

2012


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**Military Antenna Products**

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When communication is critical to mission accomplishment  
Shakespeare is there.

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HF VHF UHF Broadband WIN-T

*Technically Superior, by design for over 50 years. Shakespeare is the dominant force worldwide in military and commercial antenna technology.*

A person wearing a digital camouflage military uniform is shown from the chest up. They are holding a black, coiled antenna system that forms a large loop around their neck and shoulders. The uniform features a US flag patch on the right shoulder and a circular insignia on the left chest. The background is plain white.

**Style 120  
HF Antenna System**

**Technically, superior  
by design  
Since 1958**

# ANTENNA FREQUENCIES

Category	Antennas	1.6-30	1.8-30	2-30	30-88	30-108	30-512	30-2500	100-512	118-174	136-174	225-450	225-1000	225-2500	380-490	420-470	500-2500	1000-2500	
Vehicular	120-99																		
	120's																		
	4242-MK1A																		
	4242-MK2A																		
	4243A																		
	4242-MK3																		
	DB-3450/VRC																		
	CF-3450/VRC																		
	SFB-3512/VRC																		
	SFB-3512D/VRC																		
	HP-3512/VRC																		
	LP-3512/VRC																		
	WB-3200/VRC																		
	4265BB																		
	4265A																		
	4310																		
	WB-2220/VRC																		
	4266																		
WB-5025/VRC																			
HP-5250S/VRC																			
Marine	229-B																		
	222-B																		
	390-1 MG																		
	4328																		
	HS-2774																		
	HS-2774-1																		
	4310-MA																		
	US-3849																		
Stationary	4011-900																		
	120's																		
	1038-900																		
Manpack	3028-900																		
	3500 Series																		
	3505 Series																		
	3510 Series																		
	3500 Series																		

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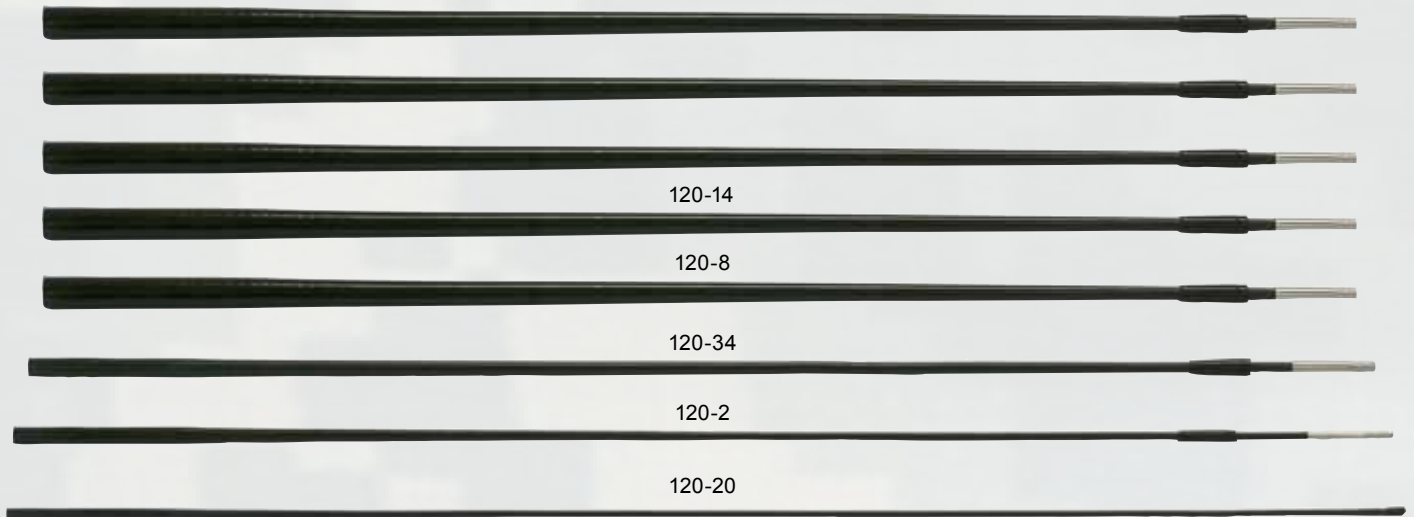
## MODEL 120 HF ANTENNA SYSTEM

### *Versatile, reliable and transportable*

The Model 120 Antenna System suits a variety of mountings, antenna heights, and configurations. With sections of 4' length each this versatile, eight -section fiberglass antenna system pulls duty as a 12' to 16' mobile antenna, or as a 20'-32' transportable stationary system. Choose the components you need for your specific applications. A custom carry case is available, plus a wide choice of mounts.

The Model 120's unique design achieves strength and reliability by merely hand tightening the sections. The antenna system takes advantage of Shakespeare's exclusive design taper rolled thread ferrules to ensure mechanical strength transfer with positive electrical contact, even during flexing. As a result Model 120 is quick to assemble and quick to move. *Special assembly tools are not required.* One person can assemble and erect the antenna in minutes.

Special features of the model 4244 Spring Mount permit Model 120's top three sections to be used as a 12' mobile whip. The upper four tapered sections form a 16' mobile antenna system. To this, up to four extensions can be added, adapting the antenna for stationary use.



The AT-1011/U was first fielded in 1960 by the United States Armed Forces. This versatile antenna system is still used by our nation's finest forces. The Model 120 antenna is the true definition of "LEGACY."

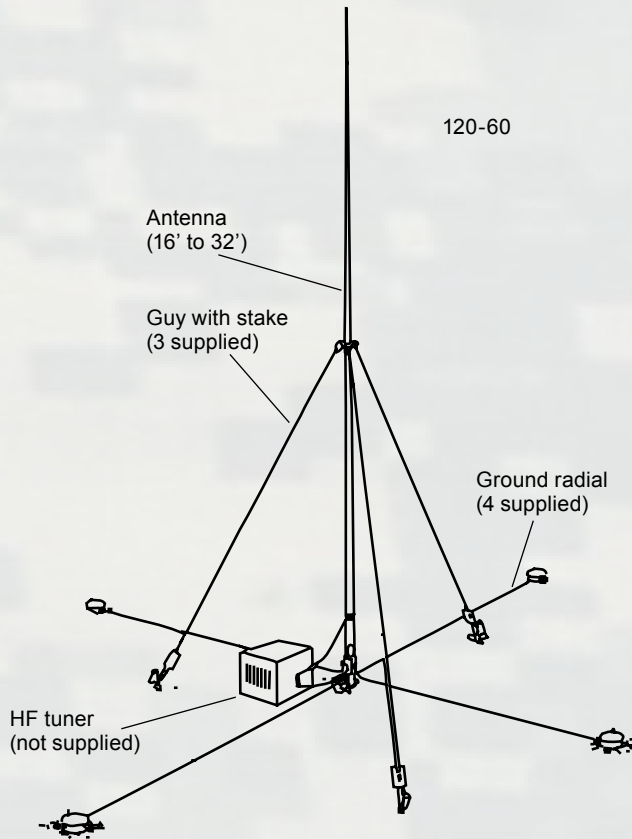
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SPECIFICATIONS			
Part No.	Military Nomenclature	NSN	Description
120-20	AT-1039/U	5985-00-733-6042	Tip Antenna Element Section
120-2	AT-1040/U	5985-00-733-6043	Second Antenna Element Section
120-34	AT-1041/U	5985-00-733-6044	Third Antenna Element Section
120-8	AT-1042/U	5985-00-733-6045	Fourth Antenna Element Section
120-14	AT-1043/U	5985-00-733-6046	Extension Antenna Section
120-58		5985-01-475-2367	Canvas Case, Military Green
120-59			Guy Rope Kit
120-47		5985-01-397-6971	Ground Radial Kit (4) with bag
120-49		5985-01-539-1084	Four-section, 16' vehicular antenna without base
120-31		5985-01-320-7703	Eight-section, 32' Stationary Antenna
120-17		5985-01-453-4775	Four-section, 16' Transportable Antenna with 120-43 base
120-55	AT-1011/U	5985-00-846-6442	Eight-section, 32' Stationary Antenna with 120-28 base
120-60		5985-01-453-4775	Transportable 32' Antenna Kit with Case, Ground Radials, Guy Rope Kit, and Tools needed for Assembly

SPECIFICATIONS	
Frequency:	2-30 MHz with tuner (not supplied)
Power Rating:	1 KW
Polarization:	Vertical
Construction:	Shakespeare Fiberglass Process (antenna sections)
Environmental:	For all weather environments
Salt Fog Resistant:	5% salinity solution
Operating Temp:	-40° C to +80° C
Radiation:	Omnidirectional
Base Diameter:	1.25" (nominal)
Tip Diameter:	.25" (nominal)
Length:	16' 4 sections
	24' 6 sections
	32' 8 sections
Weight:	30 lbs nominal
Finish:	Military Green #23
Altitude:	Up to 15,000 ft.

WIND RATING	
(depending on soil conditions)	
Unguyed 16'	Up to 80 MPH
Unguyed 32'	Up to 35 MPH
Guyed 32'	Up to 90 MPH
For 0.5" radial ice, reduce wind rating by 40%	

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Impedance Charts - Model 120

Frequency MHz	4-Section 16' antenna on 24x24 ground plane tied into factory roof girders		4-Section 16' antenna on M-113A Armored Personnel Carrier		8-Section 32' antenna on 24x24 ground plane tied into factory roof girders		5-Section 20' antenna on M-113A Armored Personnel Carrier		3-Section 12' antenna on 24x24 ground plane tied into factory roof girders		3-Section 12' antenna on M-113A Armored Personnel Carrier	
	R ohms	X ohms	R ohms	X ohms	R ohms	X ohms	R ohms	X ohms	R ohms	X ohms	R ohms	X ohms
1.5	1.7	-.3900	36	-1750	3.3	-1170	62	-1420	1.6	-2500	78	-1870
2.0	1.8	-.3400	18	-1300	4.9	-845	28	-1070	1.6	-1900	43	-430
4.0	10	-.650	10	-.645	40	-.304	35	-1524	2.2	-.910	8	-.785
6.0	9	-.348	15	-.400	43	93	28	-.380	5.2	-.575	30	-.530
8.0	18	-.263	20	-.250	112	95	30	-.170	9.7	-.399	13	-.360
10.0	26	-.157	26	-.150	237	323	42	-.56	12	-.288	17	-.250
12.0	23	-.36	32	-.68	763	847	80	68	15	-.211	19	-.180
14.0	24	6	10	25	530	-1130	130	240	13	-.142	19	-.110
16.0	30	114	82	142	83	469	110	649	13	-.77	30	-.52
18.0	60	260	100	300	45	-.236	1550	138	16	-.10	46	33
20.0	183	597	508	497	36	-.80	423	-.760	22	70	84	92
22.0	1500	800	1020	-.354	48	99	128	-.495	54	177	190	170
24.0	853	-.839	564	-.479	170	500	93	-.350	131	303	260	150
26.0	283	-.611	288	-.497	1600	-.680	53	-.260	386	473	410	190
28.0	146	-.440	150	-.390	236	-.561	40	-.108	679	497	617	96
30.0	92	-.332	78	-.310	94	-.322	42	-.110	1080	-.270	762	-.302

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**MODEL 120 ANTENNA BASES**

All Shakespeare antenna bases are engineered and manufactured of the finest materials to meet rigorous military applications, and meet MIL STD 810 environmental requirements. Available styles include Near Vertical Incident Signal (NVIS) Tilt Adapters.

Use Model 4245 Spring Mount and the Model 120's top four sections as a 16' mobile whip. Up to four extension sections can be added, adapting the Model 120 for stationary use.



Model 120-28  
NSN: 5985-00-733-6047

- Rated 1 KW
- Without spring
- Fits 16' to 32' antenna
- Side feed with termination band feed point
- Height: 20.4" nom.
- Bolt Holes: 6 ea. 13/32" dia. holes on a 7.75" BHC
- Mounting bolts not supplied



Model 120-43  
NSN: 5985-00-931-9106

- Rated 400 watts
- Without spring
- Fits 16' to 32' antenna
- Feed-thru design, 1/4" threaded rod with hex nuts; requires 2" dia. mounting hole
- Height: 15" nom.
- Bolt Holes: requires 2" dia. mounting hole
- Supplied with 3/8" stainless steel mounting bolts and hardware



Model 4245  
AB-1335/G  
NSN: 5985-01-499-4898

- Rated 1 KW
- Special spring design permits spring to be locked in rigid position or in flexible mode
- Fits 16' to 32' antenna
- Feed-thru design, 5/16" threaded rod with hex nut feed point
- Height: 18" nom.
- Bolt Holes: 4 ea. 3/8" dia. holes on a 4.5" BHC
- Supplied with 3/8" stainless steel mounting bolts and hardware

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Use Model 4244 Spring Mount and the Model 120's top three sections as a 12' mobile whip. The system's upper four tapered sections form a 16' mobile antenna system. To this, up to four extension sections can be added, adapting the Model 120 for stationary use.



Model 4246-1

NSN: 5985-01-330-9443

- Rated 400 Watts
- Ratchet base for 16' antenna
- Feed-thru design, 5/16" threaded rod with hex nut feed point
- Bolt holes: 4 ea., 3/8" dia. holes on a 4.5" BHC
- Height: 15" nominal
- Supplied with 3/8" stainless steel mounting bolts and hardware



Model 4244-1

- Rated 1 KW
- Flexible Spring
- Fixed position or flexible mode
- *Fits 16' four-section antennas only*
- Feed-thru design, 5/16" threaded rod with hex nut feed point
- Bolt holes: 4 ea., 3/8" dia. holes on a 4.5" BHC
- Height: 16" nominal
- Supplied with 3/8" stainless steel mounting bolts and hardware



Model 4244

NSN: 5985-01-481-9910

- Rated 1 KW
- Flexible Spring
- Fixed position or flexible mode
- *Fits 12' three-section antennas only*
- Feed-thru design, 5/16" threaded rod with hex nut feed point
- Bolt holes: 4 ea., 3/8" dia. holes on a 4.5" BHC
- Height: 16" nominal
- Supplied with 3/8" stainless steel mounting bolts and hardware

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## NVIS TILT WHIP ADAPTERS

The purpose of NVIS (Near Vertical Incident Signal) is to enable communications in the area commonly called the “Skip Zone or “Dead Area.” This is accomplished by tilting the antenna so that its main radiating lobe is 73° to 83° above the horizon. The higher radiating lobe causes the signal to bounce off the ionosphere, returning to the earth in the dead area that may occur 10 to 150 miles out when using the antenna vertically.

