



TECHNICAL MANUAL and INSTALLATION INSTRUCTIONS

AS-2810C/SRC UHF DIPOLE ANTENNA

VTM-99-007

Valcom Manufacturing Group, Inc.

175 Southgate Drive, P.O. Box 603, Guelph, Ontario, Canada N1H6L3 Tel: 519-824-3220 Fax: 519-824-3411

Web Site: www.valcommfg.ca E-mail: enquiries@valcom-guelph.com

AS-2810C/SRC

RECORD OF CHANGES

CHANGE NUMBER	DATE	TITLE OF BRIEF DESCRIPTION	ENTERED BY
-	18 July 2001	Original Issue	

AS-2810C/SRC
TABLE OF CONTENTS

Section	Page
n	e
TABLE OF CONTENTS	i
LIST OF ILLUSTRATIONS.....	ii
LIST OF TABLES.....	ii
1 GENERAL INFORMATION AND SAFETY PRECAUTIONS.....	1
1-1 General Safety Precautions.....	1
1-2 Specific Warnings.....	1
1-3 Introduction.....	2
1-4 Equipment Description.....	2
1-5 Relationship to Other Equipment.....	2
1-6 Reference Data.....	2
1-7 Equipment Accessories, and Documents Supplied.....	2
2 OPERATION.....	5
2-1 Introduction.....	5
2-2 Controls and Indicators.....	5
2-3 Operating Procedures.....	5
2-3.1 Operator Turn-on.....	5
2-3.2 Modes of Operation.....	5
2-3.3 Operation Under Interfering Conditions.....	5
2-3.4 Operator Turn-off.....	5
2-3.5 Emergency Operation.....	5
2-3.6 Emergency Turn-off.....	5
3 FUNCTIONAL DESCRIPTION.....	6
3-1 Introduction.....	6
3-2 Overall Level.....	6
3-3 Major Function Level.....	6
4 INSTALLATION.....	7
4-1 Site Information.....	7
4-2 Tools and Materials Required.....	7
4-3 Unpacking and Repacking.....	7
4-4 Foundation.....	7
4-5 Input Requirements.....	7

AS-2810C/SRC

4-6	Installation Procedures.....	7
4-7	Installation Checkout.....	7

LIST OF ILLUSTRATIONS

Figure		Page
4-1	Dipole UHF Antenna AS-2810C / SRC.....	8

**LIST OF
TABLES**

Table		Page
1-1	Reference Data.....	3
1-2	Equipment and Documents Supplied.....	4

SECTION 1

GENERAL INFORMATION AND SAFETY PRECAUTIONS

1-1. **GENERAL SAFETY PRECAUTIONS.** The following general safety precautions are not related to any specific procedures and therefore do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during many phases of operation and maintenance.

WARNING

Keep away from live circuits. Operating personnel must at all times observe all safety regulations, to prevent serious injury or death due to electrical shock.

Donot service or adjust alone. Under no circumstances should any person service or adjust theequipment except in the presence of someone who is capable of rendering aid.

Personnel working with or near high voltages should be familiar with modern methods of resuscitation.

1-2 **SPECIFIC WARNINGS.** The following specific precautions are related to inspecting and removing the antenna.

WARNING

Ensurethat the transmitting equipment is de-energized prior to inspection of the antenna. Makesure the test equipment is properly grounded, to prevent electric shock.

CAUTION

Makesurethe antenna is properly supported before removing its mounting hardware.

CAUTION

Donotcoattheinsulatorwithanysubstance;donot paint with lead base paints.

1-3. INTRODUCTION.

1-3.1 Purpose. This manual provides general information, operating and functional description, and installation data for the AS-2810C/SRC antenna. Information in this manual will assist in installing and operating the antenna.

1-3.2 Scope. This technical manual is provided to aid in the operation and installation of the antenna.

1-3.3 Applicability. This manual applies to the UHF Dipole Antenna AS-2810C/SRC.

1-4. EQUIPMENT DESCRIPTION.

1-4.1 General Description. The antenna, shown in Figure 4-1 is a 28 inch transmitting/receiving UHF dipole antenna for general use with UHF communications equipment. The antenna radiating elements are housed within a fibreglass insulator radome with an aluminum mounting base.

1-4.2 Capabilities. The antenna provides vertically polarized, omnidirectional azimuth radiation from 225 to 400 MHz. The aluminum antenna elements are high power dipole that can handle power up to 800 watts. The antenna meets high shock and vibration requirements.

1-4.3 Limitations. When used as directed, the antenna has no limitations.

1-5. **RELATIONSHIP TO OTHER EQUIPMENT.** The AS-2810C/SRC Antenna interfaces with UHF receiving and transmitting equipment with 50 ohm output.

