



PN XXXXXXXXXX[®]

Local Status Monitor LSM controller Installation and Operation Manual



CAUTION *In order to comply with FCC RF exposure requirements, this device must be installed in such a way as to ensure that a minimum separation distance of 20 cm is always maintained between the antenna and all persons.*



Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



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Section 2 -- Introduction

The purpose of the Local Status Monitor/Controller Installation/Operation Manual is to provide a user-friendly and comprehensive document that makes it easy for technicians to install and operate the LSM/LSMC. The manual includes step-by-step LSM/LSMC installation/operation instructions and accompanying graphics.

The information contained in this document is current as of the date of publication and is also compatible with the most recent release of Craft Software as well as the initial release of the LSM/LSMC software. ADC retains the right to change this document, in part or in whole, without prior notice.

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Section 3 – Product Overview

3a. Wireless SoftLink

The Wireless SoftLink, WSL, operates in conjunction with Craft and controls LSMC via an RS232 connection. The WSL software enables technicians to address amplifiers with a local status monitor/local status monitor controller via the Craft software.

The WSL can be loaded in any personal computer, or laptop. It must have Craft version 2.0 or higher version software installed to operate properly with the LSM and LSMC. ADC maintains helpdesk technical support to assist with any Craft or Wireless SoftLink software installation or operation issue. You will find complete LSM/LSMC installation/operation instructions in Section 4 of this manual.

3b. Local Status Monitor Controller (LSMC)

The Local Status Monitor Controller, LSMC, is a wireless communication module connected to a laptop. The main purpose for the LSMC is to become a two-way wireless link between a ground located laptop and the ADC family of Network Amplifiers or Line Extender.

The LSMC will allow Craft software to control the network amplifier through a wireless connection. Technicians can operate the LSMC in a vehicle or attach the LSMC to the belt with a clip attached to the LSMC case.

For optimal performance the LSMC should remain relatively stationary during use to prevent any interruption or disconnection of the wireless link with the LSM.

3c. Local Status Monitor (LSM)

The Local Status Monitor is an upgrade kit that can be installed in an amplifier. The LSM works in conjunction with the LSM controller as a wireless link to receive commands from a laptop. Once LSM receives command, it will send commands to the ADC family of network amplifier or Line Extender. The LSM will function properly with Craft version 2.0 or higher version software.

The LSM will allow the operator to monitor and adjust the operating status of the RF amplifier without opening the housing.

The Local Status Monitor receives the seeking transmission from the LSMC and responds to the LSMC 1) to confirm a proper connection and 2) to establish correspondence with the WSL. Once the LSM has established the connection with Craft, the technician can perform remotely Craft functions with the amplifier. The LSM/LSMC enables the technician to save valuable time and energy, and avoid hazardous or unpleasant weather conditions.

3d. Craft Software

For questions regarding Craft software please refer to the Craft Software Installation/Operation Manual.



Section 4 – Hardware Installation



CAUTION In order to comply with FCC RF exposure requirements, this device must be installed in such a way as to ensure that a minimum separation distance of 20 cm is always maintained between the antenna and all persons.

a. Network Amplifier



Note: ADC designed the Network Amplifier tray to be reversible. If further instructions are required for reverse installation, see application note. The Network Amplifier cover, tightened correctly, will provide an air tight internal amplifier chamber. To preserve optimal amplifier operating conditions, carefully and exactly follow this manual's instructions for removing and fastening the Network Amplifier housing cover.

STEP 1

Verify that the replacement kit includes all the necessary components. All the following should be included in the installation kit:

