888-2711-001
Maxiva UAX Transmitter
Outdoor Enclosure System
User Manual

Maxiva UAX Transmitter Outdoor Enclosure System

T.M. No. 888-2711-001

Feb. 9, 2010
Rev: A

© Copyright Harris Corporation 2010

All rights reserved

Technical Assistance

Technical and troubleshooting assistance for HARRIS Transmission products is available from HARRIS Field Service (factory location: Quincy, Illinois, USA) during normal business hours (8:00 AM - 5:00 PM Central Time). Telephone ***+1-217-222-8200*** to contact the Field Service Department; FAX ***+1-217-221-7086***; or E-mail questions to ***tsupport@harris.com.***
Emergency service is available 24 hours a day, seven days a week, *by telephone only*.
On-line assistance, including technical manuals, white papers, software downloads, and service bulletins, is available at ***http://support.broadcast.harris.com/eservice_enu.***
Address written correspondence to Field Service Department, HARRIS Broadcast Communications Division, P.O. Box 4290, Quincy, Illinois 62305-4290, USA. For other global service contact information, please visit: ***http://www.broadcast.harris.com/contact***.
NOTE: For all service and parts correspondence, you will need to provide the Sales Order number, as well as the Serial Number for the transmitter or part in question. For future reference, record those numbers here: _____/_____
Please provide these numbers for any written request, or have these numbers ready in the event you choose to call regarding any Service, or Parts requests. For warranty claims it will be required, and for out of warranty products, this will help us to best identify what specific hardware was shipped.

Replaceable Parts Service

Replacement parts are available from HARRIS Service Parts Department from 7:00 AM to 11:00 PM Central Time, seven days a week. Telephone ***+1-217-222-8200*** or email ***servicepartsreq@harris.com*** to contact the Service Parts Department.
Emergency replacement parts are available *by telephone only*, 24 hours a day, seven days a week by calling +1-217-222-8200.

Unpacking

Carefully unpack the equipment and preform a visual inspection to determine if any apparent damage was incurred during shipment. Retain the shipping materials until it has been verified that all equipment has been received undamaged. Locate and retain all PACKING CHECK LISTs. Use the PACKING CHECK LIST to help locate and identify any components or assemblies which are removed for shipping and must be reinstalled. Also remove any shipping supports, straps, and packing materials prior to initial turn on.

Returns And Exchanges

No equipment can be returned unless written approval and a Return Authorization is received from HARRIS Broadcast Communications Division. Special shipping instructions and coding will be provided to assure proper handling. Complete details regarding circumstances and reasons for return are to be included in the request for return. Custom equipment or special order equipment is not returnable. In those instances where return or exchange of equipment is at the request of the customer, or convenience of the customer, a restocking fee will be charged. All returns will be sent freight prepaid and properly insured by the customer. When communicating with HARRIS Broadcast Communications Division, specify the HARRIS Order Number or Invoice Number.

Manual Revision History

Maxiva UAX Transmitter Outdoor Enclosure System Manual

REV.	DATE	ECN	Pages Affected / Description
	2010 FEB		Create manual.

WARNING: Disconnect primary power prior to servicing.

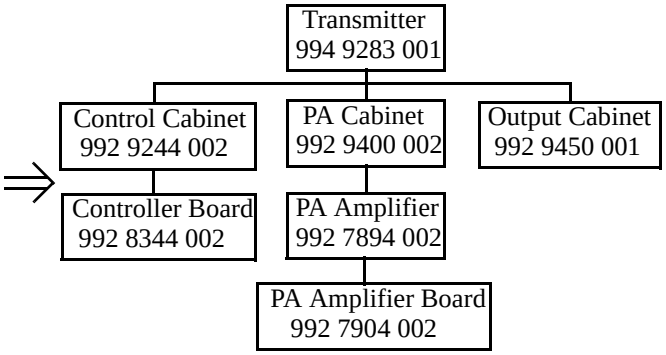
WARNING: Disconnect primary power prior to servicing.

Guide to Using Harris Parts List Information

The Harris Replaceable Parts List Index portrays a tree structure with the major items being leftmost in the index. The example below shows the Transmitter as the highest item in the tree structure. If you were to look at the bill of materials table for the Transmitter you would find the Control Cabinet, the PA Cabinet, and the Output Cabinet. In the Replaceable Parts List Index the Control Cabinet, PA Cabinet, and Output Cabinet show up one indentation level below the Transmitter and implies that they are used in the Transmitter. The Controller Board is indented one level below the Control Cabinet so it will show up in the bill of material for the Control Cabinet. The tree structure of this same index is shown to the right of the table and shows indentation level versus tree structure level.

Example of Replaceable Parts List Index and equivalent tree structure:

Replaceable Parts List Index	Part Number	Page
Table 7-1. Transmitter	994 9283 001	7-2
Table 7-2. Control Cabinet	992 9244 002	7-3
Table 7-3. Controller Board	992 8344 002	7-6
Table 7-4. PA Cabinet	992 9400 002	7-7
Table 7-5. PA Amplifier	994 7894 002	7-9
Table 7-6. PA Amplifier Board	992 7904 002	7-10
Table 7-7. Output Cabinet	992 9450 001	7-12



The part number of the item is shown to the right of the description as is the page in the manual where the bill for that part number starts. Inside the actual tables, four main headings are used:

- Table #-#. ITEM NAME - HARRIS PART NUMBER - this line gives the information that corresponds to the
- Replaceable Parts List Index entry;
- HARRIS P/N column gives the ten digit Harris part number (usually in ascending order);
- DESCRIPTION column gives a 25 character or less description of the part number;
- REF. SYMBOLS/EXPLANATIONS column 1) gives the reference designators for the item (i.e., C001, R102, etc.) that corresponds to the number found in the schematics (C001 in a bill of material is equivalent to C1 on the schematic) or 2) gives added information or further explanation (i.e., “Used for 208V operation only,” or “Used for HT 10LS only,” etc.).

NOTE: Inside the individual tables some standard conventions are used:

- A # symbol in front of a component such as #C001 under the REF. SYMBOLS/EXPLANATIONS column means that this item is used on or with C001 and is not the actual part number for C001.
- In the ten digit part numbers, if the last three numbers are 000, the item is a part that Harris has purchased and has not manufactured or modified. If the last three numbers are other than 000, the item is either manufactured by Harris or is purchased from a vendor and modified for use in the Harris product.
- The first three digits of the ten digit part number tell which family the part number belongs to - for example, all electrolytic (can) capacitors will be in the same family (524 xxxx 000). If an electrolytic (can) capacitor is found to have a 9xx xxxx xxx part number (a number outside of the normal family of numbers), it has probably been modified in some manner at the Harris factory and will therefore show up farther down into the individual parts list (because each table is normally sorted in ascending order). Most Harris made or modified assemblies will have 9xx xxxx xxx numbers associated with them.

The term “SEE HIGHER LEVEL BILL” in the description column implies that the reference designated part number will show up in a bill that is higher in the tree structure. This is often the case for components that may be frequency determinant or voltage determinant and are called out in a higher level bill structure that is more customer dependent than the bill at a lower level.

HARRIS Broadcast Systems Division
P.O. Box 4290, QUINCY, IL 62305

PARTS ORDER FORM

HARRIS PHONE: 217-222-8200
HARRIS FAX: 217-221-7096

BILLING INFORMATION

CUSTOMER NAME: _____

ADDRESS: _____

_____

_____

_____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

PREFERRED PAYMENT METHOD: _____

SHIPPING INFORMATION

SHIP TO: _____
(if different from billing information)

ADDRESS: _____

_____

_____

_____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

SHIPPING METHOD PREFERRED: _____

FREQUENCY (If required): _____

EQUIPMENT NAME: _____

EQUIPMENT PART NUMBER: _____

EQUIPMENT SERIAL NUMBER: _____

GUIDE FOR ORDERING PARTS

Please use the following parts order form, filling is as much information as possible. The complete informaiton will allow double checking the part number for correctness or locating a substitude if the part is not available.
The equipment name, part number, and serial number will be found on the metal ID plate on the back of the unit. The serial number MUST be included for any parts ordered under warranty.
Describe the part using the description in the parts list if possible. Include the schematic information, schematic number, or number of next higher assembly. The next higher assembly is usually a 992-xxxx-00x type.

ITEM #	QTY ORD	HARRIS PART NUMBER	DESCRIPTION OF PART (PART'S NAME, DESCRIPTION, SPECIFICATION FROM PARTS LIST IF AVAILABLE)	SCHEMATIC REFERENCE REFERENCE NAME (e.g. C001, R100, etc)	ITEM USED ON (NEXT HIGHER ASSEMBLY IF KNOWN) (e.g. C001 used on 992 8025 001, SCHEMATIC 839 8099 991)	COMMENTS

WARNING: Disconnect primary power prior to servicing.

WARNING: Disconnect primary power prior to servicing.

WARNING:
THE CURRENTS AND VOLTAGES IN THIS EQUIPMENT ARE DANGEROUS. PERSONNEL MUST AT ALL TIMES OBSERVE SAFETY WARNINGS, INSTRUCTIONS AND REGULATIONS.

This manual is intended as a general guide for trained and qualified personnel who are aware of the dangers inherent in handling potentially hazardous electrical/electronic circuits. It is not intended to contain a complete statement of all safety precautions which should be observed by personnel in using this or other electronic equipment.

The installation, operation, maintenance and service of this equipment involves risks both to personnel and equipment, and must be performed only by qualified personnel exercising due care. HARRIS CORPORATION shall not be responsible for injury or damage resulting from improper procedures or from the use of improperly trained or inexperienced personnel performing such tasks. During installation and operation of this equipment, local building codes and fire protection standards must be observed.

The following National Fire Protection Association (NFPA) standards are recommended as reference:

- Automatic Fire Detectors, No. 72E
- Installation, Maintenance, and Use of Portable Fire Extinguishers, No. 10
- Halogenated Fire Extinguishing Agent Systems, No. 12A

WARNING:
ALWAYS DISCONNECT POWER BEFORE OPENING COVERS, DOORS, ENCLOSURES, GATES, PANELS OR SHIELDS. ALWAYS USE GROUNDING STICKS AND SHORT OUT HIGH VOLTAGE POINTS BEFORE SERVICING. NEVER MAKE INTERNAL ADJUSTMENTS, PERFORM MAINTENANCE OR SERVICE WHEN ALONE OR WHEN FATIGUED.

Do not remove, short-circuit or tamper with interlock switches on access covers, doors, enclosures, gates, panels or shields. Keep away from live circuits, know your equipment and don’t take chances.

WARNING:
IN CASE OF EMERGENCY ENSURE THAT POWER HAS BEEN DISCONNECTED.

IF OIL FILLED OR ELECTROLYTIC CAPACITORS ARE UTILIZED IN YOUR EQUIPMENT, AND IF A LEAK OR BULGE IS APPARENT ON THE CAPACITOR CASE WHEN THE UNIT IS OPENED FOR SERVICE OR MAINTENANCE, ALLOW THE UNIT TO COOL DOWN BEFORE ATTEMPTING TO REMOVE THE DEFECTIVE CAPACITOR. DO NOT ATTEMPT TO SERVICE A DEFECTIVE CAPACITOR WHILE IT IS HOT DUE TO THE POSSIBILITY OF A CASE RUPTURE AND SUBSEQUENT INJURY.

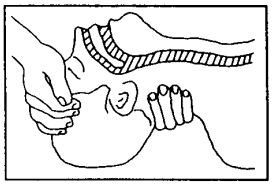
TREATMENT OF ELECTRICAL SHOCK

1. IF VICTIM IS NOT RESPONSIVE FOLLOW THE A-B-CS OF BASIC LIFE SUPPORT.

PLACE VICTIM FLAT ON HIS BACK ON A HARD SURFACE

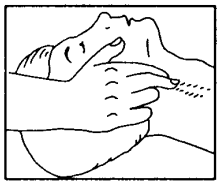
(A) AIRWAY

IF UNCONSCIOUS,
OPEN AIRWAY



LIFT UP NECK
PUSH FOREHEAD BACK
CLEAR OUT MOUTH IF NECESSARY
OBSERVE FOR BREATHING

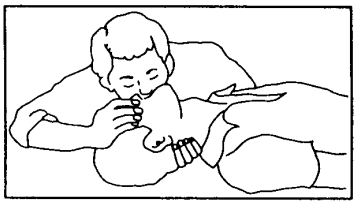
CHECK
CAROTID PULSE



IF PULSE ABSENT,
BEGIN ARTIFICIAL
CIRCULATION

(B) BREATHING

IF NOT BREATHING,
BEGIN ARTIFICIAL BREATHING



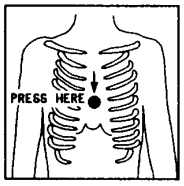
TILT HEAD
PINCH NOSTRILS
MAKE AIRTIGHT SEAL

4 QUICK FULL BREATHS

REMEMBER MOUTH TO MOUTH
RESUSCITATION MUST BE
COMMENCED AS SOON AS POSSIBLE

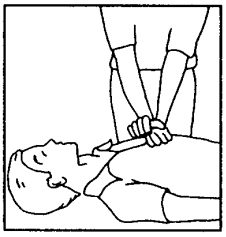
(C) CIRCULATION

DEPRESS STERNUM 1 1/2 TO 2 INCHES



APPROX. RATE OF COMPRESSIONS --80 PER MINUTE
- ONE RESCUER
- 15 COMPRESSIONS
- 2 QUICK BREATHS

APPROX. RATE OF COMPRESSIONS --60 PER MINUTE
- TWO RESCUERS
- 5 COMPRESSIONS
- 1 BREATH



NOTE: DO NOT INTERRUPT RHYTHM OF COMPRESSIONS
WHEN SECOND PERSON IS GIVING BREATH

CALL FOR MEDICAL ASSISTANCE AS SOON AS POSSIBLE.

2. IF VICTIM IS RESPONSIVE.

A. KEEP THEM WARM
B. KEEP THEM AS QUIET AS POSSIBLE
C. LOOSEN THEIR CLOTHING
D. A RECLINING POSITION IS RECOMMENDED

WARNING: Disconnect primary power prior to servicing.

FIRST-AID

Personnel engaged in the installation, operation, maintenance or servicing of this equipment are urged to become familiar with first-aid theory and practices. The following information is not intended to be complete first-aid procedures, it is a brief and is only to be used as a reference. It is the duty of all personnel using the equipment to be prepared to give adequate Emergency First Aid and there by prevent avoidable loss of life.

Treatment of Electrical Burns

1. Extensive burned and broken skin
    a. Cover area with clean sheet or cloth. (Cleanest available cloth article.)
    b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply any salve or ointment.
    c. Treat victim for shock as required.
    d. Arrange transportation to a hospital as quickly as possible.
    e. If arms or legs are affected keep them elevated.

NOTE:
If medical help will not be available within an hour and the victim is conscious and not vomiting, give him a weak solution of salt and soda: 1 level teaspoonful of salt and 1/2 level teaspoonful of baking soda to each quart of water (neither hot or cold). Allow victim to sip slowly about 4 ounces (a half of glass) over a period of 15 minutes. Discontinue fluid if vomiting occurs. (Do not give alcohol.)

