Feedline impedance on the DXE-BFS-1 is designed for 75 Ω, although it will work significantly better than hard-to-find carbon composition resistors. 2 watt non-inductive resistor that withstands nearby lightning strikes significantly better than hard-to-find carbon composition resistors. Included with the DXE-BFS-1 is a 470 Ω, the DXE-BFS-1 works with antenna impedances from Beverage and other high impedance antennas.

Single Direction Beverage Feed System
The DXE-BFS-1 is a single-wire Beverage Feed System. This WBJI design is immune to strong signal overload and core saturation common in multi-transmitter contesting environments, and is used by winning contest stations and low-band DXers. The unit uses an isolated-winding, matching transformer system to significantly increase the signal-to-noise ratio in Beverage and other high impedance antennas.

The DXE-BFS-1 works with antenna impedances from 400-500 Ω. Included with the DXE-BFS-1 is a 470 Ω, 2 watt non-inductive resistor that withstands nearby lightning strikes significantly better than hard-to-find carbon composition resistors. Feedline impedance on the DXE-BFS-1 is designed for 75 Ω, although it will work with 50 Ω coax. The DXE-BFS-1 uses an industry standard CATV type F connector. DX Engineering sells quality 75 Ω coax and type F connectors for outdoor installations.

Benefits
• 100 kHz to 30 MHz operating range
• Spark gaps minimize damage from lightning
• Wing nut terminals eliminate soldering
• Metal housings used for superior shielding and improved life
• Flange-mount holes for easy mounting
• Ground isolated secondary essential for building beverage arrays

DXE-BFS-1 Beverage Feed System $54.95
DXE-ECM-R470-2 470 Ω, 2 Watt Resistor, Lightning Damage-Resistant, Pack of 10 $20.00

Reversible Beverage System
The DXE-RBSA-1P allows two Beverage antennas receiving in opposing directions to share the same space. With the DXE-RBSA-1P, you can build a 2-wire reversible Beverage antenna system with superior signal-to-noise ratio, most useful at 40, 80 and 160M bands. The WBJI design consists of a Feedpoint System and Reflection Transformer. You can operate and even confirm the F/R ratio of this antenna at any time from the operating position. This system is immune to strong signal overload and core saturation common in multi-transmitter contesting environments, and is used by winning contest stations and low-band DXers.

The DXE-RBSA-1P has two antenna ports. The standard configuration of the DXE-RBSA-1P has one port terminated (termination included) so both antennas share a common feedline. Applying 10 to 18 Vdc to the feedline switches between the antenna, and the direction of reception. For simultaneous reception from opposing directions, each of the two feedlines connect to a separate receiver. While the DXE-RBSA-1P is optimized to use 450 Ω ladder line for the antenna element, the system will work with any 300-600 Ω 2-wire line. 450 Ω ladder line is available from DX Engineering, sold separately. DX Engineering also sells quality 75 Ω coax and type F connectors for outdoor installations.

Benefits
• Broad operating range, 0.2 to 30 MHz
• Fully isolated grounds used to prevent common-mode noise and unwanted signals
• 75 Ω design enables the use of high quality, low cost cable
• Metal housings used for superior shielding and improved life

DXE-RBSA-1P Reversible Beverage Feed System $209.95
DXE-TB-SP Tilt Base $19.95

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• Wing nut terminals eliminate soldering
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DXE-RBSA-1P Reversible Beverage Feed System $209.95
DXE-TB-SP Tilt Base $19.95

Splitter/Combiner
Use the DX Engineering DXE-RSC-2 to combine two receiving antennas to form an array or to split the signal from an antenna to feed two receivers. The DXE-RSC-2 reduces problems and performance shortfalls caused by impedance errors in less-than-perfect antenna systems.

Benefits
• High-quality components
• Reliable weathertight connectors
• Broad 0.3 to 30 MHz operating range
• Metal housings used for superior shielding and improved life
• Economical solution to potential impedance errors
• Spark gaps minimize damage from lightning

Combining
Use the DXE-RSC-2 to combine, with negligible loss, two antenna systems into a single feedline. Some examples are two antennas forming an in-phase (Roadside) receiving array, Cross-fire Echelon Beverage array, or any type of array with fixed phasing.

Benefits
• The DXE-RSC-2 matches the entire antenna system to the cable impedance
• Unlike quarter-wave matching sections that only work on one band, the DXE-RSC-2 has an extremely wide bandwidth
• With antennas connected directly in parallel, if either one develops a high impedance open, becomes shorted, falls down or has a feedline problem, the entire antenna system may become unusable. By using the DXE-RSC-2, only the problem antenna is unusable—the antenna on the other port can still be used. Due to the built-in isolation and balancing, the DXE-RSC-2 limits the total signal loss to approximately 6 dB
• The DXE-RSC-2 provides very high isolation between ports 1 and 2. This prevents either antenna from interfering with the other during normal operation

DXE-RSC-2 2-Port Splitter and Combiner $54.95

Splitting
Use the DXE-RSC-2 to split an antenna signal in two, typically to feed two receivers. Typical signal level reduction through the DXE-RSC-2 when used as a splitter is just over 3 dB per port. This is because each port receives half the available input power, and the DXE-RSC-2 has some very small additional loss in internal components.

Benefits
• Economical solution to potential impedance errors
• Metal housings used for superior shielding and improved life
• High-quality components
• Reliable CATV type F connectors standard
• Broad 0.3 to 30 MHz operating range with 75 Ω systems
• Jumper-selectable—control voltage pass-through to the selected port

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DXE-RSC-2 2-Port Splitter and Combiner $54.95

2-Port Receiving Antenna Switch
Select one of two output ports (generally connected to different receiving antennas) from one feedline using the DXE-RS-2. Install the DXE-RS-2 with two DXE-RBS-1P Reversible Beverage Antenna Systems and select four directions using a single main feedline. Install one or more DXE-RS-2s to expand larger Beverage arrays and share the feedline back to the operating position.

Benefits
• Metal housings used for superior shielding and improved life
• High-quality components
• Reliable CATV type F connectors standard
• Broad 0.3 to 30 MHz operating range with 75 Ω systems
• Jumper-selectable—control voltage pass-through to the selected port

DXE-RS-2 2-Port Receiving Antenna Switch $79.95

Find More Brands, More Products and More Specs at DXEngineering.com
**RTR-1A Antenna Receive Interface**

If you have a standard transceiver without a separate receive input port, but you want to enjoy the advantages of a separate receive antenna, DX Engineering has the perfect solution. Connect an external receive-only antenna to your transceiver with this interface, or add a TX/RX switch to your older gear, insert a receive preamplifier and add interfacing antennas to phasing or noise cancelling systems. The RTR-1A also provides false protection to the unswitched receive antenna port on your expensive transceiver.

This Active Receive Interface handles 200 watts, supports full break-in CW and uses a patented* low-noise receive antenna limiter circuit. It is RoHS-compliant and well suited for use from 1.8 MHz to 30 MHz.

