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## Chapter 1 Introduction

This manual explains the installation, setup, alignment, and maintenance procedures for the 840A 10-kW UHF transmitter with feedforward drive. It is important that you read all of the instructions, especially the safety information in this chapter, before you begin to install or operate the unit.

### 1.1 Manual Overview

This instruction manual is divided into five chapters and supporting appendices. Chapter 1, Introduction, contains information on the assembly numbering system used in the manual, safety, maintenance, return procedures, and warranties. The second chapter describes the transmitter and includes discussions on system control and status indicators as well as remote control connections. Chapter 3 explains how to unpack, install, setup, and operate the transmitter. Chapter 4 contains a detailed discussion of the circuits and boards that make up the 840A transmitter. Chapter 5, Detailed Alignment Procedures, provides information on adjusting the system to achieve peak operation of the assemblies. The appendices contain assembly and subassembly drawings and parts lists as well as system specifications.

### 1.2 Assembly Designation Procedure

ADC has assigned assembly numbers, such as Ax (x=1,2,3...), to all assemblies, trays, and boards that are referenced in the text of this manual and shown on the block diagrams and interconnect drawings provided in the appendices. These supporting documents are arranged in increasing numerical order in the appendices. Section titles in the text for assembly and tray descriptions or alignment procedures also indicate the associated drawing(s) and the relevant

appendix that contains that drawing. Sections describing vendor-supplied items, such as meters and power supplies, do not contain this information.

### 1.3 Safety

The UHF transmitters manufactured by the Broadcast Systems Division of ADC are designed to be easy to use and repair while providing protection from electrical and mechanical hazards. Listed throughout the manual are notes, cautions, and warnings concerning possible safety hazards that may be encountered while operating or servicing the transmitter. Please review these warnings and familiarize yourself with the operation and servicing procedures before working on the transmitter.

**Read All Instructions** – All of the operating and safety instructions should be read and understood before operating this equipment.

**Retain Manuals** – The manuals for the transmitter should be retained at the transmitter site for future reference. We provide two sets of manuals for this purpose; one set can be left at the office while one set can be kept at the site.

**Heed all Notes, Warnings, and Cautions** – All of the notes, warnings, and cautions listed in this safety section and throughout the manual must be followed.

**Follow Instructions** – All of the operating and use instructions for the transmitter should be followed.

**Cleaning** – Unplug or otherwise disconnect all power from the equipment before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

**Ventilation** – Openings in the cabinets and tray front panels are provided for ventilation. To ensure reliable operation of the transmitter, and to protect the unit from overheating, these openings must not be blocked.

**Servicing** – Do not attempt to service this product yourself until becoming familiar with the equipment. If in doubt, refer all servicing questions to qualified ADC service personnel.

**Replacement Parts** – When replacement parts are used, be sure that the parts have the same functional and performance characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards. Please contact the ADC Technical Service Department if you have any questions regarding service or replacement parts.

#### 1.4 Maintenance

The 840A is designed with components that require little or no periodic maintenance except for the routine cleaning of the fans and the front panels of the trays.

The amount of time between cleanings depends on the conditions within the transmitter room. While the electronics have been designed to function even if covered with dust, a heavy buildup of dust, dirt, or insects will affect the cooling of the components. This could lead to a thermal shutdown or premature failure of the affected trays.

When the front panels of the trays become dust covered, the top covers should be removed and any accumulated foreign material should be removed. A vacuum cleaner, utilizing a small wand-type attachment, is an excellent way to suction out the dirt. Alcohol and other cleaning agents should not be used unless you are certain that the solvents will not damage components or the silk-screened markings on the trays and

boards. Water-based cleaners can be used, but do not saturate the components. The fans and heatsinks should be cleaned of all dust or dirt to permit the free flow of air for cooling purposes.

It is recommended that the operating parameters of the transmitter be recorded from the meters on the trays and the system metering control panel at least once a month. It is suggested that this data be retained in a rugged folder or envelope.

#### 1.5 Material Return Procedure

To insure the efficient handling of equipment or components that have been returned for repair, ADC requests that each returned item be accompanied by a Material Return Authorization Number (MRA#).

An MRA# can be obtained from any ADC Field Service Engineer by contacting the ADC Field Service Department, Broadcast Systems Division, at (724) 941-1500 or by fax at (724) 941-4603. This procedure applies to all items sent to the Field Service Department regardless of whether the item was originally manufactured by ADC.

**Note: To prevent damage to the product during shipping, ADC supplies a shipping container to the customer at no cost.**

When equipment is sent to the field on loan, an MRA# is included with the unit. The MRA# is intended to be used when the unit is returned to ADC. In addition, all shipping material should be retained for the return of the unit to ADC.

Replacement assemblies are also sent with an MRA# to allow for the proper routing of the exchanged hardware. Failure to close out this type of MRA# will normally result in the customer being invoiced for the value of the loaner item or the exchange assembly.

When shipping an item to ADC, please include the MRA# on the packing list and on the ADC-provided shipping container. The packing slip should also include contact information and a brief description of why the unit is being returned.

Please forward all MRA items to:

**ADC  
Broadcast Systems Division  
102 Rahway Road  
McMurray, PA 15317-3349 USA**

For more information concerning this procedure, call the ADC Field Service Department, Broadcast Systems Division.

ADC, Broadcast Systems Division, can also be contacted through e-mail at [bsd\\_service@adc.com](mailto:bsd_service@adc.com) and on the Web at [www.adc.com/broadcast](http://www.adc.com/broadcast).

### **1.6 Warranty for Broadcast Products – Limited One-Year Warranty**

ADC warrants each new product that it has manufactured and sold against defects in material and workmanship under normal use and service for a period of one (1) year from the date of shipment from ADC's plant, when operated in accordance with ADC's operating instructions. This warranty shall not apply to tubes, fuses, batteries, or bulbs.

Warranties are valid only when and if (a) ADC receives prompt written notice of breach within the period of warranty, (b) the defective product is properly packed and returned by the buyer (transportation and insurance prepaid), and (c) ADC determines, in its sole judgment, that the product is defective and not subject to any misuse, neglect, improper installation, negligence, accident, or (unless authorized in writing by ADC) repair or alteration. ADC's exclusive liability for any personal and/or property damage (including direct, consequential, or incidental) caused by the breach of any or all warranties, shall be limited to the following: (a) repairing or replacing (in ADC's sole discretion) any defective parts free of charge (F.O.B. ADC's plant) and/or (b) crediting (in ADC's sole discretion) all or a portion of the purchase price to the buyer.

Equipment furnished by ADC, but not bearing its trade name, shall bear no warranties other than the special hours-of-use or other warranties extended by or enforceable against the manufacturer at the time of delivery to the buyer. **NO WARRANTIES, WHETHER STATUTORY, EXPRESSED, OR IMPLIED, AND NO WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR FREEDOM FROM INFRINGEMENT, OR THE LIKE, OTHER THAN AS SPECIFIED IN PATENT LIABILITY ARTICLES, AND IN THIS ARTICLE, SHALL APPLY TO THE EQUIPMENT FURNISHED HEREUNDER.**