The HF band is home to the most effective frequencies for NVIS applications: 4 to 12 MHz. Shakespeare’s Model 120 system is NVIS ready. The antennas can be mounted on a base, such as Model 4287A Spring Base, which has tilt features built in along with a 12° tilt offset. This product is primarily used with the United States Marine Corps Light Armored Vehicle (LAV) 25.

- Antenna spring base with tilt whip adapter built in
- Use with 16’ or 32’ antenna, 16’ MFG recommended
- Forward or reverse tilt
- 12° offset built into base
- Spring loaded locking pin allows quick change of tilt settings at vertical, 50°, 70°, 90°
- UHF Bulkhead connector
- Rated 1 KW

Shakespeare Tilt Whip Adapters with Coaxial Feed Point		
Shakespeare Part Number	Marine Corps Part Number	Vehicle Applications
4287-1A	93010G0000	AAV-C7
4287A	93010H0000	LAV-25
4289A	93010J0000	LAV-C2



Model 4287-A

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## NVIS TILT WHIP ADAPTERS

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The HF band is home to the most effective frequencies for NVIS applications: 4 to 12 MHz. Shakespeare’s Model 120 system is NVIS ready. The antennas can be mounted on a base, such as Model 4289-W Spring Base, which has tilt features built in, or adapted by inserting an adapter between the antenna and the base. In either case, the High Voltage Protection Device can still be used. For information about NVIS using Tilt Whip adapters contact Shakespeare.



Model 4289-W



Model 4282

NSN: 5985-01-422-8525

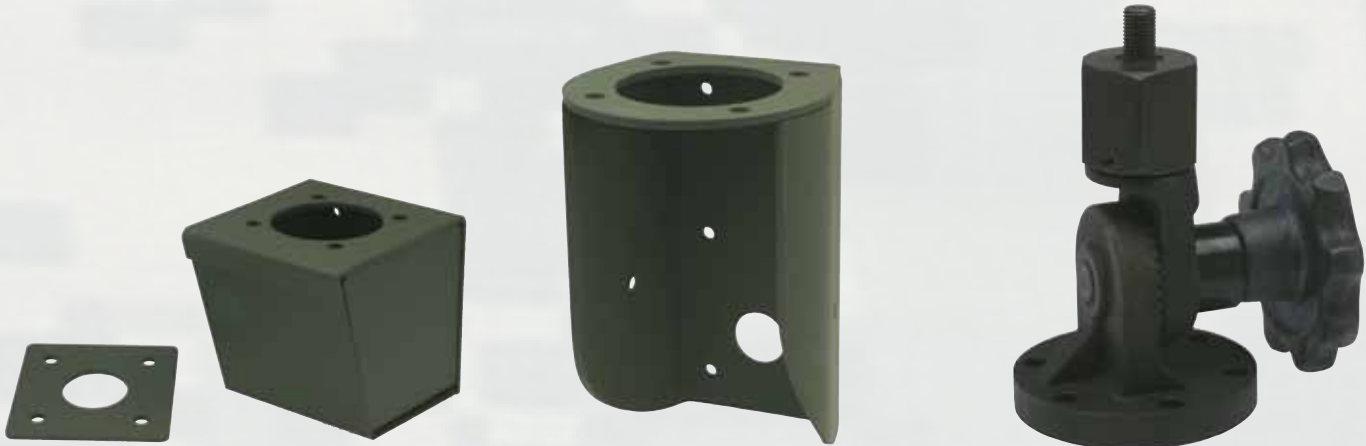
- Antenna spring base with tilt whip adapter built in
- Use with 16' antenna only
- Forward or reverse tilt
- Spring loaded locking pin allows quick change of tilt settings at vertical, 50°, 70°, 90°
- Feed-thru design, 5/16" threaded rod with hex nut feed point
- Height 20.5" nominal
- 4-bolt mounting (CECOM Drawing A3207505)
- Supplied with stainless steel mounting bolts and hardware
- Use with HVPDR for High Voltage Protection
- Tilt Adapter screws onto base and the antenna screws onto the adapter
- Locking knob prevents rotation of adapter
- Use with 16' or 32' antenna
- Forward or reverse tilt
- Spring loaded locking pin allows quick change of tilt settings: at vertical, 50°, 70°, 90°
- Feed-thru design, 1/4" threaded rod with hex nut feed point
- Height 19" nominal
- Use with HVPDR for High Voltage Protection

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**MODEL 120 ANTENNA BASES**

All Shakespeare antenna bases are engineered and manufactured of the finest materials to meet rigorous military applications, and meet MIL STD 810 environmental requirements. Available styles include Near Vertical Incident Signal (NVIS) Tilt Adapters.



Model 4240-3A Bracket  
NSN: 5985-01-514-4515

- Utility aluminum bracket
- Finished in CARC military green
- Fits Models 4244, 4244-1, 4245, and 4289-W bases
- Adapter plate included to fit Model 120-43 base not supplied.
- Steel reinforcing backing plates and dust cover supplied.
- May be bolted to vehicles or shelters
- Mounting bolts not supplied.

Model 4257 Bracket  
NSN: 5985-01-514-4396

- Utility steel bracket per ASTM A-589
- Finished in military green
- Fits Models 4244, 4244-1, 4245, and 4289-W bases
- May be bolted to vehicles or shelters
- Mounting bolts not supplied.

Model 4313

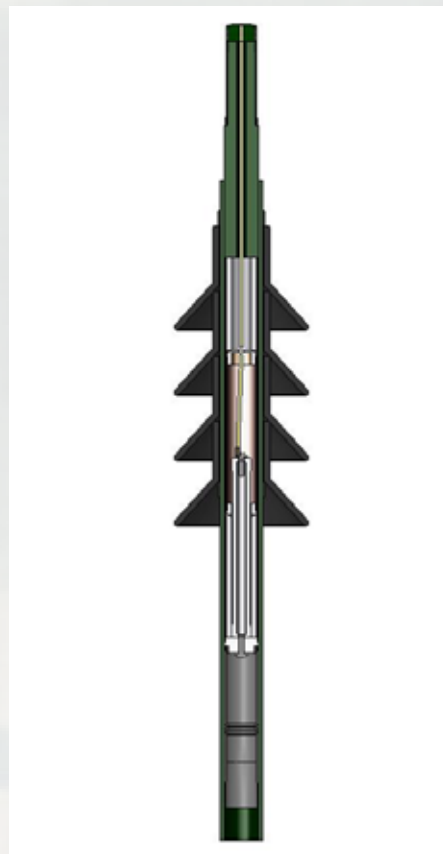
- Light Weight NVIS Adapter
- Fits three section 12' antenna only
- Full +90° or -90° swing
- Used with Model 4243 and 4244 bases
- Installation hardware included
- Stainless Steel blackened material

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## MODEL 120-HVPDR HIGH-VOLTAGE PROTECTION DEVICE REVISED

The Model 120-HVPDR can greatly reduce injuries from accidental contact with overhead power lines. When mounted on a vehicle, antennas of 16' or more in height could pose serious danger to personnel if the antenna contacts, or comes too close to, an overhead power line.

- Patented capacitance resistive circuit provides protection up to 20,000 volts RMS @ 60Hz
- Static buildup dissipation through resistive bleeder time constraint = 7ms
- Molded drip rings assure protection even in wet weather
- Can be used with 16' and 32' antennas
- No tools required for use



Shakespeare's unique design is protected by US Patent # 7034757

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## MODEL 120 HF TRANSPORTABLE EQUIPMENT

The Model 120-60 Transportable Ground Stake Antenna Kit is a vertically erected ground station antenna developed with our highly versatile Model 120 Antenna System. The Model 120-60 utilizes the eight section AT-1011/U whip, adding a ground stake base assembly, guy rope assembly, and ground plane wires. It comes with a canvas carrying case for safe transport of the antenna kit.

Antenna set-up is quick and basic. The case contains all necessary parts for the installation: ground stakes, ground plane radials, hammer, and stainless steel center stake. All tools, equipment and accessories fit into pouches within the case.

Shakespeare's exclusive-design tapered rolled thread ferrules achieve strength and positive electrical contact by merely hand tightening the sections, even for a 32-foot, unguyed antenna. For emergency reference in the field, complete assembly instructions are permanently sewn to the case's cover.



Model 120-60  
NSN: 5985-01-453-4775



Model 120-58  
NSN: 5985-01-475-2367



Model 120-59

- Guy Rope assembly consists of three 20" Dacron ropes attached to a black coated aluminum guy ring
- Use: Guy ring fits just above midpoint of the 32' antenna
- Three 12" ground stakes supplied
- Packed in military green canvas case 7" x 15" approx.

- Heavy duty carrying case
- Eight pockets for antenna sections and extensions
- Materials: #10 cotton duck per CCC-C-428, Type L, Class L or 1000 Denier Cordura®
- Military Green
- Rolls up to approx. 4" dia. by 64" long
- Carrying Handle

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## MULTIBAND MULTI-MISSION TACTICAL VEHICULAR ANTENNA

Whether used in battlefield, tactical, or C3I conditions, Shakespeare's broadband antenna technology will provide maximum performance for the latest multi-mission radios from the leading US and international manufacturers. Shakespeare's fiberglass military antennas have won praises from US and NATO military forces for exceptional durability and strong communications capability.

Now, Shakespeare is providing exceptional gain and instantaneous bandwidth performance for the 30-512 MHz spectrum in a completely passive application. No tuners, band switching, or operator intervention required. The SFB3512/VRC is designed to meet and exceed the rigors of MIL STD-810 tests for mechanical and environmental characteristics, as well as SINCGARS standards for tactical survivability. In addition, high-voltage power line protection built in.

The SFB3512/VRC is the ideal choice for the demanding multi-mission radios. It fits all existing tactical mounting, and it provides lowered vertical signature by replacing multiple antennas. The antenna's unique electrical design allows exceptional LOS and BLOS communications, even in the harshest conditions.



- Instantaneous bandwidth
- No tuners or operator intervention required
- Diplexer included with the SFB3512D/VRC Model
- ITAR governed item – requires DOS license prior to export

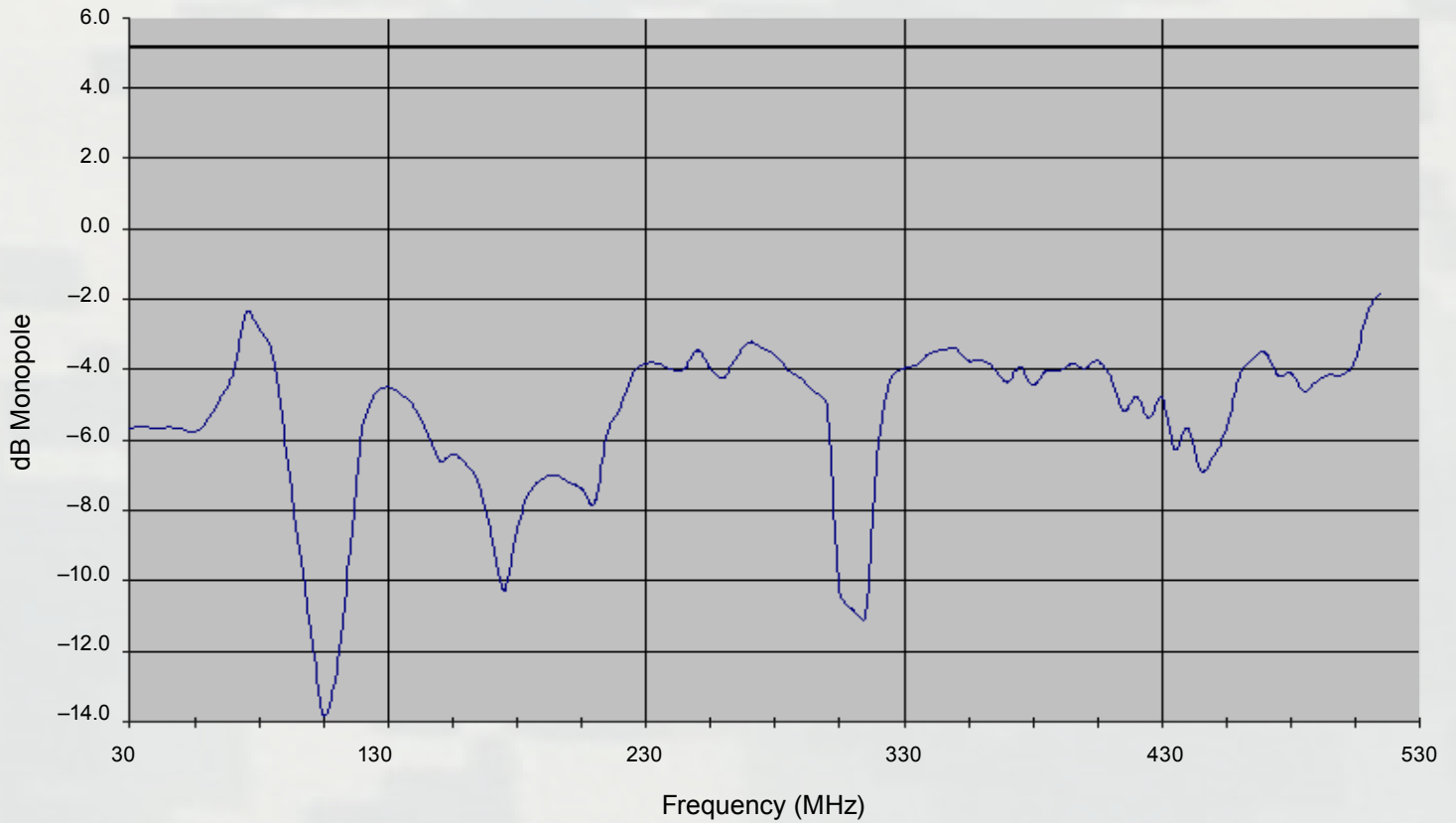
ELECTRICAL SPECIFICATIONS	
Frequency Range:	30-512 MHz
Polarization:	Vertical
Radiation Pattern:	Omnidirectional
Power Rating:	75 Watts nominal
Dual Feed:	Optional with Diplexer
Impedance:	50 Ω
VSWR:	3.5:1
HV Protection:	20 KV RMS
Color:	383 Green, Black, Tan
RF Connection:	Type "N" Female
Height:	100"
Weight:	5.25 lbs.
Mounting Configuration:	Standard 4 Bolt (CECOM Drawing A3207505)

Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.