1-6. **REFERENCE DATA.** Table 1-1 lists the reference data for the antenna.

1-7. **EQUIPMENT ACCESSORIES, AND DOCUMENTS SUPPLIED.** Table 1-2 lists the equipment and documents supplied.

Table 1-1. Reference Data

PARAMETER	SPECIFICATION
NOMENCLATURE	UHF DIPOLE ANTENNA AS-2810C/SRC
MANUFACTURER	VALCOM LIMITED 35736
FREQUENCY RANGE	225 TO 400 MHZ
VSWR	2.0:1 MAXIMUM 1.5:1 AVERAGE
GAIN	2 dBi
IMPEDANCE INPUT INPUT CONNECTOR	50 OHMS INPUT N-TYPE RECEPTACLE
POLARIZATION	VERTICAL
POWER CAPABILITY	500 W (AVERAGE) 800 W (PEAK)
RADIATION PATTERN	OMNIDIRECTIONAL
OPERATING TEMPERATURE	-55°C TO +65°C (-60°F TO +150°F)
WIND VELOCITY HUMIDITY SHOCK	120 MPH (NO ICE) MIL-STD-810E, PROCEDURE III MEET MIL-S-901C, GRADE A
VIBRATION	QUALIFIED TO MEET MIL-STD-167-1 TYPE I
HEIGHT WEIGHT	28 ± 0.5 INCHES 5.5 POUNDS [2.47KG] (MAX)
BASE MOUNTING	Ø 5.25 INCH ALUMINIUM FLANGE WITH 4 X Ø 0.344 INCH HOLES ON A Ø 4.625 INCH BOLT CIRCLE

AS-2810C/SRC

Table 1-2. Equipment, Accessories and Documents Supplied

QTY	NOMENCLATURE	OVERALL DIMENSIONS (INCHES)				WEIGHT (POUNDS) UNCRATED
		CRATED		UNCRATED		
		HEIGHT	DIA	HEIGHT	DIA	
1	ANTENNA AS-2810C/SRC	---	---	28	5.25 Base	5.5
1	TECHNICAL MANUAL FOR AS-2810C/SRC ANTENNA					

AS-2810C/SRC

SECTION 2

OPERATION

2-1. **INTRODUCTION.** This chapter provides operating instructions for the antenna.

2-2. **CONTROLS AND INDICATORS.** The antenna contains no controls or indicators.

2-3. **OPERATING PROCEDURES.**

2-3.1 Operator Turn-On. No operator turn-on procedures apply since no power is required to operate the antenna. However, the antenna is coupled to RF equipment (transmitter/receiver) and to associated systems which may require energizing. For operating instructions, consult the appropriate technical manuals.

2-3.2 Modes of Operation. The antenna operates automatically, and no operator intervention is required other than interconnecting various associated equipment with the antenna.

2-3.3 Operation Under Interfering Conditions. No additional or alternate instructions are necessary to operate the antenna under interfering conditions.

2-3.4 Operator Turn-off. Since no power is required to operate the antenna, no operator turn-off is required. However, the specific equipment connected to the antenna may require operator turn-off. Consult the associated technical manuals for turn-off procedures.

2-3.5 Emergency Operation. No additional or alternate steps are necessary to operate the antenna under emergency conditions.

2-3.6 Emergency Turn-off. The antenna requires no emergency turn-off. For emergency turn-off of specific equipment connected to the antenna, consult the associated technical manuals.

SECTION 3

FUNCTIONAL DESCRIPTION

3-1. **INTRODUCTION.** This chapter provides the functional description of the antenna.

3-2. **OVERALL LEVEL.** The antenna is a base mounted, high-power antenna which provides omnidirectional coverage for general purpose communications reception and transmission from 225 to 400 MHz.

3-3. **MAJOR FUNCTION LEVEL.** The antenna consists of aluminum radiating elements that are housed within a fibreglass radome with an aluminum mounting base. The mounting base isolates the radiating elements of the antenna from the ground and physically supports the elements.

The antenna does not require the external couplers. Only a transmitter or receiver is required to be connected to the antenna.

SECTION 4

INSTALLATION

4-1. **SITE INFORMATION.** Valcom's AS-2810C/SRC UHF Antenna is designed primarily for shipboard installation. The antenna can also be used at shore installations. The antenna should be installed in a non-obstructed environment, clear from any contiguous structures, such as masts, bulkheads, or other metal objects.

4-2. **TOOLS AND MATERIALS REQUIRED.** No special tools and materials are required for installation.

4-3. **UNPACKING AND RE-PACKING.** To unpack, carefully remove the screws holding the cover, and remove the antenna from the container. Save the container to pack the antenna for reshipment. No special handling procedures are required; observe normal precautions when handling the antenna.