DX Engineering’s Active Receive Interface is an invaluable accessory for your shack, allowing you to expand and improve your antenna connection systems. All the details on this innovative unit are at DXEngineering.com.

**DXE-RTR-1A**

Receive Antenna Interface ................................................................. **$159.95**

*US Patent 8,175,546

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**Receive Feedline Current Choke**

The Receive Feedline Current Choke (RFCC) is the most effective solution to common-mode noise or unwanted signal ingress in receiving systems available. It provides thousands of ohms isolation between the input and output coaxial shield connections while passing desired signals, including DC or low frequency AC control signals. The RFCC has extremely high isolation impedance, which effectively blocks common-mode noise or unwanted signals, even in the presence of very poor grounding. The RFCC is effective from 300 kHz to 30 MHz. It comes with standard type F female connectors, although it can be used in any 50 to 75 Ω receiving system.

**DXE-RFCC-1**

Receive Feedline Current Choke, 50/75 Ω, 0.3-30 MHz .................. **$69.95**

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**Feedpoint Voltage Coupler**

- Inject control voltages onto feedline
- Injects +/-12 Vdc or 12 Vac
- For use with DXE-RBS-1P Reversible Beverage System or Remote 2-Position Switch DXE-RLS-2
- AC supply included

**DXE-FVC-1**

Feedpoint Voltage Coupler .............................................................. **$89.95**

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**Time Variable Sequence Unit**

Protect your active antennas, transmit/receive relays and other equipment with the DX Engineering Sequence Unit. You have full control of the timing between your rig and amplifier. This microprocessor-controlled device provides 0-30 milliseconds of delay in 2 millisecond steps to as many as five outputs tied to the key-in line. You can sequence the switching of critical devices such as the transmit/receive relay, amplifier, and exciter.

In addition, the DXE-TVSU-1A has an internal side tone generator for CW. You listen to what you are keying while it is being held in the bucket brigade delay for transmit after the programmed delay. The side tone is adjustable from 300 to 1000 Hz in 50 Hz steps.

**Benefits**

- Control timing on PTT turn-on, hang delay of PTT, hang delay of amplifier, hang delay of antenna relay, and turn-on delay of auxiliary output
- Dip switch settable delays of 0-30 milliseconds in 2 millisecond steps
- Side tone generator that follows input of keyer or hand key, not transmitter
- Side tone can be programmed for 300-1000 Hz in 50 Hz steps, adjustable volume
- Supports CW full break-in
- Allows use of an active receive antenna in close proximity to a transmit antenna

**DXE-TVSU-1A**

Time Variable Sequence Unit ......................................................... **$199.95**

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**Active Receive Antenna Systems**

DX Engineering’s Active Receive Antenna Systems offer excellent receiving performance using a 1/2” whip antenna. The unique design is vastly superior to traditional active antennas in both signal handling and feedline decoupling. You get significantly better signal reception.

Available in vertical or horizontal dipole configurations, the systems include a non-conductive mounting plate, clamps, active matching system, and the 102” stainless steel whip elements. The horizontal dipole uses two 102” whips for an overall length of 210”, the vertical configuration uses a single Whip. Whip antennas have excellent wind survival and are very inconspicuous.

When space is limited, use the DXE-ARAV3-1P or DXE-ARAH3-1P in conjunction with the DXE-ARAH3-1P to provide four-square operation within 1/10-wavelength of a transmit antenna. The active antennas have relay protection to prevent overload of the transmit signal. The DXE-TVSU-1A sequencer controls switching times to ensure the receive system is protected before transmit power is applied. Use the DXE-ARAV3-4P, DXE-TVSU-1A and DXE-RFS-2 to provide four-square operation within 1/10-wavelength of a transmit antenna.

The vertical configuration can be used as a single element or in combination with DX Engineering’s RFS-2 Receive Four-Square Antenna System to build a broadband directional array that can be switched in four directions to peak the signal or null out noise. Vertical configurations are for suburban or rural locations with low levels of ground wave propagated noise. The dipole configuration makes a very sensitive, horizontally polarized receiving antenna. Horizontal polarization can greatly reduce ground wave propagated noise in congested urban environments. Light weight and low wind resistance reduces support requirements. The output connector is a Type F, allowing use of readily available high performance CATV feedlines and connectors.

**Features**

- Sensitive—weak signal sensitivity rivaling full size antennas
- Wide bandwidth—100 kHz to 30 MHz
- Excellent strong signal handling—outstanding third order intercept of +30 dBm
- Reduced noise—quiet FET followers and high feedline shield isolation
- Easy mounting and installation—pre-drilled mounting plate and universal clamps

**DXE-ARAV3-1P**

Active Receive Antenna, Vertical Configuration with Relay .................. **$349.95**

**DXE-ARAV3-1P**

Active Receive Antenna, Vertical Configuration with Relay .................. **$248.95**

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**DXE-ARAH3-1P**

Active Receive Antenna, Horizontal Configuration with Relay ............. **$394.95**

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**DXE-ARAH3-1P**

Active Receive Antenna, Horizontal Configuration with Relay ............. **$349.95**
DX Engineering

Receive 8 Circle Packages

These packages are built around the DX Engineering Receive 8 Circle Array Controller and the EC-RC8B Receive Eight Circle Control Console. They are designed to be used with eight identical, symmetrically-spaced vertical elements—active or passive—to provide switching for an eight-direction receiving antenna system. (Passive elements will generally provide you with a monoband receiving system.)

The Receive 8 Circle system uses time-delay phasing (rather than conventional narrow-band, frequency dependent phasing) to provide eight 45 degree spaced directional patterns. The time-delay phasing is directly optimized to produce wider and deeper rear nulls and a narrower main lobe. The result is greatly reduced noise and undesirable signals for a superior front-to-rear ratio (F/R). Better control of phase and currents provides a cleaner pattern than found on vertical antenna transmit arrays.

The system also offers greater reliability in receiving applications. The CC-8A controller uses sealed relays—sized for receiving applications—with oxidation-resistant silver contacts. Most transmitting four-square switches use large open-frame relays with exposed brass sealed relays—sized for receiving applications—with oxidation-resistant silver contacts. The result is greatly reduced noise and undesirable signals for a superior front-to-rear ratio (F/R). Better control of phase and currents provides a cleaner pattern than found on vertical antenna transmit arrays.