2. Less severe burns - (1st & 2nd degree)
    a. Apply cool (not ice cold) compresses using the cleanest available cloth article.
    b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply salve or ointment.
    c. Apply clean dry dressing if necessary.
    d. Treat victim for shock as required.
    e. Arrange transportation to a hospital as quickly as possible.
    f. If arms or legs are affected keep them elevated.

REFERENCE:
ILLINOIS HEART ASSOCIATION
AMERICAN RED CROSS STANDARD FIRST AID AND PERSONAL SAFETY MANUAL (SECOND EDITION)

Glossary:

ASI - Asynchronous serial interface

BPF- Band pass filter. May also be called a mask filter, or critical mask filer.

CAN - Controller–area network (CAN or CAN-bus) is a vehicle bus standard designed to allow microcontrollers and devices to communicate with each other

DAC - digital analog converter

FPGA - Field programmable gate array

GUI - graphical user interface

Hot-pluggable - device can be removed while transmitter is operating.

HTML - HyperText Markup Language

IRD - Integrated receiver decoder

LCD - Liquid crystal display

LPF - Low pass filter. Typically located at the transmitter output port. Used to attenuate out of band emissions.

LPU - Low power unit. Contains modulator and amplifier sections.

MCM - Master control module (card in TCU)

PA - Power amplifier

PAB - Power amplifier block

PCM - Processor control module (card in TCU)

PS - Power supply

RF - Radio frequency

RS-485 -TIA/EIA standard for serial multipoint communications lines

RTAC^{TM} - Real time adaptive correction

Glossary Continued:

SFN - Single frequency network

SMA - SMA connector consists of a 0.250x36 thread. The male is equipped with a .312 inch (7.925mm) hex nut

TCU - Transmitter control unit.

UDC - Up-down converter

UPS - Uninterruptable power supply

VGA - Video graphics array

WEB - A system of Internet servers that support HTML formatted documents.

Table of Contents

Section 1
Introduction

Purpose of This Manual 1-1
General Description. 1-3
System Block Diagrams 1-11
System Specifications 1-12
  Environmental and Physical 1-12
  AC power 1-12
  Connectors 1-12

Section 2
Installation / Initial Turn-On

Introduction 2-1
Documentation 2-1
  UAX Enclosure System Drawings 2-2
Cabinet Placement. 2-2
Cabinet Attachments 2-4
Installation of Components Removed for Shipment 2-6
  Install PA Modules 2-7
AC/Ground connections 2-9
Ground connections. 2-10
Transmitter RF output connection. 2-12
Signal Connections 2-14
Customer Remote Control & Interlock Connections. 2-15
Customer Remote Control & Interlock Connections. 2-16
Initial Turn-On 2-16

Section 3
Operation & Maintenance

Introduction 3-1
Transmitter Control Unit (TCU) 3-1
  Control Buttons overview: 3-2
Maintenance 3-4

Section 4
Parts List

Replaceable Parts List 4-1

Table of Contents

Section 1 Introduction

1

1.1 Purpose of This Manual

This User manual describes the UAX Outdoor Enclosure System utilizing the UAX Maxiva transmitter. The contents of this manual address the location of system components of the enclosure system, installation hook-up requirements, initial turn-on steps, and overall system operation. Detailed information pertaining to the UAX Maxiva Transmitter is not included here, but can be found in a separate doc package (988-2693-001) included with the transmitter. Detailed information regarding individual system components can be found in the component documentation material supplied with this enclosure system. The various sections of this User manual provide the following types of information.

Section 1, Introduction, provides equipment location information, block diagram and general specifications.

Section 2, Installation/Initial Turn-On, provides cabinet hardware and electrical installation information for the transmitter enclosure system including: Cabinet placement, solar shield, GPS antenna, AC Power connection, RF system connections, customer input connections, and remote interface connections.

Section 3, Operation, provides general operation information for the enclosure system. Specific equipment operation information can be found in the technical manuals/ pamphlets provided by the manufactures of the various components included in the enclosure system. Most of these can be found in a pouch inside the back door of the enclosure.

Section 4, Parts List, provides a list of parts used in a typical UAX enclosure system.

Figure 1-1 UAX Outdoor Enclosure System - Front Doors

WARNING: Disconnect primary power prior to servicing.

1.2 General Description

This section contains equipment/hardware location information of the UAX Enclosure System. Included in this section will be photos of the various components, physical location, interconnection, block diagram and system specifications.

The UAX Outdoor Enclosure System is a self contained transmission system designed to be installed in outdoor environments without the need of a shelter. The system includes the Harris solid state UAX Transmitter, an on-board system air conditioning system, and an on-board AC Power Distribution Box.

There are three models system models:

- UAX2000FLS Outdoor System -2Kw RF Power Level with Single Exciter
- UAX2000FLD Outdoor System - 2Kw RF Power Level with Dual Exciters and Transmitter Control Unit
- UAX1000FLS Outdoor System- 1Kw RF Power Level with Single Exciter.

The transmitter cabinets utilize a rack mount system that accommodates additional peripheral equipment including a UPS unit, mask filter, router, port server, monitoring unit, and customer supplied satellite receivers, IRDs, etc.

The self-contained system requires a stable/secure installation pad and external connections. The external connections include:

1. Proper grounding
2. AC Mains

⚠ **WARNING:**
INSTALLATION OF THE AC MAINS AND GROUNDING MUST BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES.

3. Antenna coax
4. Customer data stream input
5. Remote control/monitoring

Figure 1-2 shows the front of the enclosure system with the door open.

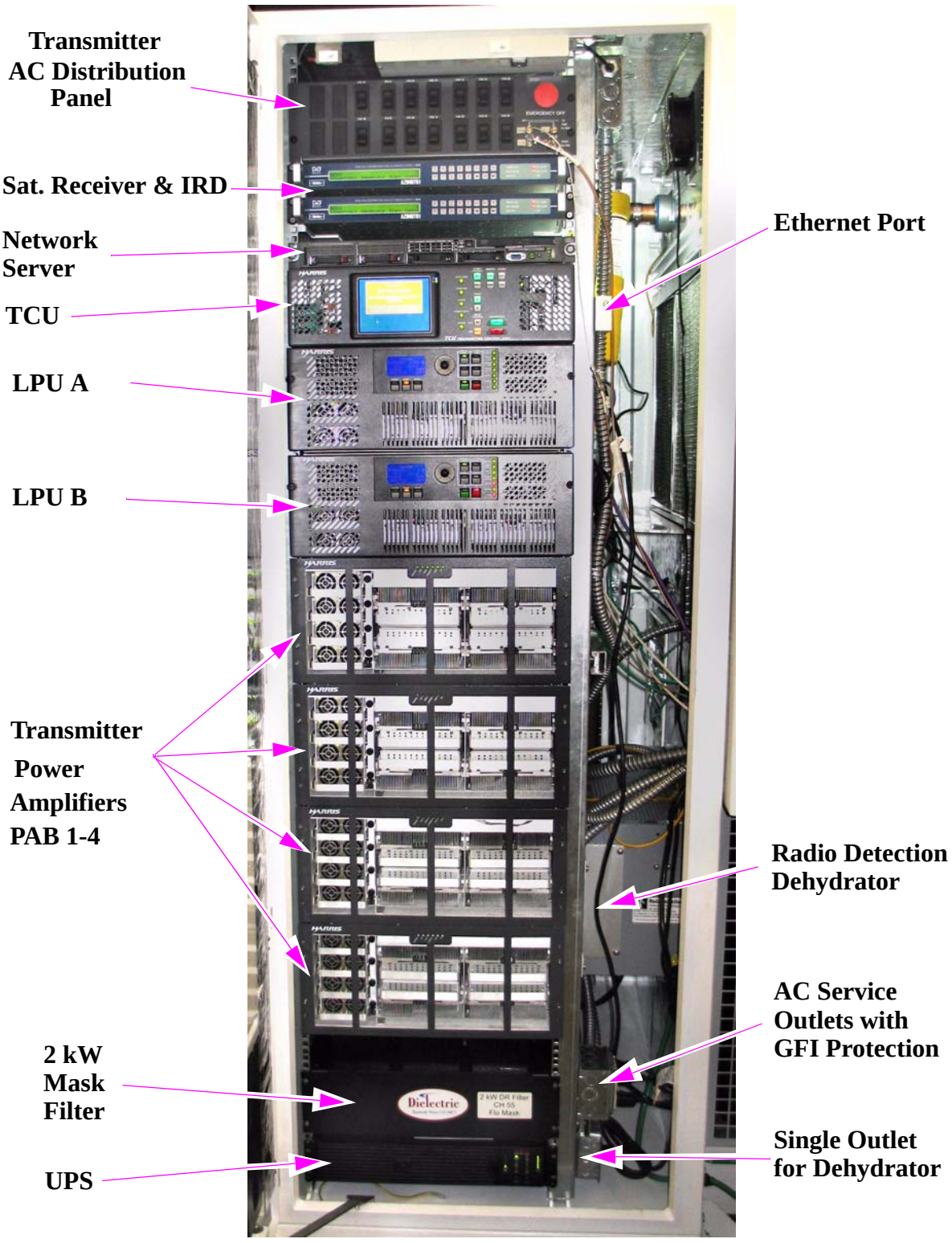


Figure 1-2 UAX Transmitter - Front View

WARNING: Disconnect primary power prior to servicing.

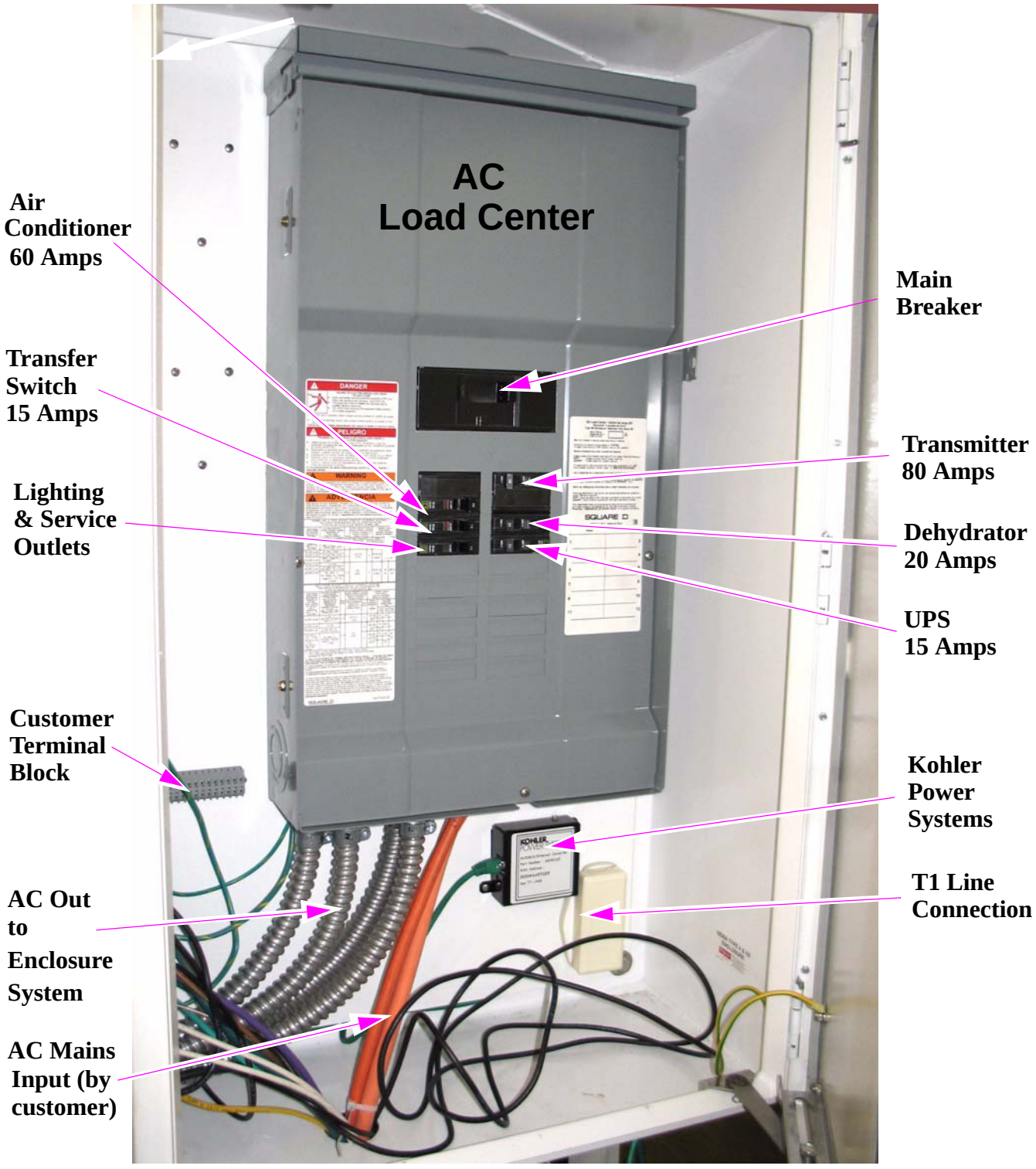


Figure 1-3 UAX AC Load Center Inside AC Distribution Box

WARNING: Disconnect primary power prior to servicing.

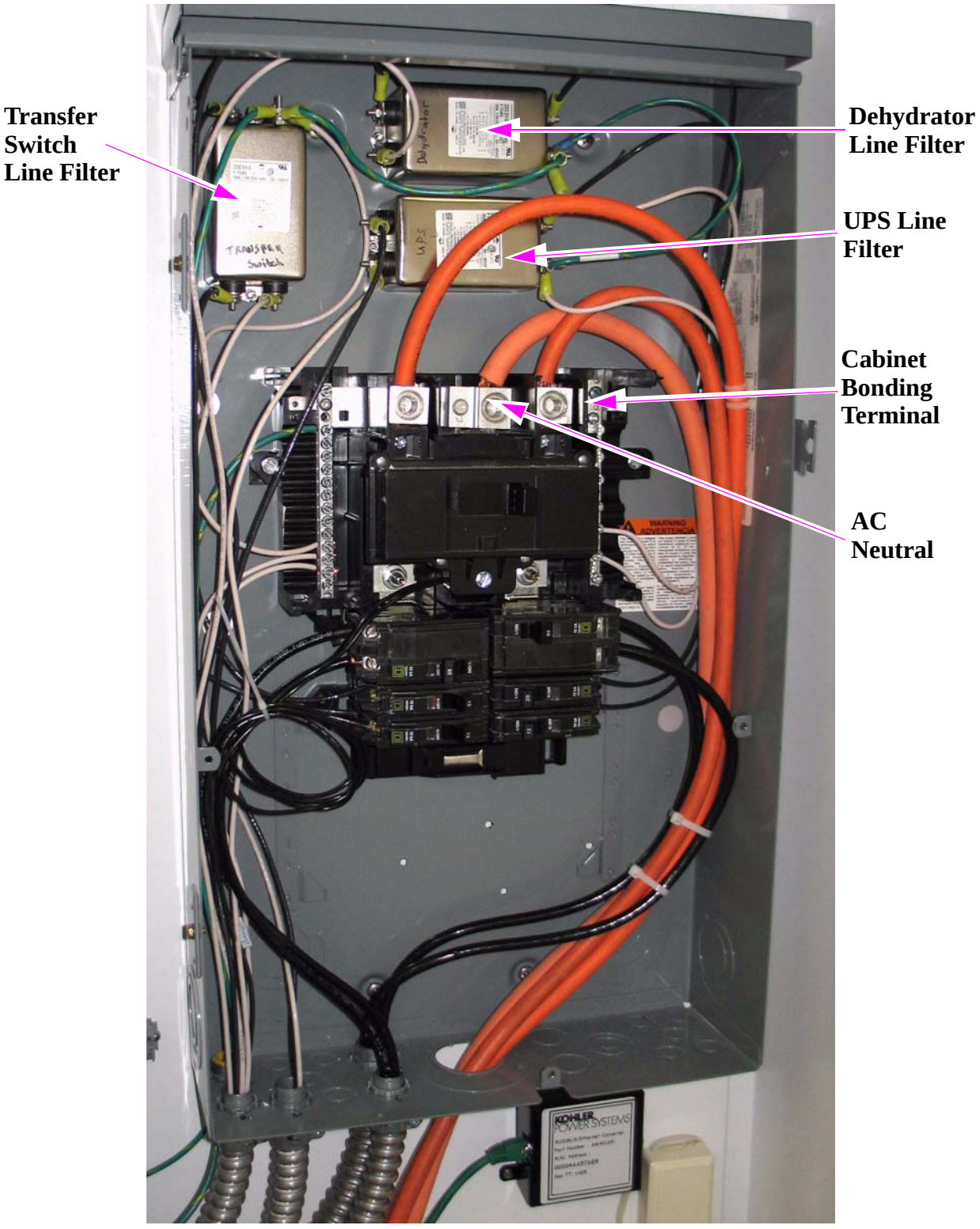


Figure 1-4 UAX AC Load Center, Front Cover Removed

WARNING: Disconnect primary power prior to servicing.