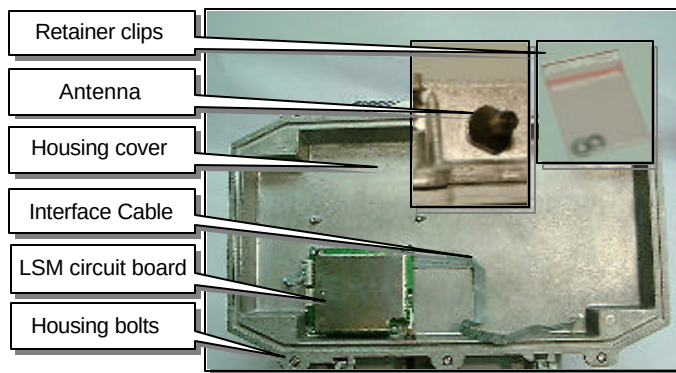


Figure 4-1

STEP 2

Locate the six 5/16-18" bolts holding the housing cover to the base. Loosen all six bolts with a 1/2" wrench. Be sure to follow the pattern numbers in the diagram at the right for loosening the bolts. The bolts are spring-loaded and will pop up when loosened. Do not attempt to remove bolts. They are fixed to the lid. The numbers in Figure 4-2 indicate the pattern for **installing** the replacement amplifier lid. Reverse the pattern for **removing** the lid from the amplifier. The numbers are engraved onto the lid.

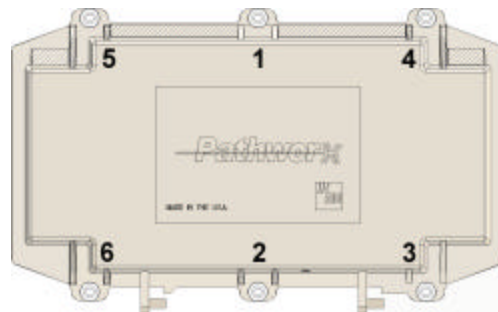


Figure 4-2

STEP 3

Locate the two retainer clips on the Network Amplifier's hinge posts. Use a flathead screwdriver to gently pry the clips from each hinge post.

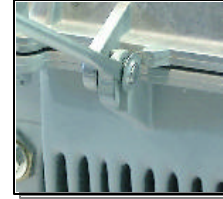


Figure 4-3

STEP 4

Carefully remove the Network Amplifier housing cover and set aside.

STEP 5

Verify that all components on the replacement kit lid are installed properly and in the correct position. Figure 4-4 illustrates an installed LSM kit. The Local Status Monitor circuit board with antenna should be installed in the housing cover. When the LSM unit is installed, the interface cable will attach through the RF tray cover to the connector in the Network Amplifier tray.

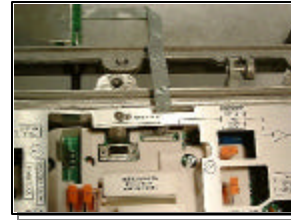


Figure 4-4



CAUTION: The LSM unit antenna is attached to the LSM printed wiring board, or PWB, through the housing cover. Any attempt to remove the antenna or reposition or remove the LSM unit could cause serious damage to the function of the Network Amplifier. **Under no circumstances** should any technician attempt to make adjustments or changes to the LSM unit in its installed position.

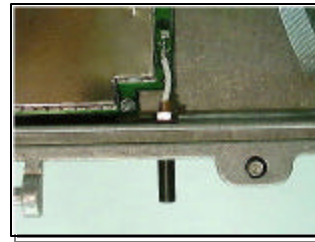


Figure 4-5

STEP 6

Remove the RF tray cover using a No. 1 Phillips screwdriver to loosen the eight RF tray cover screws (nine if reverse amplifier is installed) until there is approximately 1/8 in. (about 3mm) clearance between the bottom of the screw head and the surface of the RF tray cover. Slide the RF tray cover until the screw heads are aligned in their keyway slots and lift RF tray cover off the tray. Then unsnap the connector from the amplifier tray.

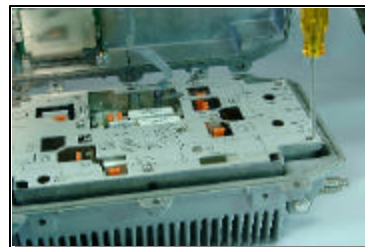


Figure 4-6



Figure 4-7



Figure 4-8



Note: Do not shortcut the installation process by removing only the screw near the cable insertion slot on the RF tray cover.



Note: The keyway feature allows the RF tray cover to be removed without fully removing the RF tray cover screws, preventing loss of the screws.



STEP 7

Slide the new amplifier cover onto the hinge posts. See Figure 4-9. Do not secure the cover with the retainer clips during this step.

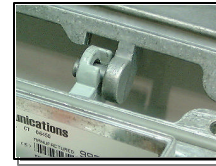


Figure 4-9

STEP 8

Locate the connector slot in the amplifier tray where you will install the interface cable. See Figure 4-10.



