



# Palomar Engineers™

## **FALL 2013 AMATEUR RADIO CATALOG**



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**Providing Quality Ham Radio Products Since 1965**

**Check website for latest product offerings**

**A letter from the President:**

**As many of you know, Jack Althouse, K6NY, founder of Palomar Engineers passed away in September of this year but his visions and contributions to the ham radio fraternity will not be forgotten. Jack is sorely missed by all the hams touched by his products and articles in World Radio magazine.**

**Jack was a member of various radio clubs in San Diego county and our Chief Engineer, Bob Brehm, AK6R had the pleasure of meeting him many years ago. Bob's background as an electrical engineer is closely parallel to Jack's and they both followed the principles of Maxwell, Kurt Sterba and others who debunk the hooey of inflated antenna specs, and the need to use only resonant antennas with a low SWR at all times.**

**We plan to continue the Palomar reputation of truth, fairness and the American way with great customer support and new products that support the "fun" of ham radio.**

**This fall 2013 catalog has many of the products contained in previous catalogs and several new products including separate selections of various mixes of ferrite beads, toroid cores and iron toroids.**

**The new Kurt Sterba book, "Kurt Speaks Out" is also available and is a great way to learn the truth about antenna principles, get some crazy new antenna ideas that may not make you the king of DX, but will certainly get you thinking about unusual antennas that can work in limited or restricted spaces. The book is peppered with humor and makes easy reading while massaging your brain. Check it out for yourself or buy it as a gift for a fellow ham. An order form is available on the catalog back page or on the website.**

**Stay tuned for new development and check for the latest info and products on our website, [www.Palomar-Engineers.com](http://www.Palomar-Engineers.com)**

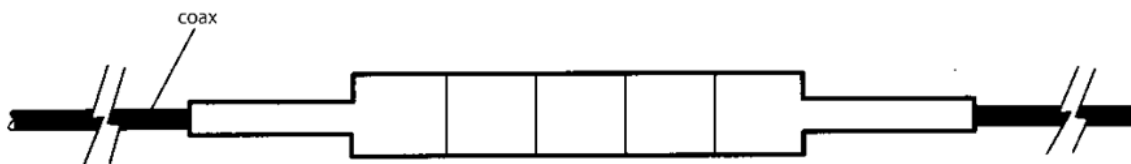
**Sincerely,**

**Susan P. Kline  
President**

**Bob Brehm, AK6R  
Chief Engineer**

# 1:1 CURRENT BALUN/LINE ISOLATOR KITS

## SLIP ON FERRITE BEADS



**Baluns are used to** connect **balanced** antennas to **unbalanced** transmission lines (Coaxial cable) They stop antenna currents from flowing down the outside of the cable if they are located right at the antenna. They can also be used as “line isolators” anywhere along the cable to prevent flow of induced RF and especially to keep RF out of the shack.

**Palomar 1:1 balun kits** are current baluns. They consist of five large ferrite beads (total length 5-1/2 inches) that slip over the coax (**but will not slip over a connector**). Also included are three lengths of shrink tubing to enclose the balun and hold the beads in place on the cable. They work from 2-500 MHz (use two for 160 meters) and allow use of full 1500 watts power or cable capacity. No tools are required for installation, just a source of heat to shrink the tubing - heat gun, lighter, matches.

| <b>Model BA-8/BA-8L</b>  | <b>Model BA-8/8L</b>   |
|--|--|
| For use with RG-8, RG-213, 9913, LM-400 and similar size cables. Balun diameter 1 inch. Requires 9-1/2 inches of cable for installation. Use BA-8L best for 2-150 Mhz, BA-8 for 3-150 or use two of either one for more choking impedance on 160 meters. | For use with RG-58, RG-8X, LM-200 and similar size cables. Balun diameter 0.6 inch. Requires 9-1/2 inches of cable for installation. Use BA-58L best for 2-150 Mhz, BA-58 for 3-150 or use two of either one for more choking impedance on 160 meters. |
| <b>Price: \$18.95</b>  | <b>Price \$9.95</b>  |

