt now appears as "**root@aplabs-desktop:~#**" ☑ **IMPORTANT NOTE: MAKE SURE TO INSTALL THE CORRECT GOLD LABEL IMAGE AS PER THE FOLLOWING RULES !!! Refer to the correct MOD Instruction !!!** • **NO MOD** = INSTALL **SWA** (Southwest Airlines) IMAGE (Code = "**wn**") • **MOD1** = INSTALL **NAS** (Norwegian Air Shuttle) IMAGE (Code = "**dy**") • **MOD11** = INSTALL **ICELAND** (Iceland Air) IMAGE (Code = "**fi**") • **MOD12** = INSTALL **TRANSAERO** (Transaero Airlines) IMAGE (Code = "**un**") ☑ At the prompt type the following command: ***./goldLabelPrep.sh*** ☑ **Select** the appropriate **menu # (1,2,3,4)** corresponding to correct Airline as per above ☑ Enter "**y**" **(yes)** when prompted to configure either /dev/sdb or /dev/sdc **The SMU /dev/sdb drive needs to be configured** **>>> Would you like to proceed? (y/n) : y** *Note: The Install process will take approximately 20 minutes to complete.* ☑ **Confirm** all lines **PASS** (Green) as applicable: Drive /dev/sdb Configuration ..... PASS Drive /dev/sdc Configuration (if/when applicable) ..... PASS . . Drive /dev/sda Configuration Complete ..... PASS Gold Label Configuration Complete ..... PASS ☑ **Turn OFF 400Hz Power Supply** to power down the SMU ☑ **Remove the GOLD LABEL** USB-SATA SSD "**5140320-CFE-SW**" from Maintenance port ☑ **PASS**

Test	Test Description
17	**Row 44 Boot Test** ☑ **Turn ON 400Hz Power Supply** to verify booting SMU in the Row44 configuration (Note: The System-Enable switch should still be ON from previous steps.) Upon bootup press the <DEL> key to enter the BIOS at the beginning of the boot sequence. Verify the correct **GMT Time** and **GMT Date** have been retained in CMOS. ☑ **PASS** In the BIOS go to the **ADVANCED** menu, then select **HARDWARE HEALTH** and then **MODULE HARDWARE HEALTH CONFIG**. At this point 3 temperature values will be displayed. Record the values below: CPU TEMPERATURE: 42 Must be < 55 C INTERNAL TEMPERATURE: 38 Must be < 45 C NORTHBRIDGE TEMPERATURE: 37 Must be < 45 C Confirm that ALL 3 temperatures are below the specified values above. Note: These recordings are only valid if the SMU UUT has been in use for at least 5 minutes. ☑ **PASS** ☑ In BIOS "**Exit" menu**, select "**Load Optimal Defaults**", press <ENTER> to accept "**OK**" In BIOS "**Exit" menu**, select "**Save Changes and Exit**", press <ENTER> to accept "**OK** The "Load Optimal Defaults" will set the correct boot order of the Row-44 default (P0) Boot Device in the BIOS. • The **P0** (Sata-0) Device is the First/Top item listed • The **P1** (Sata-1) Device is second item listed • The **P2** (Sata-2) Device is third item listed (if/when applicable) **Verify proper boot-up and correct software version of Row-44 boot image** A. Verify the SMU system now boots the Row-44 image. B. Verify the Linux Row44 login prompt is displayed after Boot-Up. C. Verify the system successfully booted from the internal SSD with the version displayed as indicated in the 5140320-SSCD for the Row 44 software ☑ **PASS** **Log into the Row-44 system and set Teraterm to log the 'kachk' output in next section** 1) At the SMU login prompt press the <ENTER> key one time to make sure it reacts. 2) Login as: **row44** -- Type in the password: **row[[** 3) Type: **su** to become super-user (root) -- Type in the password: **row[[** 4) On the Teraterm window in the File menu select "**Log**..." to begin creation of 'kachk' logfile. Rename the default file to "**switch_xxxxx**" where 'xxxxx' is the S/N of the SMU UUT Note: Only the final "passing" 'kachk' logfile needs to be saved. Do not keep duplicates. 5) Go to next page to continue logging the session during "kachk" ☑ **PASS**