Figure 4-10

STEP 9

Carefully insert the interface cable into the connector. The cable and connector are keyed, so they will only fit together in the correct position. Make sure the cable is folded. Firmly fit the interface cable into the amplifier. See Figure 4-11. Do not force the insertion.



Figure 4-11

STEP 10

Replace the amplifier RF tray cover by passing the tray cover screws back through the keyway slots, sliding the cover until the screw heads are over the narrowest part of the keyway slots. Refer to Figure 4-12. Tighten the RF tray cover screws with a No. 1 Phillips screwdriver.

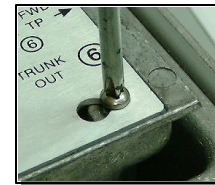


Figure 4-12

STEP 11

Remove any excess moisture or debris from the interior of the Network Amplifier and the Network Amplifier tray. If any moisture has accumulated during the installation process, use a clean, dry cotton cloth to wipe off the housing unit and tray. Although this unit is extremely tolerant of a variety of environmental conditions, you can enhance the service life of the amplifier by insuring that it is clean and free of any moisture before closing.

STEP 12

Close the housing lid and align it squarely with the housing base. Thread all six housing lid bolts finger-tight to hold the lid in place. Make sure the lid bolts do not cross thread. The numbered pattern for installing the housing is engraved on the housing cover.

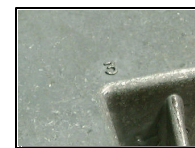


Figure 4-13



STEP 13

Tighten down the lid bolts. Follow the pattern of the numbers engraved in the amplifier lid. Use a ½” socket or torque wrench specifically designed to apply the necessary 5-12 lb.ft (7-16 N·m) of torque to tighten the housing lid bolts.



Figure 4-14



The use of any but the specified tool may result in excess or incorrect torque on the lid bolts. Incorrect torque could also damage amplifier functions and prevent the amplifier from maintaining its airtight seal.

STEP 14

Place one new retainer clip on each Network Amplifier hinge post. Firmly secure the retainer clips onto the posts. Lightly tap the clips onto each post with a hammer until the clips fit snugly on the posts.



Section 4 – Hardware Installation



CAUTION In order to comply with FCC RF exposure requirements, this device must be installed in such a way as to ensure that a minimum separation distance of 20 cm is always maintained between the antenna and all persons.

b. Line Extender



Note: ADC designed the Line Extender tray to be reversible. If further instructions are required for reverse installation, see application note. The Line Extender cover, tightened correctly, will provide an air tight internal amplifier chamber. To preserve optimal amplifier operating conditions, carefully and exactly follow this manual's instructions for removing and fastening the Line Extender housing cover.

STEP 1

Verify that the replacement kit includes all the necessary components. All the following should be included in the installation kit:

STEP 2

Locate the four 5/16-18" bolts holding the housing cover to the base. Loosen all four bolts with a 1/2" wrench. Be sure to follow the pattern numbers in the diagram at the right for loosening the bolts. The bolts are spring-loaded and will pop up when loosened. Do not attempt to remove bolts. They are fixed to the lid. The numbers in Figure 4-2 indicate the pattern for **installing** the replacement amplifier lid. Reverse the pattern for **removing** the lid from the amplifier. The numbers are engraved onto the lid.

STEP 3

Locate the two retainer clips on the Line Extender's hinge posts. Use a flathead screwdriver to gently pry the clips from each hinge post.

STEP 4

Carefully remove the Line Extender housing cover and set aside.

STEP 5

Verify that all components on the replacement kit lid are installed properly and in the correct position. Figure 4-4 illustrates an installed LSM kit. The Local Status Monitor circuit board with antenna should be installed in the housing cover. When the LSM unit is installed, the interface cable will attach through the RF tray cover to the connector in the Line Extender tray.



CAUTION: The LSM unit antenna is attached to the LSM printed wiring board, or PWB, through the housing cover. Any attempt to remove the antenna or reposition or remove the LSM unit could cause serious damage to the function of the Line Extender. **Under no circumstances** should any technician attempt to make adjustments or changes to the LSM unit in its installed position.