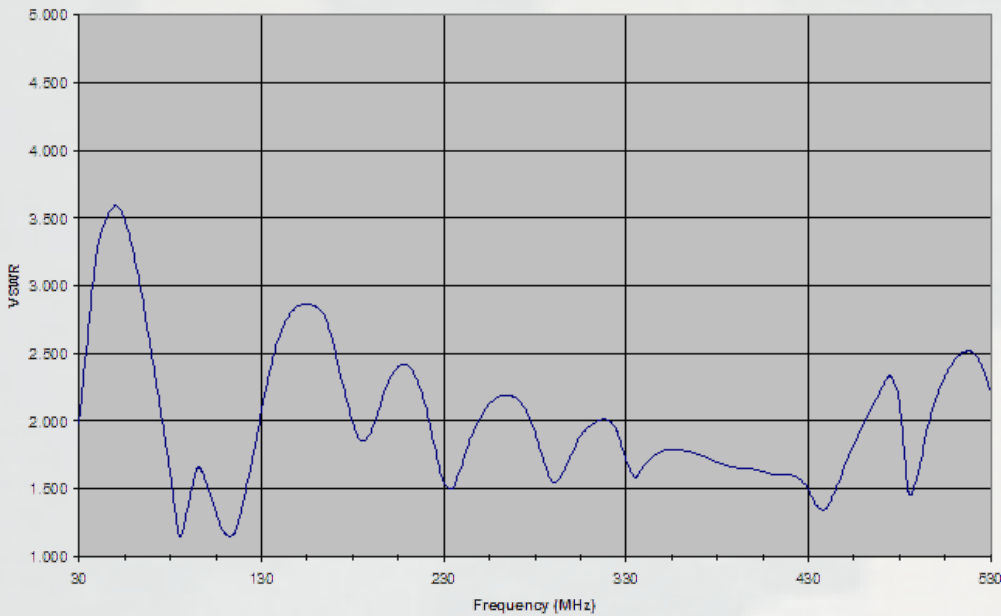
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Model	NSN	Connector	Color
SFB3512/VRC	5985-01-514-2271	Type "N" Female	Green
SFB3512D/VRC	5985-01-497-7004	Dual Port BNC	Green, Tan
SFB3512B/VRC	5985-01-550-2303	Type "N" Female	Black
SFB3512T/VRC		Type "N" Female	Tan
SFB3512BN/VRC		BNC	Green,Tan

SF3512 Forward Gain



SF3512 VSWR



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The SFB3512/VRC is the ideal choice for the demanding multi-mission radios. It fits all existing tactical mounting, and it provides lowered vertical signature by replacing multiple antennas. The antenna's unique electrical design allows exceptional LOS and BLOS communications, even in the harshest conditions.



- Lower vertical signature
- Instantaneous bandwidth
- No tuners or operator intervention required
- Diplexer included
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency Range:	30-512 MHz
Input Power:	75 Watts nominal
Dual Feed:	Diplexer Included
Input Impedance:	50 ohms nominal
VSWR:	3.5:1 or less
HV Protection:	20 KV RMS
Color:	383 Green, Black, Tan
RF Connector:	Type "N" Female (BNC available)
Length:	100" nominal
Weight:	5.25 lbs.

Model LP-DFD Dual Feed Diplexer with BNC connector is available separately.

Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.

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## HIGH POWER, HIGH PERFORMANCE MULTI-MISSION TACTICAL VEHICULAR ANTENNA

Built on the strong foundation of Shakespeare's patented Broadband technology, the HP3512/VRC provides gain comparable to the Legacy AS-3900A/VRC in the 30-90 MHz frequency range. Also providing coverage of the EPLRS, public safety and commercial interoperability frequencies, the HP3512/VRC allows the capability for a high power, 200 watt antenna for tactical and security applications.

The HP3512/VRC provides excellent comparability for multiple radios utilizing various combiner multiplexers already fielded. Mechanically, this antenna meets or exceeds MIL STD-810, as well as self aligning connectors and survival of the harshest mechanical test, **The OAK BEAM IMPACT Test**.



- Lower vertical signature
- Instantaneous bandwidth
- No tuners or operator intervention required
- Excellent compatibility for multiple radios
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	30-512 MHz
Power:	200 Watts Continuous
Dual Feed:	Optional with Diplexer
VSWR:	3.5:1 or less
Wind Rating:	70 MPH
HV Protection:	20 KV RMS
Color:	383 Green, Black, Tan
RF Connector:	Type "N" Female (BNC available)
Length:	110" nominal
Weight:	11.50 lbs.

Model LP-DFD Dual Deed Diplexer with BNC connector is available separately.

Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.

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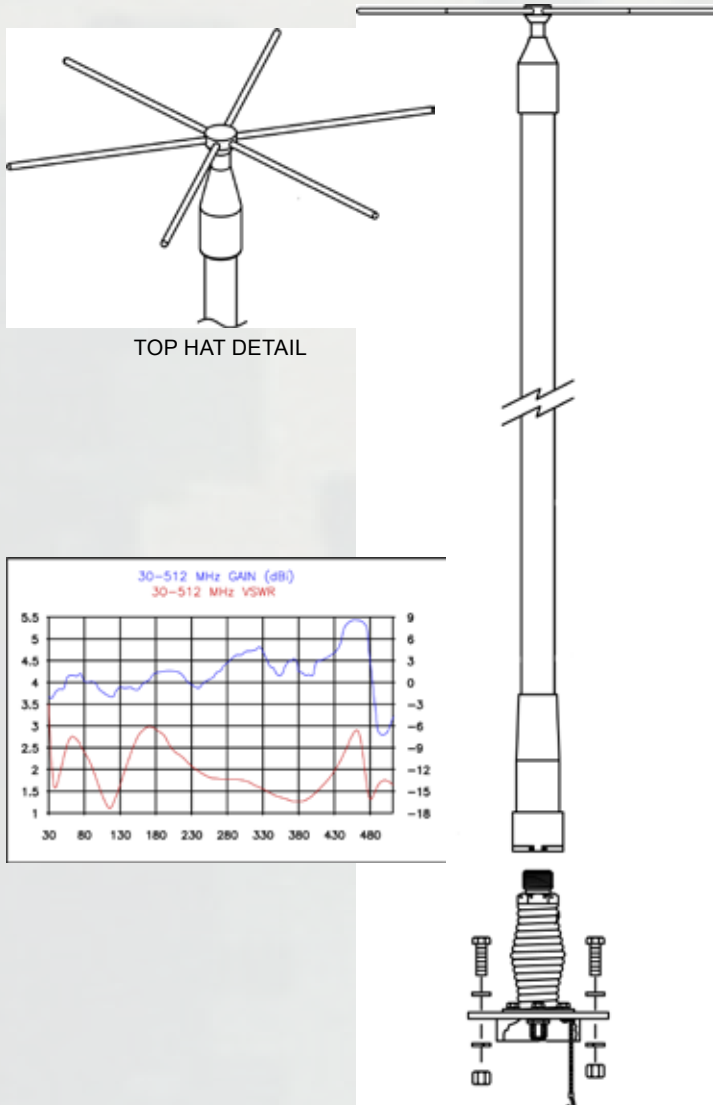
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## LOW-PROFILE MULTIBAND MULTI-MISSION TACTICAL VEHICULAR ANTENNA

Whether used in battlefield, tactical, or C3I conditions, Shakespeare's broadband antenna technology will provide maximum performance for the latest multi-mission radios from the leading US and international manufacturers. Shakespeare's fiberglass military antennas have won praises from US and NATO military forces for exceptional durability and strong communications capability.

Now, Shakespeare is providing exceptional gain and instantaneous bandwidth performance for the 30-512 MHz spectrum in a completely passive application. No tuners, band switching, or operator intervention required. The SFB3512/VRC is designed to meet and exceed the rigors of MIL STD-810 tests for mechanical and environmental characteristics, as well as SINGARS standards for tactical survivability. In addition, high-voltage power line protection built in.

The SFB3512/VRC is the ideal choice for the demanding multi-mission radios. It fits all existing tactical mounting, and it provides lowered vertical signature by replacing multiple antennas. The antenna's unique electrical design allows exceptional LOS and BLOS communications, even in the harshest conditions.



- Lower vertical signature
- Instantaneous bandwidth: 482 MHz
- No tuners or operator intervention required
- Optional LP-DFD Dual Feed Diplexer w/BNC Connectors
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency Range:	30-512 MHz
Input Power:	50 Watts CW
Dual Feed:	Optional LP-DFD Diplexer (dual BNC)
Input Impedance:	50 $\Omega$ nominal
VSWR:	Average 3.5:1 or less
Gain:	-7 to +8 dBi
Color:	Green, Black, Tan
RF Connector:	Type "N" Female standard
Length:	50" nominal
Weight:	6 lbs. (approx.)

Model LP-DFD Dual Feed Diplexer with BNC connector is available separately.

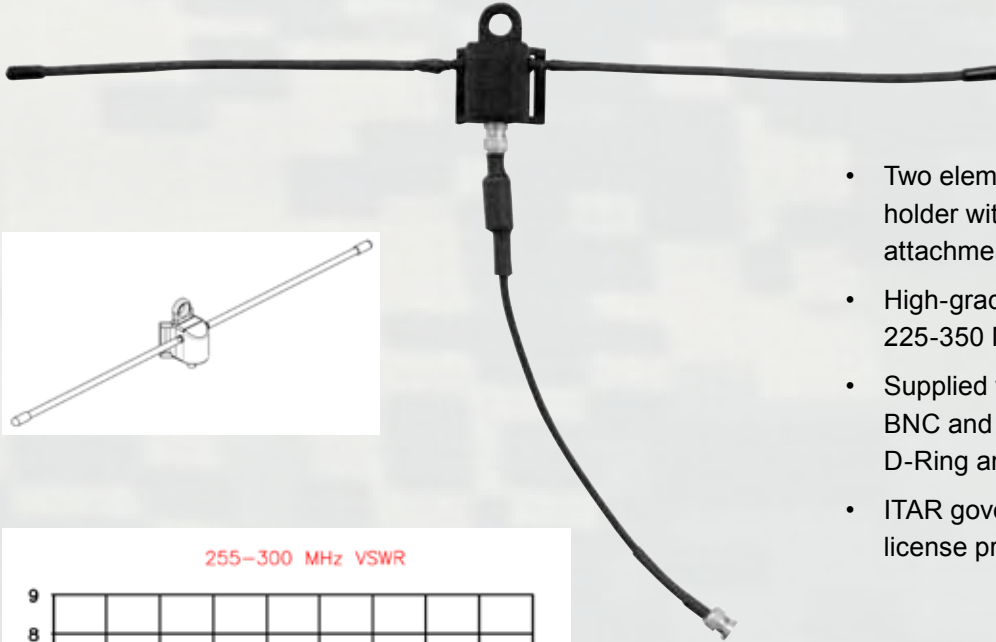
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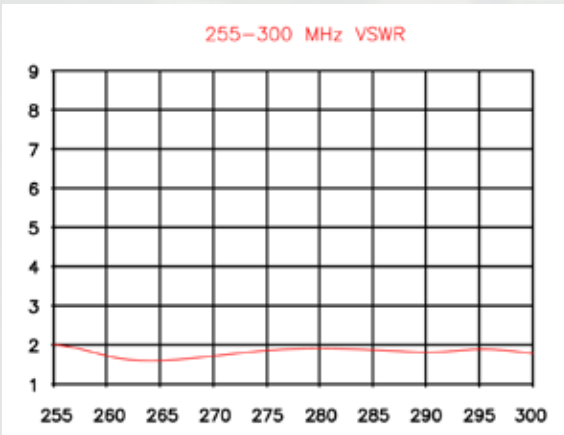
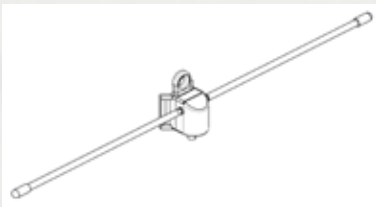
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## RAMHEAD ANTENNA

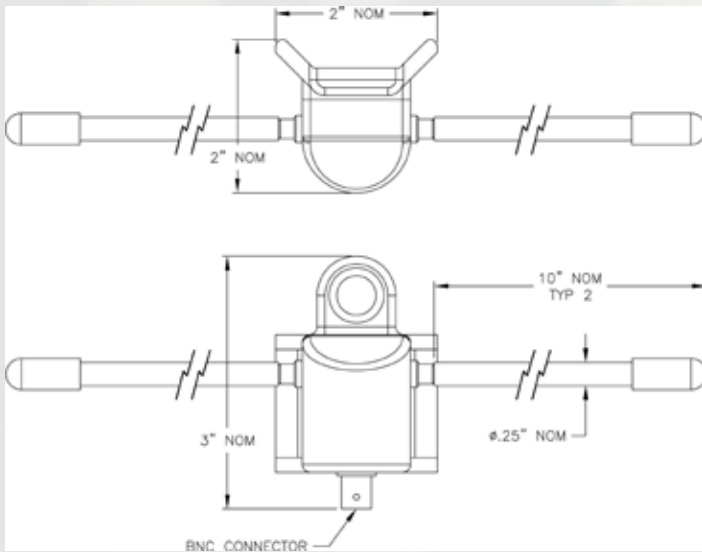
Shakespeare's Model RH-2535 Broadband Ramhead antenna has been designed by Shakespeare specifically for mobility.