The DXE-RCA8B-SYS-2P Complete Electronics Package

• DXE-RC8B-1 Receive 8 Circle Array Controller
• DXE-EC-RC8B Receive 8 Circle BCD Control Console
• DXE-SSVC-2P Stainless Steel V-Clamp for mounting the RC8B to a 1-2" O.D. post

The DXE-RC4B-SYS-3P Electronics Package

Includes everything from DXE-RCAB-SYS-2P, plus:
• Eight DXE-AV2A Active Voltage Amplifiers with internal disconnect relays
• DXE-RPA-1 Receiver Preamplifier, 0.3-35 MHz
• Custom-made delay line—75 Ω F6 flooded coaxial cable with Snap-N-Seal® connectors installed

The DXE-RCAB-SYS-4P Complete Electronics Package

Includes everything from DXE-RCAB-SYS-2P, plus:
• DXE-ARA8V3-8P Active Receive Antenna Array Package (see below)
• Two DXE-F6-1000 F6 flooded coax cable, 75 Ω (1,000' each)
• DXE-CPT-659 Coax Cable Prep Tool
• DXE-SNS-CT1 Snap-N-Seal® crimp tool for 75 Ω coax
• DXE-SNS-25 Snap-N-Seal® connectors for F6 coax, 25 pieces
• DXE-RCA8B-SYS-2P Receive 8 Circle Controller and Switch Package $498.95
• DXE-RCA8B-SYS-3P Receive 8 Circle Electronics Package $1,497.95
• DXE-RCA8B-SYS-4P Receive 8 Circle Complete System Package $2,575.00

Receive Four-Square System

• W8JI design
• Excellent directivity in a small space for better signal-to-noise ratio
• Switchable in four 90 degree spaced directions
• Reduced susceptibility to high angle signals compared to EWE, Flag, Pennant, or K9AV arrays
• Operates from 100 kHz to 30 MHz
• Each complete system package includes four active vertical antennas, RFS-2 switch, CC-8A controller, 1,000 feet of F6 flooded cable, connectors and tools
• TVSU-1 Time Variable Sequencer Unit included to protect active antennas installed as close as 1/10-wavelength from transmitting antenna

DXE-RFS-SYS-4P Receive Four-Square System Package $1,650.00

Complete Electronically Steered Receiving System

• More than 5 S-units of front-to-back on optimized systems
• Works best on 160M, 80M and 40M
• Like having a rotatable Beverage antenna
• Fits in YOUR yard!
• Easily installed—no radials required

Visit: www.eham.net/reviews/detail/5336
Want to know what people are saying about this system?

DXE-ARA8V3-8P Active Receive Antenna Array Package

The DX Engineering Active Receive Antenna Array Package contains eight DXE-ARA8V3-1P Active Receive Antennas. They offer excellent receiving performance from 100 kHz to 30 MHz while using only 102” whips as the vertical elements. This results in significantly better weak signal reception due to lower spurious signal interference and reduced noise. The package also includes mounting blocks, wiring, and mounting clamps.

DXE-ARA8V3-8P Active Receive Antenna Array Package $1,991.60

DXE-RC8B-1 Receive 8 Circle Array Controller

DXE-EC-RC8B Receive 8 Circle BCD Control Console

DXE-SSVC-2P Stainless Steel V-Clamp

0.325-wavelength radius

As Small As:

40M 14'

80M 26'

160M 54'

102” Whips on Active Antennas

Optimal signal-to-noise ratio occurs at 1/4-wavelength side length
Typical Installation for DX Engineering NCC-1

This diagram shows the DX Engineering NCC-1 in a station with a single transceiver that has a separate receive antenna port. The two active receive antennas are shown deployed in the recommended position. The DX Engineering RPA-1 Preamplifier is normally not needed as most of today's transceivers have built-in preamps to compensate for overall lower signal levels obtained from small receive-only antennas. What is most important is the NCC-1's ability to improve the overall signal-to-noise ratio improvement and null out interference from other directions.

The diagram shows the transceiver keying line set up to allow the NCC-1 to shut off the power to the DXE Active Receive Antennas, which have an internal relay which grounds the antenna for protection from TX RF.

The DX Engineering NCC-1 can be used with many receiving antenna combinations including Single and Reversible Beverages, Receive Four-Square Arrays, K9AY Loops, and more. It will increase the directivity of any properly spaced combination of two similar antennas as long as the signal levels are within the range of the balancing controls.

Receive Antenna Variable Phasing Controller

Allows control of signal level and phasing of two receive antennas—see specifications below. It is available separately for those who want to design their own variable receive antenna system.

DXE-NCC-1 Receive Antenna Variable Phasing Controller $599.95

See NCC-1 specifications below.

Electronically Rotatable Receive Antenna System

Phased receive-only antenna systems are used to create a directional pattern which can peak desired signals and remove interfering signals. Variable phase nulling allows an operator to improve reception by electronically reducing a stronger interfering signal arriving from a different direction.

This system includes two Active Receiving Vertical Antennas and the DXE-NCC-1 Receive Antenna Variable Phasing Unit. It combines the two verticals to produce a steerable directional array. The system improves your reception of weak DX by:

- Combining two omni-directional antennas to produce an adjustable directional pattern
- Reducing overload from a strong signal in a different direction
- Reducing interference from distant signals or noise in a different direction
- Nulling directional strong signals to hear weak stations on the same frequency

Features

- Vertical antenna elements only 102” long
- Ideal for Amateur Radio or Shortwave listening
- Antenna elements are grounded when power is turned off
- Use with DXE-TVSU-1A sequencer for best protection before transmitting

NCC-1 Phasing Unit Specifications

- Usable Frequency Range: 300 kHz to 30 MHz
- Optimum Performance Range: 500 kHz to 15 MHz
- Third Order Output Intercept: +32 dBm each input, +38 dBm both inputs combined
- Gain Flatness: +/- 1 dB over complete phase rotation
- Gain: Adjustable from 0 dB to -40 dB
- Available Phase Rotation: >360 degrees between 500 kHz and 15 MHz
- Power: NCC-1 +13 Vdc nominal @ 1A minimum (2A recommended)
- Antenna Port Power: 10-30 Vdc @ 300 mA maximum, TX muting available

DXE-AAPS3-1P Active Antenna Phasing System $1,099.95

MFJ 1.5-30 MHz Deluxe Noise Canceller

This unit is designed to reduce noise or interference—or improve desired signals—before the noise affects sensitive receiver circuits. Unlike conventional noise blankers, it is effective on all types of noise, including interference (QRM) from unwanted signals.

You can adjust both phase and amplitude while combining two antenna inputs. The antenna inputs can be from two external antennas, or an external antenna and the unit’s internal whip antenna. The signal output for the receiver is the vector addition or subtraction of signals from the two separate antennas. This removes unwanted noise and enhances desired signals.

The Deluxe Noise Canceller is optimized over the range of 1.8 to 30 MHz and has the interface circuitry necessary for operation with most modern HF transceivers.

MFJ-3025 1.5-30 MHz Deluxe Noise Canceller $179.95
**Antennas: Wire Antennas & Parts**

**Rugged Construction—Maximum Reliability!**

**Universal Wire Antenna Kits**

DX Engineering’s three Universal Wire Antenna (UWA) Kits offer the right combination of parts and hardware to create a wide variety of antenna designs.