STEP 6

Remove the RF tray cover using a No. 1 Phillips screwdriver to loosen the seven RF tray cover screws (eight if reverse amplifier is installed, ten if AGC is installed) until there is approximately 1/8 in. (about 3mm) clearance between the bottom of the screw head and the surface of the RF tray cover. **If the AGC is present, completely remove the two screws at the Craft Interface connector.** Slide the RF tray cover until the screw heads are aligned in their keyway slots and lift RF tray cover off the tray. Then unsnap the connector from the amplifier tray.

Note: Do not shortcut the installation process by removing only the screw near the cable insertion slot on the RF tray cover.

Note: The keyway feature allows the RF tray cover to be removed without fully removing the RF tray cover screws, preventing loss of the screws.



CAUTION: Do not lose the bolts or AGC interface connector screws.

STEP 7

Slide the new amplifier cover onto the hinge posts. See Figure 4-9. Do not secure the cover with the retainer clips during this step.



Figure 4-9

STEP 8

Locate the connector on the AGC plug-in module where you will install the interface cable. See Figure 4-10.

STEP 9

Carefully insert the interface cable into the connector. the cable and connector are keyed, so they will only fit together in the correct position. Make sure the cable is folded. Firmly fit the interface cable into the amplifier. See Figure 4-11. Do not force the insertion.



STEP 10

Replace the amplifier RF tray cover by passing the tray cover screws back through the keyway slots, sliding the cover until the screw heads are over the narrowest part of the keyway slots. Refer to Figure 4-12. Tighten the RF tray cover screws with a No. 1 Phillips screwdriver.



Note Do not forget to reinstall the two AGC screws if AGC is installed.

STEP 11

Remove any excess moisture or debris from the interior of the Line Extender and the Line Extender tray. If any moisture has accumulated during the installation process, use a clean, dry cotton cloth to wipe off the housing unit and tray. Although this unit is extremely tolerant of a variety of environmental conditions, you can enhance the service life of the amplifier by insuring that it is clean and free of any moisture before closing.

STEP 12

Close the housing lid and align it squarely with the housing base. Thread all four housing lid bolts finger-tight to hold the lid in place. Make sure the lid bolts do not cross thread. The numbered pattern for installing the housing is engraved on the housing cover.

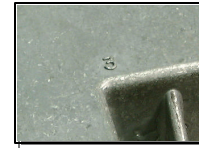


Figure 4-13

STEP 13

Tighten down the lid bolts. Follow the pattern of the numbers engraved in the amplifier lid. Use a ½" socket or torque wrench specifically designed to apply the necessary 5-12 lb.ft (7-16 N·m) of torque to tighten the housing lid bolts.

The use of any but the specified tool may result in incorrect torque on the lid bolts. Incorrect torque could damage amplifier functions and prevent the amplifier from maintaining its airtight seal.

STEP 14



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Place one new retainer clip on each Line Extender hinge post. Firmly secure the retainer clips onto the posts. Lightly tap the clips onto each post with a hammer until the clips fit snugly on the posts.



Section 5 – Wireless SoftLink Software Installation

Step 1

Insert the 3 ½" floppy disk labeled "Wireless SoftLink Installation Disk 1" into the floppy drive.

Step 2

In the Windows toolbar click on "Start", then click on "Run."

Step 3

Type "a:\setup.exe" in the window and press "Enter" where a:\ is the floppy drive destination.

Step 4

Follow the instructions on the screen for installation of the Wireless SoftLink Software.



Section 6 – Operation

a. Introduction

The Wireless SoftLink is a software program that operates a Local Status Monitor Controller. The WSL will allow operator to run Craft software through a wireless connection to operate and to monitor the ADC family of Network Amplifiers and Line Extender.

b. Initializing

Warning: The LSM Initialization is required. If a technician does not perform the LSM configuration the target LSM will fail to respond. Follow the installation sequence in the exact order listed.

b1 – WSL Setup

Press the WSL Setup button. Watch the status bar at the bottom of the screen. During the install test the status bar will display “Searching,” “Connecting” or “Finished.” When the test is finished, proceed to step 2.

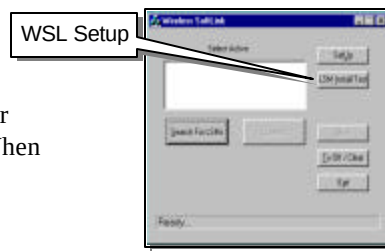


Figure 6-1

 **Note:** If the LSM Install Test fails the error message in Figure 6-1a at right will appear on the screen. If the connection failed, the message in Figure 6-1b will appear on the screen. If the LSMC does not detect any LSM's that require setup in the coverage area, the message in Figure 6-1c will appear on the screen.