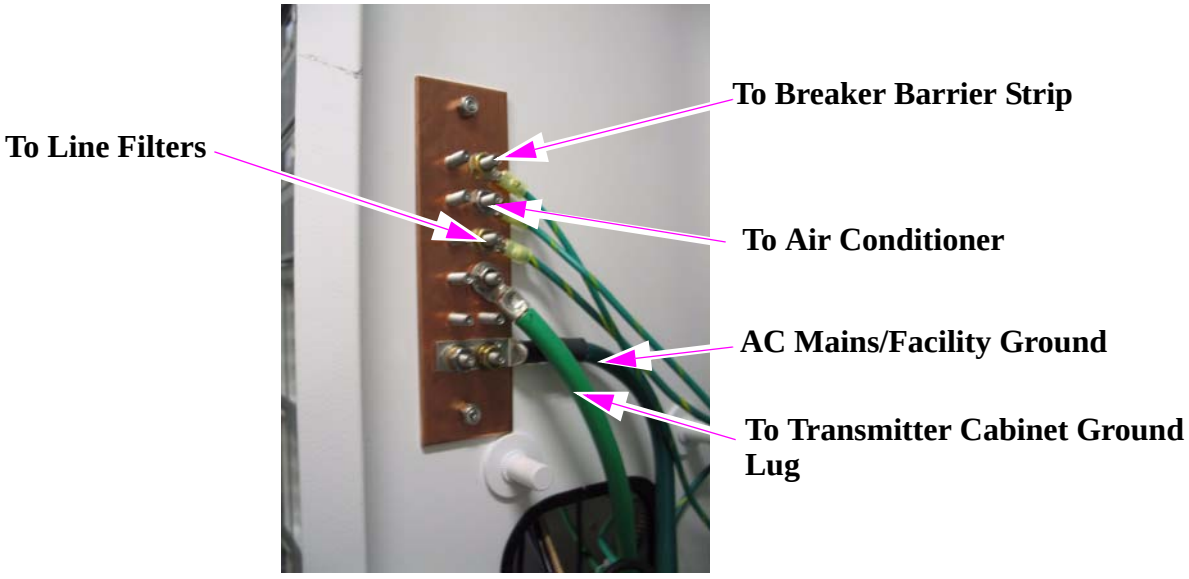


Figure 1-5 Copper Grounding Strip, Left Wall in AC Dist. Box

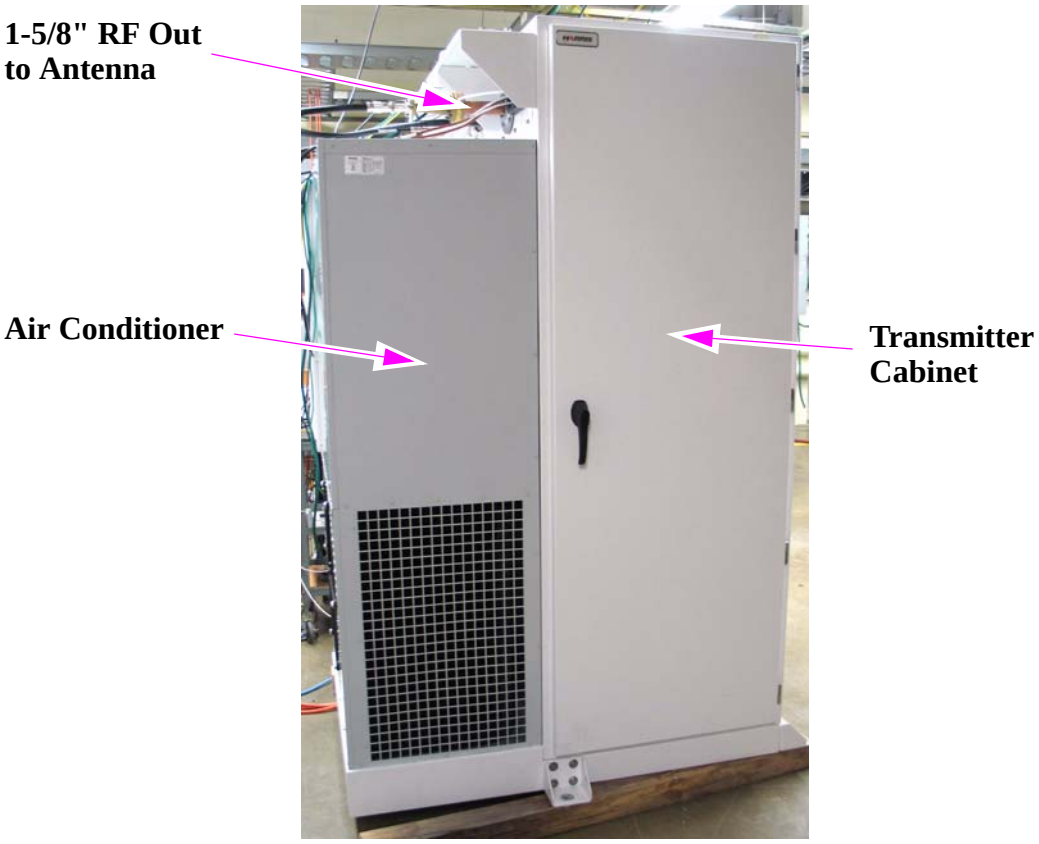


Figure 1-6 UAX Cabinet Rear View

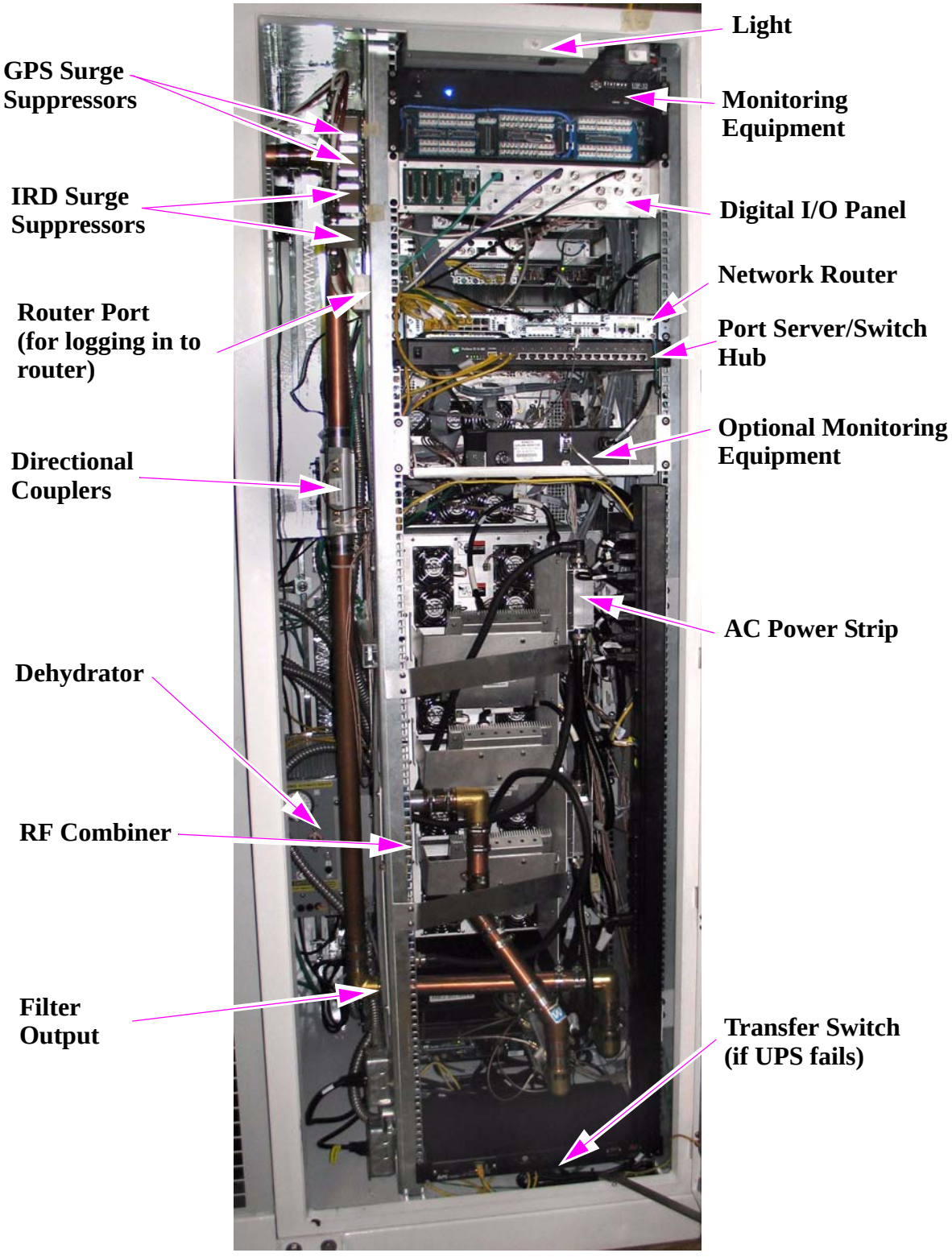


Figure 1-7 Transmitter Cabinet Rear View

WARNING: Disconnect primary power prior to servicing.

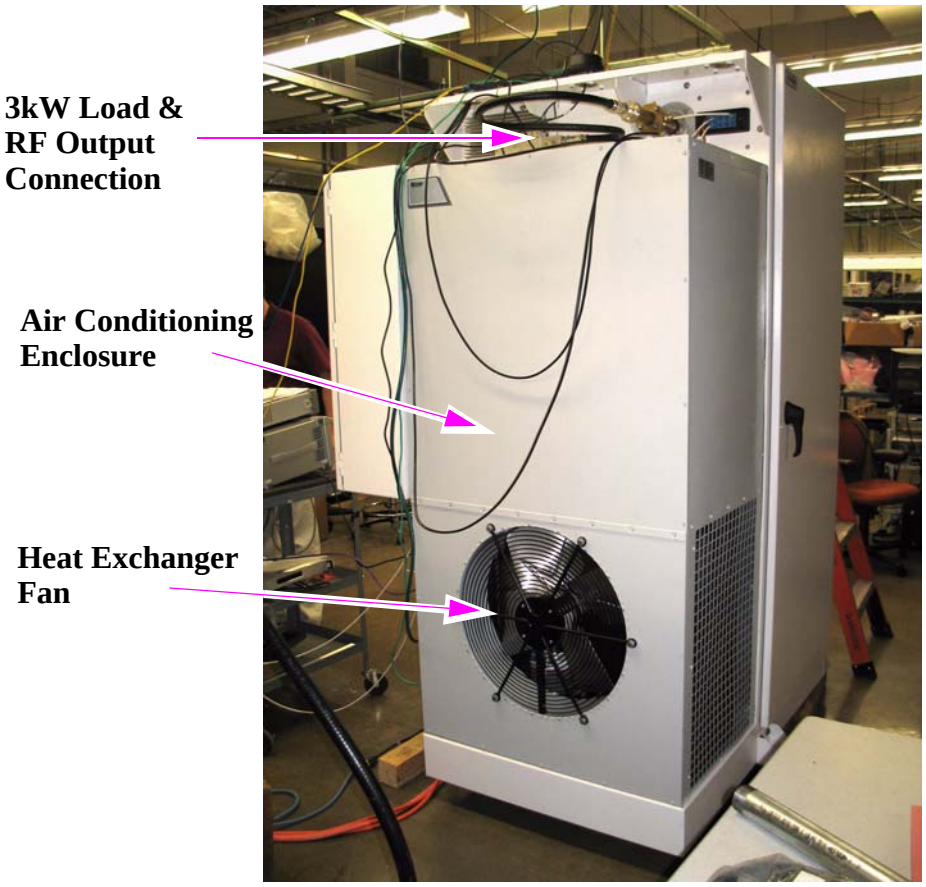


Figure 1-8 UAX Side View

Figure 1-9 shows the transmitter RF 1-5/8" output connector which also serves as a gas barrier.

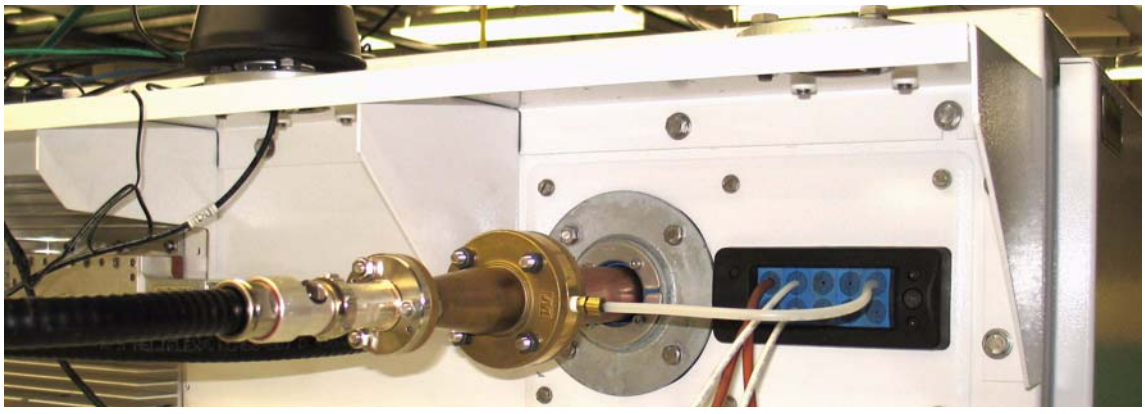


Figure 1-9 RF Output

Figure 1-10 shows the 3kW dry load mounted in the bracket attached to the top of the transmitter cabinet next to the RF output connector.

