

GENERAL DYNAMICS

Decision Systems

April 1, 2003

Federal Communications Commission
Experimental Licensing Branch
445 12th Street SW
Washington, DC 20554

Attn: Anthony Serafini

Subject: Exhibit for requested changes to existing license, Confirmation# EL13112

Dear Mr. Serafini:

As described in the program narrative for our existing license, General Dynamics Decision Systems is responsible for the ground segment on the Lockheed-Martin Team competing for the Mobile User Objective System (MUOS) contract from SPAWAR (Naval Space and Warfare Center). The contract details for this phase of the program were also provided in the original program narrative.

The MUOS will be an unprotected, narrowband satellite communication system that will support a worldwide, multi-service population of mobile and fixed-site terminal users. Designed to improve on the capability of the current Ultra High Frequency (UHF) Follow-On (UFO) satellite communications system, MUOS will provide significantly more capacity to the warfighter, particularly to small, disadvantaged terminals. The current effort is the 2nd phase of the program and called the Component Advanced Development and is planned as a 14 month effort. At the end of this phase, proposals will be submitted by the Lockheed-Martin and Raytheon teams for the 3rd-phase, Pre-Acquisition System Definition and Risk Reduction. This contract is planned to achieve system initial operational capability in 2008 and full operation capability no later than 2013. Contract award for this phase is projected for the second quarter of fiscal year 2004

An UHF test link will be added to the existing MUOS UMTS experimental system, and the system will then have the capability to transmit on UMTS or UHF frequencies. The UHF handset and base station modification will be conducted to show the customer that we can easily convert commercial HW/SW to support the military frequency bands. The eventual program implementation will utilize an UHF link from the satellite. The experimental testing with UHF transmissions will utilize the same base stations, power levels, and modulation schemes as previously submitted for the UMTS test segment. The UHF antenna, Shakespeare Model 4310 UHF, described in the attached specification sheet will be added at each of the base stations.

I hope this satisfies your request for the change description and testing to be conducted. Please feel free to contact me if you need additional information or have any questions.

Sincerely,
Gil O. Estrella
EMC Group
General Dynamics Decision Systems

8201 East McDowell Road
Scottsdale, AZ 85257
Tel 480 441 3725
Fax 480 441 3625
Email Gil.Estrella@gd-decisionsystems.com

VHF/UHF Broadband Communications Systems Antennas

Military, Civil Defense, Disaster Preparedness, FEMA, and General Communications Antennas

Model 4265A NSN 5985-01-395-0097, Model 4310, and Model 4266

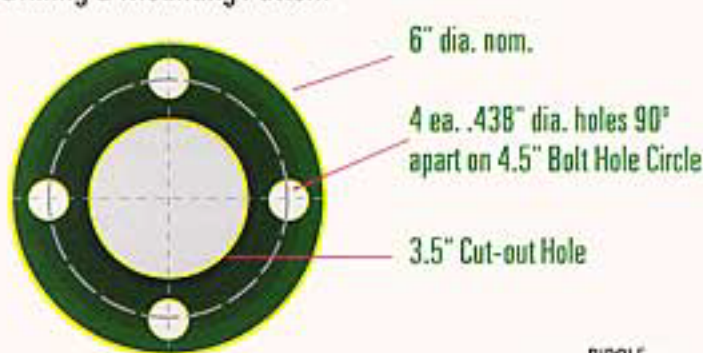
Shakespeare's VHF/UHF Broadband antennas can best be described electrically as center-fed, coaxial sleeve dipoles, which are sealed into fiberglass radomes to provide longlasting protection from the elements. The internal elements are brass tubing for maximum conductivity and dependability. Each antenna has a broadband choking circuit to allow the antenna to operate independent of a ground plane. This innovative feature permits the antennas to operate on vehicles, shelters, buildings, mast, or shipboard. The built-in passive broadband matching network is engineered to provide instantaneous bandwidth across the full frequency spectrum, and is centered around a 50-ohm impedance.

Between the fiberglass radome and the mounting plate is a stainless steel spring, which allows flexing under impact. All metal parts are black oxide coated to resist a salt water environment. A grounding strap and 3/8" stainless steel screws and hardware are provided.

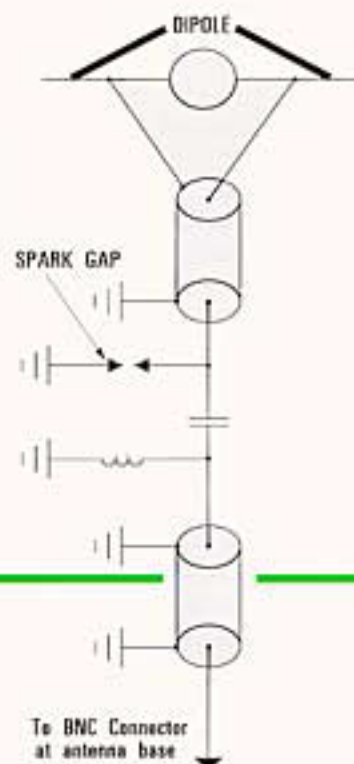
Specifications

	Model 4265A VHF	Model 4310 UHF	Model 4266 UHF
Frequency:	116 MHz to 174 MHz	225 MHz to 420 MHz	403 MHz to 470 MHz
Impedance:	50 Ohms	50 Ohms	50 Ohms
Coax Connector:	BNC female	Type N female	Type N female
Radiation:	Omnidirectional	Omnidirectional	Omnidirectional
Polarization:	Vertical	Vertical	Vertical
Power Rating:	60 W	60 W	60 W
Gain:	3 dbi	2 dbi	4 dbi
VSWR:	Better than 2.8:1	Better than 3.5:1	Better than 2:1
Ground Plane:	None required	None required	None required
Operating Temp:	-45° C to +60° C	-45° C to +60° C	-45° C to +60° C
Color:	383 Military Green CARC	383 Military Green CARC	383 Military Green CARC
Mounting Pattern:	4 Bolt Holes	4 Bolt Holes	4 Bolt Holes
Length:	42" (nominal)	35" (nominal)	26" (nominal)
Net Weight:	6 lbs.	7.5 lbs	6 lbs.

Drilling & Mounting Pattern



TYPICAL CIRCUIT OF VHF/UHF ANTENNAS



Mounting Brackets: See Page 8

4266
UHF

4310
UHF

4265A
VHF

UHF • VHF



Photo by John King, Shakespeare