Figure 6-1a



Figure 6-1b



Figure 6-1c

b2 – LSM Setup

Locate the LSM Setup button in the upper right of the screen when the WSL screen appears. Pressing the LSM Setup button will allow the technician to select the laptop's Com Port. When you select the appropriate Com Port, click on “OK” and return to the WSL screen. The technician performs the setup function only on the initial use of the WSL software.



Figure 6-2

c – Operation

Step 1

Press the Polling button to initiate the search for LSMs. See Figure 6-3.

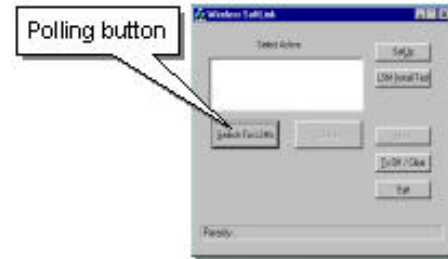


Figure 6-3

As the WSL polls in the target area and locates LSM's, the WSL screen will display the amplifier electronic serial numbers in the screen window. A user-selected name of up to 30 characters may appear, if the name has been previously and manually entered into the amplifier. See Figure 6-4.

Step 2

Monitor the screen window, the progress bar and the scrolling information bar at the bottom of the screen. The technician can connect when the desired amplifier appears in the screen window. See Figure 6.4.

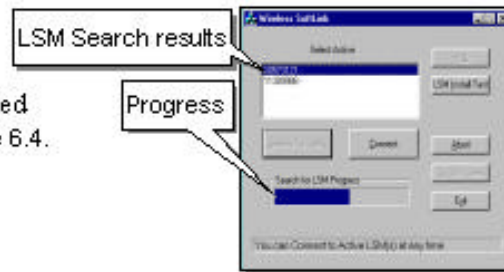


Figure 6-4

Step 3

Highlight and select the appropriate amplifier in the screen window. See Figure 6-5. Press the Connect button.

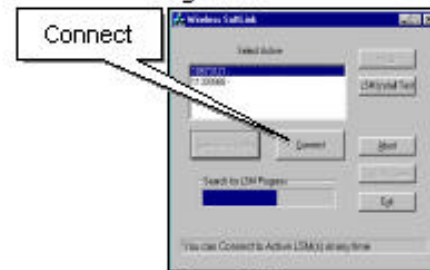


Figure 6-5

When the LSMC locates and connects with the appropriate LSM, the appropriate LSM serial number will appear in the information bar at the bottom of the screen. See Figure 6-6.

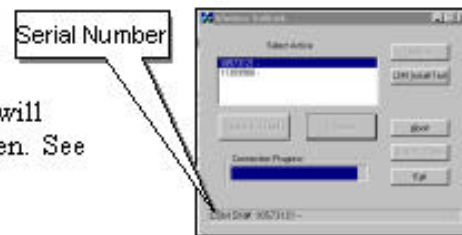


Figure 6-6



Note: When an LSM does not respond to a search the error message in Figure 6-6 will appear on the WSL screen. Press Retry to continue or Cancel to cease the search effort.



Figure 6-7



Note: If the LSM fails to communicate with the RF amplifier, the WSL message will appear as in Figure 6-7. Press OK to continue.



Figure 6-8

STEP 6

A technician can abort the connection process at any time when the Abort button is active. Abort the Polling process or the Connect functions by pressing the Abort button. See Figure 6-8.

Abort button

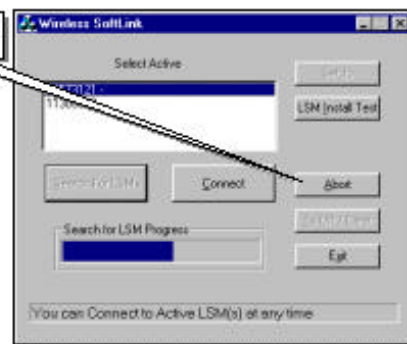


Figure 6-9

STEP 7

Clear the screen. Pressing the Tx Off / Clear button will clear the screen and stop all RF transmissions to the LSMC. See Figure 6-9.

Tx Off / Clear button



Figure 6-10



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