- Two elements, joined by an innovative holder with belt loop and eyelet attachments.
- High-grade communications across the 225-350 MHz band
- Supplied with 2 ea. 12" coax, 1 TNC to BNC and 1 BNC to BNC connectors, D-Ring and a Velcro fastener
- ITAR governed item – requires DOS license prior to export



SPECIFICATIONS	
Frequency:	255-300 MHz
Power:	25 Watts CW
Instantaneous Bandwidth:	125 MHz
Polarization:	Linear
VSWR:	Average 2.5:1 or less
Input Impedance:	50 Ω nominal
Color:	Green, Black, Tan
RF Connector:	Type BNC
Weight:	1 lb. approximate

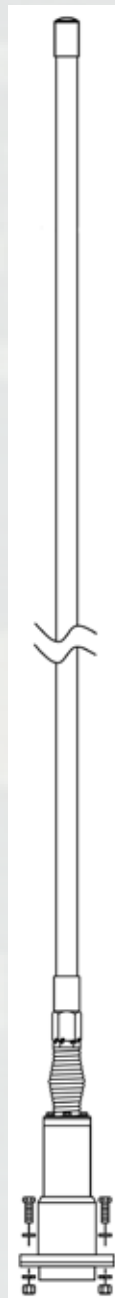
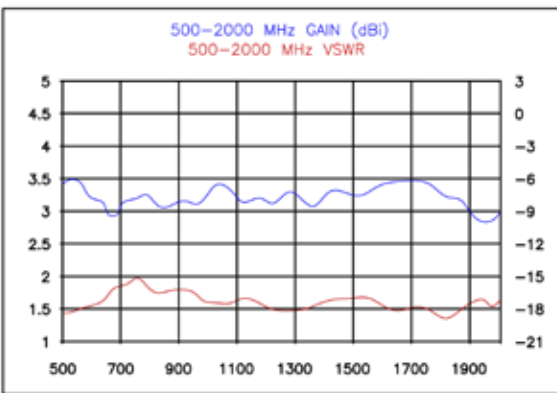
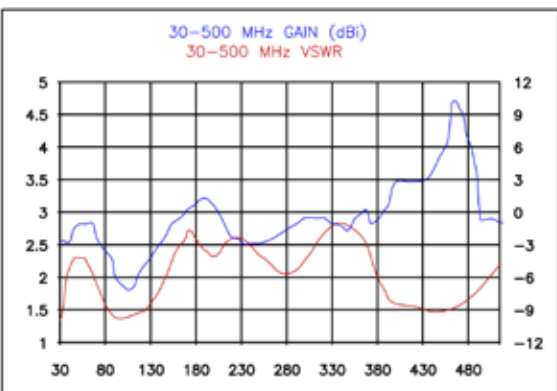


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**Military Antenna Products**

## WIDE BAND ANTENNA

Designed for the latest in battlefield applications of digital data transfer technologies using RF frequencies above 500 MHz, the WB-3200/VRC uses a patented radiator design to allow maximum link capabilities with best pattern efficiency across a very wide bandwidth. This new design minimizes pattern up-tilt and maintains best signal to the horizon.

The mechanical design is a truly tactically rated Mil-Std 810 compliant fiberglass composite antenna that exceeds the rigors of tracked or wheeled vehicle application. The WB-3200



- 30-500 MHz and 500-2500 MHz
- 4-bolt Standard mount (CECOM Drawing A3207505)
- Maximum link capabilities
- Mil-Std 810 compliant fiberglass composite
- Instantaneous bandwidth: VHF/UHF 470 MHz; Wi-Fi 2000 MHz
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	30-500 MHz and 500-2500 MHz
Power:	100 Watts CW
Instantaneous Bandwidth:	VHF/UHF: 470 MHz; Wi-Fi: 2000 MHz
Polarization:	Vertical
RF Connector:	30-500 MHz: Type N; 500-2500 MHz: Type N
VSWR:	30-88 MHz: Average 1.9:1 or less; 108-156 MHz: Average 1.7:1 or less; 225-450 MHz: Average 2.2:1 or less; 1350-1550 MHz: Average 1.6:1 or less; 1650-1850 MHz: Average 1.5:1 or less
Input Impedance:	50 Ω nominal
Color:	Green, Black, Tan
RF Connector:	Type BNC
Weight:	16 lbs. approximate

*Shakespeare*<sup>®</sup>

**Military Antenna Products**



## DUAL-BAND, DUAL-FEED ANTENNA FOR TACTICAL VEHICLES

Shakespeare has teamed with major OEMs and military end users to produce a multi-band antenna design occupying a single radome, yet allowing significant co-site and intermod interference reduction. The design allows mechanical and electrical performance equivalent to “Legacy” antennas and utilizes only one mounting system.

The antenna’s interface reduction is gained through unique matching and choking methodologies allowing two separate feed lines up to 50dB of isolation between two antennas. The DB-3450/VRC’s small diameter radome also reduces vertical signature of multiple antennas, but provides the robust mechanical strength to thrive in hostile tactical environments.

The antenna is designed to mount in the “Legacy” mounting space available on the latest tactical vehicle configurations. Specifications were thoroughly verified by testing on the leading military proving grounds. When combined with the most recent fielded multiplexing designs, this antenna can well tolerate the RF energies produced from multiple transmitters on each band.

- 30-88 MHz / 225-450 MHz
- Performance equivalent to “Legacy” antennas
- Mil-Std 810 compliant fiberglass composite
- Low cost
- Port to Port isolation reaching 50 dB
- ITAR governed item – requires DOS license prior to export



SPECIFICATIONS		
	VHF	UHF
Frequency:	30-88 MHz	225-450 MHz
Power:	150 Watts	100 Watts
VSWR:	3.5:1	3.0:1
Bandwidth:	60 MHz Instantaneous	225 MHz Instantaneous
RF Connector:	BNC Female, 50 ohm	BNC Female, 50 ohm
Color:	383 Green, Black, Sand	383 Green, Black, Sand
Weight:	10 lbs	10 lbs

Model SF-DBD Dual Band Diplexer is available separately.

Shakespeare’s unique design is protected by US Patents #4958164, #6429821 and others pending.

*Shakespeare*<sup>®</sup>  
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## CENTERFED DUAL-BAND, DUAL-FEED ANTENNA

Shakespeare has teamed with major OEMs and military end users to produce a multi-band antenna design allowing significant co-site intermod interference reduction. The design allows mechanical and electrical performance equal to “Legacy” antennas and utilizes one mounting system. The antenna’s interface reduction is gained through unique matching and choking methodologies allowing two separate feed lines between the two antennas. The small diameter radome also reduces visual signature of multiple antennas, yet provides the robust mechanical strength to thrive in hostile tactical environments. The antenna is designed to mount in the “Legacy” mounting space on the latest tactical vehicle configurations. Specifications were verified by testing on the leading military proving grounds.

When combined with the most recent fielded multiplexing designs, this antenna can well tolerate the RF energies produced from multiple transmitters on each band. The CF-3450/VRC is ground independent which creates an ideal environment for less than ideal ground planes as well as mast mounting in Forward Operating Base camps or Tactical Operations Centers. Shakespeare carries a complete line of Tactical Lightweight Telescopic Masts and accessories that are can be quickly deployed. Also available is a dual-band diplexer allowing other operating modes.



- Performance equal to “Legacy” antennas
- Ground independent
- Co-site intermod interference reduction
- Two antenna design, one mounting base

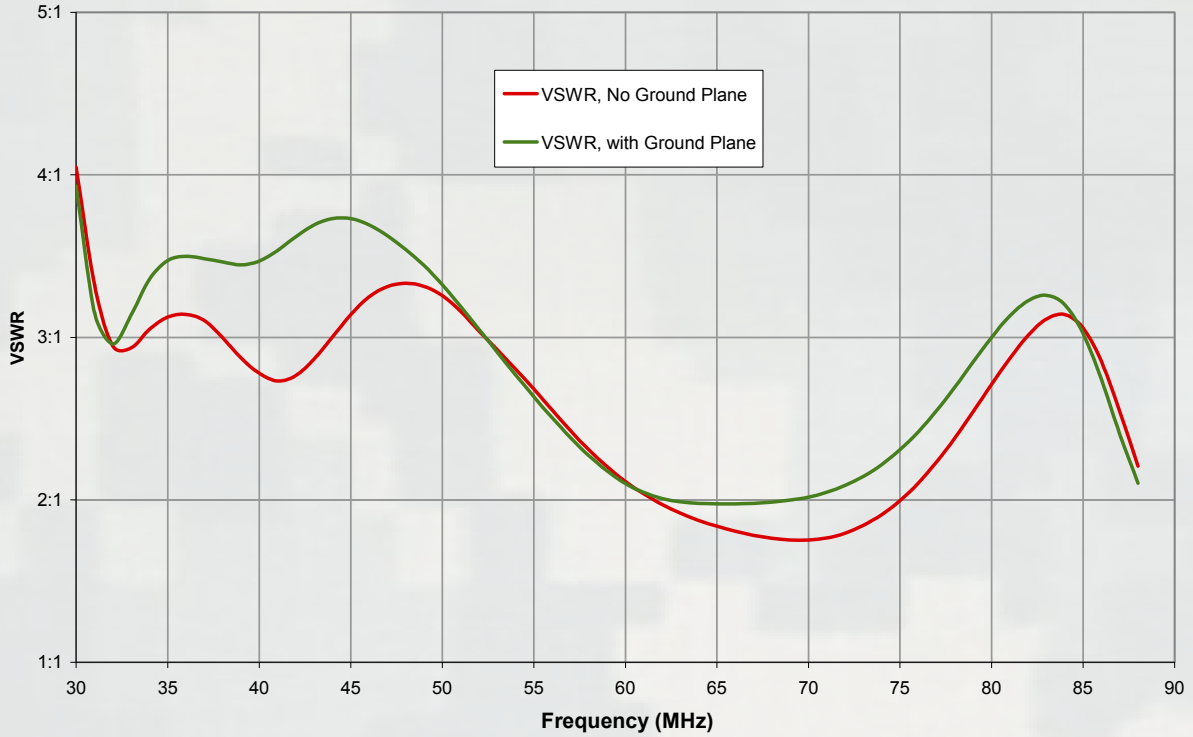
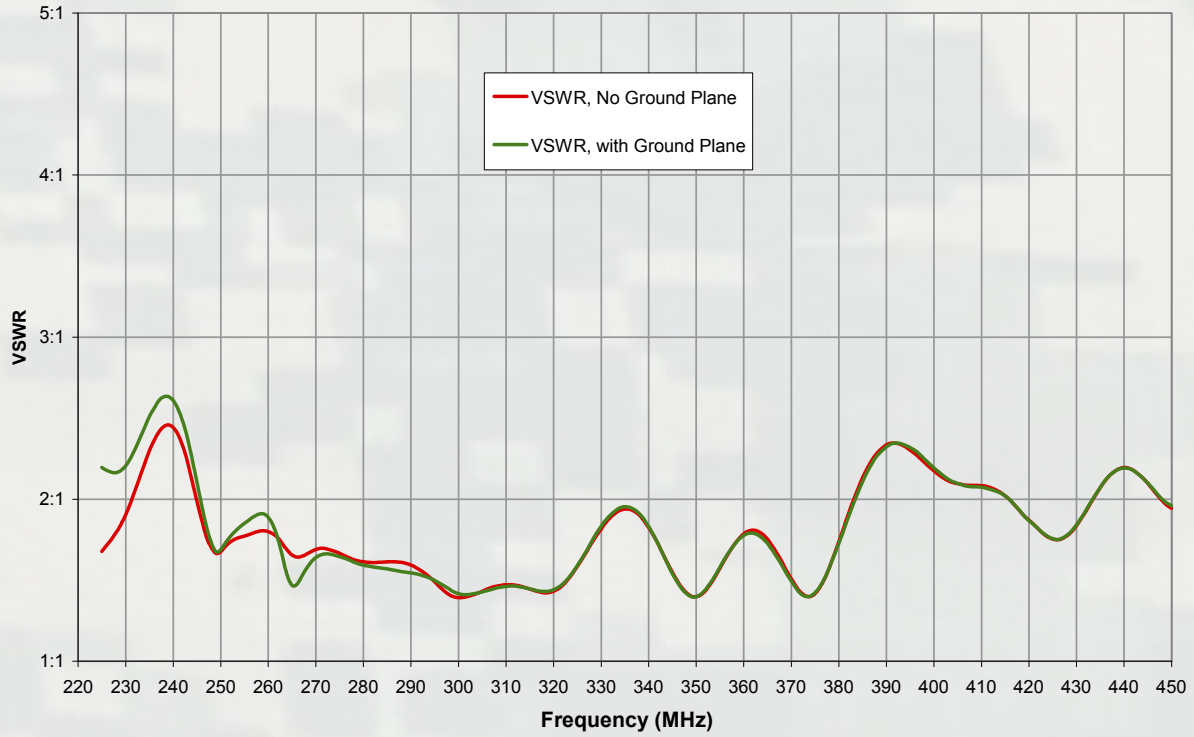
SPECIFICATIONS		
	VHF	UHF
Frequency:	30-88 MHz	225-450 MHz
Power:	150 Watts	50 Watts
VSWR:	3.5:1	3.0:1
Bandwidth:	60 MHz Instantaneous	225 MHz Instantaneous
RF Connector:	BNC Female, 50 ohm	BNC Female, 50 ohm
Color:	383 Green, Black, Tan	383 Green, Black, Tan

Model SF-DBD Dual Band Diplexer is available separately.