You can create any type of wire antenna, including single band, multi-band, multi-frequency and folded dipole, doublet and inverted-v, off-center fed, Windom, Zepp, long wires, rhombic, vee beam, and loop antennas.

The kits feature the new EZ-BUILD™ Center-T insulator and end insulators. The insulators have a unique patented design that features a serpentine wire grip for insulated DX Engineering Wire and DX Engineering’s high strength, high power E-glass Fiber Insulator. This serpentine grip is strong enough to support the antenna wire without looping or wrapping the wire ends. This allows fast and easy field adjustments of antenna length without soldering!

The insulators are made of a lightweight, high-strength, UV-protected material. The center-T insulator is designed to serve as a feedpoint and strain relief for antennas made with either wire or ladder line, which may be fed with either ladder line or coaxial cable. The center-T insulator can be the main support point for the antenna feedpoint by using the top center hole to attach a support rope. It also serves as the mounting and support point for any DX Engineering Balun.

The DXE-UWA8X-KIT and DXE-UWA213-KIT kits include a new strain relief bracket and P-clamps with neoprene cushions that grip the coaxial cable without deforming it, taking the weight of the hanging cable off of the connector. Each kit also includes crimp-on terminal sets for ladder line and antenna wire, and connection hardware.

- **DXE-UWA-KIT** Universal Wire Antenna Kit .......... $19.95
- **DXE-UWA8X-KIT** Universal Wire Antenna Kit for RG-8X ....... $39.95
- **DXE-UWA213-KIT** Universal Wire Antenna Kit for RG-213 ....... $39.95
- **DXE-UWA-END-KIT** End Insulators, Package of 8 .......... $12.00

**Premium Copper Antenna Wire**

Use DX Engineering antenna wire to achieve top performance and long-life, trouble-free operation. This insulated copper wire is UV-resistant and lays out easily, unlike the wire that is commonly available at the “big box” stores which coils and kinks. It will last much longer in contact with the environment than bare wire. It is available in pre-cut lengths for easy dipole assembly, or in bulk lengths of 500 and 1,000 feet.

- **SYN-DBR-94-100** 3/32" Diameter Rope, 100' Roll .......... $9.95
- **SYN-DBR-94-1000** 3/32" Diameter Rope, 1,000' Roll ..... $71.95
- **SYN-DBR-125-100** 1/8" Diameter Rope, 100' Roll .......... $11.95
- **SYN-DBR-125-1000** 1/8" Diameter Rope, 1,000' Roll .... $81.95
- **SYN-DBR-187-100** 3/16" Diameter Rope, 100' Roll .......... $16.95
- **SYN-DBR-187-350** 3/16" Diameter Rope, 350' Roll .......... $49.95
- **SYN-DBR-187-500** 3/16" Diameter Rope, 500' Roll .......... $69.95
- **SYN-DBR-312-100** 5/32" Diameter Rope, 100' Roll .......... $24.95
- **SYN-DBR-312-500** 5/32" Diameter Rope, 500' Roll .......... $98.95
- **SYN-DBR-437-500** 7/32" Diameter Rope, 500' Roll .......... $209.95

**Center Insulator for Multi-Band Doubles with SO-239**

This weatherproof, lightweight, high-strength center insulator is used for connecting coaxial feedline to a doublet-type antenna. The insulator can be hung from a supporting mast. It has an SO-239 connector to attach to coaxial cable with a matching PL-259 connector.

- **HGN-C-1C** Center Insulator for Multi-Band Doubles .......... $29.95

**Ladder-Line Fed Dipole Antennas**

The DX Engineering multi-band dipoles are rugged yet lightweight. Each model resonates at the low end of the band specified. They are usable to 30 MHz with a wide range of tuning and come complete with the wire elements, ladder feedline, center-T support and end insulators.

- **DXE-WA-260** Antenna, 260' Long for 160M and Up ........ $59.95
- **DXE-WA-135** Antenna, 135' Long for 80M and Up .......... $49.95
- **DXE-WA-070** Antenna, 70' Long for 40M and Up .......... $49.95

**Synthetic Textile Industries’ Antenna Support Rope**

- **SYN-DBR-187-100** SYN-DBR-94-100
- **SYN-DBR-187-350** SYN-DBR-94-100

**Premium Copper Antenna Wire**

- **DXE-ANTW-150** #14 Insulated Antenna Wire, 80M & Up, 150' .......... $142.95
- **DXE-ANTW-300** #14 Insulated Antenna Wire, 160M & Up, 300' .......... $142.95
- **DXE-ANTW-500** #14 Insulated Antenna Wire, 80M & Up, 500' ........ $142.95
- **DXE-ANTW-750** #14 Insulated Antenna Wire, 160M & Up, 750' ........ $142.95
- **DXE-ANTW-1000** #14 Insulated Antenna Wire, 1,000' .......... $142.95
Alpha Delta Wire Antennas

Multi-Band Dipole Wire Antennas

These complete resonant antennas include DELTA-C center insulator and end insulators, ISO-RES coils, and separate wires for different bands. All wires are attached to the center insulator. An ARC-PLUG™ static electricity protector is built in. Stainless steel hardware and 12-gauge solid copper wire ensure long life. Antennas are shipped fully assembled. No antenna tuners are necessary, except for 15 meter band with DX-CC.

<table>
<thead>
<tr>
<th>Antenna</th>
<th>Frequency Range</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALF-DX-CC</td>
<td>80-10 Meter</td>
<td>$159.00</td>
</tr>
<tr>
<td>ALF-DX-DD</td>
<td>80-40 Meter</td>
<td>$129.00</td>
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<tr>
<td>ALF-DX-EE</td>
<td>40-10 Meter</td>
<td>$139.00</td>
</tr>
<tr>
<td>ALF-DX-LB</td>
<td>160-80-40 Meter</td>
<td>$159.00</td>
</tr>
<tr>
<td>ALF-DX-LPLUS</td>
<td>160-10 Meter</td>
<td>$189.00</td>
</tr>
<tr>
<td>ALF-SEP</td>
<td>Replacement</td>
<td>$15.95</td>
</tr>
</tbody>
</table>

Multi-Band Sloper Wire Antennas

These antennas provide good DX performance for limited space installations by combining the tremendous DX firepower of a quarter-wave sloper with the wide bandwidth of a half-wave dipole antenna. A built-in ARC-PLUG™ static electricity protector is included. Because the installation of sloper antennas depends on your available mounting circumstances, the use of a wide range antenna tuner is recommended for best performance.

<table>
<thead>
<tr>
<th>Antenna</th>
<th>Frequency Range</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALF-DX-A</td>
<td>Twin Sloper, 160/80/40 Meter</td>
<td>$99.00</td>
</tr>
<tr>
<td>ALF-DX-B</td>
<td>Sloper, 160/80/40/30 Meter</td>
<td>$109.00</td>
</tr>
<tr>
<td>ALF-SEP</td>
<td>Replacement</td>
<td>$15.95</td>
</tr>
</tbody>
</table>

SWL Antennas

Fully assembled for fast, easy installation, these antennas are optimized to provide best broadband receiving performance from the AM broadcast band through 30 MHz. The antennas include ISO-RES inductors, solid copper wire elements and the exclusive DELTA-C center insulator with a built-in ARC-PLUG™ static electricity protector. Stainless steel hardware and 12-gauge solid copper wire ensure long life.