(Balun impedance should be 5X line impedance to be effective)

| Frequency<br>Mhz | BA-8<br>Impedance,<br>Ohms | BA-8L<br>Impedance,<br>Ohms | BA-58<br>Impedance,<br>ohms | BA-58L<br>Impedanc<br>e, Ohms |
|------------------|----------------------------|-----------------------------|-----------------------------|-------------------------------|
| 1.9              | 150                        | 215                         | 160                         | 250                           |
| 3.5              | 225                        | 325                         | 240                         | 350                           |
| 7                | 325                        | 450                         | 350                         | 500                           |
| 14               | 475                        | 575                         | 600                         | 675                           |
| 21               | 650                        | 700                         | 775                         | 825                           |
| 28               | 750                        | 800                         | 875                         | 925                           |
| 50               | 875                        | 950                         | 975                         | 1100                          |
| 144              | 1225                       | 1325                        | 1250                        | 1200                          |

Note: Impedance is for 5 beads. If you need higher choking impedance, use more beads. For example, 10 beads will double the above impedances. Extra beads are available in the Ferrite Beads section of the website.

TX5C -The Clipperton 2008 DXpedition specified Palomar Engineers BA-58 baluns for their antennas

# 1:1 CURRENT BALUN/LINE ISOLATOR KITS

## SNAP-ON SPLIT BEAD KITS

**Connector already on the cable? Don't want to remove it?**  
Use split bead line isolator kits that clamp over the cable.



For 1/4" cables (RG-58, RG-8X, LM-200) use five FSB-1/4 split beads to get the same performance as Model BA-58 balun kit.

For 80-10 meters

Indoor Use - Five FSB-1/4 @ \$2.75 each .....Kit 105.....\$13.75

Outdoor use – Five FSB-1/4 with heat shrink tubing for weatherproofing – Kit 105W – \$16.75

For 1/2" cables (RG-8, RG-213, 9913, LM-400) use five FSB-1/2" split beads to get the same performance as Model BA-8 balun kit.

For 80-10 meters

Indoor Use - Five FSB-1/2 @\$5.50 each.....Kit 110.....\$27.50

Outdoor use – Five FSB-1/2 with heat shrink tubing for weatherproofing – Kit 110W – \$29.95

The beads clamp to the cable and may be operated as is for indoor use. However, it is strongly suggested that they be covered to protect the beads from weathering or just order the 105W or 106W which includes custom shrink tubing weatherproofing to ensure long life. For 160 meter operation use two kits in series.



## INDIVIDUAL SNAP ON SPLIT BEADS



Often it is difficult to slip beads on a cable because of a plug or connector. Split beads solve this problem. They come in two halves that fit over the cable. A plastic snap cover holds the two halves together and holds the assembly on the cable.

**FSB-1/4** For 1/4" cable (RG-58, RG-8X, LM-200), 43 Mix for 1-1000 MHz, 1-1/4" long....**\$2.75 each**  
Typical Impedance: 10 Mhz: 100 ohms, 25 Mhz: 163 ohms, 100 Mhz: 275 ohms, 250 Mhz: 275 ohms

**FSB-1/2** For 1/2" cable (RG-8, RG-213, LM-400), 43 Mix for 1-1000 MHz, 1-1/4" long....**\$5.50 each**  
Typical Impedance: 10 Mhz: 90 ohms, 25 Mhz: 156 ohms, 100 Mhz: 250 ohms, 250 Mhz: 305 ohms

**Technical Note: To increase the choking impedance, pass the signal wire through the hole more than once. Two times is 4X and 3 times is 9X the effective impedance of a single turn.**

## 4:1 BALUN KITS

### Model BA-4-1500 Balun Kit - \$28.50



**Purpose.** This kit is designed to convert from coaxial cable to ladder line at full legal power at 100% duty cycle from 1.8 to 30 MHz. It provides conversion from unbalanced coax to balanced ladder line and gives a 4:1 impedance step-up to reduce SWR on the coax.

**Application.** A dipole can be used as a multi-band antenna by using a tuner to convert the impedance to 50 ohms for the transmitter. On its fundamental the dipole impedance will be about 75 ohms. But on its second harmonic its impedance will be on the order of 3500 ohms. If 50 ohm coax is connected directly the SWR on the fundamental will be 1.5 but on the second harmonic it will be 70. The 4:1 balun changes these to 2.7 on the fundamental and 17.5 on the harmonic. Of course the ladder line changes the impedance seen at the balun depending on its length. But there still is a wide range of impedances seen from band to band and a very rugged balun such as the BA-4-1500 is required to cope with it.

Model BA-4-1500. Kit consists of two type T200A cores, two colors of #14, 1000-v insulated wire, a UHF connector with stainless steel hardware, and winding instructions with directions to connect the kit as a 4 to 1 balun (balanced antenna to unbalanced coax) or 4 to 1 unun (unbalanced coax to unbalanced antenna).