Shakespeare’s unique design is protected by US Patents #4958164, #6429821 and others pending

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## BROADBAND 500-2500 MHZ TACTICAL VEHICULAR ANTENNA FOR WIN-T / WI-FI DIGITAL APPLICATIONS

Designed for the latest in battlefield applications of digital data transfer technologies using RF frequencies above 500 MHz, the WB5025/VRC uses a unique patented radiator design to allow maximum link capabilities with best pattern efficiency across a very wide bandwidth. This new design minimizes pattern up-tilt and maintains best signal to the horizon.

The mechanical design is a true tactically rated Mil-Std 810 compliant fiberglass composite antenna that exceeds the rigors of tracked or wheeled vehicle application. The WB5025/VRC will provide ground independent low angle pattern, and fits the standard 4-bolt US Standard antenna mount.



- 500-2500 MHz
- Maximum link capabilities
- Mil-Std 810 compliant fiberglass composite
- 4-bolt Standard Mount (CECOM Drawing A3207505)
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	500-2500 MHz
Power:	25 Watts Continuous
Polarization:	Vertical
Input Impedance:	50 ohms nominal
VSWR:	2.5:1 or less across the band
Bandwidth:	2500 MHz Instantaneous
RF Connector:	Type "N" Female
Color:	383 Green, Black, Tan
Weight:	5.25 lbs

Shakespeare's unique design is protected by US Patent # 7142166

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**Military Antenna Products**



## L BAND ANTENNA

Today's versatile radios demand equal versatility in antenna technology for quality communication over every available band. Versatility and simplicity are paramount, and that's what you get with Shakespeare broadband antennas.

With a minimum of antennas, you get optimal signal and transmission strength. For vehicular, ground and manpack platforms, there's less to see and to maintain.



- 2400-2500 MHz
- Mobile connectivity
- Extend wireless signal reach
- Rugged and low profile
- Vehicle or fixed mounting
- EIRP 34 dBm peak, 28 dBm max. average
- Signal booster transmit gain 20 dB max. under D-AGC control
- Azimuth beam width 360°; elevation beam width 70°
- Power over coax (POC) option
- WNW, 802.11, Wi-Fi waveforms

SPECIFICATIONS	
Frequency:	2400-2500 MHz
Power:	2 Watts Max (RX), 8W max (TX)
Polarization:	Righthand circular or linear vertical
Gain:	2 dBi
Mounting:	NATO 4.5" compatible vehicle mount; 2" pole or mast mount
Operating temp:	-40° F (-40° C) to +158° F (70° C)
Construction:	Impact-resistant UV-stabilized polycarbonate
Radiation:	Omnidirectional
Dimensions:	4.4" dia., 5.5" high
VSWR:	2.0:1
Input impedance:	50 Ω

*Shakespeare*<sup>®</sup>  
**Military Antenna Products**

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- Azimuth beam width 360°; elevation beam width 70°
- Power over coax (POC) option
- WNW, 802.11, Wi-Fi waveforms

SPECIFICATIONS	
Frequency:	2400-2500 MHz
Power:	2 Watts Max (RX), 8W max (TX)
Polarization:	Righthand circular or linear vertical
Gain:	7 dBi
Mounting:	NATO 4.5" compatible vehicle mount; 2" pole or mast mount
Operating temp:	-40° F (-40° C) to +158° F (70° C)
Color:	Desert Tan

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**Military Antenna Products**

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- 2400-2500 MHz
- Mobile connectivity
- Extend wireless signal reach
- Rugged and low profile
- Vehicle or fixed mounting
- EIRP 34 dBm peak, 28 dBm max. average
- Signal booster transmit gain 20 dB max. under D-AGC control
- Azimuth beam width 360°; elevation beam width 70°
- Power over coax (POC) option
- WNW, 802.11, Wi-Fi waveforms

SPECIFICATIONS	
Frequency:	2400-2500 MHz
Power:	2 Watts Max (RX), 8W max (TX)
Polarization:	Righthand circular or linear vertical
Gain:	14 dBi
Mounting:	NATO 4.5" compatible vehicle mount; 2" pole or mast mount
Operating temp:	-40° F (-40° C) to +158° F (70° C)
Color:	Desert Tan

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## C BAND ANTENNA

Today's versatile radios demand equal versatility in antenna technology for quality communication over every available band. Versatility and simplicity are paramount, and that's what you get with Shakespeare broadband antennas.

With a minimum of antennas, you get optimal signal and transmission strength. For vehicular, ground and manpack platforms, there's less to see and to maintain.



- 5.1 - 5.85 GHz
- Mobile connectivity
- Extend wireless signal reach
- Rugged and low profile
- Vehicle or fixed mounting
- EIRP 34 dBm peak, 28 dBm max. average
- Signal booster transmit gain 20 dB max. under D-AGC control
- Azimuth beam width 360°; elevation beam width 70°
- Power over coax (POC) option
- WNW, 802.11, Wi-Fi waveforms

SPECIFICATIONS	
Frequency:	5.1 - 5.85 GHz
Power:	2 Watts Max (RX), 8W max (TX)
Polarization:	Righthand circular or linear vertical
Gain:	5 dBi
Mounting:	NATO 4.5" compatible vehicle mount; 2" pole or mast mount
Operating temp:	-40° F (-40° C) to +158° F (70° C)
Construction:	Impact-resistant UV-stabilized polycarbonate
Radiation:	Omnidirectional
Dimensions:	4.4" dia., 5.5" high

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## C BAND ANTENNA

Today's versatile radios demand equal versatility in antenna technology for quality communication over every available band. Versatility and simplicity are paramount, and that's what you get with Shakespeare broadband antennas.

With a minimum of antennas, you get optimal signal and transmission strength. For vehicular, ground and manpack platforms, there's less to see and to maintain.



- 4.4 - 4.6 GHz
- Mobile connectivity
- Extend wireless signal reach
- Rugged and low profile
- Vehicle or fixed mounting
- EIRP 34 dBm peak, 28 dBm max. average
- Signal booster transmit gain 20 dB max. under D-AGC control
- Azimuth beam width 360°; elevation beam width 70°
- Power over coax (POC) option
- WNW, 802.11, Wi-Fi waveforms

SPECIFICATIONS	
Frequency:	4.4 - 4.6 GHz
Power:	2 Watts Max (RX), 8W max (TX)
Polarization:	Righthand circular or linear vertical
Gain:	14 dBi
Mounting:	NATO 4.5" compatible vehicle mount; 2" pole or mast mount
Operating temp:	-40° F (-40° C) to +158° F (70° C)
Color:	Desert Tan

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## C BAND ANTENNA

Today's versatile radios demand equal versatility in antenna technology for quality communication over every available band. Versatility and simplicity are paramount, and that's what you get with Shakespeare broadband antennas.

With a minimum of antennas, you get optimal signal and transmission strength. For vehicular, ground and manpack platforms, there's less to see and to maintain.



- 5.45 - 5.58 GHz
- Mobile connectivity
- Extend wireless signal reach
- Rugged and low profile
- Vehicle or fixed mounting
- EIRP 34 dBm peak, 28 dBm max. average
- Signal booster transmit gain 20 dB max. under D-AGC control
- Azimuth beam width 360°; elevation beam width 70°
- Power over coax (POC) option
- WNW, 802.11, Wi-Fi waveforms

SPECIFICATIONS	
Frequency:	5.45 - 5.58 GHz
Power:	2 Watts Max (RX), 8W max (TX)
Polarization:	Righthand circular or linear vertical
Gain:	7 dBi (FP7T); 13 dBi (FP13T)
Mounting:	NATO 4.5" compatible vehicle mount; 2" pole or mast mount
Operating temp:	-40° F (-40° C) to +158° F (70° C)
Color:	Desert Tan

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## C BAND ANTENNA

Today's versatile radios demand equal versatility in antenna technology for quality communication over every available band. Versatility and simplicity are paramount, and that's what you get with Shakespeare broadband antennas.

With a minimum of antennas, you get optimal signal and transmission strength. For vehicular, ground and manpack platforms, there's less to see and to maintain.



- 5.45 - 5.85 GHz
- Mobile connectivity
- Extend wireless signal reach
- Rugged and low profile
- Vehicle or fixed mounting
- EIRP 34 dBm peak, 28 dBm max. average
- Signal booster transmit gain 20 dB max. under D-AGC control
- Azimuth beam width 360°; elevation beam width 70°
- Power over coax (POC) option
- WNW, 802.11, Wi-Fi waveforms

SPECIFICATIONS	
Frequency:	5.45 - 5.85 GHz
Power:	2 Watts Max (RX), 8W max (TX)
Polarization:	Righthand circular or linear vertical
Gain:	18 dBi
Mounting:	NATO 4.5" compatible vehicle mount; 2" pole or mast mount
Operating temp:	-40° F (-40° C) to +158° F (70° C)
Color:	Desert Tan

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## HIGH POWER, HIGH GAIN, BROADBAND 500-2500 MHz TACTICAL VEHICULAR ANTENNA FOR WIN-T / WI-FI DIGITAL APPLICATIONS

Designed for the latest in battlefield applications of digital data transfer technologies using RF frequencies above 500 MHz, the HP5250/VRC uses a unique patented radiator design to allow maximum link capabilities with best pattern efficiency across a very wide bandwidth. This new design minimizes pattern up-tilt and maintains best signal to the horizon.

The mechanical design is a true tactically rated Mil-Std 810 compliant fiberglass composite antenna that exceeds the rigors of tracked or wheeled vehicle application. The HP-5250/VRC will provide ground independent low angle pattern, and fits the standard 4-bolt US Standard antenna mount.



HP5250S/VRC

- 500-2500 MHz
- Maximum link capabilities
- Mil-Std 810 compliant fiberglass composite
- 4-bolt Standard Mount (CECOM Drawing A3207505)
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	500-2500 MHz
Power:	200 Watts
Polarization:	Vertical
Input Impedance:	50 ohms nominal
VSWR:	3.5:1
Bandwidth:	2 GHz Instantaneous
RF Connector:	Type "N" Female
Color:	383 Green, Black, Tan
Weight:	5.75 lbs

Shakespeare's unique design is protected by US Patent # 7142166

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## VHF TACTICAL VEHICULAR ANTENNA BROADBAND COMMUNICATIONS SYSTEMS ANTENNAS

Shakespeare's tactical vehicle antennas are advanced broadband, vertically polarized antennas for the VHF 30-108 MHz bands. Our most advanced designs, the 4242-MK2A and 4242-MK3, feature high performance in the 30-88 MHz band, plus an improved power rating. The 4242-MK3 covers the 30-108 MHz band.

These high-performance broadband antennas are ideally suited for use on personnel carriers, tanks, shelters, and other tactical vehicles. They maintain a VSWR of better than 3.5:1 over the entire frequency spectrum, and the bandwidth is instantaneous, with out the need for tuners or band switching. No operator intervention required.

Uniquely designed to meet the specifications for frequency-agile radios, the 4242-MK Series antennas are also compatible with fixed frequency transceivers. These passive antennas do not require tuning, band switching, a motor drive, a cable harness, or a DC voltage source to the antenna. Simply connect 50-ohm coax cable between the transceiver and the antenna.



- Complete compatibility with NATO and Free World Communications
- Rolled thread taper-lock fittings for quick assembly and positive RF conduction
- BNC female
- Virtually indestructible, Xenoy® feed-thru base with flexible shock spring
- Safety-engineered, upper section of antenna affords protection from electrocution in the event of power line contact
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	30-88 MHz (4242-MK3: 30-108 MHz)
Power:	100 Watts
Impedance:	50 ohms
Gain:	-1dB to +4 dBi
VSWR:	3.5:1 or less
Color:	383 Green, Black, Tan
Mounting Pattern:	4-Bolt (CECOM Drawing A3207505)
Pattern:	Omnidirectional
Length:	75" nominal

Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.

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## LOW-PROFILE VHF TACTICAL VEHICULAR ANTENNA

Shakespeare's Model 4243-A broadband antenna is an end-fed, low profile, stainless steel whip antenna especially designed for tactical vehicles. It provides a low silhouette to prevent visual detection, and to present low drag factor to exhaust gases which can destroy a larger surface antenna when firing vehicle mounted missiles. The Model 4243-A's advanced design is totally passive, delivering an instantaneous bandwidth across the entire 30-88 MHz band within a VSWR of 3.5:1. NO tuning or operator adjustments are required.

Uniquely designed to meet specification for frequency-agile radios, the Model 4243-A antenna is also compatible with VRC-12 and PRC-77 fixed frequency transceivers. When operating with fixed frequency radios, the passive antenna does not require tuning, band switching, a motor drive, a cable harness, or a DC voltage source to the antenna. Simply connect 50 ohm coax cable between the transceiver and the antenna.

The Model 4243-A provides built-in protection against high voltage electrocution from accidental contact with a power line - up to 20KV RMS. A surge arrestor is built in, for EMP protection. Its Xenoy® base is finished in CARC 383 green paint, and stainless steel components are black oxide coated. The antenna mounts using ½" stainless steel mounting bolts, and hardware which is provided.



- Tapered Stainless steel Whip
- EMP Protected
- Feed-thru base with flexible shock spring
- Safety engineered to prevent electrocution
- BNC-female connector
- Xenoy® base is virtually indestructible
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	30-88 MHz
Power:	70 Watts
Impedance:	50 ohms
VSWR:	Less than 3.5:1
Operating Temp:	-45° to +60° C.
Coax Connector:	BNC Female
Color:	383 Green with black oxide coated stainless steel whip
Mounting Pattern:	4-Bolt (CECOM Drawing A3207505)
Radiation:	Omnidirectional

Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.

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**Military Antenna Products**

## VEHICULAR BRACKETS AND ACCESSORIES



Model 4240-3A Bracket  
NSN: 5985-01-514-4515

- Utility aluminum bracket
- Finished in CARC military green
- Fits Models 4244, 4244-1, 4245, and 4289-W bases
- Adapter plate included to fit Model 120-43 base not supplied.
- Steel reinforcing backing plates and dust cover supplied.
- May be bolted to vehicles or shelters
- Mounting bolts not supplied.