<table>
<thead>
<tr>
<th>Antenna</th>
<th>Frequency Range</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALF-DX-SWL</td>
<td>SWL Sloper Antenna, 60’</td>
<td>$119.00</td>
</tr>
<tr>
<td>ALF-DX-Ultra</td>
<td>SWL Parallel Dipole, 80’</td>
<td>$159.00</td>
</tr>
<tr>
<td>ALF-SEP</td>
<td>Replacement ARC-PLUG Protector</td>
<td>$15.95</td>
</tr>
</tbody>
</table>

Antenna Insulator Kit with Surge Protection

This kit contains one center insulator, antenna connection hardware, one ARC-PLUG™ static electricity protector, and two end insulators. The antenna hardware is molded of Deltalloy™, an extremely tough and durable plastic specifically blended to withstand sunlight and extreme weather conditions. An SO-239 connector is provided for direct connection to your coaxial cable. A ladder line balanced feedline may be connected directly to the dipole wire ends.

<table>
<thead>
<tr>
<th>Insulator</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALF-Delta-C</td>
<td>$29.95</td>
</tr>
<tr>
<td>ALF-Delta-CIN</td>
<td>$1.95</td>
</tr>
<tr>
<td>ALF-SEP</td>
<td>$15.95</td>
</tr>
</tbody>
</table>
COMTEK Baluns

COMTEK Baluns are sealed in a weatherproof 4” x 4” x 2” NEMA box which makes all hardware Stainless Steel. Studs are 1/4"-20.

- Gasketed SO-239 connectors are silver plated with Teflon® insulation.
- Power handling from 3 kW continuous to 7 kW intermittent, depending on model
- Typical insertion loss is less than 0.2 dB
- Special wire size selection and Teflon®-insulated wire sleeves provide exact impedance matching and superb insulation - unlike common Thermaleze® wire

This book COMTEK Baluns were inspired by the writings of Jerry Sevick W2FMI, published in "Building and Using Baluns and Ununs". COMTEK baluns are value-engineered to provide maximum performance at minimum cost while providing a superb, efficient match between unbalanced coax and balanced antennas.

When properly connected to balanced antenna loads like symmetrical dipoles, unbalanced coaxial feedlines must have exactly equal and opposite currents on the shield and center conductors. COMTEK baluns are value-engineered to provide maximum performance at minimum cost while providing a superb, efficient match between unbalanced coax and balanced antennas.

Balanced current distribution along the halves of the antenna assures correct pattern shape and antenna efficiency. Current baluns add common-mode isolation between the antenna and coaxial feedline.

The expected figure-8 dipole azimuth pattern cannot be achieved unless RF current is flowing equally on both halves of the dipole. The COMTEK current baluns force equal current to flow and prevent high values of common mode feedline current. This eliminates pattern distortion, unpredictable performance, RFI, and noise pickup from nearby sources like TV sets and computers.

Baluns come in ratios for effective SWR matching between the 50 Ω coaxial transmission line and the antenna feedpoint based on the feedpoint impedance. COMTEK baluns have been designed to provide the lowest possible SWR match across the specified frequency range.

Current baluns isolate or add impedance to unwanted common-mode current paths, reducing or controlling common-mode current. Current baluns are the best choice in almost all situations because they work better in most real-world systems by isolating the input and output connections. Contrary to some published information, a high common-mode impedance across a wide frequency range is absurd, if not unachievable. The highest impedance values are most useful at lower frequencies, while lesser impedance values are more than adequate at the high end of the HF range. In most cases, baluns are installed as close as possible to a balanced-to-unbalanced transition point.

Contact DX Engineering Customer Support to discuss your application or for recommendations.

W2FMI Series Baluns

When properly connected to balanced antenna loads like symmetrical dipoles, unbalanced coaxial feedlines must have exactly equal and opposite currents on the shield and center conductors. COMTEK baluns are value-engineered to provide maximum performance at minimum cost while providing a superb, efficient match between unbalanced coax and balanced antennas.

Balanced current distribution along the halves of the antenna assures correct pattern shape and antenna efficiency. Current baluns add common-mode isolation between the antenna and coaxial feedline.

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Baluns, UNUNs & Chokes

4:1 High Power UNUN for Non-Resonant Vertical Antennas
Using non-resonant multi-band antennas? This UNUN helps your antenna system operate at maximum efficiency by minimizing transmission line losses caused by SWR. You can add this UNUN to any 43 foot antenna system; it covers 1.8-30 MHz and can handle 2 kW CW/5 kW SSB.

Mounting and feedpoint connection kits are available separately; or you can purchase everything together for a complete installation package:
- **DXE-UN-43** High Power 4:1 UNUN $104.95
- **DXE-UN-BRKT** UNUN Mounting Kit $22.95
- **DXE-TCB-UNPK** UNUN to Vertical Feedpoint Connection Kit $9.50
- **DXE-UN-43-R** Complete Package with UNUN, Mounting and Feedpoint Kits $129.95

Balun Mounting and Installation Solutions
Mounting your balun correctly is critical to maintaining its reliability. Here are several options to ensure your balun is ready to face Mother Nature.

### Balun or Choke Mounting Kit
The DXE-VFCC-BRKT is the same bracket kit supplied with our Vertical Feedline Current Chokes. It also works well with several other models. The kit includes the stainless steel bracket and insulated shelf. You can mount it to a standard 4x4 or 6x6 wooden post with basic wood screws. If you’re using this kit to mount your balun to a 1 to 2 inch O.D. pipe, you’ll want to use a durable clamp; we recommend our V-Saddle Clamp.
- **DXE-VFCC-BRKT** Balun or Choke Mounting Kit $19.95
- **DXE-SSVC-2P** V-Saddle Clamp $11.95

### Balun Dipole Adapter Bracket
If you’re mounting your balun or feedline choke to a wire dipole antenna, the Balun Dipole Adapter Kit is the ideal solution. It suspends your balun with the antenna and includes all necessary mounting hardware. Be sure to use durable rope that can support the added weight; check out the Double-Braided Polyester Rope from Synthetic Textile Industries, found on page 60.
- **DXE-BDAB-1P** Balun Dipole Adapter Kit $24.95