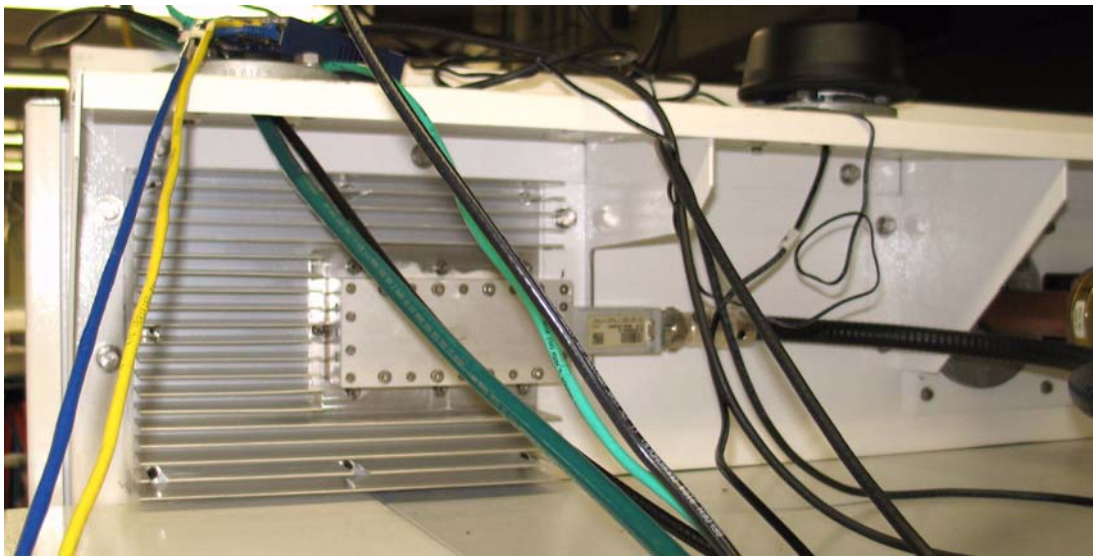


Figure 1-10 3 kW Dry Load

Figure 1-11 shows the customer interface panel mounted in the back of the transmitter cabinet. Refer to the UAX transmitter manual 888-2693-001 section 2.7 for detailed information

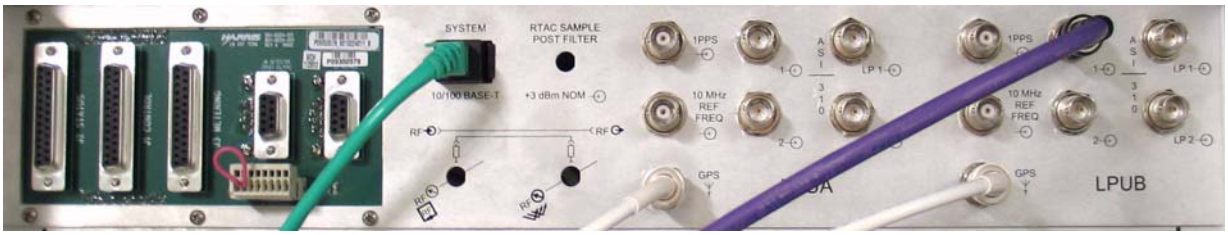


Figure 1-11 Customer I/O Panel

WARNING: Disconnect primary power prior to servicing.

1.3 System Block Diagrams

Figure 1-12 is a simplified block diagram of the UAX enclosure system RF transmission path.

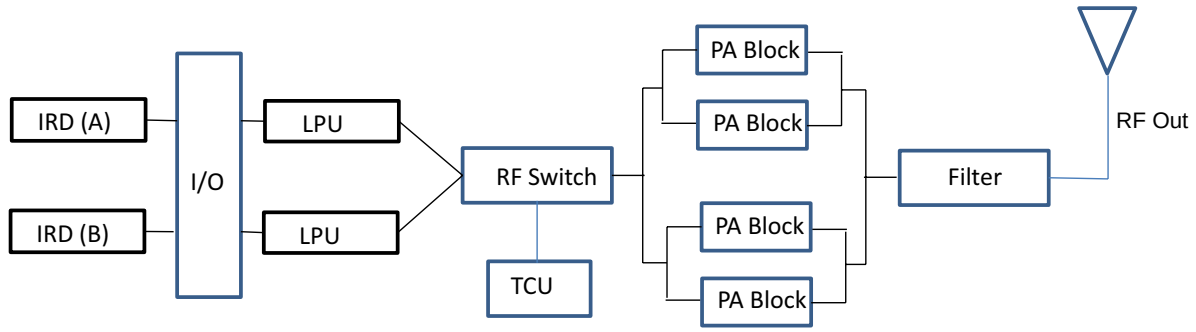


Figure 1-12 RF Transmission Path

Figure 1-13 is a simplified block diagram of the communications path.

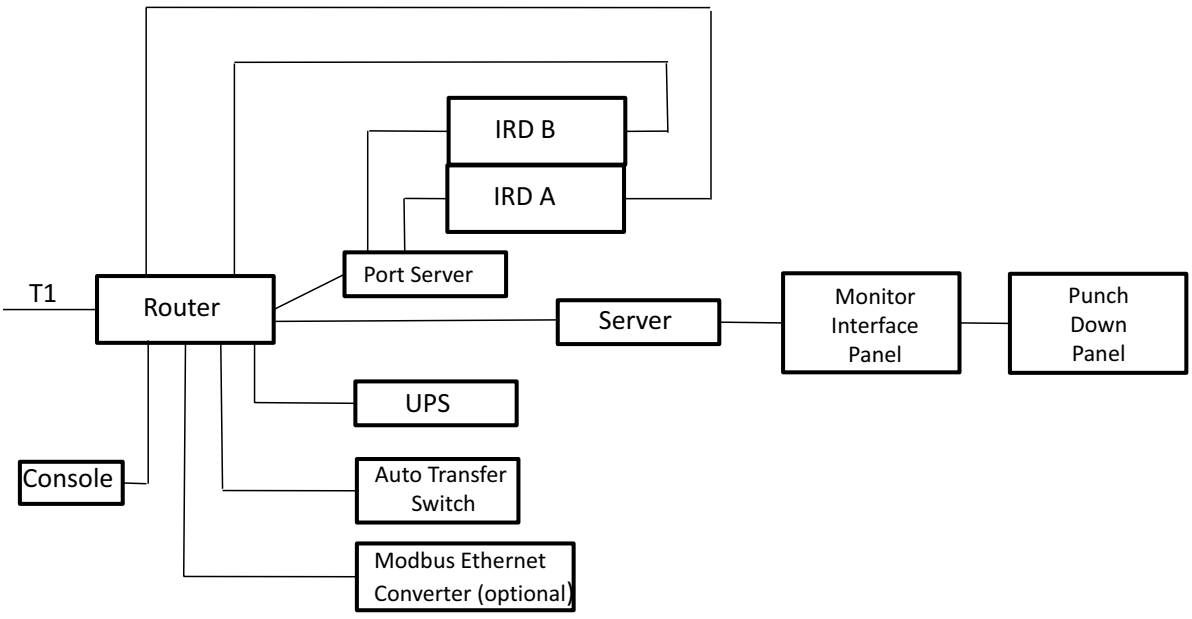


Figure 1-13 Communications Path

WARNING: Disconnect primary power prior to servicing.

1.4 System Specifications

The following specifications refer to a typical 2kW outdoor enclosure system. Specifications are subject to change and may vary depending on system configuration.

1.4.1 Environmental and Physical

Operating Temperature (ambient): -30°C. to 55°C.

Storage Temperature (ambient): -40°C to 70°C

Humidity: 0 to 100% humidity.

Altitude: Maximum 12,000 ft.

Weight: <1800 lbs.

1.4.2 AC power

Input voltage: 240V ±15% V, 60 Hz, Split Phase

Nominal current at maximum RF output power: < 165 A

Input Voltage Harmonics: < 5% THD

1.4.3 Connectors

Transmitter RF output: EIA 1-5/8", 50 Ohm

ASI input: BNC, female, 75 Ohm

NOTE:
For Warranty purposes, each major component in the enclosure contains a bar code strip. These bar codes are NOT to be removed.

Figure 1-14 Component Barcode Identification

WARNING: Disconnect primary power prior to servicing.

WARNING: Disconnect primary power prior to servicing.

Section 2 Installation / Initial Turn-On 2

2.1 Introduction

This section includes the information necessary for installation and initial turn on of an UAX Outdoor Enclosure System.

2.2 Documentation

Following is a partial list of documentation that ships with the system. Find and save all documentation. The top level Document Package numbers are shown below:

UAX Transmitter Outdoor Enclosure System Doc Package: **988-2711-001**

Outdoor Enclosure System User manual: **888-2711-001**

Enclosure and AC power drawings: **843-5602-523**

UAX Enclosure System Interconnect drawing: 843-xxxx-xxx

UAX Outdoor Enclosure System Installation Manual: **888-2713-001**

UAX Outdoor Enclosure System Commissioning Manual: **888-2712-001**

The UAX Transmitter Document Package **988-2693-001** includes:

UAX technical manual: **888-2693-001**

Drawing Package with a complete set of schematics for the transmitter System: **943-5276-170**

2.2.1 UAX Enclosure System Drawings

It is recommended that you look through the documentation package to familiarize yourself with the information available. The installation and planning information is given in the following drawings:

Std. Enclosure AC Distribution - 817-2307-076 shows overall AC wiring and has information on system current requirements.

UAX Enclosure System Interconnect Diagram - Shows interconnect wiring between transmitter and all peripheral systems.

2.3 Cabinet Placement

The entire enclosure can be lifted in place using the four (4) lifting eye bolts supplied with the system. The eye bolts are shown in Figure 2-1.

⚠ **CAUTION:**
LIFT STRAIGHT UP, EVENLY FROM EACH LIFT POINT TO AVOID PLACING STRESS ON ANY ONE LIFT EYE.

Figure 2-1 Lifting Eye Bolt

The four (4) Lifting Eye bolts screw into the top of the transmitter cabinet. One in each corner. See Figure 2-2.

Figure 2-2 Lifting Eye Bolt On Top of Transmitter Cabinet

STEP 1 Install the lifting eyes. Be sure each lifting eye bolt is screwed all the way in. Tighten the bolts in place using a wrench handle or bar.

STEP 2 Use an adequately sized hoist to lift the enclosure to its permanent location.

STEP 3 Be sure the enclosure is level and securely positioned.

2.4 Cabinet Attachments

The enclosure is equipped with three (3) threaded antenna mounts located on the bracket that is attached to the side of the transmitter cabinet directly above the air conditioner cabinet. See Figure 2-3. The 2 GPS antenna supports screw into any two (2) of these mounts.

STEP 1 Install the two mounts and GPS antennas. Tighten the mounts down securely.

STEP 2 Feed the antenna wires through the moisture proof barrier under the bracket close to the back of the transmitter. Figure 2-4. They connect to the GPS surge suppressors. See Figure 1-7 on page 1-8.

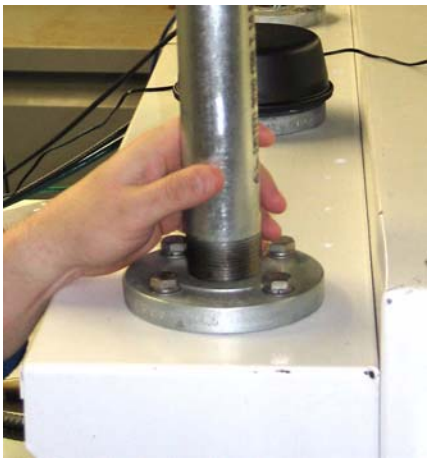


Figure 2-3 GPS Antenna Mount

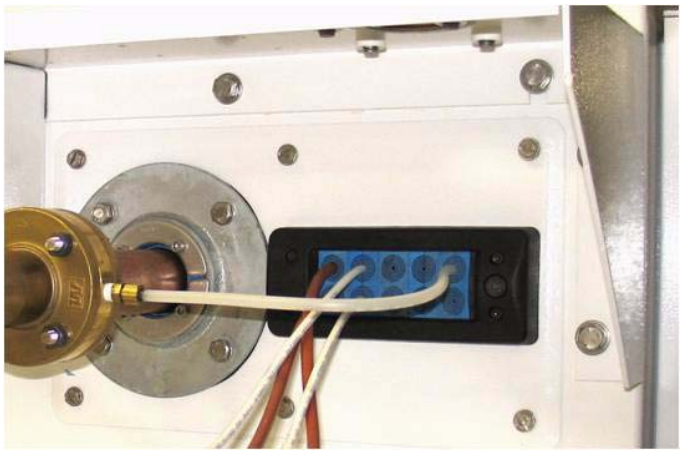


Figure 2-4 GPS Antenna Cables

STEP 3 Remove the eye bolts from the top of the transmitter cabinet.

STEP 4 . The solar shield is a large cover designed to keep direct sunlight off the top of the transmitter cabinet. Carefully unpack the shield from its box and place on top of the transmitter cabinet. Figure 2-5 shows the shield plus the bag of mounting screws. There are two (2) holes on each side of the transmitter cabinet near the top. Use the supplied screws to attach the shield to the transmitter cabinet. Refer to Figure 2-6.

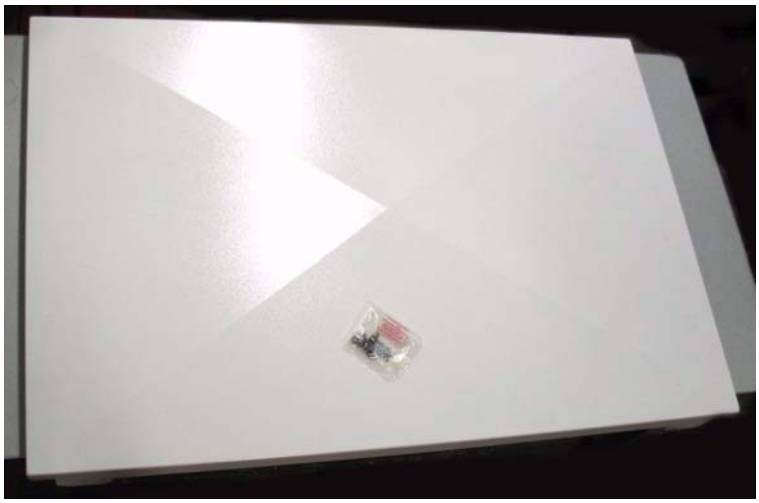


Figure 2-5 Solar Shield

Figure 2-6 Solar Shield Mounts

2.5 Installation of Components Removed for Shipment

Selected components have been removed for shipment following factory assembly and test. These components have been packed separately and should be unpacked as needed for reassembly. These items must be stored in a safe, climate controlled, dry location until needed for reassembly. Save all packing material until after commissioning to facilitate returns if needed. Notify Harris immediately if damage is noted while unloading the shipment.

The removed components include:

Removed from the front of the enclosure (and identified in Figure 1-2 on page 1-4) are the two Satellite receivers and IRD's, power amplifier modules in the LPU's and power amplifier blocks, and the mask filter.

Removed from the rear of the enclosure (and shown in Figure 1-7 on page 1-8) are the network router, the port server/switch hub and the coaxial lines into and out of the mask filter.

STEP 1 **Install the mask filter in the front of the cabinet and secure it in position.**

STEP 2 I**nstall the power amplifier blocks in the LPU's and in the power amplifier blocks.** Read Section 2.5.1 Install PA Modules before installing PA modules.