Model 4257 Bracket  
NSN: 5985-01-514-4396

- Utility steel bracket per ASTM A-589
- Finished in military green
- Fits Models 4244, 4244-1, 4245, and 4289-W bases
- May be bolted to vehicles or shelters
- Mounting bolts not supplied.



Model 4277  
NSN: 5820-00-908-6416

- Used for tying antenna over
- Metal clip attached to 10' cord
- Fits over antenna shaft
- Other end of cord ties to vehicle
- Military green



Model 4291-2 Eye Protector

- Tear drop shape
- Slips over tip of antenna to help prevent eye injury
- Securely held in place by internal locking devices
- Material: vinyl coated plastic ball with internal metal parts

*Shakespeare*<sup>®</sup>  
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## VHF / UHF MILITARY, CIVIL DEFENSE, DISASTER PREPAREDNESS, AND GENERAL COMMUNICATIONS ANTENNA

Shakespeare's VHF /UHF broadband antennas can be best described electronically as center-fed, coaxial sleeve dipoles, which are sealed into fiberglass radomes to provide long-lasting 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 and 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 salt water environment. A grounding strap and ½" stainless steel screws and hardware are supplied.



Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.

- Instantaneous Bandwidth
- Maximum Performance
- Feed-thru base with flexible shock spring
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	118-174 MHz
Power:	60 Watts
Impedance:	50 ohms
Gain:	3 dBi
VSWR:	Better than 2.8:1
Polarization:	Vertical
Operating Temp:	-45° to +60° C.
Coax Connector:	BNC Female
Ground Plane:	None required
Color:	383 Green
Mounting Pattern:	4-Bolt (CECOM Drawing A3207505)
Radiation:	Omnidirectional
Length:	42" nominal
Net Weight:	6 lbs.

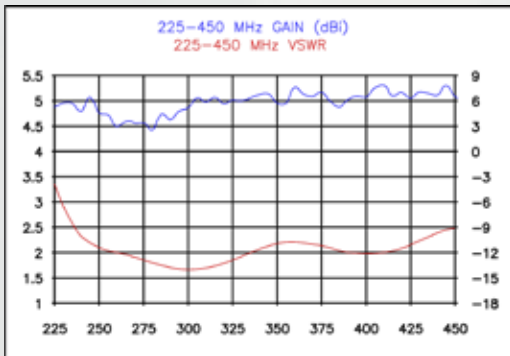
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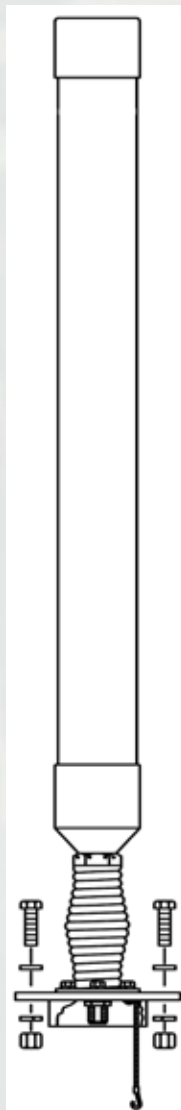
## WIDE BAND ANTENNA

Shakespeare's VHF /UHF wide band antennas are sealed into fiberglass radomes to provide long-lasting protection from the elements. The antennas are built for vehicles, shelters, buildings, mast and shipboard applications. They antenna provides instantaneous bandwidth centered around a 50 ohm impedance. A grounding strap and 1/2" stainless steel screws and hardware are supplied.

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 salt water environment. A grounding strap and 1/2" stainless steel screws and hardware are supplied.



Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.



- Instantaneous Bandwidth: 225 MHz
- Maximum Performance
- Feed-thru base with flexible shock spring
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	225-450 MHz
Power:	100 Watts CW
Impedance:	50 ohms nominal
Gain:	+3 to +8 dBi (see chart)
VSWR:	Average 3.5:1 or less
Polarization:	Vertical
Coax Connector:	Type N
Color:	Green, Tan, Black
Mounting Pattern:	4 0.438" holes spaced 90° apart on a 4.5" bolt hole circle
Radiation:	Omnidirectional
Length:	42" nominal
Weight:	6 lbs. (approx.)

*Shakespeare*<sup>®</sup>

**Military Antenna Products**

## VHF / UHF MILITARY, CIVIL DEFENSE, DISASTER PREPAREDNESS, AND GENERAL COMMUNICATIONS ANTENNA

Shakespeare's VHF /UHF broadband antennas can be best described electronically as center-fed, coaxial sleeve dipoles, which are sealed into fiberglass radomes to provide long-lasting 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 and 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 salt water environment. A grounding strap and ½" stainless steel screws and hardware are supplied.

Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.



- Instantaneous Bandwidth
- Maximum Performance
- Feed-thru base with flexible shock spring

SPECIFICATIONS	
Frequency:	225-450 MHz
Power:	60 Watts
Impedance:	50 ohms
Gain:	2 dBi
VSWR:	Better than 3.5:1
Polarization:	Vertical
Operating Temp:	-45° to +60° C.
Coax Connector:	Type "N" Female
Ground Plane:	None required
Color:	White
Mounting Pattern:	4-Bolt (CECOM Drawing A3207505)
Radiation:	Omnidirectional
Length:	35" nominal
Net Weight:	7.5 lbs.

*Shakespeare*<sup>®</sup>  
**Military Antenna Products**

## TRIPOD OFFERS QUICK TACTICAL SETUP FOR VEHICULAR ANTENNAS

Shakespeare's TP-1897 was designed for quick deployment and operator exibility. The TP-1897 allows the operator to install vehicular antennas in a tactical environment. The tripod legs form the ground plane for increased antenna performance.

SPECIFICATIONS	
Standard:	Center Mount, 3 Legs
Weight:	Approximately 17 lbs
Height:	48 inches nominal
Optional:	Center Mount, 6 legs
Weight:	Approximately 22 lbs
Height:	90 inches nominal



TP-1897 is shown with the Shakespeare SFB-3512/VRC Multiband Antenna. The antenna is sold separately.

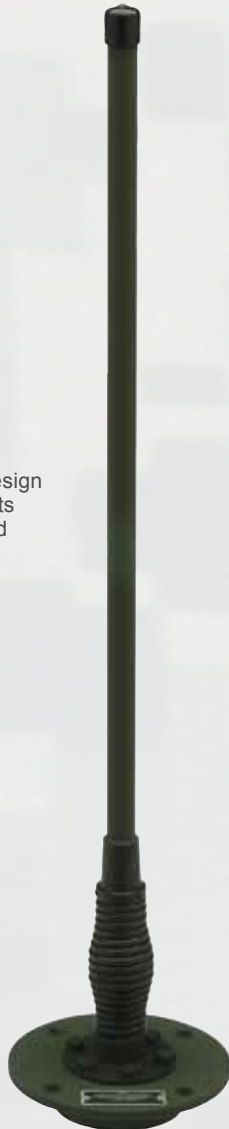
*Shakespeare*<sup>®</sup>  
**Military Antenna Products**

## VHF / UHF MILITARY, CIVIL DEFENSE, DISASTER PREPAREDNESS, AND GENERAL COMMUNICATIONS ANTENNA

Shakespeare's VHF /UHF broadband antennas can be best described electronically as center-fed, coaxial sleeve dipoles, which are sealed into fiberglass radomes to provide long-lasting 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 and 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 salt water environment. A grounding strap and 1/2" stainless steel screws and hardware are supplied.



Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.

- Instantaneous Bandwidth
- Maximum Performance
- Feed-thru base with flexible shock spring
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	420-470 MHz
Power:	60 Watts
Impedance:	50 ohms
Gain:	4 dBi
VSWR:	Better than 2:1
Polarization:	Vertical
Operating Temp:	-45° to +60° C.
Coax Connector:	Type "N" Female
Ground Plane:	None required
Color:	CARC 383 Green
Mounting Pattern:	4-Bolt (CECOM Drawing A3207505)
Radiation:	Omnidirectional
Length:	26" nominal
Net Weight:	6 lbs.

*Shakespeare*<sup>®</sup>  
**Military Antenna Products**



## VHF / UHF MILITARY, CIVIL DEFENSE, DISASTER PREPAREDNESS, AND GENERAL COMMUNICATIONS ANTENNA

Shakespeare's VHF /UHF broadband antennas can be best described electronically as center-fed, coaxial sleeve dipoles, which are sealed into fiberglass radomes to provide long-lasting 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 and 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 salt water environment. A grounding strap and ½" stainless steel screws and hardware are supplied.

Shakespeare's unique design is protected by US Patents #4958164, #6429821 and others pending.



- Instantaneous Bandwidth
- Maximum Performance
- Feed-thru base with flexible shock spring
- ITAR governed item – requires DOS license prior to export

SPECIFICATIONS	
Frequency:	100-512 MHz
Power:	75 Watts
Impedance:	50 ohms
Gain:	3 dBi
VSWR:	Better than 2.8:1
Polarization:	Vertical
Operating Temp:	-45° to +60° C.
Coax Connector:	Type "N" Female
Ground Plane:	Required
Color:	383 Green
Mounting Pattern:	4-Bolt (CECOM Drawing A3207505)
Radiation:	Omnidirectional
Length:	58" nominal
Net Weight:	6.8 lbs.

*Shakespeare*<sup>®</sup>  
Military Antenna Products

## VHF/UHF 0.5 METER BROADBAND MANPACK TAPE ANTENNA

Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

The 3500 series wideband tape antenna has been designed for manpack radio applications, with suitable radio antenna tuner unit, operating in the 30-512 MHz frequency band. This type of antenna is more suited for combat conditions where physical restriction on the user and radio is not desirable. These antennas are constructed from a number of stainless steel tape elements, sheathed in a protective durable sleeving. The tape antenna is supplied with an antenna matching unit (AMU) optimized over the full operating band. The radio interface end of the AMU can be tailored to the radio manufacturer's bulkhead interface.



SPECIFICATIONS	
Frequency:	30 – 512 MHz
Power:	15 W CW at 55° C (30–512 MHz) 20 W CW at 55° C (120–512 MHz)
Connection:	3500-100-01 - BNC Male with M16 x 0.75 retaining thread 3500-101-01 - TNC Male 3500-102-01 - N Type Male 3500-103-01 - BNC Male
Input Impedance:	50 Ω
VSWR:	3.5:1 (subject to groundplane)
Pattern:	Omnidirectional
Polarization:	Linear vertical
Height:	19.69 inches / 0.5 M
Weight:	0.36 lbs / 164 g



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## VHF/UHF 0.56 METER WIDEBAND DIPOLE ANTENNA & ANTENNA MATCHING UNIT (AMU)

Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

The 3505 ultra wideband manpack antenna is suitable for software definable (SDR) radios for use in a network centric environment over the 225-1000 MHz frequency band. The antenna is of dipole design which means that it will operate efficiently without the need for a groundplane. A flexible gooseneck is fitted as standard to enable the antenna to be angled to the ideal position when used in a manpack role. The antennas are fully ruggedized for military use, manufactured from stainless steel and GRP.



SPECIFICATIONS	
Frequency:	225 – 1000 MHz
Power:	30 W CW
Connection:	N Type Male
Input Impedance:	50 $\Omega$
VSWR:	3:1
Pattern:	Omnidirectional
Polarization:	Linear vertical
Height:	22.05 inches / 0.56 M
Weight:	1.1 lbs / 0.5 kg

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Military Antenna Products

## VHF/UHF 0.43 METER WIDEBAND DIPOLE ANTENNA & ANTENNA MATCHING UNIT (AMU)

Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

The 3506 ultra wideband manpack antenna is suitable for software definable (SDR) radios for use in a network centric environment over the 1000-2500MHz frequency band. The antenna is of dipole design which means that it will operate efficiently without the need for a groundplane. A flexible gooseneck is fitted as standard to enable the antenna to be angled to the ideal position when used in a manpack role. The antennas are fully ruggedized for military use, manufactured from stainless steel and GRP.



SPECIFICATIONS	
Frequency:	1000 – 2500 MHz
Power:	30 W CW
Connection:	N Type Male
Input Impedance:	50 $\Omega$
VSWR:	2.5:1
Pattern:	Omnidirectional
Polarization:	Linear vertical
Height:	16.93 inches / 0.43 M
Weight:	0.99 lbs / 0.45 kg

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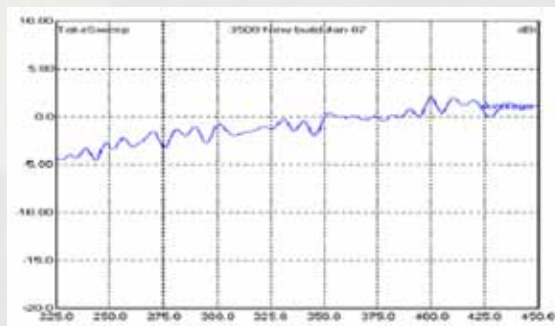
## VHF/UHF MANPACK MONOPOLE ANTENNA & ANTENNA MATCHING UNIT (AMU)

The 3508 manpack monopole antenna has been designed for manpack radio applications operating in the 225–450 MHz (VHF/UHF) frequency band. A flexible gooseneck is fitted as standard to enable the antenna to be angled to the ideal position when used in a tactical role. The antennas are fully ruggedized for military use.



SPECIFICATIONS	
Frequency:	225 – 450 MHz
Power:	10 W CW
Connection:	TNC Male (N Male optional)
Input Impedance:	50 Ω
VSWR:	3.5:1
Pattern:	Omnidirectional
Polarization:	Vertical
Height:	12.99 inches / 330 mm
Weight:	4.76 oz. / 135 g
Temperature Tolerance:	Operational -40° C to +70° C; Storage -55° C to +85° C
Humidity:	Up to 95% RH up to 55°
Mounting Configuration:	Directly to radio bulkhead connector

GAIN



*Shakespeare*<sup>®</sup>  
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## VHF/UHF 0.43 METER WIDEBAND DIPOLE ANTENNA & ANTENNA MATCHING UNIT (AMU)

Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

The 3510 ultra wideband manpack antenna is suitable for software definable (SDR) radios for use in a network centric environment over the 500-2500 MHz frequency band. The antenna is of dipole design which means that it will operate efficiently without the need for a groundplane. A flexible gooseneck is fitted as standard to enable the antenna to be angled to the ideal position when used in a manpack role. The antennas are fully ruggedized for military use, manufactured from stainless steel and GRP.