### Balun Mounting Bracket Kits
Select from several mounting options that match your Yagi boom, tower leg or mast’s diameter. Each kit contains the appropriate stainless steel clamps and hardware, plus the aluminum bar mounting bracket. They’re the perfect mounting method for any DX Engineering balun in a formed aluminum enclosure.
- **DXE-BMB-1P** Mounting Kit, with 75” to 1.5” Clamps $24.95
- **DXE-BMB-2P** Mounting Kit, with 1.56” to 2.25” Clamps $24.95
- **DXE-BMB-3P** Mounting Kit, with 2.31” to 3” Clamps $24.95
- **DXE-BMB-4P** Mounting Kit, Made for COMTEK Baluns $17.95

### Cable Strain Relief Brackets
Mounting your balun or choke is only part of the equation—you still need to ensure your coaxial cables are secure and free from the stress of gravity. Our Cable Strain Relief Brackets will help prevent the cable from pulling out of your PL-259 connector.
- **DXE-CSR8X-1** Cable Strain Relief Assembly, for RG-8X Cable $15.50
- **DXE-CSR213-1** Cable Strain Relief Assembly, for RG-213/U Cable $15.50

---

**Part Number**  **Application**  **Ratio**  **Power**  **Enclosure**  **Price**
---
**DXE-BAL050-H05-A** Dipole, Yagi 1:1 2.5 kW Formed Aluminum $99.95
**DXE-BAL050-H10-A** Dipole, Yagi 1:1 5/10 kW Formed Aluminum $109.95
**DXE-BAL50-H11-C** Dipole, Yagi 1:1 10/10+ kW Cast Aluminum $139.95
**DXE-BAL100-H11-C** Vertical Loop 2:1 10/10+ kW Cast Aluminum $149.95
**DXE-BAL200-H10-A** Yagi, LPDA, Horizontal Loop 4:1 5/10 kW Formed Aluminum $119.95
**DXE-BAL200-H11-C** Yagi, LPDA, Horizontal Loop 4:1 10/10+ kW Cast Aluminum $144.95
**DXE-BAL300-H10-A** Folded Dipole 6:1 5/10 kW Formed Aluminum $139.95
**DXE-BAL450-H10-A** 450 Ω Antenna 9:1 5/10 kW Formed Aluminum $139.95
**DXE-BAL600-H10-A** Terminated Loop 12:1 5/10 kW Formed Aluminum $139.95

**Special Balun Applications for Use with an Antenna Tuner**
**DXE-BAL050H10AT** Multi-Band Dipole 1:1 5/10 kW Formed Aluminum $119.95
**DXE-BAL050H11CT** Multi-Band Dipole 1:1 10/10+ kW Cast Aluminum $144.95
**DXE-BAL200H10AT** Multi-Band Vertical, Off Center-Fed Dipole 4:1 5/10 kW Formed Aluminum $129.95
**DXE-BAL200H11CT** Multi-Band Vertical, Off Center-Fed Dipole 4:1 10/10+ kW Cast Aluminum $149.95

**Maxi-Core® Special Line Transformers**
If you need a long low loss feedline for your HF antennas, this pair of transformers may be able to save you some money. Instead of running a length of expensive coax, these transformers let you use 450 Ω ladder line as an affordable alternative. Simply run your ladder line and connect a transformer to each end, then connect your 50 Ω coax to each transformer, linking your antenna to your transceiver.

More details on this cost-effective solution can be found on page 85 and at DXEngineering.com. **DXE-BAL450H10-BP** Special Line Transformers, Pair $299.95

**Maxi-Core® and Vertical Feedline Current Chokes**
Fend off RF interference and reduce the noise level in your 50 Ω coxially-fed antenna system. It improves your transceiver’s efficiency by maximizing the transmit power going to your antenna. In addition to eliminating RFI, this current choke can also overcome a less-than-optimal ground system. The DXE-FCC050-H05-A handles 2 kW and is compatible with vertical, Yagi and log periodic antennas. It offers higher common-mode impedance, higher power handling, and lower loss than other chokes. The Maxi-Core® Feedline Current Choke covers 160 to 6 meters and is an excellent way to combat poor ground isolation.

**DXE-FCC050-H05-A** Feedline Current Choke $87.95

---

Find the Full Specs on Every DX Engineering Balun at DXEngineering.com, or Call Us and We’ll Find the Perfect Match for Your Application!
**Vertical Feedline Current Choke**

When quarter-wave antennas are constructed over a good radial system, they have a feedpoint impedance of about 30 Ω and currents are equal between the vertical section and the radial system. If the radial system is less than ideal—due to short radials, too few radials or poor soil conductivity—the antenna system will try to use the feedline shield as part of the radial system. This leads to a loss in the efficiency and a higher take-off angle. Often the current introduced on the shield of the feedline causes RFI at the operator position.

Placing a vertical feedline current choke (VFCC) at the base of the quarter-wave antenna forces the currents to equalize between the vertical section and the radial system, even if the radial system is less than ideal. The balanced terminals of the VFCC should be connected directly to the base of the antenna and radial plate with appropriate lengths of low-inductance tinned copper braid. The DX Engineering VFCC is supplied with an insulated mounting shelf to isolate the feedline shield from ground. Purchase the optional V-Saddle Clamp for mounting the VFCC to pipe up to 2 inches O.D.

- **• Improves signal efficiency**
- **• Equalizes vertical and ground currents**
- **• Improves signal efficiency**
- **• Lowers radiation angle**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXE-VFCC-H05-A</td>
<td>Vertical Feedline Current Choke Kit, 0.5/15 kW, HF</td>
<td>$134.95</td>
</tr>
<tr>
<td>DXE-VFCC-H10-A</td>
<td>Vertical Feedline Current Choke Kit, 5/10 kW, HF</td>
<td>$189.95</td>
</tr>
<tr>
<td>DXE-SSVC-2P</td>
<td>V-Saddle Clamp, for 1” to 2” O.D. Pipe</td>
<td>$11.95</td>
</tr>
</tbody>
</table>

**RBA Series Baluns**

LDG Electronics designed these baluns to let you easily connect ladder line and long wire antennas to LDG’s automatic antenna tuners. For more versatility, these baluns can operate without an LDG tuner and may be used with any of your long random or ladder line antenna projects.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDG-RBA-1-1</td>
<td>1:1 Voltage Balun</td>
<td>$29.95</td>
</tr>
<tr>
<td>LDG-RBA-1-1</td>
<td>1:1 Current Balun</td>
<td>$29.95</td>
</tr>
</tbody>
</table>

**Accessories**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDG-ALK-2</td>
<td>Audio/Linear/Key 2-Port Switch</td>
<td>$49.95</td>
</tr>
</tbody>
</table>

Visit DXEngineering.com to learn more about LDG baluns and accessories!