2.5.1 Install PA Modules

The PA Modules should be placed into the Low Power Unit (LPU) or Power Amplifier Block (PAB) at this time. They should be inserted into the module slots in which they were tested. In the LPU the PA modules are inserted with the cooling fins up. Each module has a serial number which is recorded on the factory test data sheet as belonging to a specific module slot, in the LPU or specific PAB block. The module slots for each transmitter configuration are labeled as shown in Figure 2-7.

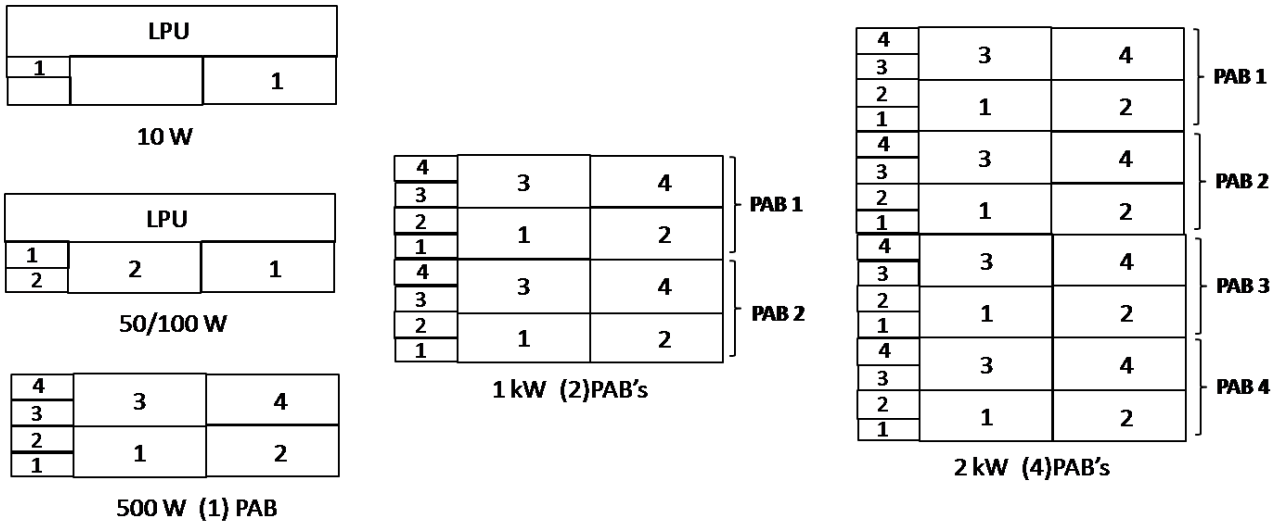


Figure 2-7 LPU & PAB Numbering Front View

PA modules in the PAB's are installed in two orientations. The upper modules are installed with the cooling fins up. The lower PAB modules are installed with the cooling fins down. Fully seat each module by pressing firmly against the outside front edges on the handles. Do not press on the center of the handle as it may deform.

CAUTION:
IF THE MODULES DO NOT SEAT WITH MODERATE PRESSURE, REMOVE THE MODULE TO CHECK FOR INTERFERENCE. DO NOT FORCE THE MODULES INTO THE CHASSIS AS THIS MAY CAUSE DAMAGE TO THE RF CONNECTOR ON THE BACK OF THE MODULE OR ON THE PA BACKPLANE BOARD.

STEP 3 **Install the network server and secure to the rack.**

STEP 4 **Install the two satellite receivers and IRD units and secure to the rack.**

STEP 5 Install the coaxial line assemblies at the input and output of the mask filter.

STEP 6 **Install the RF sample cables on the directional coupler located at the filter input.** The location of these cables is described in the Wiring Diagram, XMTR UAX 2kW Dual Drive with TCU Racked, drawing number 843-5602-409 which can be found in the 943-5276-170 drawing package which is part of the 988-2693-001 documentation package.

STEP 7 **Install the port server/switch hub and secure it in rack.**

CAUTION:
CARE MUST BE TAKEN TO PROPERLY CONNECT THESE CABLES IN THEIR PROPER LOCATION ON THE FORWARD OR REVERSE PORTS OF THE COUPLER. FAILURE TO HOOK THEM UP PROPERLY WILL RESULT IN POOR PERFORMANCE.

STEP 8 Install the network router and secure it in the rack.

STEP 9 Using the outdoor enclosure Interconnect Drawing and the UAX wiring diagram connect all input and outputs to the installed components.

2.6 AC/Ground connections

WARNING: Disconnect primary power prior to servicing.

2.7 Ground connections

CAUTION:
ALL CONNECTIONS LISTED IN THIS SECTION SHOULD BE VERIFIED WITH THE SCHEMATICS BEFORE INITIAL TURN ON.

CAUTION:
THE USE OF A SYSTEM SURGE SUPPRESSOR IS RECOMMENDED. THE SYSTEM SURGE SUPPRESSOR WILL BE PROVIDED BY THE CUSTOMER.

Figure 2-8 shows the AC load center with the breaker cover removed. The split-phase AC wires enter through the bottom of the cabinet and connect to the top of the breaker assembly. The neutral connects to the middle terminal.

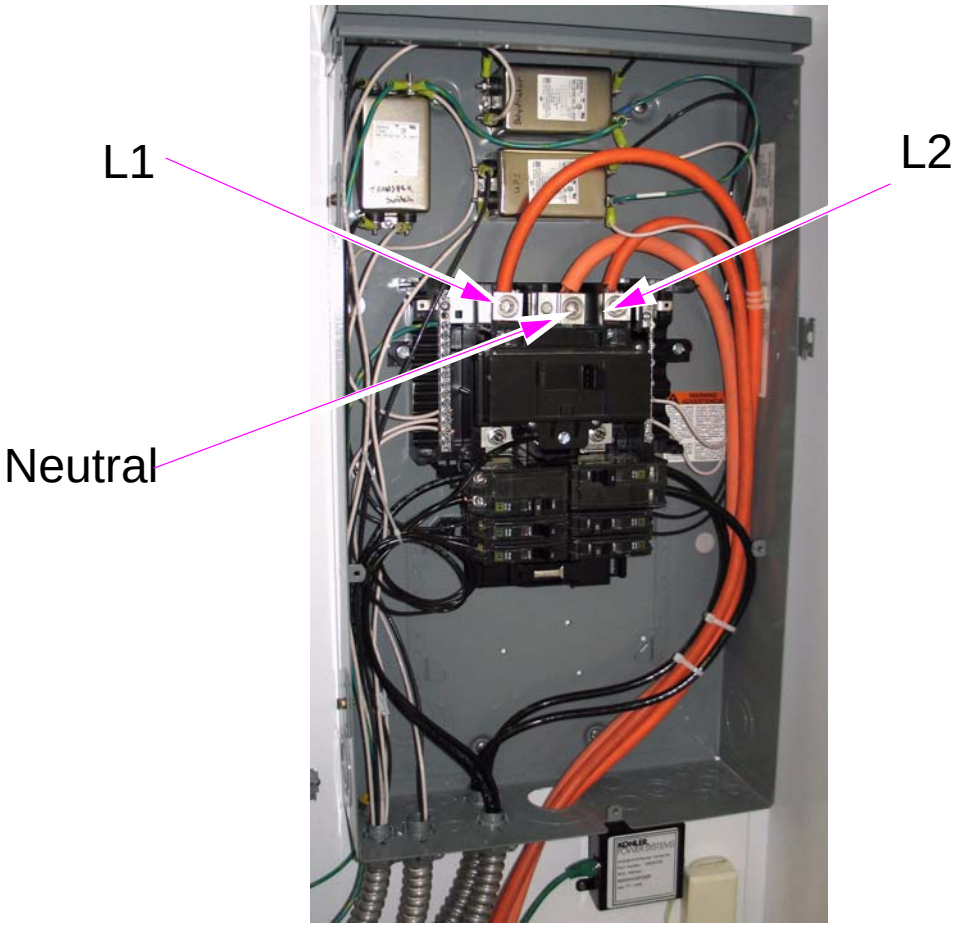


Figure 2-8 Transmitter AC Load Center AC Mains Connections

The UAX Enclosure System operates on split phase 220- 240 VAC 50/60Hz power. Refer to the AC wiring diagram in the transmitter schematic package.

Figure 2-9 shows the facility safety ground copper buss bar for the enclosure system. It is located on the left wall inside the AC distribution box.

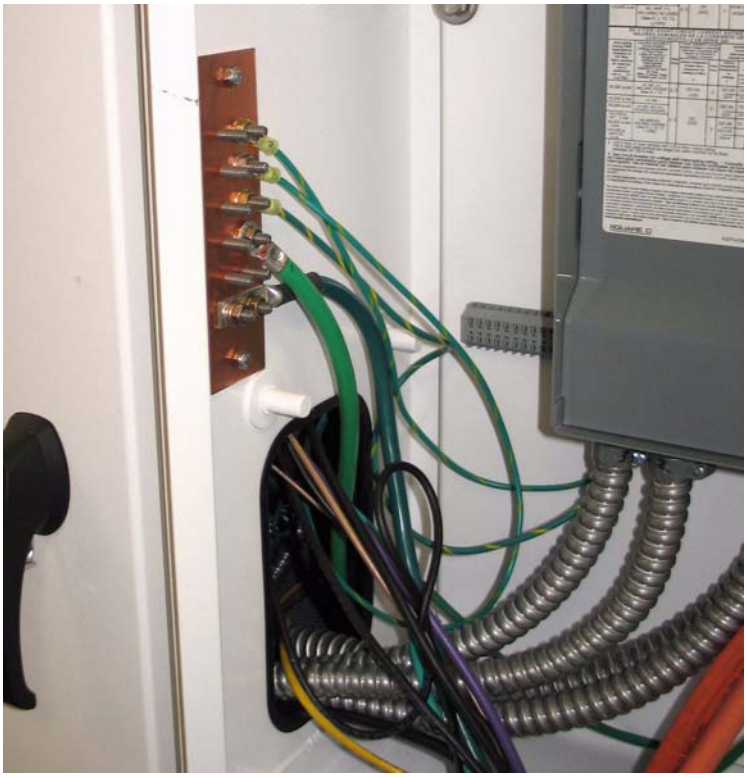


Figure 2-9 System Safety Ground Copper Buss Bar

STEP 1 **Verify all circuit breakers on the front of the breaker panel in the transmitter cabinet are OFF.** Refer to Figure 2-10.

STEP 2 **Verify that the AC mains are disabled before proceeding.**

WARNING: Disconnect primary power prior to servicing.

Figure 2-10 Transmitter AC Distribution Panel

STEP 3 **Connect a ground cable from the copper ground buss bar to the station ground.** This connection is made at the bottom of the copper buss bar. It is routed through the same hole in the bottom of the AC Distribution Box used to route the AC power wires.

STEP 4 **Following all local codes hook up the AC mains.**

STEP 5 **Hook up remaining AC mains connections.**

2.8 Transmitter RF output connection

STEP 1 **Verify the quality of the RF load or antenna.**

STEP 2 **Install the RF output connection to the transmitter**.

STEP 3 **Tighten the flange bolts in the RF coaxial line.**

The RF output uses a standard EIA, flanged "1 5/8" RF connector. The RF output is located on the side of the transmitter above the air conditioning cabinet. Refer to Figure 2-11.

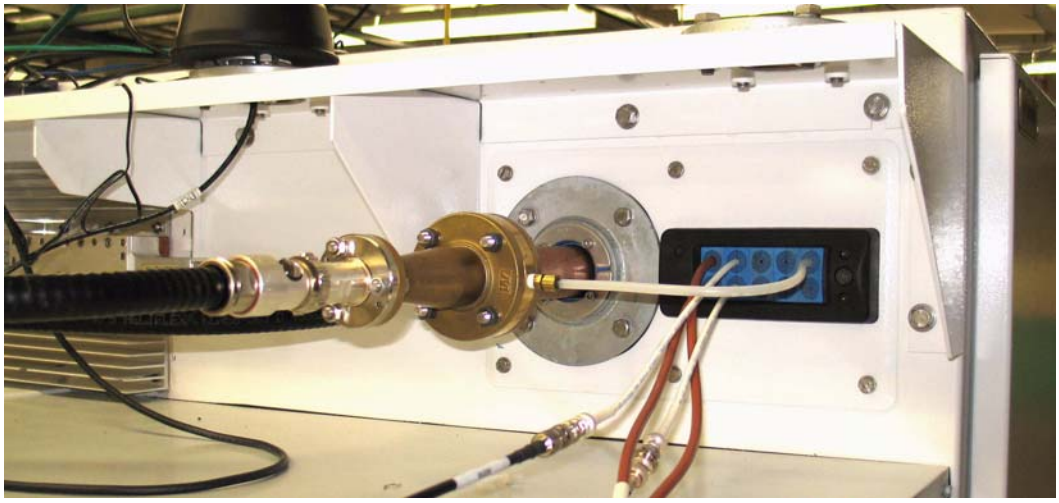


Figure 2-11 Transmitter RF Output Connection

WARNING: Disconnect primary power prior to servicing.

2.9 Signal Connections

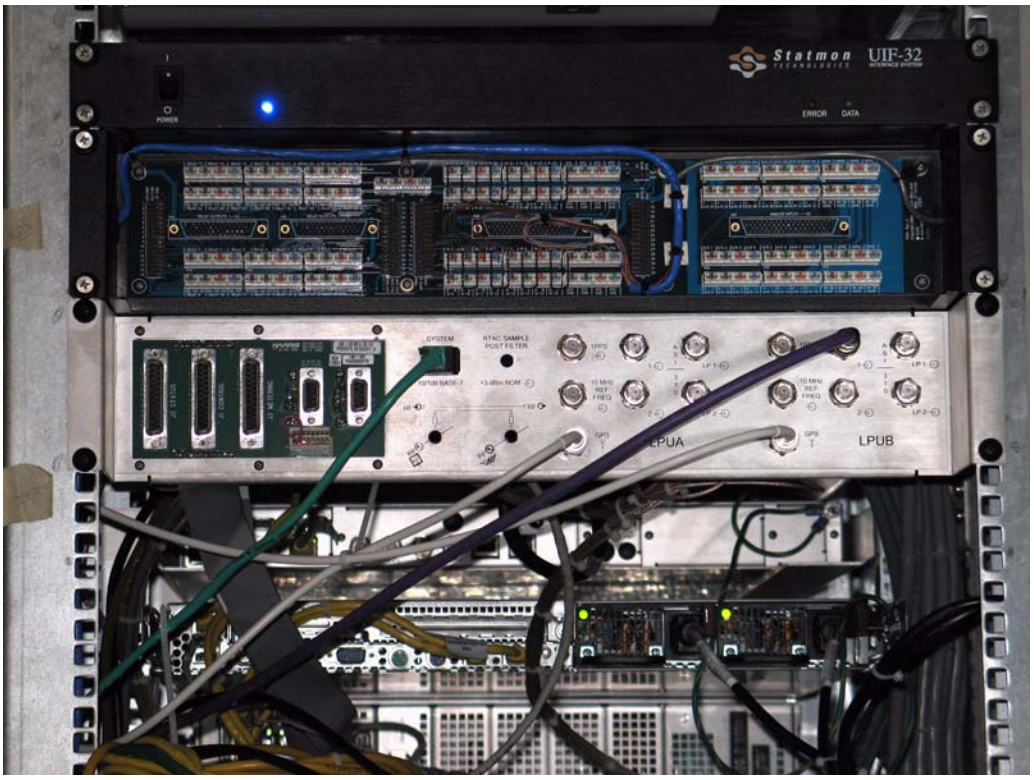


Figure 2-12 Customer I/O Panel on Back of Transmitter

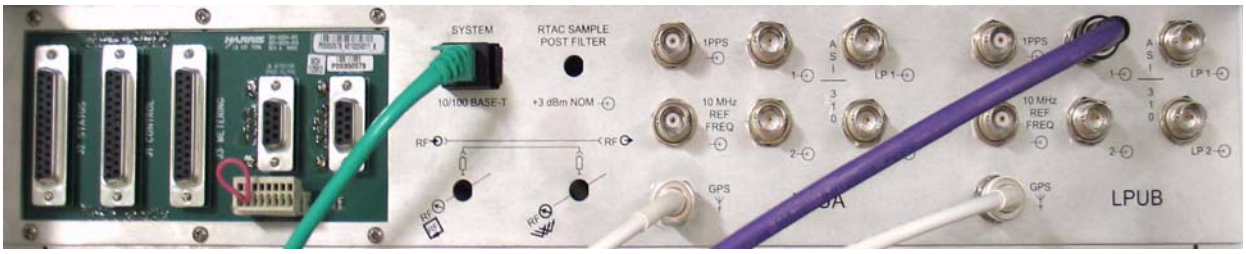


Figure 2-13 Customer I/O Exciter Connections

Figure 2-13 shows the Exciter connections on the Customer I/O panel. Depending on the system model, the UAX system may or may not include two LPU's (exciters). Refer to the UAX transmitter manual for connection details.