SMU (Aceflight 73002001-003) - Factory Acceptance Test-postfat

Test Name : postfat
Test Operator: Eleazar G
Test Date : 2015/08/31
Serial Number: 00649
FAT Def File : fatdefs/smu-73002001-003
Serial Nbr 5140256-2 Enet Assembly :
Serial Nbr 5005601-1 Pwr Supply Unit :
Serial Nbr 5140325-1 Baseboard Assembly :
Serial Nbr P1-00324-001 PWA Sig Int Board :

CPU Processor Test

Verifies that the correct processor is found

1101-Processor ..... PASS
Actual Processor = Intel(R) Core(TM)2 Duo CPU P9300 @ 2.26GHz

---

Memory Size Test

Verifies that correct memory is installed

1201-Memory-Size - 8158888 ..... PASS

On Board Sensor Tests

Verifies that on board CPU Sensors are in range.

2300_Sensors +5V:=+5.30 (+4.25..+5.50) ..... PASS
2300_Sensors temp1:=+32.0 (20..65) ..... PASS

Ethernet Test

Performs a basic connection test of Ethernet Interfaces

1001_Enet_Interface_Detected - eth0 ..... PASS
1002_Enet_MAC_MAC_Address 00:e0:4b:41:bc:fd ..... PASS
1003_Enet_Link_Up ..... PASS
1004_Enet_Duplex_Mode Full ..... PASS
1005_Enet_Speed 100M ..... PASS
1006_Enet_Ping eth0 192.254.32.1 PC Maint ..... PASS
1001_Enet_Interface_Detected - eth1 ..... PASS
1002_Enet_MAC_MAC_Address 00:10:13:26:aa:44 ..... PASS
1003_Enet_Link_Up ..... PASS
1004_Enet_Duplex_Mode Full ..... PASS
1005_Enet_Speed 1000M ..... PASS
1006_Enet_Ping eth1 10.2.0.1 Sixnet Switch ..... PASS