SPECIFICATIONS	
Frequency:	500 – 2500 MHz
Power:	20 W CW
Connection:	N Type Male
Input Impedance:	50 $\Omega$
VSWR:	2.5:1
Pattern:	Omnidirectional
Polarization:	Linear vertical
Height:	16.93 inches / 0.43 M
Weight:	1.1 lbs / 0.5 kg

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**Military Antenna Products**

# Masts

Mast Specifications											
Category	Mast	Metric					English				
		Extended Height (m)	Closed Height (m)	Mast Weight (kg)	Accessory Kit Weight (kg)	Head Load (kg)	Extended Height (ft)	Closed Height (ft)	Mast Weight (lbs)	Accessory Kit Weight (lbs)	Head Load (lbs)
		Aluminum Lightweight Telescoping Mast (Standard/Pneumatic)	716/476	8.0	1.5	10.2	18.1	10.0	26.2	4.9	22.5
798/477	9.0		2.2	10.6	18.1	15.0	29.5	7.1	23.4	39.9	33.1
715/478	10.0		1.8	11.6	21.0	8.5	32.8	5.7	25.6	46.3	18.7
714/479	12.0		2.0	13.0	21.0	7.0	39.4	6.6	28.7	46.3	15.4
486/1486	12.0		2.0	13.0	21.0	15.0	39.4	6.6	28.7	46.3	33.1
Aluminum Intermediate Telescoping Mast	459/1487	6.8	2.2	30.0	30.0	50.0	22.3	7.2	66.1	66.1	110.2
	1440	10.0	2.2	35.0	30.0	25.0	32.8	7.2	77.2	66.1	55.1
	456	12.0	2.5	40.0	30.0	25.0	39.4	8.0	88.2	66.1	55.1
	463	12.8	2.8	44.0	30.0	35.0	42.0	9.2	97.0	66.1	77.2
	1447	14.5	3.1	48.0	30.0	35.0	47.6	10.2	105.8	66.1	77.2
	457	15.0	2.9	46.0	32.0	25.0	49.2	9.5	101.4	70.5	55.1
	458	17.0	3.2	50.0	32.0	25.0	55.8	10.5	110.2	70.5	55.1
Composite Lightweight Telescoping Mast	1449	18.0	3.3	52.0	35.0	25.0	59.1	10.8	114.6	77.2	55.1
	TM51/4-1.2	4.0	1.2	2.8	-	5.0	13.1	3.9	6.2	-	11.0
	TM51/6.3-1.8	6.3	1.8	3.6	-	3.0	20.7	5.9	7.9	-	6.6
	TM58/4.8-1.2	4.8	1.2	4.2	-	5.0	15.7	3.9	9.3	-	11.0
	TM58/7.6-1.8	7.6	1.8	5.2	-	5.0	24.9	5.9	11.5	-	11.0
	TR72/9.5-1.7	9.5	1.7	9.0	11.0	5.0	31.2	5.6	19.8	24.3	11.0
	TR86/8-1.35	8.0	1.4	11.0	11.0	5.0	26.2	4.4	24.3	24.3	11.0
TR86/10-1.7	10.0	1.7	12.0	11.0	5.0	32.8	5.6	26.5	24.3	11.0	
TR86/12-1.7	12.0	1.7	13.0	11.0	5.0	39.4	5.6	28.7	24.3	11.0	

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**Military Antenna Products**

Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

Shakespeare's SIGNATURE LTM-TM SERIES MASTS are designed for very lightweight head loads up to 7 pounds with heights available up to 26 feet. The mast sections are made from pultruded composite tubes with molded clamps and stainless steel fittings. Masts are erected vertically by pushing up each section and then locking in the position with the clamp under each section. Mounting kits are available for ground, vehicles and shelters, as well as a variety of other ancillary equipment.



Tripod shown for illustrative purposes.

- Lightweight
- Quick and safe operation
- Multiple uses for Police, emergency work, disaster preparedness, radio and TV broadcasting

**ACCESSORIES**

- Wall Clamp
- Vehicle Wheel Bracket
- Towing Ball Bracket
- Ground Mounting Kit
- Guying Accessories

Mast Type	TM51 4-1.2	TM51 5.1-1.3	TM51 6.3-1.8	TM51 8-1.8
Extended Height:	13 ft	17 ft	21 ft	26 ft
Retracted Length:	4 ft	4 ft	6 ft	6 ft
Max. Vertical Top Load:	7 lbs	7 lbs	7 lbs	7 lbs
Mast Weight:	6 lbs	7 lbs	8 lbs	10 lbs



Shakespeare has teamed with Rolatube™ and is proud to offer a line of light weight, highly portable mast systems developed for man portable tactical use. The system is designed to minimize the size and weight of package carried by the user and is significantly lighter than any comparable system currently available. Quick and simple to deploy and may be used either fully extended or partially rolled out for shorter deployment length. Unlike metal or carbon composite masts, the thermal signature of BRC masts is minimal.

The system is based on patented Rolatube™ technology. Formed from custom manufactured composite materials, the mast rolls up in the manner of a tape measure but, uniquely, is stable in either the coiled or extended form.

Rolatube Masts are:

- Reliable: No moving parts or joints
- Lightweight: Small and compact, easily fits in rucksack
- Rugged: Thermoplastic composite design is highly resistant to impact
- Proven: Over 1500 masts in service

Height	Weight	Headload
3 Meters	4.2lbs Complete	4.4lbs
5 Meters	8.5lbs Complete	7.7lbs
8 Meters	18lbs Complete	Call for Information



Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

Shakespeare's SIGNATURE TLTM-TR / TX CUSTOM SERIES MASTS are designed specific for customer's requirements. They are designed to meet the most demanding requirements for tactical / general communications systems, civil defense, disaster preparedness, police and emergency work.

Every mast detail and guy assembly is designed to resist external forces and to ensure quick safe operation. The masts perform excellently in arctic, tropical and desert environments. The mast is a push up model and can be supplemented with mounting kits for vehicles and shelters as well as a variety of other ancillary equipment.

The lightweight masts meet MIL-STD 810 requirements. All accessories needed for the mast operation are stored in separate bags.

- Lightweight
- Quick and safe operation



Tripod shown for illustrative purposes.

Mast Type	TX86 5-1	TR86 6.1.13	TR86 7.6-1.65	TR86 9-2.2	TR86 10-1.7
Extended Height:	16 ft	20 ft	25 ft	29 ft	32 ft
Retracted Length:	3 ft	4 ft	5 ft	7 ft	6 ft

Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

Shakespeare's SIGNATURE TLTM-TR SERIES MASTS are designed to meet the most demanding requirements for tactical / general communications systems, civil defense, disaster preparedness, police and emergency work.

Every mast detail and guy assembly is designed to resist external forces and to ensure quick safe operation. The masts perform excellently in arctic, tropical and desert environments. The mast is a push up model and can be supplemented with mounting kits for vehicles and shelters as well as a variety of other ancillary equipment.

The lightweight masts meet MIL-STD 810 requirements. All accessories needed for the mast operation are stored in separate bags.

- Lightweight
- Quick and safe operation
- Antenna mounting base mount sold separately



Tripod shown for illustrative purposes.

# Shakespeare®

## Military Antenna Products



Mast Type	TR72 6.6-1.6	TR72 9.5-1.7	TR86 8-1.35	TR86 9-1.7	TR86 12-1.7
Extended Height:	22 ft	31 ft	26 ft	29 ft	39 ft
Retracted Length:	5 ft	6 ft	5 ft	6 ft	6 ft
Max. Vertical Top Load:	15 lbs	11 lbs	11 lbs	11 lbs	11 lbs
Max. Wind Speed:	60 mph	55 mph	55 mph	55 mph	55 mph
Max. Wind Area:	3 ft <sup>2</sup>	2 ft <sup>2</sup>	3 ft <sup>2</sup>	2 ft <sup>2</sup>	2 ft <sup>2</sup>
Guy Radius:	10 ft	16 ft	13 ft	16 ft	16 ft
Qty, Guys x Levels:	3x2	3x3	3x3	3x3	3x3
Mast Weight:	13 lbs	20 lbs	24 lbs	26 lbs	29 lbs
Accessories Weight:	22 lbs	24 lbs	24 lbs	24 lbs	24 lbs

Tripod shown for illustrative purposes.

*Shakespeare*<sup>®</sup>

**Military Antenna Products**



Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

Shakespeare's series of LIGHTWEIGHT PNEUMATIC TELESCOPIC MASTS are precision engineered and designed to meet the most exacting tasks of modern communications. Although primarily for military use to support various types of antennas, the masts are used in a wide range of alternative applications, including support of remote controlled TV and CCTV cameras, public address loudspeakers, floodlights and emergency lighting for airfields and construction sites. They are also used in survey and triangulation work, to provide a point of fixed height above ground level.

The masts are light, reliable and remarkably simple to erect, even by one man. Tested under severe environmental conditions by the School of Signals Trial Squadron, these masts are in current service with the British Army.

The masts are manufactured from high tensile aluminum alloy, the standard 8, 10 and 12m masts comprise eight sections to ensure a combination of minimum weight, minimum retracted height and maximum strength. Each section is positively locked in its full or partially extended position by a specially designed friction clamp. This clamp is a particular feature of these masts and provides a positive self-aligning clamping force actuated by a lever forming part of an over-centre toggle arrangement.

Mounting kits for vehicles are also available. The mast base insulator can be included in the vehicle mounting kit and the mounting brackets are also available with fitted insulators, if required. Vehicle mounting kits can also be supplied to meet customer specific requirements, provided adequate information on vehicle design and construction is available. Shelter, cabin and wall mounting kits can also be supplied as can hand or foot pumps or compressors for pneumatically assisted versions.

A tripod for mounting the un-guyed mast is also available. This has adjustable feet to enable it to stand on sloping or uneven ground.



Mast Type	476	477	478	479
Extended Height:	26 ft	30 ft	33 ft	40 ft
Head Load:	22 lbs	33 lbs	19 lbs	15 lbs

Tripod shown for illustrative purposes.

# Shakespeare®

## Military Antenna Products

Shakespeare Company in a strategic marketing alliance has teamed with Cobham Antenna Systems. This alliance has enabled a broader product line for today's radio OEM's and end users.

Shakespeare's series of INTERMEDIATE SERIES OF PNEUMATICALLY OPERATED TELESCOPIC MASTS are designed for commercial and military applications where rapid deployment is required in either ground or vehicle mounted roles. Each of the telescopic mast sections can be locked in position either fully extended, or at any intermediate height, by means of a quick and effective single lever operated friction clamp. Lowering the mast is carried out by releasing the lower clamp and allowing the mast to retract under its own weight. Each clamp is then released in turn to completely lower the mast. The rate of descent is controlled by a pneumatic damping system, which ensures the safety of the operator and masthead equipment. The erection time using two personnel to field deploy the telescopic mast is approximately 15-20 minutes.

In addition to the standard ground mounting accessory kit various optional items are available such as vehicle mounting brackets, winch assembly for roof mounting, falling derrick kit for ground systems, mast turning handle, electric compressor 12/24VDC or 240VAC, foot pump and hand pump.

The intermediate duty masts are available in a range of sizes from 6.8m up to 18.0m. All are capable of supporting a 25kg head load. Models using fewer mast sections such as types 459 and 463 are capable of supporting a head load up to 50kg. All tube sections are manufactured from high tensile aluminum alloy and fitted with precision piston and seal assemblies to permit pneumatic erection of the mast. Hand operated over centre clamping enables each section to be locked in position effectively and quickly. A double thumb wheel clamp is fitted to the top of the mast for securing a head load fitted with a standard NATO 40mm spigot assembly.



Mast Type	456	457	458	459	463	1440	1447	1448
Extended Height:	40 ft	49 ft	56 ft	22 ft	42 ft	33 ft	48 ft	59 ft
Head Load:	26 lbs	55 lbs	55 lbs	100 lbs	77 lbs	55 lbs	77 lbs	99 lbs

Tripod shown for illustrative purposes.

# Shakespeare®

## Military Antenna Products

## Mast Mount Antenna Adapters



MA-700

The MA-700 Mast Adapter was designed to support vehicular antennas on a mast to increase LOS communications. The MA-700 is for use on the aluminum push up and pneumatic telescoping masts.



MA-700A

The MA-700A Mast Adapter was designed to support vehicular antennas on a mast to increase LOS communications. The MA-700A is for use on the aluminum push up and pneumatic telescoping masts, and comes supplied with a ground radial kit for ground dependant antennas.



*Shakespeare*<sup>®</sup>

**Military Antenna Products**



## Mast Mount Antenna Adapters



MA-701

The MA-701 Mast Adapter was designed to support vehicular antennas on a mast to increase LOS communications. The MA-701 is for use on the TR / TX series composite telescoping masts.



MA-702

The MA-702 Mast Adapter was designed to support vehicular antennas on a mast to increase LOS communications. The MA-702 is for use on the TR / TX series composite telescoping masts and comes supplied with a ground radial kit for ground dependant antennas.



MA-701 mounted on a TR7.2/9.5-17 spigot

*Shakespeare*<sup>®</sup>

**Military Antenna Products**



## Mast Mount Antenna Adapters



MA-703

The MA-703 Mast Adapter was designed to support man portable antennas on a mast to increase LOS communications. The MA-703 is for use on the TM series composite telescoping masts.



MA-703 mounted on a TM51/4-1.2.