WARNING: Disconnect primary power prior to servicing.

2.10 Customer Remote Control & Interlock Connections

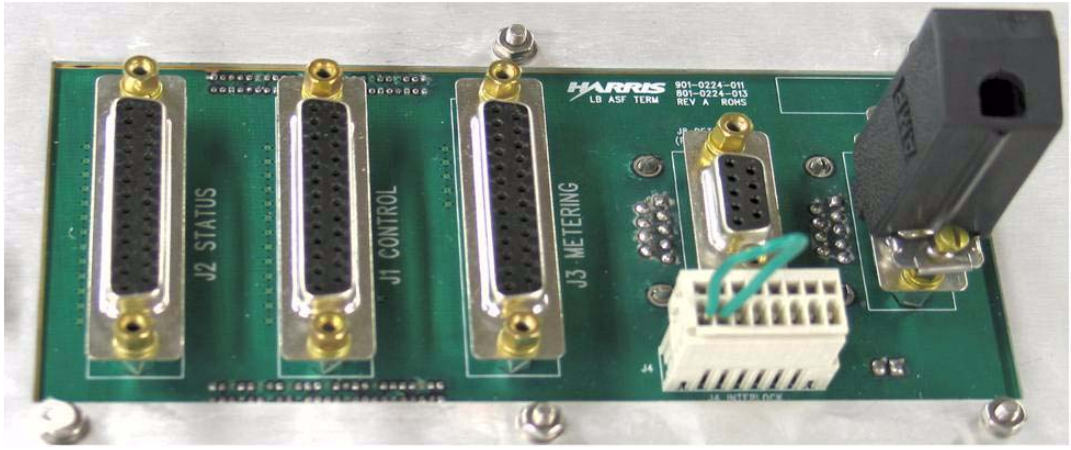


Figure 2-14 Customer Remote Control & Interlock Connections

The circuit board mounted on the left side of the Customer I/O panel (Figure 2-14), is used for remote control connection to the transmitter. J4 is an Interlock connector that can be used to add peripheral devices such as an antenna switch into the transmitter interlock system. Refer to the UAX transmitter manual for connection details.

2.11 Customer Remote Control & Interlock Connections

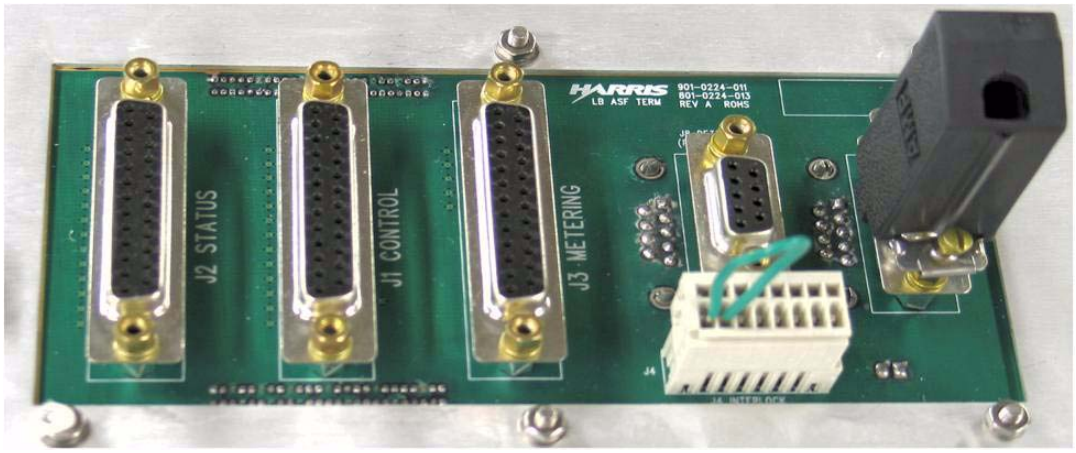


Figure 2-15 Customer Remote Control & Interlock Connections

The circuit board mounted on the left side of the Customer I/O panel (Figure 2-14), is used for remote control connection to the transmitter. J4 is an Interlock connector that can be used to add peripheral devices such as an antenna switch into the transmitter interlock system. Refer to the UAX transmitter manual for connection details.

2.12 Initial Turn-On

Read and understand the entire initial turn-on procedure before starting. Descriptions and operational instructions for TCU and LPU GUI screens is given in Section 3 "Operation" in the UAX Transmitter manual.

STEP 1 Make sure the output RF line is connected properly. If connecting to a load, verify the load connections are proper and that load conditions are met.

CAUTION:
THE TRANSMITTER RF LINE MUST BE CONNECTED TO A KNOWN GOOD LOAD OR ANTENNA. IF THE CONDITION OF THE LOAD OR ANTENNA ARE IN DOUBT THEY SHOULD BE MEASURED WITH A NETWORK ANALYZER PRIOR TO TURNING ON THE TRANSMITTER.

STEP 2 Verify all ground connections are secure and the AC power feed wire connections from the facility AC power source are tight and of proper capacity (correct gauge wire, breaker size etc.).

STEP 3 Verify the breaker cover is properly installed in the AC Distribution Box.

STEP 4 Check the transmitter cabinet for any loose hardware. Visually inspect that all cable/wire/cord connections are secure.

STEP 5 Check that all breakers in the Transmitter Enclosure System AC Distribution Box are OFF. Also all 18 breakers on the AC distribution panel at the top of the transmitter cabinet are OFF.

STEP 6 Apply AC primary power to the enclosure system. Be ready to quickly disconnect the power if necessary.

STEP 7 In the AC Distribution Box, turn the Main Breaker ON.

STEP 8 Turn on the Air Conditioner breaker. The A/C system should start immediately.

STEP 9 Turn on the Transmitter breaker, then the remaining breakers.

STEP 10 If the system has a UPS unit, it must be turned ON to power the rest of the system. Check the UPS manufacturer's manual for procedure.

STEP 11 To turn the Transmitter on, refer to the procedure in the Transmitter manual. It begins by turning each of the transmitter breakers ON. These are the breakers in the breaker panel at the top of the transmitter. Only the transmitter is connected to these breakers.

STEP 12 After the Transmitter is turned ON, verify power out is correct on the TCU Home Screen. Refer to the transmitter manual for detailed operation of all transmitter functions and operation.

NOTE:
Make sure the transmission data stream is being fed into the exciter. If not, the transmitter will stay in a Mute condition and will not produce RF.

STEP 13 Some individual pieces of equipment (non-supplied equipment - computer, satellite receivers etc.) may require turning individual power switches on. Check the owner's manual for each piece for turn-on procedure.

STEP 14 Check the equipment mounted in the back of the transmitter rack (Monitoring, Router, Server, etc.) to verify all is powered up.

NOTE:
Equipment should power up automatically when the breakers are turned ON. The enclosure is designed so that breakers activate all equipment.

At this time, the TCU and Home screen should appear as shown in Figure 2-16. All LEDs should be illuminated GREEN. If any are RED, refer to the Transmitter manual for detailed information. Actual forward power can be read off the top bar graph.

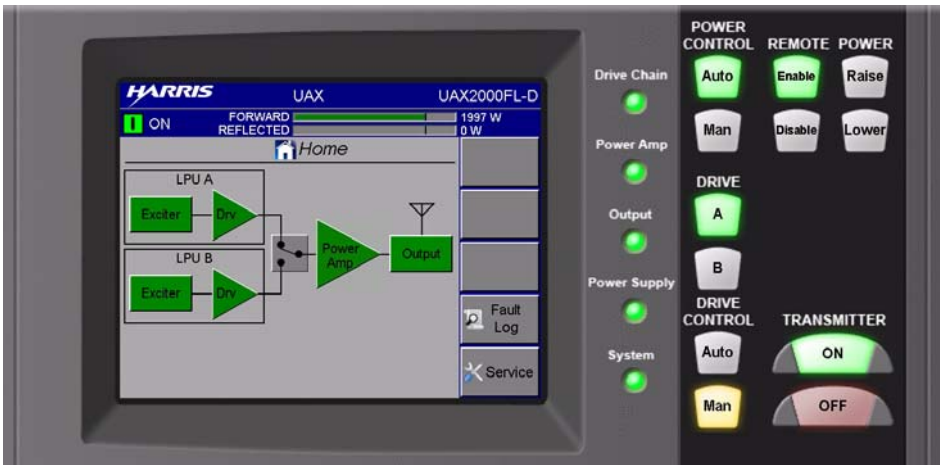


Figure 2-16 Transmitter TCU Screen and Controls

This completes the initial Turn-On procedure. Do a visual inspection of the entire system to verify the system is operating properly, verify the RF connections are secure, and confirm the Air Conditioning unit is operating and cooling the enclosure.

STEP 15 Close all doors and secure them before leaving.

NOTE:
The cabinet doors do not contain locks. However, customer supplied locks can be attached to each door through the hole in the handles. See Figure Figure 2-17.

WARNING: Disconnect primary power prior to servicing.

Figure 2-17 Enclosure Door Handles

WARNING: Disconnect primary power prior to servicing.

Section 3 Operation & Maintenance

3

3.1 Introduction

This section provides operational information for the UAX Outdoor Enclosure Transmitter System

NOTE:
Operation of the UAX Transmitter and the LPU (low power unit) is covered in a separate manual which ships with the system.

3.2 Transmitter Control Unit (TCU)

The TCU front panel user interface utilizes a 1/4 VGA, LCD touchscreen display. See Figure 3-1. This touchscreen display uses software buttons to monitor the transmitter. There are 12 hardware buttons for the primary transmitter functions shown in Transmitter Control Panel. Refer to the UAX Transmitter Manual for details.

The TCU Home screen shows the total output power of the transmitter before the output filter. Note that no VSWR is displayed. The VSWR is read off the LPU (low power unit....Exciters) screens.

WARNING: Disconnect primary power prior to servicing.

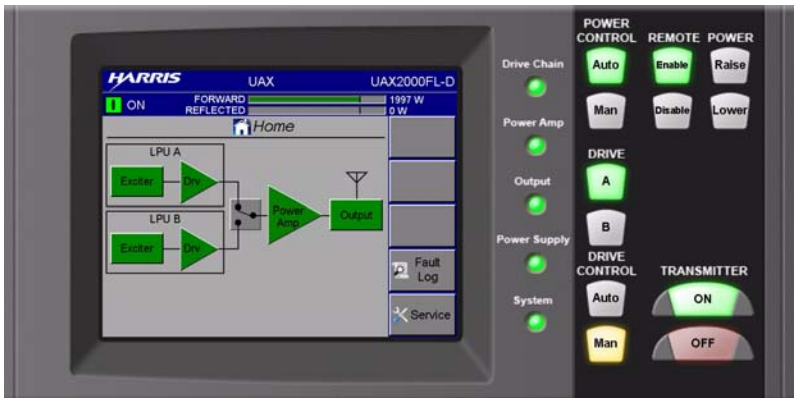


Figure 3-1 Transmitter TCU Screen

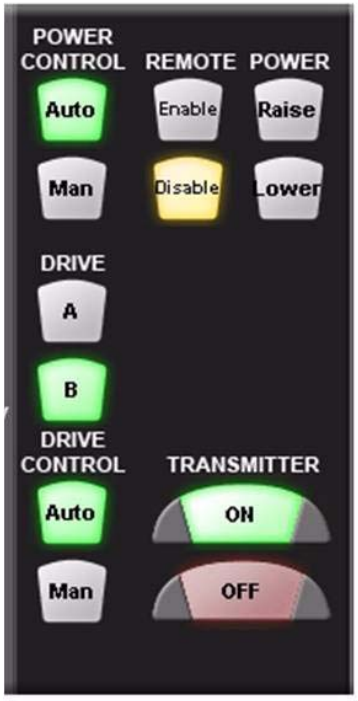


Figure 3-2 Transmitter Control Panel

3.2.1 Control Buttons overview:

- TRANSMITTER "ON" and "OFF" (the main transmitter on/off buttons)
- POWER "Raise" and "Lower" (to raise or lower transmitter output power)

WARNING: Disconnect primary power prior to servicing.

- POWER CONTROL "Auto" and "Man" (for automatic or manual output power control) to manually raise or lower the transmitter power, press the "Man" button. Then press Raise or Lower to adjust output power. Once the output power has been set to the desired level, press the "Auto" button and the TCU will maintain that level automatically.
- DRIVE "A" and "B" (To choose Drive Chain A or Drive Chain B)
- DRIVE CONTROL "Auto" and "Man" (In "Manual" mode, operator can select Drive Chain A or B. In "Auto" mode, the TCU will automatically switch drive chains if a fault occurs in the active drive chain.
- REMOTE "Enable" and "Disable" (To block all remote control operations of the transmitter). By pressing the "Disable" button, prevents a remote control operator from performing any transmitter function while a local operator/engineer is performing tests or maintenance on the transmitter.

NOTE:
Be sure to press the "Enable" button before leaving the transmitter facility.

When leaving the enclosure facility check to make sure the control buttons are lit as follows:

- POWER CONTROL: Auto
- DRIVE: A
- DRIVE CONTROL: Auto
- REMOTE: Enable
- TRANSMITTER: ON

Figure 1-2 in Chapter 1 shows a Server (Ethernet) port attached to the rack to the right of the TCU. A shelf for a laptop pc is provided on the transmitter door. Simply lift until it clicks in position. Connect the laptop to the server port which provides access to the entire system.

See Figure 1-6, "UAX Cabinet Rear View", on page 1 -7. Attached to the left side of the rack is another router port. This port connects to the Console Command Port on the back of the system router. This allows the technician to access the server and set/program the parameters of the system. (That attached port allows easy connection to the router without having to remove the router from the rack to gain access to the Console Port). Also note the power switch is also located on the back of the router.