IPERF Network Performance Test

Tests network performance.

```
 3101 Iperf=85 Mbits/sec, (75 min) 192.254.32.1 PC Maint Port     ..... PASS
 3101 Iperf=81 Mbits/sec, (75 min) 192.254.55.7 PC 01 (J7-1)      ..... PASS
 3101 Iperf=76 Mbits/sec, (75 min) 192.254.55.8 PC 02 (J7-2)      ..... PASS
 3101 Iperf=94 Mbits/sec, (75 min) 192.254.55.9 PC 03 (J7-3)      ..... PASS
 3101 Iperf=94 Mbits/sec, (75 min) 192.254.55.10 PC 04 (J7-4)     ..... PASS
 3101 Iperf=94 Mbits/sec, (75 min) 192.254.55.11 PC 05 (J7-5)     ..... PASS
 3101 Iperf=94 Mbits/sec, (75 min) 192.254.55.12 PC 06 (J7-6)     ..... PASS
 3101 Iperf=94 Mbits/sec, (75 min) 192.254.55.13 PC 07 (J7-7)     ..... PASS
 3101 Iperf=94 Mbits/sec, (75 min) 192.254.55.14 PC 08 (J7-8)     ..... PASS
 3101 Iperf=893 Mbits/sec, (750 min) 192.254.55.3 PC 09 (J6-1)    ..... PASS
 3101 Iperf=894 Mbits/sec, (750 min) 192.254.55.4 PC 10 (J6-2)    ..... PASS
 3101 Iperf=899 Mbits/sec, (750 min) 192.254.55.5 PC 11 (J6-3)    ..... PASS
 3101 Iperf=906 Mbits/sec, (750 min) 192.254.55.6 PC 12 (J6-4)    ..... PASS

------------------------------------------------------------------------
Sixnet Http and Port Test


     Verify the Sixnet HTTP Interface and port status

   Launching Web Browser on 192.254.32.1
   user admin, password admin

     <<<< Wait up to 30s for Port-Status page to appear. >>>

     >>>
     >>> Type [RETURN] when ready to continue :

     >>> Browser listed Ports 1-8 as 100BaseT (GREEN)? (y/n) :
 X2700_Sixnet 100baseT Ports                                      ..... PASS

     >>> X2700_Sixnet Browser listed Ports 9-13 as 1000BaseT (RED)? (y/n) :
 1000baseT Ports                                                  ..... PASS


------------------------------------------------------------------------
Excalibur ARINC Loopback Tests


     Performs a loopback test on the specified ports.

 2601_Arinc_Excalibur Loopback 3 0                                ..... PASS
 2601_Arinc_Excalibur Loopback 4 1                                ..... PASS
 2601_Arinc_Excalibur Loopback 4 2                                ..... PASS

------------------------------------------------------------------------
SMART Disk Test


     Verify SMART Disk Information

 1307 SMART /dev/sda Device Model: Device Model:     INTEL SSDSC2BB600G4 ..... PASS

 1307 SMART /dev/sda User Capacity: User Capacity:    600,127,266,816 bytes .....
PASS
 1307 SMART /dev/sda Serial Number:    CVWL426004ML600TGN          .....   n/a
 1307 SMART /dev/sda Firmware Version: Firmware Version: D2010370 ..... PASS
 1307 SMART /dev/sdb Device Model: Device Model:     INTEL SSDSC2BB600G4 ..... PASS

 1307 SMART /dev/sdb User Capacity: User Capacity:    600,127,266,816 bytes .....
PASS
 1307 SMART /dev/sdb Serial Number:    CVWL426100BK600TGN          .....   n/a
 1307 SMART /dev/sdb Firmware Version: Firmware Version: D2010370 ..... PASS
```

```
 1307 SMART /dev/sdc Device Model: Device Model:     INTEL SSDSC2BB600G4 ..... PASS

 1307 SMART /dev/sdc User Capacity: User Capacity:    600,127,266,816 bytes .....
PASS
 1307 SMART /dev/sdc Serial Number:    CVWL426004N3600TGN          .....   n/a
 1307 SMART /dev/sdc Firmware Version: Firmware Version: D2010370 ..... PASS

------------------------------------------------------------------------
Version Tests


     Verifies Version Information

 1500 CMD SMU Version SMU-SSD_2_15                                  ..... PASS
 1500 CMD SMU Baseboard Version x110                                ..... PASS
 1500 CMD CPLD Version C                                            ..... PASS
 1500 CMD Bios Version RW44R105                                     ..... PASS
 1500 CMD Sierra FW Version K2_0_7_35AP                             ..... PASS
 1500 CMD Excalibur Fw 1.44                                         ..... PASS
 1500 CMD Baseboard Serial Nbr = CNTGBWD3M0256                      .....   n/a
 1501 CMD (>=) Sixnet FW Version 5.0.196                            ..... PASS
 1500 CMD Baseboard Version 9.0 CNTGP903.0034                       ..... PASS

------------------------------------------------------------------------
FIO Disk Performance Test


     Tests Disk IO Performance.

Switching to EXT4-fs due to installed ROW44 image
 1900_FIO /dev/sdb2 mount test                                      ..... PASS
