OSPREY 35W 869-894MHz CDMA SPCA

OPERATING & INSTALLATION MANUAL

DOCUMENT #: **190.0002**
DOCUMENT REVISION #: **02**

Unity Wireless Systems Corp.
7438 Fraser Park Drive
Burnaby, B.C., Canada V5J 5B9
Tel: 604-267-2700
Toll Free: 1-800-337-6642
Fax: 604-267-2701
www.unitywireless.com

Table of Contents

Regulatory

This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Where appropriate, the use of the equipment is subject to the following conditions:

CAUTION! Unauthorized modifications or changes not expressly approved by UW could void compliance with regulatory rules, and thereby your authority to use this equipment.

WARNING (EMI) - United States FCC Information - This equipment has been tested and found to comply with the limits pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in an appropriate installation. This equipment, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician

This device meets the minimum MPE limit at a distance of 69cm assuming it is operating at full rated output power into a 6dBi gain antenna.

Legal

1.0 Safety Instructions

INSTRUCTIONS FOR SAFE OPERATION

BEFORE APPLYING POWER

Review this manual and become familiar with all safety markings and instructions.
Protection provided by the equipment may be impaired if used in a manner not specified by Unity Wireless Systems Corp.

INTENED PURPOSES

This equipment is intended for commercial use in a cellular network basestation and is designed to be used in the process of amplifying electromagnetic Radio Frequency (RF) energy. Therefore, the output of the amplifier must be connected to an appropriate load, such as an antenna or a field-generating device. It is the responsibility of the user to assure that the device is operated in a location, which will control the radiated energy such that it will not cause injury and will not violate regulatory levels of electromagnetic interference.

HAZARDOUS RF VOLTAGES

The RF voltages on the center pin of the RF output connector can be hazardous. The RF output connector should be connected to a load before DC power is applied to the amplifier. Do not come into contact with the center pin of the RF output connector or accessories connected to it. Place the equipment in a non-operating condition before disconnecting or connecting the load to the RF output connector.

PHYSICAL DAMAGE

The RF amplifier should not be operated if there is physical damage, missing hardware, or missing panels.

MAINTENANCE CAUTION

Adjustment, maintenance, or repair of the equipment must be performed only by qualified personnel. Hazardous energy may be present while protective covers are removed from the equipment even if disconnected from the power source. Contact may result in personal injury.

INSTRUCTIONS FOR SAFE OPERATION (continued)

SAFETY SYMBOLS

This symbol is marked on the equipment when it is necessary for the user to refer to the manual for important safety information. This symbol is indicated in the Table of Contents to assist in locating pertinent information.

Dangerous voltages are present. Use extreme care.

CAUTION: The caution symbol denotes a potential hazard. Attention must be given to the statement to prevent damage, destruction or harm.

RANGE OF ENVIROMENTAL CONDITIONS

This equipment is designed to be safe under the following environmental conditions:

Indoor use
Altitude up to 2000M
Temperature of -5°C to +55°C
Maximum relative humidity 90%
Main supply voltage fluctuates not to exceed minimum and maximum autoranging values.

While the equipment will not cause a hazardous condition over this environmental range, performance may vary.

HEATSINK

Care should be exercised not to block the cooling air inlets or outlets. Cooling air blockage can result in damage to the RF amplifier or intermittent shut-downs.
Forced air cooling should be provided at a rate of at least 50cfm.

2.0 General Information

2.1 SCPA Overview

The Osprey 35W SCPA (Unity Wireless P/N: 100.0188.001) is a compact unit designed for CDMA 1X operation over the frequency of 869-894MHz.

The amplifier is composed of an RF line-up and a function board. The RF line-up provides the necessary amplification of the input signal. The function board provides power supplies to the RF board, processes alarms and provides monitoring functions for the external user. The function board also provides for RF shut down in case of a major alarm condition.

The HPA requires forced-air cooling (50 to 75 ft^3/minute depending on temperature) over its integral heatsink. The block diagram of the HPA is shown in figure 2.1-1 below.