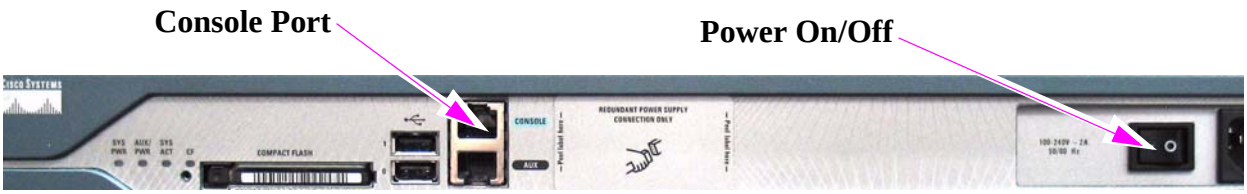


Figure 3-3 Router Rear View

The rest of the system components basically function On or Off and don't require any adjustments.

NOTE:
Access to the Dehydrator ON/OFF switch is through the back transmitter cabinet door. Note the pressure meter should read about 5 PSI.

3.3 Maintenance

This section contains the maintenance procedures for the UAX Outdoor Enclosure Transmitter System. Always refer to the manufacturer's manual of the individual components for specific maintenance procedures.

The enclosure system overall, requires very little maintenance. The air conditioning system should be checked periodically and maintained as you would normally maintain any air conditioner. The condenser coils should have a routine cleaning every six months. If the enclosure is exposed to high levels of dust and dirt, cleaning should occur more often. Simply spray the condenser coils with a garden hose. Avoid high pressure spray as this may damage the fragile aluminum fins.

There are no air filters to change on the A/C unit.

Section 4
Parts List

4

4.1 Replaceable Parts List

Table 4-1	"UAX-2000FL & SHELTER, QUALCOMM" - - - - - -	9950068111G (J)	4-2
Table 4-2	"KIT, FLO OPTION" - - - - - - - - - - - - - - - - -	9710035027G (A)	4-3
Table 4-3	KIT; RF SYSTEM USED WITH DIELECTRIC FILTER	971 0041 026 (D)	4-3
Table 4-4	"ASSY, 2KW AC DISTRIBUTION PANEL"- - - - - -	971 0041 029 (C)	4-3
Table 4-5	"ASSY, HEATSINK LOAD"- - - - - - - - - - - - - -	971 0041 044 (A)	4-4
Table 4-6	KIT; RF SYSTEM USED WITH RFS FILTER - - - - -	971 0041 060 (B)	4-4
Table 4-7	"XMTR, 2KW MAXIVA UAX" - - - - - - - - - - - -	9810031012G (G)	4-4
Table 4-8	"ASSY, 1KW POWER BLOCK" - - - - - - - - - - -	9710041019G (J)	4-4
Table 4-9	1000 WATT SYSTEM REJECT LOAD - - - - - - -	9710041016G (E1)	4-4
Table 4-10	500W POWER BLOCK - - - - - - - - - - - - - - -	9810031037G (B)	4-5
Table 4-11	BASIC POWER BLOCK- - - - - - - - - - - - - - -	9810031038G (J)	4-5
Table 4-12	"XMTR, MAXIVA UAX 50W"- - - - - - - - - - - -	9810031004G (J)	4-6
Table 4-13	"BASIC, MAXIVA UAX 10-100W, LPU" - - - - - -	9810031036G (G)	4-7
Table 4-14	"KIT, 2KW TCU / DUAL LPU OPTION" - - - - - - -	9810031020G (H)	4-8

For table above and in tables that follow in this section the (X) or (XX) after the table title part number is the revision level of that bill of material and is for reference only.

WARNING: Disconnect primary power prior to servicing.

Table 4-1 "UAX-2000FL & SHELTER, QUALCOMM" - 9950068111G (J)

Harris PN	Description	Qty UM	Ref Des
10	B/M NOTE:	0 DWG	
448 0965 200	"OUTDOOR ENCLOSURE, ALUMINUM, WITH 5 TON HVAC UNIT."1 EA		
583 0118 001	"RELAY, COAXIAL TRANSFER"	1 EA	
620 2686 000	"DEHYDRATOR, OUTDOOR ENCLOSURE, SPECIAL DESIGN, 200 SCFD"1 EA		
620 2964 000	"POWER SPLITTER, 2-WAY"	4 EA	
620 3261 000	"ADAPTER, 1-5/8"" TO 7/16 FEMALE"	1 EA	
620 3268 000	"CABLE, COAX, 7/16"" PLUG"	1 EA	
646 1483 000	"NAMEPLATE, HARRIS LOGO"	1 EA	
646 1701 000	"NAMEPLATE, MAXIVA"	1 EA	
778-241-040	SCREWED CABLE GLAND	1 EA	
783 0048 041	"DIE FILTER, DR 2 KW"	1 EA	
783 0048 042	"RFS FILTER, DR 2KW"	0 EA	
790 5357 100	ENCLOSURE AC DISTRIBUTION & MUX EQUIPMENT 2KW UAX1 EA		
939 8221 031	"PNL, 19.0X1.718X0.125 HF142"	1 EA	
943 5567 592	"PLATE, CABLE GLAND"	1 EA	
943 5602 220	FILTER BRACKET LEFT	1 EA	
943 5602 221	FILTER BRACKET RIGHT	1 EA	
943 5602 244	LOAD MOUNTING BRACKET	1 EA	
943 5602 268	"PANEL, I/O ANALOG BLANK"	1 EA	
943 5602 342	"PANEL, COMNINER & SPLITTER MOUNTING"	1 EA	
943 5602 343	"SHELF, AIRLINK MONITOR MOUNTING"	1 EA	
943 5602 345	"BRACKET, SUPPORT"	14 EA	
943 5602 346	"BRACKET, SUPPORT, AIRLINK MONITOR"	2 EA	
943 5602 361	"SLIDE, RACK MOUNT"	2 EA	
943 5602 363	"BRACKET, PWR STRIP MTG"	2 EA	
943 5602 413	"PANEL, I/O, OUTDOOR ENCLOSURE"	1 EA	
943 5602 417	"BRACKET, REAR SUPPORT, RIGHT"	2 EA	
943 5602 418	"BRACKET, REAR SUPPORT, LEFT"	2 EA	
943 5602 420	"BRACKET, FILTER SUPPORT"	2 EA	
943 5602 434	"PANEL, FRONT, 500W"	4 EA	
943 5602 440	"PANEL, COMBINER MTG"	1 EA	
943 5602 448	"BRACKET, TCU MTG"	2 EA	
943 5602 451	"PANEL, I/O. CONNECTOR MTG"	1 EA	
943 5603 072	"BAR, GROUNDING"	1 EA	
952 9248 052	"CABLE, UAX AC 500W "	1 EA	
952 9248 053	"CABLE, UAX AC 1KW "	1 EA	
952 9248 054	"CABLE, UAX AC 2KW "	1 EA	
952 9248 056	"CABLE, UAX RACK/SINGLE LPU "	1 EA	
9710035027G	"KIT, FLO OPTION"	2 EA	
9710035030G	"KIT, GPS OPTION"	2 EA	
971 0041 026	KIT; RF SYSTEM USED WITH DIELECTRIC FILTER	1 EA	
971 0041 029	"ASSY, 2KW AC DISTRIBUTION PANEL"	1 EA	
971 0041 044	"ASSY, HEATSINK LOAD"	1 EA	
971 0041 060	KIT; RF SYSTEM USED WITH RFS FILTER	0 EA	
9810031012G	"XMTR, 2KW MAXIVA UAX"	1 EA	
9810031020G	"KIT, 2KW TCU / DUAL LPU OPTION"	1 EA	
988 2693 001	"DOC PACKAGE, MAXIVA UAX"	2 EA	
BRD 100S TFN	"LOAD, 100W, 'N' JACK"	1 EA	

Table 4-2 "KIT, FLO OPTION" - 9710035027G (A)

Harris PN	Description	Qty UM	Ref Des
861 1135 252	APEX M2X SW/FW FLO COMPLETE APP	0 DWG	
9710035014G	ASM-SUB-BLANK PANEL B	1 EA	

Table 4-3 KIT; RF SYSTEM USED WITH DIELECTRIC FILTER - 971 0041 026 (D)

Harris PN	Description	Qty UM	Ref Des
620 0231 000	"BARRIER, GAS 1-5/8"	1 EA	
620 0276 000	ADAPTER 1-5/8 IN.	2 EA	
620 0631 000	"ELBOW, EQUAL, 1-5/8, 90 DEG"	6 EA	
620 0662 000	"COUPLING, SLEEVE, 1-5/8"	13 EA	
620 1910 000	"ELBOW 45 DEG 1-5/8""""	2 EA	
839 8016 003	"ASSY INSTR, 3.75"" LG, TUBING COAX"	1 DWG	
839 8016 008	"ASSY INSTR, OUTER COND,"	2 DWG	
839 8016 009	"FAB INSTR, OUTER COND,"	1 DWG	
839 8016 018	"FAB INSTR, OUTER COND, 7.50LG"	1 DWG	
839 8016 042	"TUBE, COAX 1-5/8 X 13.50"	1 EA	
839 8016 161	"TUBE, 43.25"" LG OUTER"	1 EA	
839 8017 003	"ASSY INSTR, 2.875"" LG, INNER TUBING COAX"	1 DWG	
839 8017 008	"ASSY INSTR, INNER COND,"	2 DWG	
839 8017 009	"FAB INSTR, INNER COND,"	1 DWG	
839 8017 018	"FAB INSTR, INNER COND, 6.625LG"	1 DWG	
839 8017 042	"TUBE, COAX .65 X 12.63"	1 EA	
839 8017 161	"TUBE, 42-3/8"" LG INNER"	1 EA	
943 5602 344	ASSY RF OUTPUT	1 EA	
943 5602 446	"INNER CONDUCTOR, RF OUTPUT"	1 EA	
943 5602 520	"BRACKET, FILTER MTG"	2 EA	
952 9248 087	"CABLES, COAX, USED W/ DIELECTRIC FILTER"	1 EA	
971 0023 158	"COUPLER, UHF 1-5/8, 4 PORT,40DB,54DB,54DB,54DB"	2 EA	

Table 4-4 "ASSY, 2KW AC DISTRIBUTION PANEL" - 971 0041 029 (C)

Harris PN	Description	Qty UM	Ref Des
358 3637 000	"PLATE, END STOP, DIN RAIL MTG"	4 EA	#TB1(2) #TB2(2)
358 3717 000	"PLATE, END COVER (282, 3-COND)"	1 EA	#TB2
424 0008 000	GROMMET 1.063 GROOVE DIA	3 EA	
598 0482 000	"SW, OPERATOR, PB PILOT 22MM"	1 EA	
598 0484 000	"SWITCH, CONTACT BLOCK N.C."	1 EA	
606 1232 100	CKT BRKR 10 AMPS 2P 240VAC	6 EA	
606 1232 150	CKT BRKR 15 AMPS 2P 240VAC	8 EA	
607 0090 000	"BLANK FILLER, ETA F3 FRAME"	4 EA	
609 0105 000	"AC INLET, 16AMP FEMALE IEC-C19"	10 EA	
614 0920 000	"JUMPER, 2-POLE ADJACENT 282"	12 EA	#TB2
614 0941 000	"TERM BLK, 3C MODULAR 282"	18 EA	#TB2
614 0962 000	"TERM BLK, 4C MODULAR 284"	4 EA	
614 0975 000	"TERM BLOCK, GND MODULAR 2C"	1 EA	
620 3014 000	"ADAPTER, BULKHEAD SMA"	2 EA	
778-502-004	MAINS INPUT CONNECTOR 1PHASE LNE	4 EA	
917 2567 003	"DIN RAIL, CUT LENGTH 108MM"	1 EA	
917 2567 006	"DIN RAIL, CUT LENGTH 216MM"	1 EA	
943 5602 237	"PANEL, AC DISTRIBUTION"	1 EA	
943 5602 238	"PLATE, CLOSE OUT"	4 EA	
943 5602 340	"FRAME, COVER MTG."	1 EA	
943 5602 341	"COVER, AC CHASSIS"	1 EA	
952 9248 046	CABLE AC DIST 2KW UAX	1 EA	

WARNING: Disconnect primary power prior to servicing.

Table 4-5 "ASSY, HEATSINK LOAD" - 971 0041 044 (A)

Harris PN	Description	Qty UM	Ref Des
2522-006-18045	SCR SKTCAP 18-8 M5X50	7 EA	
700 1244 000	"DRY LOAD, 3KW, 7/16 FEMALE"	1 EA	
943 5602 347	"HEATSINK, LOAD MTG"	1 EA	

Table 4-6 KIT; RF SYSTEM USED WITH RFS FILTER - 971 0041 060 (B)

Harris PN	Description	Qty UM	Ref Des
620 0231 000	"BARRIER, GAS 1-5/8"	1 EA	
620 0276 000	ADAPTER 1-5/8 IN.	2 EA	
620 0631 000	"ELBOW, EQUAL, 1-5/8, 90 DEG"	4 EA	
620 0662 000	"COUPLING, SLEEVE, 1-5/8"	12 EA	
620 1910 000	"ELBOW 45 DEG 1-5/8""""	3 EA	
839 8016 002	"ASSY INSTR, TUBING COAX"	1 DWG	
839 8016 004	"FAB INSTR, TUBING COAX"	1 DWG	
839 8016 008	"ASSY INSTR, OUTER COND,"	2 DWG	
839 8016 214	"FAB INSTR, OUTER COND, 56.50LG"	1 DWG	
839 8017 002	"ASSY INSTR, TUBING COAX"	1 DWG	
839 8017 004	"FAB INSTR, TUBING COAX"	1 DWG	
839 8017 008	"ASSY INSTR, INNER COND,"	2 DWG	
839 8017 214	"FAB INSTR, INNER COND,55.625LG"	1 DWG	
943 5602 344	ASSY RF OUTPUT	1 EA	
943 5602 446	"INNER CONDUCTOR, RF OUTPUT"	1 EA	
952 9248 086	"CABLES, COAX, USED W/ RFS FILTER"	1 EA	

Table 4-7 "XMTR, 2KW MAXIVA UAX" - 9810031012G (G)

Harris PN	Description	Qty UM	Ref Des
250 0686 080	CABLE 7/16M STRT TO 7/16M STRT 80CM	3 EA	
277-465-000	CONNECTOR R.F. 7/16 50R M-RA-F ADAPT SPIN	3 EA	
943 5602 244	LOAD MOUNTING BRACKET	1 EA	
943 5602 246	CABINET INSIDE WALL	1 EA	
943 5602 251	4-WAY SPLITTER MOUNT	1 EA	
952 9248 062	CABLE UAX PA LINK	1 EA	
952 9248 068	COAX SPLITTER PKG 2KW	1 EA	
971 0023 158	"COUPLER, UHF 1-5/8, 4 PORT,40DB,54DB,54DB,54DB"	1 EA	
9710041007G	4-WAY SPLITTER	1 EA	
9710041012G	"2-WAY COMBINER, 2 KW"	1 EA	
9710041016G	1000 WATT SYSTEM REJECT LOAD	1 EA	
9710041019G	"ASSY, 1KW POWER BLOCK"	2 EA	
9810031004G	"XMTR, MAXIVA UAX 50W"	1 EA	