 1901_FIO /dev/sdb2 Success                                         ..... PASS
 1902_FIO /dev/sdb2 Write Speed=34952, Req=1                        ..... PASS
 1903_FIO /dev/sdb2 Read Speed=63167, Req=1                         ..... PASS
Switching to EXT4-fs due to installed ROW44 image
 1900_FIO /dev/sdc2 mount test                                      ..... PASS
 1901_FIO /dev/sdc2 Success                                         ..... PASS
 1902_FIO /dev/sdc2 Write Speed=35069, Req=1                        ..... PASS
 1903_FIO /dev/sdc2 Read Speed=69905, Req=1                         ..... PASS

------------------------------------------------------------------------
Power On Self Test (POST)

     This test verifies the results of the Power On Self
     Test (POST)
*** The results of the PBIT are as follows ***
     Aug 31 10:01:23 aplabs-desktop sibhmd: Power On Self Test (POST) Start
     Aug 31 10:01:23 aplabs-desktop sibhmd:      POST_DMSG_Arinc429_Check PASS
     Aug 31 10:01:23 aplabs-desktop sibhmd:      POST_DMSG_Cpu_Check PASS
     Aug 31 10:01:23 aplabs-desktop sibhmd:      POST_DMSG_GSM_Modem_Check PASS
     Aug 31 10:01:23 aplabs-desktop sibhmd:      POST_DMSG_Network_Check PASS
     Aug 31 10:01:23 aplabs-desktop sibhmd:      POST_DMSG_Serial_Check PASS
     Aug 31 10:01:23 aplabs-desktop sibhmd: Power On Self Test (POST) End

  X1404_Sib Power On Self Test                                      ..... PASS

------------------------------------------------------------------------
GSM Modem Status Test

     This test verifies the functionality of the PCS_ENB_IN and
     CONFIG switches on the GSM Modem
```

```
Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Down

CONF 0    CONF 1          CONF 2
Down      Down            Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1412 Tmodem:         Found                                        ..... PASS


Verify Tmodem can be shut down

Set switch CONF 1 up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1414 Tmodem:     Radio Disabled                                   ..... PASS

Set switch CONF 1 down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1416 Tmodem:        Reattached                                    ..... PASS
 X1403_Sib GSM Modem Type                                           ..... PASS
     Modem: mc8795v
 X1403_Sib GSM Modem FW                                             ..... PASS
     Firmware Revision: K2_0_7_35AP
 X1403_Sib GSM Modem HW Rev                                         ..... PASS
     Sierra Wireless Hardware Version: "1.0"
 X1403_Sib GSM Modem ICCID                                          ..... PASS
     USIM ICCID: 89443021516024855 82F
 X1403_Sib GSM Modem SN                                             ..... PASS
     IMEI/Serial Number: 355310036014029
     +CNUM: "LINE 1","07908127125",129

Current Time:  25               Temperature: 28
Bootup Time:   0                Mode:        ONLINE
System mode:   WCDMA            PS state:    Attached
WCDMA band:    WCDMA1900        GSM band:    Unknown
WCDMA channel: 487              GSM channel: 65535
GMM (PS) state:REGISTERED       NORMAL SERVICE
MM (CS) state: IDLE             NORMAL SERVICE

WCDMA L1 State:L1M_PCH_SLEEP    RRC State:   DISCONNECTED
RX level (dBm):-80


 PS state:    Attached                                              ..... PASS
 Mode:        ONLINE                                                ..... PASS
 System mode: WCDMA                                                 ..... PASS
 WCDMA band:    WCDMA1900                                           ..... PASS
 Rx Level -90 .. -60 dBM                                            ..... PASS
 X1405_Sib Diversity Mode Check RXDEN?=00                           ..... PASS

-------------------------------------------------------------------------
GSM Modem Test

     This test will initiate a call over the GSM Modem, transfer
     data by pinging an external website, and terminate the call.
```

```
    Note: The connection is retried if a connection cannont be
          made.
 X1411_SIB Sierra Tmodem ID:  USB Device found                    ..... PASS
 X1400_SIB Tmodem identified correctly                            ..... PASS

CHAT: Starting Sierra Wireless GPRS/UMTS connect script...

CHAT: Setting the abort string

CHAT: Initializing modem