Model 3505, 225-1000MHz  
manportable antenna  
mounted on MA-703

*Shakespeare*<sup>®</sup>

**Military Antenna Products**

## MODEL 222-B

In service for more than 35 years, Shakespeare's Model 222-B is not only world class, it's the world standard. Designed for shipboard use, this heavy duty, two-section, 35' fiberglass antenna also affords excellent performance on land.

Shakespeare embeds parallel copper conductors around the circumference of finest quality fiberglass for maximum strength and freedom from corrosion. Center fittings of stainless steel and acrylic coated fiberglass withstand the most rigorous marine environment. This side-fed antenna is bolted directly to the deck or platform, eliminating costly porcelain insulators. The base is made of galvanized steel. The brass top cap is designed to eliminate corona at high power levels.



SPECIFICATIONS	
Frequency:	1.8 MHz to 30 MHz
Power:	5 KW (avg.) 2MHz to 30 MHz
Polarization:	Vertical
Wind Rating:	125 MPH
Operating Temp.:	-50° C to +65° C
Bolt Hole Pattern:	4 ea. 21/32" dia. Mounting Holes on 6" dia. BHC, for 5/8" mounting bolts (not supplied)
Color:	Shakespeare white
Polarization:	Vertical
Pattern:	Omnidirectional
Feed Point:	Side feed point 32" above mounting surface 5/16"-24 female, 1/2" deep. Feed point adapter with corona shield for soldering transmission line supplied.
Corona Ball:	Acrylic coated brass
Conductors:	Copper alloys
Fittings	Type 303 stainless steel
Flange:	Max. Dia. 7.625" Material: Galvanized ductile iron
Base Flash Over:	25,000 volts
Net Weight:	65 lbs.
Shipping Weight	105 lbs
Carton Packing:	Cardboard tube



*Shakespeare*<sup>®</sup>  
**Military Antenna Products**

## MODEL 229-B MODEL 229-BA

Shakespeare's 35-foot Model 229-B antenna is constructed entirely of corrosion resistant, non-ferrous materials, ideally suited to shipboard and fixed station applications requiring non-magnetic antennas. The top section is made with parallel beryllium copper ribbon, embedded in Shakespeare fiberglass for maximum tip capacitance. The lower half of the antenna employs tubular copper conductors secured in the center of tapered fiberglass with polyurethane foam and terminating in a fiberglass mounting flange.

Shakespeare's exclusive parallel-fiber fiberglass construction controls droop. When held horizontally, tip droop does not exceed 12".

The bottom-fed Model 229-B needs no costly porcelain insulators, and its base protects all electrical connections from exposure to weather. It can be bolted directly to the deck or platform, eliminating vulnerable insulators.

- Entire antenna is non-magnetic
- Two-section construction
- Reinforced fiberglass base mounting flange



SPECIFICATIONS	
Frequency:	1.6 MHz to 30 MHz, down to 200 KHz with power reduced
Power:	1 KW (avg.) bottom feed
Polarization:	Vertical
Wind Rating:	150 MPH
Operating Temp.:	-50° C to +65° C
Mounting:	US Navy/Coast Guard standard - 8 ea. 11/16" mounting holes equally spaced on a 10 3/4" dia. BHC. 5/8" mounting bolts not supplied
Color:	Shakespeare White (Model 229-BA), Black (Model 229-B)
Construction:	Shakespeare fiberglass process; non-magnetic materials
Shunt Capacitance at Base:	15 pF
Feed Point:	Bottom electrical feed point: Tapped 1/4"-20 female 1/2" deep. Screw, terminal lug and corona shield supplied
Corona Ball:	Acrylic coated brass
Conductors:	Copper alloys
Fittings:	Center fitting: Silicon bronze materials
Flange:	Max. Dia. 13.5" Material: Reinforced fiberglass
Base Flash Over:	25,000 volts
Net Weight:	200 lbs.
Shipping Weight:	295 lbs

*Shakespeare*<sup>®</sup>  
**Military Antenna Products**

## MODEL 390-1 MG and 390-1 MGB

### Military Grade

The Model 390-1 MG antenna is a light weight, 23' fiberglass whip antenna designed for small and medium-sized craft and fixed-station applications. It's constructed of Epoxy fiberglass composite to withstand the rigors of a military naval environment. The Model 390-1 MGB is the same, in a black finish.



SPECIFICATIONS	
Frequency:	2 to 30 MHz HF with tuner (not supplied)
Power:	500 Watts 2-30 MHz
Polarization:	Vertical
Wind Rating:	100 MPH
Operating Temp.:	-50° C to +65° C
Bolt Hole Pattern:	4 ea. 9/16" dia. Holes 90° apart on 5" BHC
Color:	Shakespeare white; 3901 MGB: black
Pattern:	Omnidirectional
Feed Point:	Termination band 9½" above base with ¼"-20 threaded stud with nut to accept terminal lug on transmission line
Conductors:	Copper alloys
Fittings:	Center fitting: Silicon bronze materials
Flange:	Max. Dia. 5" Material: Anodized aluminum
Base Flash Over:	20,000 volts
Net Weight:	7.5 lbs.
Shipping Weight:	12.5 lbs
Carton Packing:	Cardboard tube

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**MODEL 4328**  
**Commercial Duty**

For HF/SSB communications, the 28-foot Model 4328 is a whip antenna with conductors running full length and no loading coil. It's designed for large vessels requiring the highest HF-band performance. The two-piece antenna easily accommodates input up to 1 kilowatt. It's Shakespeare white, and has a built in anodized aluminum flange base for mounting as a self-supporting antenna. The center fittings are chrome-plated brass. Side feed termination band.

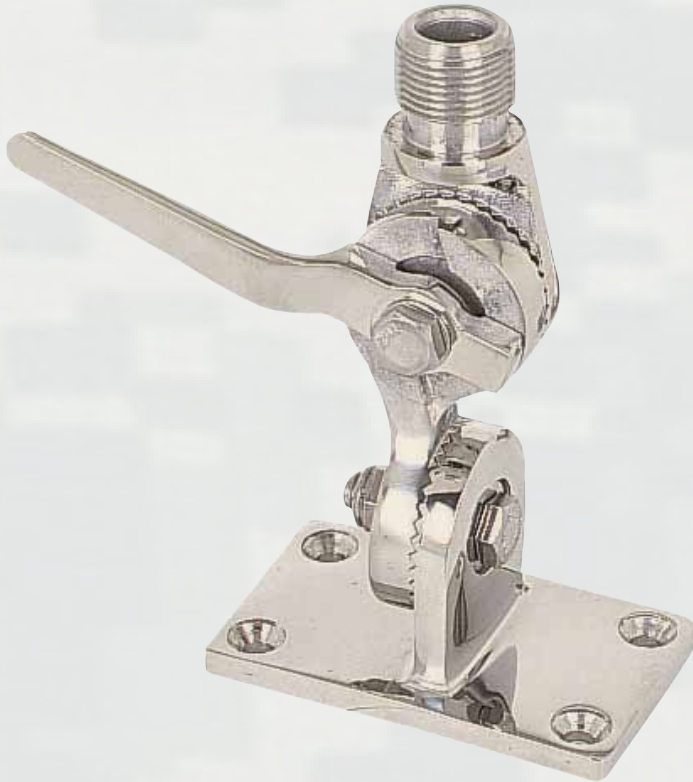


SPECIFICATIONS	
Frequency:	2 to 30 MHz HF with tuner (not supplied)
Power:	1 KW
Polarization:	Vertical
Wind Rating:	100 MPH
Operating Temp.:	-50° C to +65° C
Bolt Hole Pattern:	4 ea. 9/16" dia. Holes 90° apart on 5" BHC
Color:	Shakespeare white
Pattern:	Omnidirectional
Feed Point:	Termination band 9½" above base with ¼"-20 threaded stud with nut to accept terminal lug on transmission line
Conductors:	Copper alloys
Fittings	Chrome-plated brass
Flange:	Max. Dia. 5" Material: Anodized aluminum
Base Flash Over:	20,000 volts
Shipping Weight	20 lbs

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**MODEL 4187-HD**

The 4187-HD is a heavy-duty marine mount with ratchet action and handle. It is made of stainless steel for durability and strength.



- Quick action handle makes operation quick and easy.
- Versatile 4-way ratchet design.
- Stainless steel construction
- Fits Models HS-2774-1, 390-1 MG, 390-1 MGB
- Bolt Holes: 4 each, 3/16" dia. 2<sup>3</sup>/<sub>4</sub>" x 1 11/16" on centers
- May be bolted to vertical, horizontal, or tilted surfaces
- Mounting bolts not supplied
- Extra rigid

SPECIFICATIONS	
Construction:	Stainless steel ratchet mount with handle
Bolt Hole Circle:	4 each, 3/16" dia. 2 <sup>3</sup> / <sub>4</sub> " x 1 <sup>11</sup> / <sub>16</sub> " on centers
Shipping Weight:	2 lbs.

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**Military Antenna Products**

## MODEL HS-2774 (MAST MOUNT)

Whether used onboard ship or on tactical base stations in environmentally harsh locations, this antenna provides military and commercial radio users with a high performance, broadband design built to critical specifications.

Shakespeare's Model HS-2774 Broadband antenna is designed specifically for today's high-tech communications systems for military, commercial, law enforcement, and disaster preparedness applications. These HS-2774 offers VSWR of less than 2:1 across the 136-174 MHz VHF band, providing nominal 4dBi gain across the entire band. RF power up to 125 watts continuous is no problem.

Shakespeare has achieved a unique patented electrical design requiring no tuning or ground plane to put the power pattern on the horizon at any frequency in the band. The antennas allow high grade communications across this normally hard-to-cover band. The antenna is designed to meet or exceed the rigors of MIL-STD-810 testing for both mechanical and environmental characteristics. Model HS-2774 is designed for mast mounting.

- 136 to 174 MHz
- Continuous duty cycle at 125 watts RF power
- Exceptional performance
- Extreme environmental tolerance

SPECIFICATIONS
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Frequency:	136 to 174 MHz
Color and Finish:	Smooth white fiberglass, protective UV coat
VSWR:	2.1 or less within the band
Gain:	On the horizon: +3.3dBi @ 136 MHz; +4dBi @ 154 MHz; +4.3dBi @ 174 MHz
Wind Rating:	100 MPH
Mount:	Mast mounting with supplied stainless steel U-bolts
Operating Temp.:	-65° C to +85° C
Construction:	External: Fiberglass radome; Internal: Hand-soldered brass elements
Salt Fog:	5% Salinity solution
Input Impedance:	50 Ohms
Feed Point:	Type "N" female
Radial Ice:	0.5" max.
Net Weight:	2.8 lbs
Beamwidth:	95° @ 136 MHz; 85° @ 154 MHz; 65° @ 174 MHz

Shakespeare's unique design is protected by U.S. Patents #4958164, and # 6429821.

*Shakespeare*<sup>®</sup>

**Military Antenna Products**

**MODEL HS-2774-1**

Whether used onboard ship or on tactical base stations in environmentally harsh locations, this antenna provides military and commercial radio users with a high performance, broadband design built to critical specifications.

Shakespeare's Model HS-2774-1 Broadband antenna is designed specifically for today's high-tech communications systems for military, commercial, law enforcement, and disaster preparedness applications. The Shakespeare antenna offers VSWR of less than 2:1 across the 136-174 MHz VHF band, providing nominal 4dBi gain across the entire band. RF power up to 125 watts continuous is no problem.

Shakespeare has achieved a unique patented electrical design requiring no tuning or ground plane to put the power pattern on the horizon at any frequency in the band. The antennas allow high grade communications across this normally hard-to-cover band. The antennas are designed to meet or exceed the rigors of MIL-STD-810 testing for both mechanical and environmental characteristics, as well as typical marine standards for high seas applications. Model HS-2774-1 has a 1"-14 thread standard marine ferrule.



- 136 to 174 MHz
- Continuous duty cycle at 125 watts RF power
- Exceptional performance
- Extreme environmental tolerance

SPECIFICATIONS	
Frequency:	136 to 174 MHz
Color and Finish:	Smooth white fiberglass, protective UV coat
VSWR:	2.1 or less within the band
Gain:	On the horizon: +3.3dBi @ 136 MHz; +4dBi @ 154 MHz; +4.3dBi @ 174 MHz
Wind Rating:	100 MPH
Mount:	Marine mount w/1" x 14 threads
Operating Temp.:	-50° C to +85° C; -65° C to +85° C @ 174 MHz
Construction:	External: Fiberglass radome; Internal: hand-soldered brass elements Fittings: stainless steel
Salt Fog:	5% Salinity solution
Input Impedance:	50 Ohms
Feed Point:	20' RG-8X coaxial cable
Radial Ice:	0.5" max.
Net Weight:	2.8 lbs
Beamwidth:	95° @ 136 MHz; 85° @ 154 MHz; 65° @ 174 MHz

Shakespeare's unique design is protected by U.S. Patents #4958164, and #6429821.

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**Military Antenna Products**



## BROADBAND ANTENNA FOR HIGH-TECH COMMUNICATIONS

Shakespeare's Model US-3849 Broadband antenna has been designed by Shakespeare specifically for today's high-tech communications systems for military, commercial, law enforcement, and disaster preparedness applications. This Shakespeare antenna offers VSWR of less than 2:1 across the 380-490 MHz UHF band, providing nominal 4dBi gain across the entire band. RF power up to 125 watts continuous is no problem.

Shakespeare has achieved a unique electrical design requiring no tuning or ground plane to put the power pattern on the horizon at any frequency in the band. The antenna allows high grade communications across this normally hard-to-cover band. The antenna is designed to meet or exceed the rigors of MIL-STD-810 testing for both mechanical and environmental characteristics, as well as typical marine standards for high seas applications.



SPECIFICATIONS	
Frequency:	380 – 490 MHz
VSWR:	2:1 or less across the band
Gain:	4 dBi
Connection:	N Type Female
Input Impedance:	50 $\Omega$
Length:	41.875 inches / 1.06 M

*Shakespeare*<sup>®</sup>  
**Military Antenna Products**



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