Table 4-8 "ASSY, 1KW POWER BLOCK" - 9710041019G (J)

Harris PN	Description	Qty UM	Ref Des
250 0686 080	CABLE 7/16M STRT TO 7/16M STRT 80CM	3 EA	
943 5602 244	LOAD MOUNTING BRACKET	1 EA	
943 5602 245	1000 WATT WALL	1 EA	
952 9248 062	CABLE UAX PA LINK	1 EA	
9710041002G	"ASSY, FULL PA PALLET"	8 EA	
9710041011G	"2-WAY COMBINER, 1KW"	1 EA	
9710041016G	1000 WATT SYSTEM REJECT LOAD	1 EA	
9810031037G	500W POWER BLOCK	2 EA	

Table 4-9 1000 WATT SYSTEM REJECT LOAD - 9710041016G (E1)

Harris PN	Description	Qty UM	Ref Des
74060084	"BRZ, PH FGR STOCK"	1 EA	

301 1103 008	"SCREW, MACH M3 X 8MM BRASS"	1 EA
302 0803 006	"SCREW, MACH M3-0.5 X 6 SEMS"	10 EA
302 0804 012	"SCREW, MACH M4-0.7 X 12 SEMS"	8 EA
303 4103 010	"SCREW, MACH M3-0.5 X 10"	4 EA
303 4203 008	SCREW MACH M3-0.5 X 8	2 EA
308 0003 000	"*WASHER, FLAT #4 BRASS (ANSI NARROW)"	1 EA
312 0003 000	"WASHER, INT LOCK 4"	1 EA
314 0003 000	"LOCKWASHER, SPLIT #4 SST (ANSI)"	4 EA
544 1706 001	TERMINATION 50R 800W 5%	2 EA
626 0046 000	"JACK, 7/16 DIN, M3 STUD"	1 EA
8010222323G	"PWB, 2X800W ISOLOAD"	1 EA
943 5601 346	INDUCTOR	1 EA
943 5601 414	"PLATE, COMBINER"	1 EA
943 5601 417	"DIVIDER PANEL, COMBINER"	1 EA
943 5602 171	LOAD COVER	1 EA
943 5602 172	LOAD HEAT SINK	1 EA
943 5602 258	"CONDUCTOR, CENTER, 7/16 CONNECTOR"	1 EA
943 5602 362	"PLATE, TUNING"	2 EA

Table 4-10 500W POWER BLOCK - 9810031037G (B)

Harris PN	Description	Qty UM	Ref Des
302 0803 006	"SCREW, MACH M3-0.5 X 6 SEMS"	2 EA	
302 0803 010	"SCREW, MACH M3-0.5 X 10 SEMS"	2 EA	
302 0804 008	"SCREW, MACH M4-0.7 X 8 SEMS"	2 EA	
303 4203 008	SCREW MACH M3-0.5 X 8	2 EA	
325 0020 000	"NUT, KEP M3"	4 EA	
556 0183 120	"ATTEN, SMA, 12DB, 2W, 50 OHM"	1 EA	R2
556 0183 200	"ATTEN, SMA, 20DB, 2W, 50 OHM"	1 EA	R1
609 0125 000	"AC INLET/FILTER, C20, 20AMP"	1 EA	
843 5602 101	WIRING DIAGRAM 250/500W AMPLIFIER	0 DWG	
943 5602 204	"BRACKET, COMBINER MOUNTING"	2 EA	
9710041005G	"ASSY, POWER SUPPLY"	4 EA	
9710041007G	4-WAY SPLITTER	1 EA	
9710041051G	4-WAY COMBINER	1 EA	
9810031038G	BASIC POWER BLOCK	1 EA	

Table 4-11 BASIC POWER BLOCK - 9810031038G (J)

Harris PN	Description	Qty UM	Ref Des
266010007	"GROMMET STRIP, 0.063"	0.5 FT	
0311810015A	"TAPE, FOAM VINYL 0.125THK X 0.500W"	1.38 FT	
860001002	"*ADHESIVE, THREADLOCK 242"	0 EA SCREWLOCKS	USE ON
253-314-000	PAN HEAD SCR A M3X8 A2 CROSS H2	4 EA	
254-204-000	"WASHER 3,2 MS/NI"	12 EA	
254-305-000	"WASHER A 4,3 STAINLESS"	8 EA	
258-864-000	SPRING WASHER B 4 STAINLESS	8 EA	
302 0803 006	"SCREW, MACH M3-0.5 X 6 SEMS"	37 EA	
302 0803 010	"SCREW, MACH M3-0.5 X 10 SEMS"	10 EA	
302 0804 008	"SCREW, MACH M4-0.7 X 8 SEMS"	2 EA	
303 4104 016	"SCREW, MACH M4-0.7 X 16"	1 EA	
303 4104 050	"SCREW, PHMS M4 X 50 SST"	8 EA	
303 4203 008	SCREW MACH M3-0.5 X 8	2 EA	
306 0028 000	"NUT, HEX KEPS M4 ZINC"	6 EA	
307 0001 040	"NUT, STD HEX M4-0.7 X .8H"	2 EA	
315 0023 040	"WASHER, EXT LOCK M4"	3 EA	
325 0020 000	"NUT, KEP M3"	26 EA	

WARNING: Disconnect primary power prior to servicing.

350 0105 000	RIVET 3/16 ALUM .126/.25	72 EA
356 0083 000	"CABLE TY-RAT 4"" LG"	2 EA
356 0087 000	CABLE TIE TY RAP	11 EA
358 1214 000	"SCREWLOCK, M/F 4-40X3/16"""	4 EA
358 2628 000	CABLE PUSH MOUNT	1 EA
408 0338 000	"GASKET, EMI, 0.13 TALL X 0.19"	4 EA
408 0397 000	"GASKET,EMI,11.8MM X 10.7MM, V"	22 IN
410 0491 014	"STANDOFF, HEX 14MM M3 F/F AL"	5 EA
430 0325 000	"FAN GUARD, 80MM WIRE-FORM"	4 EA
430 0683 000	"FAN, 48VDC 0.84A"	4 EA
609 0125 000	"AC INLET/FILTER, C20, 20AMP"	1 EA
612 2156 004	"PLUG, 4C 1ROW VERTICAL"	4 EA
727 1519 002	"GROMMET, LIGHT PIPE"	6 EA
727 1519 004	"LIGHT PIPE, 0.8"" L X 0.190"" DIA CLEAR"	6 EA
843 5602 106	FAMILY TREE UAX	0 DWG
9010223061G	"PWA, FAN FILTER "	1 EA
9010223071G	"PWA, AMP CONTROL"	1 EA
9010223081G	"PWA, LED PANEL"	1 EA
9010223151G	"PWA, 4-WAY PS BACKPLANE"	1 EA
9010223161G	"PWA, 4-WAY PA BACKPLANE"	1 EA
943 5602 064	"COVER, TOP- 500W"	1 EA
943 5602 094	500W AIR FILTER	1 EA
943 5602 177	"TRAY, POWER SUPPLY"	3 EA
943 5602 291	"PANEL, PA CONTROL, 500W"	1 EA
943 5602 372	"CHASSIS, 500W"	1 EA
943 5602 373	"SUPPORT TOP, CHASSIS"	1 EA
943 5602 374	"TRAY, PA BOTTOM"	1 EA
943 5602 375	"DIVIDE WALL, PA"	1 EA
943 5602 376	"HOUSING, POWER SUPPLY"	1 EA
943 5602 380	"WALL, CHASSIS DIVIDING"	1 EA
943 5602 381	"TRAY, SPLITTER"	1 EA
943 5602 382	"REAR SUPPORT, CHASSIS"	1 EA
943 5602 383	"TRAY, BOTTOM, POWER SUPPLY"	1 EA
943 5602 384	FAN BOX	1 EA
943 5602 385	"RAIL, PA"	8 EA
943 5602 386	"FRONT PANEL, 500W"	1 EA
943 5602 388	500W LEFT HINGE ASSEMBLY	1 EA
943 5602 389	500W RIGHT HINGE ASSEMBLY	1 EA
943 5602 394	REAR PANEL	1 EA
943 5602 396	"ACCESS PANEL, REAR"	1 EA
943 5602 461	"SHIELD, CONTROL CABLE"	1 EA
943 5602 462	"FILTER FRAME, 500W"	1 EA
943 5602 466	"SCREEN, FRONT PANEL, PAB"	1 EA
943 5602 470	"AIR DAM, TOP"	2 EA
943 5602 472	"AIR DAM, SIDE WALL"	2 EA
952 9248 032	CABLE PKG UAX 500W	1 EA
952 9248 041	CABLES FAN FILTER DC 500W	1 EA

Table 4-12 "XMTR, MAXIVA UAX 50W" - 9810031004G (J)

Harris PN	Description	Qty UM	Ref Des
9710035013G	ASM-SUB-BLANK PANEL A	1 EA	
9710041002G	"ASSY, FULL PA PALLET"	2 EA	
9710041005G	"ASSY, POWER SUPPLY"	2 EA	
9810031036G	"BASIC, MAXIVA UAX 10-100W, LPU"	1 EA	

Table 4-13 "BASIC, MAXIVA UAX 10-100W, LPU" - 9810031036G (G)

Harris PN	Description	Qty UM	Ref Des
266010007	"GROMMET STRIP, 0.063"	0.66 FT	
411310001	"GASKET, RUBBER"	0.2 FT	
256 0227 000	"CABLE, FFC 40C, 2ROW 61MM LONG"	3 EA	
336 1330 000	STDOFF-M/F-4.5MM HEX-M3X0.5X5L	13 EA	
358 1214 000	"SCREWLOCK, M/F 4-40X3/16"""	12 EA	
408 0397 000	"GASKET,EMI,11.8MM X 10.7MM, V"	19 IN	
408 0567 000	"GASKET,EMI,17.1MM X 14.7MM, C"	0.149 EA	
410 0471 000	"STANDOFF, HEX M3 X 16, M/F"	6 EA	
410 0490 010	"STANDOFF, HEX 10MM M3 M/F AL"	6 EA	
426 0149 000	VIBRATION MOUNT M/F .375D X .625H	4 EA	
430 0325 000	"FAN GUARD, 80MM WIRE-FORM"	5 EA	
430 0478 000	"FAN, RADIAL, 12V 46.62CFM 80MM"	2 EA	
430 0683 000	"FAN, 48VDC 0.84A"	3 EA	
609 0125 000	"AC INLET/FILTER, C20, 20AMP"	1 EA	
610 1425 003	"RECP, 3C 1ROW VERTICAL"	3 EA	
612 1346 000	"RECP 2 CKT, 1 ROW"	1 EA	
612 2156 004	"PLUG, 4C 1ROW VERTICAL"	3 EA	
620 0208 001	"JACK-JACK ADAPTER, PANEL MOUNT"	2 EA	
620 0547 000	ADAPTER BNC TO N UG201A/U	1 EA	
843 5602 100	WIRING DIAGRAM 10-100W AMPLIFIER	0 DWG	
843 5602 106	FAMILY TREE UAX	0 DWG	
9010213011G	"*PWA, MCF5484 UC MODULE"	1 EA	
9010215101G	"*PWA, UP/DOWN CONVERTER"	1 EA	
9010215181G	"*PWA, SIGNAL PROCESSOR"	1 EA	
9010223041G	"PWA, PA BACKPLANE"	1 EA	
9010223051G	"PWA, PS BACKPLANE"	1 EA	
9010223061G	"PWA, FAN FILTER "	1 EA	
9010223071G	"PWA, AMP CONTROL"	1 EA	
943 5588 020	"HEATSINK, AMPLIFIER MODULE"	1 EA	
943 5588 030	BLOCK-MOUNTING-PCA_UEP	6 EA	
943 5588 045	"PANEL, DIVIDER"	1 EA	
943 5588 059	RAMP. M2X AIR	1 EA	
943 5602 039	LPTX 100W CENTER PLATE	1 EA	
943 5602 040	LPTX 100W TOP COVER.	1 EA	
943 5602 042	LPTX 100W FRONT PANEL FRAME.	1 EA	
943 5602 081	CONTROLL MONITOR PANEL	1 EA	
943 5602 143	"BRACKET, SUPPORT"	1 EA	
943 5602 177	"TRAY, POWER SUPPLY"	1 EA	
943 5602 303	"BRACKET, RF CONNECTOR"	2 EA	
943 5602 304	"CARD GUIDE, BOTTOM, AMP CONTROL"	1 EA	
943 5602 305	"CARD GUIDE, TOP, AMP CONTROL"	1 EA	
943 5602 336	TRAVEL LIMIT PLATE	1 EA	
943 5602 364	LPTX 100W CHASSIS.	1 EA	
943 5602 365	CHASSIS BOTTOM	1 EA	
943 5602 366	LPTX 100W BOTTOM COVER.	1 EA	
943 5602 367	"PLATE, AIR DEFLECTOR, CHASSIS, LPTX 100W"	1 EA	
943 5602 368	"HOUSING, POWER SUPPLY"	1 EA	
943 5602 369	"WALL, PA TO PA DIVIDER WALL, 100W"	1 EA	
943 5602 371	"PANEL, BACKPLANE, 100W"	1 EA	
943 5602 385	"RAIL, PA"	4 EA	
943 5602 519	AIR DEFLECTOR	1 EA	
952 9248 020	CABLE UAX BASIC EXC/CTRL	1 EA	
952 9248 048	CABLE COAX W13	1 EA	
971 0035 007	ASM-POWER MODULE	1 EA	
9710035011G	ASM-SUB-TX/IO INTERFACE MODULE	1 EA	

WARNING: Disconnect primary power prior to servicing.

971 0035 018	"ASSY, M2X PFRU"	1 EA	
9710041004G	"ASSY, DISPLAY PANEL"	1 EA	
9710041013G	"ASSY, COUPLER / DETECTOR"	1 EA	
9710041050G	"ASSY, 100 WATT FRONT PANEL"	1 EA	

Table 4-14 "KIT, 2KW TCU / DUAL LPU OPTION" - 9810031020G (H)

Harris PN	Description	Qty UM	Ref Des
556 0179 100	"ATTEN, SMA, 10DB, 2W, 50 OHM"	3 EA	
556 0179 150	"ATTEN, SMA, 15DB, 2W, 50 OHM"	1 EA	
952 9248 055	"CABLE, UAX AC TCU/LPUB "	1 EA	
952 9248 056	"CABLE, UAX RACK/SINGLE LPU "	1 EA	
952 9248 057	"CABLE, UAX RACK/DUAL LPU "	1 EA	
952 9248 063	CABLE UAX COAX SWITCH	1 EA	
952 9248 066	COAX SPLITTER IN (97)	1 EA	
952 9248 069	COAX SWITCH LOAD (96)	1 EA	
952 9248 070	CABLE RIBBON RACK BUSS	1 EA	
952 9248 073	"CABLE INTERLOCK ""D"" "	1 EA	
952 9248 075	CABLE RIBBON W1	1 EA	
952 9248 076	CABLE RIBBON W2	1 EA	
952 9248 083	CABLE RIBBON W3	1 EA	
952 9248 084	CABLE RIBBON W4	1 EA	
9810031013G	"KIT, BASIC TCU / DUAL LPU OPTION"	1 EA	