CHAT: Setting Access Point Name (APN)

CHAT: Dialing ISP...


Serial connection established.
Using interface ppp0
Connect: ppp0 <--> /dev/ttyGSMPPPD
PAP authentication succeeded
Could not determine remote IP address: defaulting to 10.64.64.64
found interface eth1 for proxy arp
local  IP address 31.71.204.72
remote IP address 10.64.64.64
primary   DNS address 109.249.185.224
secondary DNS address 149.254.199.126

 Google.com Web Site                                             ..... PASS

Terminating on signal 15
Connect time 0.4 minutes.
Sent 1060 bytes, received 1485 bytes.
Connection terminated.
 X1407_Sib GSM Obtained Connection                               ..... PASS

-------------------------------------------------------------------------
SMU Fan Test


     This test verifies the operation of the SMU Fans and the
     ability of the SIB to read their nominal RPM values
     Reading SMU_FAN1_SPEED = 7186 (6200 .. 8500) ..... PASS
     Reading SMU_FAN2_SPEED = 7288 (6200 .. 8500) ..... PASS

     Partially obstruct FAN1 (closest to the corner) to
     reduce the fan's RPM value.

     >>>
     >>> Type [RETURN] when ready to continue :
 X1408_Sib Obstructed Fan1 Test = 7028                           ..... PASS

     Remove the obstruction from the FAN1.
     Partially obstruct FAN2 (closest to the middle) to
     reduce the fan's RPM value.

     >>>
     >>> Type [RETURN] when ready to continue :
 X1408_Sib Obstructed Fan2 Test = 7133                           ..... PASS

-------------------------------------------------------------------------
SIB Interrupt Test
```

```
     This test verifies the ability of the SIB to detect a test
     interrupt and notify the host computer
 X1410_Sib Interrupt Test                                          ..... PASS

------------------------------------------------------------------------
SMU System Id Test

     This test displays the SMU System ID information and has
     operator confirm that this matches the what is expected


Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Down

CONF 0    CONF 1          CONF 2
Down      Down            Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                 ..... PASS

 X1409_Sib SIB SMU Serial Number Test                              ..... PASS
     ICAO                    : xxxxx
     SMU Serial # (5 Chars)  : 00649
     SMU Part Number         : 73002001-002
     SMU Hardware Version    : H-4,10,12

     >>> Is this information correct? (y/n) :
 SMU System Id Test                                                ..... PASS

------------------------------------------------------------------------
Power Supply and Temp Check


     Performs a check of Power/Voltages and Temps

 X1402_SIB Check Digin DCFAIL_L is H                               ..... PASS
 X1402_SIB Check Digin ACFAIL_L is H                               ..... PASS
 X1402_SIB Check Digin OVERTEMP_L is H                             ..... PASS
 X1404_SIB Analog SIB_3_3_VOLTS (3.15..3.45) 3.35                  ..... PASS
 X1404_SIB Analog SIB_12_VOLTS (11.4..12.6) 12.18                  ..... PASS
 X1404_SIB Analog SIB_5_VOLTS (4.75..5.25) 5.15                    ..... PASS
 X1404_SIB Analog SIB_REMOTE_TEMP (22..34) 31                      ..... PASS

------------------------------------------------------------------------
Fixed Value Discrete Input Test


     Tests various discrete that should have known
     fixed values.
 X1402_SIB Check Digin CPLD_REV0 is L                              ..... PASS
 X1402_SIB Check Digin CPLD_REV1 is H                              ..... PASS
 X1402_SIB Check Digin SMU_ENB_L is L                              ..... PASS
 X1402_SIB Check Digin ALERT is H                                  ..... PASS
 X1402_SIB Check Digin GPIO_DCFAIL_L is L                          ..... PASS
 X1402_SIB Check Digin GPIO_ACFAIL_L is L                          ..... PASS
 X1402_SIB Check Digin GPIO_OVERTEMP_L is L                        ..... PASS
 X1403_SIB Set Digout INTTEST_OUT L                                .....   n/a
 X1402_SIB Check Digin INTTEST_IN is L                             ..... PASS
 X1403_SIB Set Digout INTTEST_OUT H                                .....   n/a
 X1402_SIB Check Digin INTTEST_IN is H                             ..... PASS
```