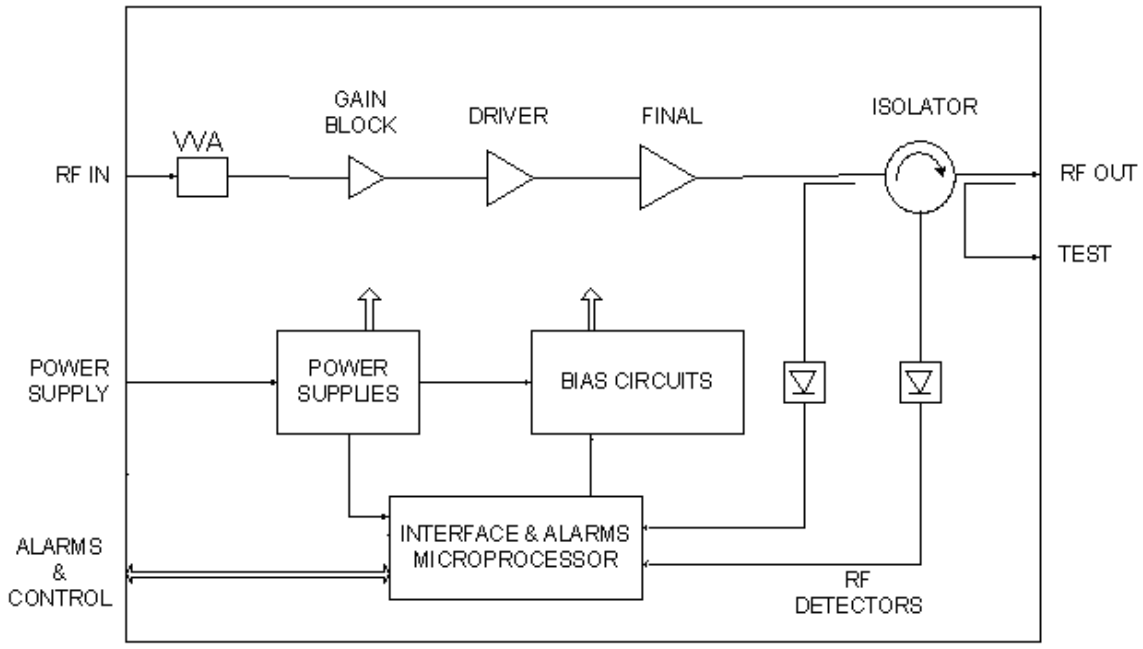

Figure 2.1-1

2.2 SCPA Installation

2.2.1 Mounting

The Osprey SCPA is to be mounted on a chassis with 8 #4 screws (see fig.2.2-1). The user is responsible for making sure the unit is installed with the proper fasteners for the installation type.