**50 and 75 Ω Choke Baluns**

Choke baluns ensure that RF does not flow on the outside shield of feedlines, phasing lines, etc. COMTEK SYSTEMS’ baluns feature 100 Amidon beads on a length of RG-400 PTFE double-shielded silver coax terminated with Silver PTFE PL-259 UHF connectors. Assembled baluns are covered w/3M heat shrink tubing. RF bead kits are available if you wish to assemble your own chokes.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM-CFC-50</td>
<td>50 Ω Balun, Assembled</td>
<td>$93.95</td>
</tr>
<tr>
<td>COM-CFC-50K</td>
<td>50 Ω Balun, Kit</td>
<td>$69.95</td>
</tr>
<tr>
<td>COM-CFC-75</td>
<td>75 Ω Balun, Assembled</td>
<td>$94.95</td>
</tr>
<tr>
<td>COM-RFB-160</td>
<td>RF Choke Bead Kit, 160M</td>
<td>$89.95</td>
</tr>
<tr>
<td>COM-RFB-80</td>
<td>RF Choke Bead Kit, 80M</td>
<td>$84.95</td>
</tr>
<tr>
<td>COM-RFB-40</td>
<td>RF Choke Bead Kit, 30 and 40M</td>
<td>$67.95</td>
</tr>
<tr>
<td>COM-RFB-20</td>
<td>RF Choke Bead Kit, 10, 15 and 20M</td>
<td>$38.95</td>
</tr>
</tbody>
</table>

**Accessories**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXE-RADP-3</td>
<td>Stainless Steel Radial Plate with 20 Bolt Sets</td>
<td>$54.50</td>
</tr>
<tr>
<td>DXE-SSVC-2P</td>
<td>V-Saddle Clamp, Fits 1” to 2” Tube</td>
<td>$11.95</td>
</tr>
</tbody>
</table>

**B4KC Current Baluns**

Palstar B4KC Current Baluns are available in both 1:1 and 4:1 ratios. They’re intended for indoor use on Lo-Z antenna applications for center-fed wire antennas with open wire and twin lead transmission lines. B4KC Baluns feature steatite insulators and a large 3.25” ferrite core with Teflon® 12-gauge wire. Rated up to 4,000 watts, these are useful additions to your antenna.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PKS-B4KC-4-1</td>
<td>4:1 Current Balun</td>
<td>$89.95</td>
</tr>
<tr>
<td>PKS-B4KC-1-1</td>
<td>1:1 Current Balun</td>
<td>$89.95</td>
</tr>
</tbody>
</table>

**Broadband Ferrite Balun**

This balun matches your 50 Ω direct coax-fed, hairpin/beta matched or trap tri-band Yagi antenna. It can couple into any 50 Ω balanced system, like dipoles, multiband doublets and beam antennas. The BN-86 Balun handles 800 watts SSB and 1,500 watts CW, while covering the 80 to 10 meter bands. Using stainless steel hardware, this sturdy boom-mounted balun will give you years of reliable service.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGN-BN-86</td>
<td>Broadband Ferrite Balun</td>
<td>$79.95</td>
</tr>
</tbody>
</table>

**BN-4000B Broadband Beam Current Balun**

This 1:1 balun provides the proper current path between unbalanced coax and your balanced antenna feedpoint. It’s compatible with 50 Ω direct coax-fed, hairpin/beta matched and trap tri-band Yagi antennas. Using ferrite beads over a short length of coax, the BN-4000B effectively chokes the flow of RF on the outside of your coax shield. You can use this balun from 160 meters all the way to 6 meters. It handles 2,000 watts of continuous duty.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGN-BN-4000B</td>
<td>Broadband Beam Current Balun</td>
<td>$109.95</td>
</tr>
</tbody>
</table>

**Permatex Neutral Cure RTV Sealant**

Have you ever sealed a piece of electronic gear with ordinary RTV sealant, only to open it later to find that the component had become corroded? It wasn’t moisture that caused the corrosion—it was the RTV. Ordinary RTV gives off acetic acid when it cures (that’s the vinegar smell), it’s the acid that causes the corrosion. DX Engineering has located a Neutral Cure RTV that is non-corrosive and safe for sealing baluns and other electronic gear that will be out in the weather. Applies just like “normal” RTV, dries in one hour and cures in 24 hours at 70 degrees F.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMI-82180</td>
<td>Permatex Neutral Cure RTV, 3.35 oz. Tube, Black</td>
<td>$5.99</td>
</tr>
</tbody>
</table>

Hazardous, limited to domestic UPS Ground shipping only.

**CQ Magazine Publications**

W2FMI Understanding Baluns and Ununs

W2FMI: Jerry Sevick’s compilation of balun performance and design criteria. It offers clear explanations to prompt further discussion of theory and applications.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CQM-SEVICKBALUNS</td>
<td>Baluns and Ununs</td>
<td>$19.95</td>
</tr>
</tbody>
</table>

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- There’s a ton of interesting and FREE tech articles available. Maybe you can learn something new?
- You can contact us through DXEngineering.com. Whether it’s an order, tech question or friendly hello, we love hearing about (and seeing) what you’re working on!
Super Hi-Q Loop Antennas
If you’re short on space, but don’t want to compromise on performance, look to MFJ’s line of Super Hi-Q Loop Antennas. These compact loops have a 36-inch diameter, which means they’ll fit in apartments, attics, small lots, and RVs. The Hi-Q Loop Antennas include a controller with auto band selection, and no control cables are necessary.

Included with each antenna is MFJ’s “Super Remote,” which gives you a built-in cross-needle SWR Wattmeter that lets you quickly tune to your exact frequency. The antennas handle 150 watts and, depending on the model, they cover the WARC bands.

- MFJ-1786 Super Hi-Q Loop Antenna with Remote, 30-10M, 120 Vac $419.95
- MFJ-1786X Super Hi-Q Loop Antenna with Remote, 30-10M, 220 Vac $419.95
- MFJ-1788 Super Hi-Q Loop Antenna with Remote, 40-15M, 120 Vac $469.95
- MFJ-1788X Super Hi-Q Loop Antenna with Remote, 40-15M, 220 Vac $469.95

Mini-Loop Antenna Kits and Tuners
These PVC Cross Loop Antenna kits are the perfect compliment to MFJ’s J-933/J-935C/J-936B loop tuners. The 4.5 x 4.5-foot PVC cross mounts break down to fit in a suitcase or duffle bag—making them perfect for portable multi-band operation.

- MFJ-57B Loop Antenna Kit, 20-15 Meters $29.95
- MFJ-58B Loop Antenna Kit, 60-10 Meters $49.95
- MFJ-933 Loop Tuner, 150 Watts, 5.3-30 MHz $179.95
- MFJ-935B Loop Tuner, 150 Watts, Current Meter, 5.3-30 MHz $199.95
- MFJ-936B Loop Tuner, 150 Watts, Current/ SWR/Wattmeter, 5.3-30 MHz $249.95

Auto Tuned Stealth Antenna (ATS A)
Great for EMCOMM—Assemble and Deploy in Minutes!
Do you live in an area where antennas are not allowed? DX Engineering has designed a complete antenna system that allows Amateur Radio operators living under the shadow of HD4-controlled areas to get on the air easily. Even with a short 26-foot wire antenna, you can typically be on the air on all bands: 40 meters and up. With only 45 feet of wire you can be on all bands from 80 through 10 meters! That’s because the unique ATSA MatchBoxx™ module lets you use almost any length wire—no more “forbidden” lengths as with other end-fed systems.