Control Panel Test

Tests inputs/outputs on Test Box Control Panel

```
 X1403_SIB Set Digout SMU_ENB_IND_H L                                .....   n/a

     >>> Is SMU Enable LED ON (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1402_SIB Check Digin SMU_ENB_L is L                                ..... PASS
 X1403_SIB Set Digout SMU_ENB_IND_H H                                .....   n/a

     >>> Is SMU Enable LED Off (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1403_SIB Set Digout SMU_ENB_IND_H L                                .....   n/a
 X1403_SIB Set Digout CWLU_IND_H L                                   .....   n/a
```

Set CWLU Non Depressed State [Public]

```
     >>>
     >>> Type [RETURN] when ready to continue :
 X1402_SIB Check Digin CWLU_ACCESS_L is H                            ..... PASS

     >>> Is the CWLU Illuminated with [PUBLIC] (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
```

Set CWLU Depressed State [Restricted]

```
     >>>
     >>> Type [RETURN] when ready to continue :
 X1402_SIB Check Digin CWLU_ACCESS_L is L                            ..... PASS

     >>> Is the CWLU Illuminated with [Restricted] (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1403_SIB Set Digout CWLU_IND_H H                                   .....   n/a

     >>> Is the CWLU LED Off (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1403_SIB Set Digout SYS_OP_IND_H L                                 .....   n/a
 X1403_SIB Set Digout SYS_INOP_IND_H L                               .....   n/a

     >>> Is Control Panel Status LED Yellow (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1403_SIB Set Digout SYS_OP_IND_H H                                 .....   n/a
 X1403_SIB Set Digout SYS_INOP_IND_H L                               .....   n/a

     >>> Is Control Panel Status LED Orange (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1403_SIB Set Digout SYS_OP_IND_H L                                 .....   n/a
 X1403_SIB Set Digout SYS_INOP_IND_H H                               .....   n/a

     >>> Is Control Panel Status LED Green (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1403_SIB Set Digout SYS_OP_IND_H H                                 .....   n/a
 X1403_SIB Set Digout SYS_INOP_IND_H H                               .....   n/a

     >>> Is Control Panel Status LED Off (y/n) :
 X1400_SIB Operator Check                                            ..... PASS
 X1403_SIB Set Digout CABIN_AVLB_IND_H H                             .....   n/a
```

```
    >>> Is Control Panel Cabin Avail LED Off (y/n) :
X1400_SIB Operator Check                                        ..... PASS
X1403_SIB Set Digout CABIN_AVLB_IND_H L                         .....   n/a

    >>> Is Control Panel Cabin Avail LED On (y/n) :
X1400_SIB Operator Check                                        ..... PASS
X1403_SIB Set Digout ALTITUDE_IND_H H                           .....   n/a

    >>> Is Control Panel Altitude LED Off (y/n) :
X1400_SIB Operator Check                                        ..... PASS
X1403_SIB Set Digout ALTITUDE_IND_H L                           .....   n/a

    >>> Is Control Panel Altitude LED On (y/n) :
X1400_SIB Operator Check                                        ..... PASS


Set MDU FAN Up

    >>>
    >>> Type [RETURN] when ready to continue :
X1402_SIB Check Digin MDU_FAN_FAIL_L is H                       ..... PASS


Set MDU FAN Down

    >>>
    >>> Type [RETURN] when ready to continue :
X1402_SIB Check Digin MDU_FAN_FAIL_L is L                       ..... PASS


Set MDU FAN Up

    >>>
    >>> Type [RETURN] when ready to continue :
X1402_SIB Check Digin MDU_FAN_FAIL_L is H                       ..... PASS


Set SPARE Up

    >>>
    >>> Type [RETURN] when ready to continue :
X1402_SIB Check Digin SPARE_DISCRETE is L                       ..... PASS


Set SPARE Down

    >>>
    >>> Type [RETURN] when ready to continue :
X1402_SIB Check Digin SPARE_DISCRETE is H                       ..... PASS


Set SPARE Up

    >>>
    >>> Type [RETURN] when ready to continue :
X1402_SIB Check Digin SPARE_DISCRETE is L                       ..... PASS

-------------------------------------------------------------------------
Top Cover Test


    Tests items on top cover.
```

```
X1403_SIB Set Digout ENABLE_LED_H L                                  ..... n/a

    >>> Is Top Cover SMU Enable LED On (y/n) :
X1400_SIB Operator Check
X1402_SIB Check Digin SMU_ENB_L is L                                 ..... PASS
X1403_SIB Set Digout ENABLE_LED_H H                                  ..... PASS
X1402_SIB Check Digin SMU_ENB_L is L                                 ..... n/a
                                                                     ..... PASS

    >>> Is Top Cover SMU Enable LED Off (y/n) :
X1400_SIB Operator Check
X1403_SIB Set Digout ENABLE_LED_H L                                  ..... PASS
X1403_SIB Set Digout OPSTATUS_LEDA_H L                               ..... n/a
X1403_SIB Set Digout OPSTATUS_LEDB_H L                               ..... n/a
                                                                     ..... n/a

    >>> Is Top Cover Status LED Yellow (y/n) :
X1400_SIB Operator Check
X1403_SIB Set Digout OPSTATUS_LEDA_H H                               ..... PASS
X1403_SIB Set Digout OPSTATUS_LEDB_H L                               ..... n/a
                                                                     ..... n/a

    >>> Is Top Cover Status LED Orange (y/n) :
X1400_SIB Operator Check
X1403_SIB Set Digout OPSTATUS_LEDA_H L                               ..... PASS
X1403_SIB Set Digout OPSTATUS_LEDB_H H                               ..... n/a
                                                                     ..... n/a

    >>> Is Top Cover Status LED Green (y/n) :
X1400_SIB Operator Check
X1403_SIB Set Digout OPSTATUS_LEDA_H H                               ..... PASS
X1403_SIB Set Digout OPSTATUS_LEDB_H H                               ..... n/a
                                                                     ..... n/a

    >>> Is Top Cover Status LED Off (y/n) :
X1400_SIB Operator Check
X1403_SIB Set Digout faultBall off                                   ..... PASS
X1403_SIB Set Digout faultBall off                                   ..... n/a
                                                                     ..... n/a

    >>> Is Fault Ball Off (y/n) :
X1400_SIB Operator Check
X1403_SIB Set Digout faultBall on                                    ..... PASS
X1403_SIB Set Digout faultBall on                                    ..... n/a
                                                                     ..... n/a

    >>> Is Fault Ball On (y/n) :
X1400_SIB Operator Check
X1403_SIB Set Digout faultBall off                                   ..... PASS
X1403_SIB Set Digout faultBall off                                   ..... n/a
                                                                     ..... n/a

    >>> Is Fault Ball Off (y/n) :
X1400_SIB Operator Check                                             ..... PASS
```