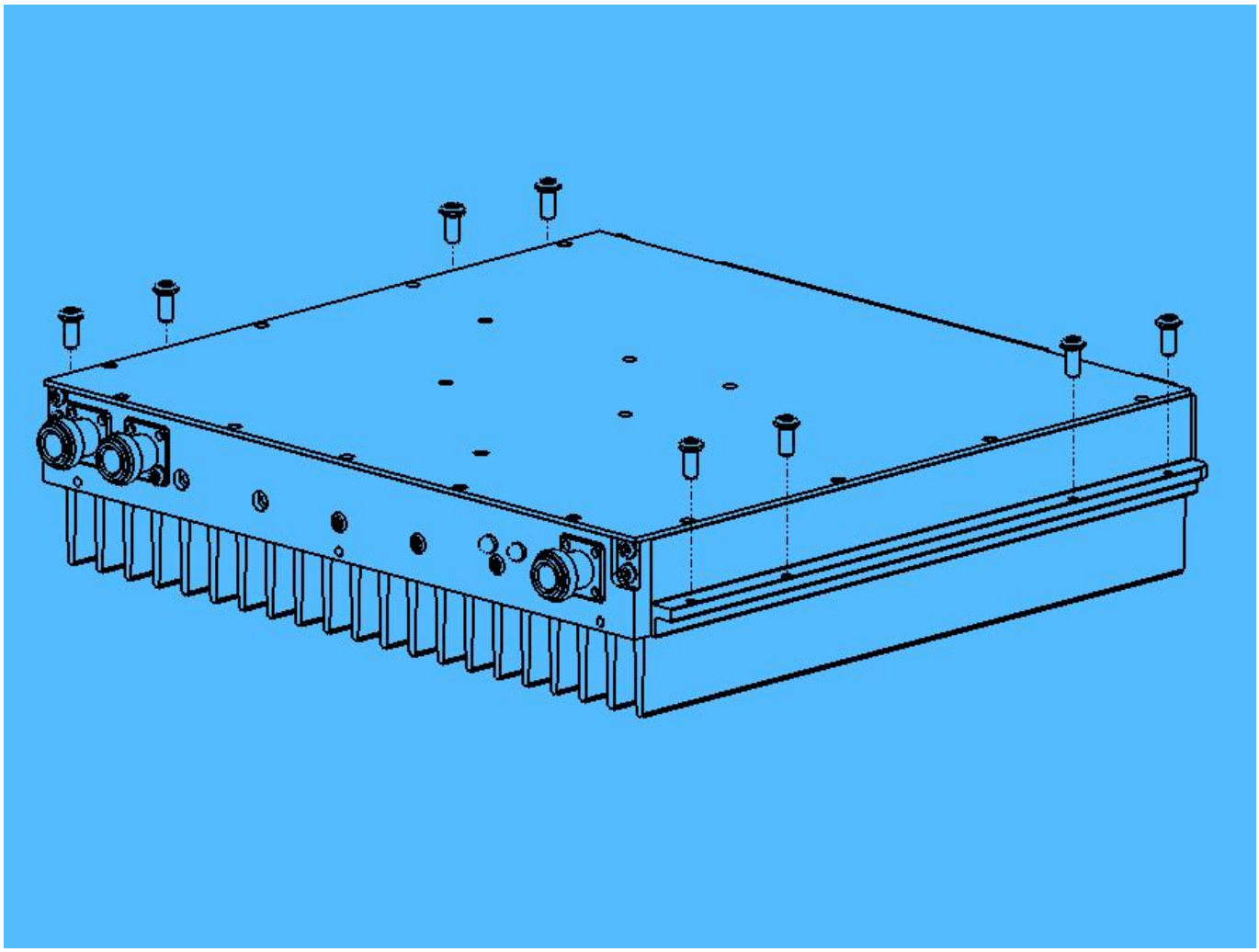

Fig.2.2-1

2.2.2 Grounding

The ground connection for the PA is provided by the user's rack-mount chassis. The rack-mount chassis should be properly grounded to protect the PA and personnel from lighting and other electrically induced transients.

2.2.3 RF Connections

Care must be taken when attaching the RF connections to the PA, to prevent costly damage to the equipment.

When fastening the connections, do not cross thread them. The "N"-type connectors used require 90 N-cm or 8 in-lb of torque for proper connection.

2.3 SCPA Operation

2.3.1 Powering the SCPA

The PA should be powered by a regulated DC power supply. The PA has a built in reverse polarity protection circuit. The PA should be supplied with -48VDC and shall consume less than 300W in a normal operational state. See PA's Technical Specification for DC connector pin assignment.

2.3.2 Tune Up Procedure

- Attach RF power meter and load to RF output port of PA
- Attach RF source to the input port of PA

Before applying DC power to the PA be sure it's output is connected to the appropriate load and the input power level is set to minimum in order to prevent RF overdrive.

- Apply DC power to PA
- Adjust RF input level to the desired level, making sure that the output power does not exceed the maximum rated level for the Osprey SCPA (35W).

2.3.3 Monitoring SCPA

See PA's Technical Specification for the alarm and control interface description.

2.4 SCPA Specifications

The detailed specifications are listed in the PA's Technical Specification. In the event of a conflict, the product specification takes precedent.

Under no circumstances should the specifications be exceeded, as serious injury or damage to the equipment may occur.

Operating Frequency Range:	869 to 894 MHz
Operating DC Supply:	-48 VDC Nominal, -36 to -75VDC
Operating Temperature:	-5 to +55 Degrees Celsius
Operating Humidity	0 to 95%
Maximum Output Power:	35W at RF Output Port

END OF DOCUMENT

For questions or assistance with your products, please contact:

Unity Wireless Systems Corporation
7438 Fraser Park Drive
Burnaby, British Columbia
CANADA V5J 5B9

Phone: +1 604 267 2700
FAX: +1 604 267 2701
sales@unitywireless.com
http://www.unitywireless.com