Most small, physically short antennas exhibit narrow bandwidth, limiting your operating frequency range on the lower bands to 50 to 100 kHz with acceptable SWR. The ATSA’s integral auto tuner always delivers the lowest possible SWR at any operating frequency with no operator adjustments necessary. Just change bands and the ATSA antenna will follow you!

The very low profile Remote Tuning Unit (RTU) is easily hidden, even in small bushes or shrubs. Just “plant” the RTU with supplied spikes and lay out the minimum length radials. The only thing visible is the wire antenna element, which can be made from small diameter wire for a near-zero visual impact. You can further camouflage the RTU with a plastic boulder or other items available at most landscaping stores.

The DX Engineering ATSA system is completely self-contained; even the required 12 Vdc power is carried by the coax. The ATSA will automatically match your coax to the antenna and RVs. The Hi-Q Loop Antennas include a controller with auto band selection, and no insulators. It’s everything you will need to get on the air and operating right under their noses.

- Automatic bandswitching—tunes for lowest SWR
- Handles 200 watts SSB/CW
- Connect 12 Vdc power and RF through single coax feedline

DXE-ATS A-1 ATSA Multi-Band HF Antenna System $489.00
DXE-SA80-AOK Stealth Antenna 80M Tuning Coil Add-On Kit $49.95
**Antennas: Switches**


**Manual Antenna Switches**

**DAIWA**

New!

**Manual Antenna Switches**

Perfect for switching one radio between two antennas (or two radios between one antenna), these rugged switches offer excellent isolation and auto-grounding of the unused terminal for extra protection.

Daiwa’s CS-2011GII has a frequency range up to 2 GHz, 50 dB of isolation at 1 GHz and an insertion loss below 1.2 dB at 1.2 GHz. Gold plated type-N connectors make for easy installation.

The CS-201A has a frequency range up to 600 MHz, 60 dB of isolation at 600 MHz and an insertion loss under 2 dB. This switch features SO-239 connectors.

**ALF-D4**  Replacement ARC-PLUG .......................................................... $8.97

**DMN-CX210A**  Wideband Coax Switch, 1,500 W Max, DC-1000 MHz, SO-239 .................................................. $49.95

**DMN-CX210N**  Wideband Coax Switch, 1,500 W Max, DC-1000 MHz, Type-N Connector ........................................ $79.95

**DMN-CX310A**  Wideband Coax Switch, 3-Position, DC-800 MHz, SO-239 .................................................. $89.95

**Antennas has the gear to help you do it.**

**DIAMOND ANTEenna**

**Wideband Coax Switches**

Maximum Performance without Compromise!

Diamond Antennas offers an extensive line of station accessories: duplexers/triplexers, switches, dummy loads, and lightning protection. Maximize your installation, Diamond Antennas has the gear to help you do it.

**Wideband Coax Switches**

- **DMN-CX210A**  Wideband Coax Switch, 1,500 W Max, DC-1000 MHz, SO-239  $49.95
- **DMN-CX210N**  Wideband Coax Switch, 1,500 W Max, DC-1000 MHz, Type-N Connector  $79.95
- **DMN-CX310A**  Wideband Coax Switch, 3-Position, DC-800 MHz, SO-239  $89.95

**Manual Antenna Switches**

**MFJ**

**Manual Antenna Switches**

MFJ antenna switches have precision-machined, low loss components for reliable service. MFJ 1704 Antenna Switches. Mount one of these antenna switches and you will have more than the convenience of instantly selecting any of four antennas or center ground positions. They come complete with replaceable lightning surge protection that helps to protect against distant lightning-induced surges and static. When these antenna switches are in the center position, all connectors are disconnected and grounded. If the switch is turned to an active connector, the other connectors are automatically grounded. The active connector is automatically protected with the replaceable lightning/surge protector. MFJ antenna switches utilize heavy cast metal construction and a ball bearing drive for smooth switching.

Additional features include:
- Handles 2.5 kW PEP
- Extremely low SWR
- Isolation: greater than 60 dB at 30 MHz, greater than 50 dB at 500 MHz
- Negligible insertion loss
- 50Ω Impedance

**DMN-CX210A**  Wideband Coax Switch, 1,500 W Max, DC-1000 MHz, SO-239 .................................................. $49.95

**DMN-CX210N**  Wideband Coax Switch, 1,500 W Max, DC-1000 MHz, Type-N Connector ........................................ $79.95

**DMN-CX310A**  Wideband Coax Switch, 3-Position, DC-800 MHz, SO-239 .................................................. $89.95

**Alpha Delta**

**Manual Antenna Switches**

Alpha Delta antenna switches have precision-machined, low loss components for reliable service. Grounded unselected antenna ports and ARC-PLUG™ lightning surge protectors provide the final line of protection.

**ALF-D4**  Replacement ARC-PLUG .......................................................... $9.95

**AME-RCS-4**  1.5 kW Four Position RF Switch ............ $149.95

**Ameritron**

**RCS-4 Remote Antenna Switch**

The Ameritron RCS-4 is a Four-Position Remote Antenna Switch which is powered through the coax cable. The relay switch box may be tower, mast or wall mounted—the control console is located at your operating position. It features bright LED indicators, a steel enclosure, 50 ms switching time, and SO-239 connectors. It uses three heavy-duty 10 ampere contact relays on a rugged G-10 fiberglass circuit board. The RCS-4 operates from 120 Vac power source, and covers 1.8 to through 30 MHz at 1,500 watts.

**Ameritron**

**RCS-4 Remote Antenna Switch**

**AMERITRON**

1.5 kW Four Position RF Switch ............ $149.95

**Alpha Delta**

**Manual Antenna Switches**

Alpha Delta antenna switches have precision-machined, low loss components for reliable service. Grounded unselected antenna ports and ARC-PLUG™ lightning surge protectors provide the final line of protection.

**ALF-D4**  Replacement ARC-PLUG .......................................................... $9.95

**ALF-DELTA-2B**  2-Position Coax Switch, SO-239 Connector ............................... $59.95

**ALF-DELTA-2B-N**  2-Position Coax Switch, N-Connector ............................................. $75.95

**ALF-DELTA-4B**  4-Position Coax Switch, SO-239 Connector ............................... $89.95

**ALF-DELTA-4B-N**  4-Position Coax Switch, N-Connector ............................................. $99.95

**ALF-ASC-4B**  4-Position Desk Console Switch, SO-239 Connector ........................ $149.95

**ALF-ASC-4B-N**  4-Position Desk Console Switch, N-Connector ........................ $159.95

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**Controlling a Stacked Yagi Array using the DXE-RRB8-SD or -HP Remote Antenna Switch techarticles/antennaconstruction/controlling-a-stacked-yagi-array**