4-4. **FOUNDATION.** The antenna should be installed vertically on a mounting plate that has bolt holes matching those in the antenna mounting base.

4-5. **INPUT REQUIREMENTS.** The Dipole UHF antenna has an rf power handling up to 800 watts at the 50 ohm input impedance.

4-6. **INSTALLATION PROCEDURES.** After unpacking the antenna, proceed with its installation as follows:

a. Examine the exterior of the antenna for damage; make sure that the fibreglass radome and the mounting base have not been damaged, misaligned, or fractured.

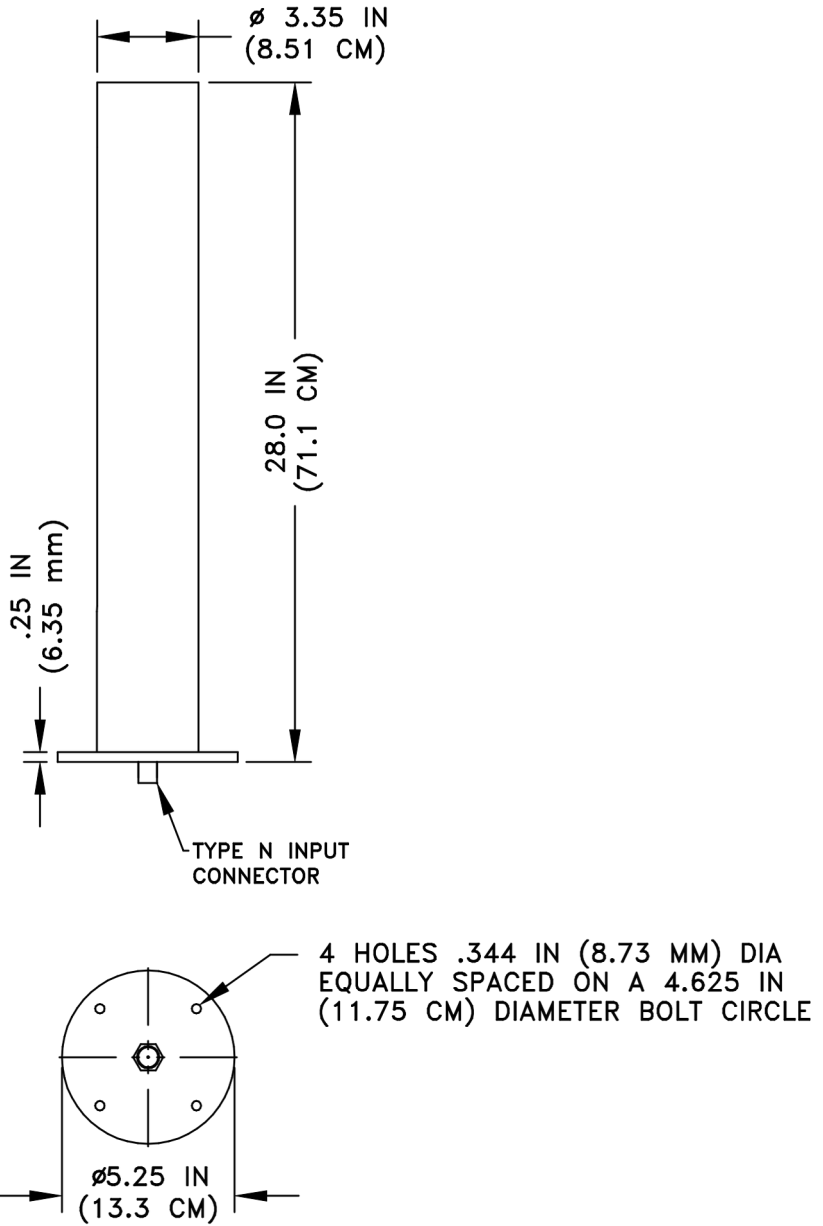
b. Secure the antenna to its mounting plate with four 0.312 inch hex head cap screws, flat washers, split lock-washers and nuts.

c. Connect the system connector to the antenna at the input N-type receptacle.

4-7. **INSTALLATION CHECKOUT.** Checkout of the antenna after installation can only be accomplished by operating the receiving and transmitting equipment that is used with the antenna.

Note: If replacing an existing antenna with a new antenna, it is recommended that new mounting hardware be used.

DIPOLE UHF ANTENNA AS-2810C/SRC



BOTTOM VIEW

Figure 4-1

NOTES:

1. FINISH: HAZE GRAY SILICONE ALKYD ENAMEL
2. DO NOT USE LEAD BASE PAINT TO TOUCH-UP OR REPAINT ANTENNA