

It is assumed that the operator's manual for the various units connected to the KLN 94 (as well as the manual for the KLN 94 itself), are available or that the installer is familiar with operating the units.

### 2.4.3 INSTALLATION CHECK OUT

Before inserting the unit into the mounting rack, verify that at the rear connector of the mounting rack, aircraft power is present on P942 pin 19, and that there is a ground on P941 pin 14 and P942 pin 20. In installations using 28 V lighting, lighting bus voltage should be present between P941 pins 24 and 14. In installations using 14 V lighting, lighting bus voltage should be present between P941 pins 25 and 14. Verify that there are no voltages or grounds present on any other pins of P941 and P942.

A. Verify that aircraft power is OFF or the unit circuit breaker is pulled. Making sure that the power On/Off switch, located on the front panel of the KLN 94 is rotated the "off" position (power off), plug the unit into the mounting rack and verify that the panel lighting works properly.

B. Energize the unit by rotating the power control switch to the "on" position.

C. Manipulate the controls as necessary to display the Set 1 Page on the right half of the screen. On the Set 1 Page, enter the airport name or the present position (latitude and longitude) for the installation location accurate to within 60 nautical miles. Display the Set 2 Page. Verify that the date and time are correct to within 10 minutes and update if necessary.

D. At this point the aircraft will have to be moved to a location known to have reasonable GPS signal coverage. This implies an outside location away from tall structures that could mask low elevation satellites. (To speed up the next test it is helpful to turn unit power off then on again once the system is away from structures).

E. Proceed to the AUX 1 page. The State shown on the display should change to Acquire (ACQ) from INIT and after a period of not more than 5 minutes, (typically two minutes depending upon the satellite coverage), the unit should display Latitude and Longitude values on the Nav 2 Page that are correct for the installation location. If the unit has not been turned on for 6 months, the unit will take up to 20 minutes to calculate a position.

F. Select the AUX 2 page, verify that no asterisks appear next to any satellite with an elevation greater than 25°. Select 121.15 MHz on COMM 1. Transmit on COMM 1 for a period of 20 seconds and verify that no asterisks appear indicating satellites with an elevation of greater than 25°. Repeat for the following frequencies: 118.000, 120.925, 121.175, 121.200, 123.825, 127.100, 130.625, 131.250, 131.275 131.300 and 134.150 MHz. Repeat the above procedure for all VHF COMM's on board the aircraft.

If any of the above tests do not pass (any asterisks appear on satellites with greater than 25° during the above tests), it will be necessary to identify the source of the interference. There are two common sources of interference:

1. The 12th and 13th harmonics of the above mentioned frequencies can be radiated from the VHF COMM at a level strong enough to be a problem to the GPS but still be well low enough to meet TSO/JTSO requirements for the VHF COMM.

If the interference is from the radiating VHF COMM, an optional notch filter (i.e. the KA 198 P/N 071-01565-0000 or TED Mfg 4-70-54) will need to be installed. The recommended location for the inline filter should be as close to the VHF RT as practical.

#### NOTE

The conditions and tests performed on this article are minimum performance standards. It is the responsibility of those desiring to install this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within these performance standards. The article may be installed only if further evaluation by the applicant documents an acceptable installation and is approved by the Administrator.

2. The other possibility is re-radiation from an ELT. The radiated RF from the VHF COMM can excite the output tank circuit of the ELT and cause it to oscillate and radiate RF strong enough to interfere with the GPS. If disconnecting the ELT antenna eliminates the GPS interference, the manufacturer of the ELT should be contacted for a recommended solution.

G. Select the AUX 14 page and verify that the first line of that page on the unit display screen reads as follows:

SW REVISION 0X0X

(where 0X0X is the last four digits of the KLN 94 Application Software 206- number)

An entry must be made in the aircraft log book upon installation of the KLN 94, indicating the applicable software revision level. The recommended log book wording is as follows:

KLN 94 Application Software is at SW REVISION 0X0X on DD MMM YYYY.

(where 0X0X represents the last four digits of the KLN 94 Application Software 206- number and DD MMM YYY represents the Day, Month and Year of the installation)

#### 2.4.4 INTEGRATED INSTALLATION CHECK OUT

The following paragraphs define checkout procedures for all possible Input/Output signals that can be connected to the KLN94. It should be clearly determined which of the signals are intended to be used in any given installation and then only the paragraphs pertaining to those signals should be performed.

##### 2.4.4.1 All Installations

Perform all steps defined in [Paragraph 2.4.3](#) and leave the system energized with a valid GPS signal being received.

##### 2.4.4.2 CDI/HSI Interface

Cycle the power on the KLN94, which will cause the self-test page to be displayed. Verify that the CDI needle, after it has settled, is indicating half scale right deflection.