GSM Modem Disable Test

Test GSM Modem Configuration Switches

Set Switches as follows:

IN 1	IN 2	IN 3
Down	Down	Down

CONF 0	CONF 1	CONF 2
Down	Down	Down

```
     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Up        Down            Down

CONF 0    CONF 1          CONF 2
Down      Down            Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Down      Up              Down

CONF 0    CONF 1          CONF 2
Down      Down            Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Up

CONF 0    CONF 1          CONF 2
Down      Down            Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Down

CONF 0    CONF 1          CONF 2
Up        Down            Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS
```

Set Switches as follows:

IN 1	IN 2	IN 3
Up	Down	Down

CONF 0	CONF 1	CONF 2
Up	Down	Down

>>>
>>> Type [RETURN] when ready to continue :
X1401_SIB Readback Switch Setting ..... PASS
X1402_SIB Check Digin GSM_DISABLE_L is H ..... PASS

Set Switches as follows:

IN 1	IN 2	IN 3
Down	Up	Down

CONF 0	CONF 1	CONF 2
Up	Down	Down

>>>
>>> Type [RETURN] when ready to continue :
X1401_SIB Readback Switch Setting ..... PASS
X1402_SIB Check Digin GSM_DISABLE_L is L ..... PASS

Set Switches as follows:

IN 1	IN 2	IN 3
Down	Down	Up

CONF 0	CONF 1	CONF 2
Up	Down	Down

>>>
>>> Type [RETURN] when ready to continue :
X1401_SIB Readback Switch Setting ..... PASS
X1402_SIB Check Digin GSM_DISABLE_L is L ..... PASS

Set Switches as follows:

IN 1	IN 2	IN 3
Down	Down	Down

CONF 0	CONF 1	CONF 2
Down	Up	Down

>>>
>>> Type [RETURN] when ready to continue :
X1401_SIB Readback Switch Setting ..... PASS
X1402_SIB Check Digin GSM_DISABLE_L is L ..... PASS

Set Switches as follows:

IN 1	IN 2	IN 3
Up	Down	Down

CONF 0	CONF 1	CONF 2
Down	Up	Down

```
     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting
 X1402_SIB Check Digin GSM_DISABLE_L is L                    ..... PASS
                                                             ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Down      Up              Down

CONF 0    CONF 1          CONF 2
Down      Up              Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting
 X1402_SIB Check Digin GSM_DISABLE_L is H                    ..... PASS
                                                             ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Up

CONF 0    CONF 1          CONF 2
Down      Up              Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting
 X1402_SIB Check Digin GSM_DISABLE_L is L                    ..... PASS
                                                             ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Down

CONF 0    CONF 1          CONF 2
Down      Down            Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting
 X1402_SIB Check Digin GSM_DISABLE_L is L                    ..... PASS
                                                             ..... PASS

Set Switches as follows:

IN 1      IN 2            IN 3
Up        Down            Down

CONF 0    CONF 1          CONF 2
Down      Down            Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting
 X1402_SIB Check Digin GSM_DISABLE_L is L                    ..... PASS
                                                             ..... PASS
```

```
Set Switches as follows:

IN 1      IN 2            IN 3
Down      Up              Down

CONF 0    CONF 1          CONF 2
Down      Down            Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                              ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                       ..... PASS


Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Up

CONF 0    CONF 1          CONF 2
Down      Down            Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                              ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                       ..... PASS


Set Switches as follows:

IN 1      IN 2            IN 3
Down      Down            Down

CONF 0    CONF 1          CONF 2
Down      Down            Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                              ..... PASS

-------------------------------------------------------------------------
SWA & NAL Switch Check

     Tests specific switch combinations


Set Switches as follows:

IN 1      IN 2    IN 3
Down      Down            Down

CONF 0    CONF 1          CONF 2
Up        Up              Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                              ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                       ..... PASS


Set Switches as follows:
```

```
IN 1      IN 2     IN 3
Up        Down              Down

CONF 0    CONF 1            CONF 2
Up        Up                Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Down      Up                Down

CONF 0    CONF 1            CONF 2
Up        Up                Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Up        Up                Down

CONF 0    CONF 1            CONF 2
Up        Up                Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Down      Down              Up

CONF 0    CONF 1            CONF 2
Up        Up                Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Up        Down              Up

CONF 0    CONF 1            CONF 2
Up        Up                Down
```

```
     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Down      Up               Up

CONF 0    CONF 1           CONF 2
Up        Up               Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Up        Up               Up

CONF 0    CONF 1           CONF 2
Up        Up               Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS

-------------------------------------------------------------------------------
UAL Switch Check


     Tests specific switch combinations



Set Switches as follows:

IN 1      IN 2     IN 3
Down      Down             Down

CONF 0    CONF 1           CONF 2
Up        Up               Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Up        Down             Down

CONF 0    CONF 1           CONF 2
Up        Up               Up
```

```
     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Down      Up                Down

CONF 0    CONF 1            CONF 2
Up        Up                Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Up        Up                Down

CONF 0    CONF 1            CONF 2
Up        Up                Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Down      Down              Up

CONF 0    CONF 1            CONF 2
Up        Up                Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Up        Down              Up

CONF 0    CONF 1            CONF 2
Up        Up                Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS


Set Switches as follows:
```

```
IN 1      IN 2     IN 3
Down      Up               Up

CONF 0    CONF 1           CONF 2
Up        Up               Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is L                           ..... PASS


Set Switches as follows:

IN 1      IN 2     IN 3
Up        Up               Up

CONF 0    CONF 1           CONF 2
Up        Up               Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1402_SIB Check Digin GSM_DISABLE_L is H                           ..... PASS

-------------------------------------------------------------------------------
SIB EEPROM Test

     Test SIB EEPROM write ability and write lock feature.


Set Switches as follows:

IN 1      IN 2             IN 3
Down      Down             Down

CONF 0    CONF 1           CONF 2
Down      Down             Up

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1406_SIB_EEPROM Writable                                          ..... PASS
 X1406_SIB_EEPROM Not Writable                                      ..... PASS


Set Switches as follows:

IN 1      IN 2             IN 3
Down      Down             Down

CONF 0    CONF 1           CONF 2
Down      Down             Down

     >>>
     >>> Type [RETURN] when ready to continue :
 X1401_SIB Readback Switch Setting                                  ..... PASS
 X1406_SIB_EEPROM Writable                                          ..... PASS
 X1406_SIB_EEPROM Writable                                          ..... PASS
```

Kontron QA : A 205
Date : SEP 25 2015

Number of Tests Executed: 207
Number of Tests with results: 207
Number Passing : 207
Number Failing : 0

KACHK_00649 150831

```
##### SMU Login (vers:un2-10) ######

smu login: row44
Password:
Last login: Mon Aug 31 18:51:10 UTC 2015 from 192.168.48.1 on pts/1

<YYZZZZ>:un2-10:[~]$ kachk
dkachk.sh: Executing switch ping check
ate
su
kachk.sh: Executing switch config check
kachk.sh: Checking vpn key file generation
kachk.sh:
kachk.sh: ### Results ###
kachk.sh:              Enet-switch ping: PASS
kachk.sh:            Enet-switch config: PASS
kachk.sh:            VPN key file check: PASS
kachk.sh:
kachk.sh: ### ALL-PASS ###
kachk.sh:
kachk.sh: ### Validate sib-eeprom values below ###

All SIB eeprom values::
               smu-sn: 000649
               smu-pn: 73002001-002 (aceflight)
            smu-hwrev: H-4,10,12
          smu-cpldrev: C
kachk.sh:
kachk.sh: SMU SOFTWARE VERS ==> un2-10
kachk.sh: Validate that the above smu swvers installed is correct for this smu


<YYZZZZ>:un2-10:[~]$ date
Mon Aug 31 18:53:13 UTC 2015
```