4:1 Baluns are useful between balanced lines for center fed Zepps and G5RV antennas, full wave loops, NVIS dipoles that are close to ground and have impedance levels near 200 ohms or high impedance feeds for log periodic beams.

4:1 Ununs are useful between coax and vertical antennas, monopole verticals or long wires with load impedances near 200 ohms.

### Model BA-4-250 Balun Kit - \$17.50



Model BA-4-250 is a 4:1 balun kit used to translate a 50 ohm input up to 200 ohms at power levels up to 250 watts when used with a matched load. With a matched load the SWR will not exceed 1.2 over the frequency range 1.8 to 30 MHz.

The kit consists of a F140-61 ferrite core, two colors of #16 600-v insulated wire, a UHF connector with stainless steel hardware, and an instruction manual with directions to connect the kit as a 4 to 1 balun (balanced antenna to unbalanced coax) or 4 to 1 unun (unbalanced coax to unbalanced antenna).

4:1 Baluns are useful between balanced lines for center fed Zepps and G5RV antennas, full wave loops, NVIS dipoles that are close to ground and have impedance levels near 200 ohms or high impedance feeds for log periodic beams.

4:1 ununs are useful between coax and vertical antennas, monopole verticals or long wires with load impedances near 200 ohms.

## 9:1 BALUN/UNUN KITS



Model BA-9-250 is a 9:1 balun kit used to translate a 50 ohm input up to 450 ohms at RF power levels up to 250 watts when used with a matched load. With a matched load SWR will not exceed 1:1 over the frequency range 1.8 to 30 MHz. The kit consists of a F140-61 ferrite toroidal core, three colors of #16 600-v insulated wire, a UHF connector with stainless steel hardware, and an instruction manual with directions to connect the kit as a 9 to 1 balun (balanced antenna to unbalanced coax) or 9 to 1 unun (unbalanced coax to unbalanced antenna).

9:1 Baluns are useful between balanced lines for center fed Zepps and G5RV antennas, full wave loops, folded dipoles that are close to ground and have impedance levels near 450 ohms or high impedance feeds for log periodic beams.

9:1 Ununs are useful between coax and vertical antennas, monopole verticals or long wires with load impedances near 450 ohms. Shortwave listener antennas also can benefit with the 9:1 unun and it will provide a better match than 4:1 ununs – this means quieter noise levels and stronger signals so you can hear distance stations easier.

**Model BA-9-250 Balun/Unun Kit - \$19.50**

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# FERRITE TOROID CORES



Ferrite toroid cores are used for low power tuned circuits and especially for wideband transformers and baluns. They have high permeability so you get high inductance with few turns.

The frequency ranges listed in the table are those recommended for tuned circuits. **FOR WIDEBAND TRANSFORMERS THE TOP FREQUENCY IS TEN TIMES HIGHER.**

To find the number of turns to give the desired inductance for your coil use the formula below:

$$\text{Turns} = 1000 \times \sqrt{(\text{Desired } L \text{ in mH}) / (\text{mH per 1000 turns (from table)})}$$

Chart showing mH (millihenry) per 1000 turns.

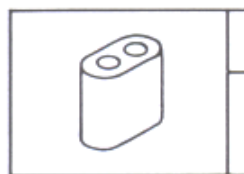
| CORE SIZE | Mix 67                   | Mix 61                    | Mix 43                    | Mix 77                      | Mix 75                      | SIZE           | SIZE           | SIZE          | PRICE        |
|-----------|--------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|----------------|----------------|---------------|--------------|
|           | $\mu=40$<br>10-80<br>MHz | $\mu=125$<br>.2-10<br>MHz | $\mu=850$<br>.01-1<br>MHz | $\mu=1800$<br>.001-2<br>MHz | $\mu=5000$<br>.001-1<br>MHz | O.D.<br>inches | I.D.<br>inches | HT.<br>inches | \$<br>(U.S.) |
| F-240     |                          | 173                       | 1240                      | 2740                        |                             | 2.4            | 1.4            | 0.5           | 13.65        |
| F-140     | 45                       | 140                       | 1060                      | 2250                        |                             | 1.4            | 0.9            | 0.5           | 6.25         |
| F-114A    |                          | 146                       | 993                       | 2340                        |                             | 1.14           | 0.75           | 0.55          | 4.5          |
| F-114     | 25                       | 79                        | 603                       | 1270                        |                             | 1.14           | 0.75           | 0.3           | 3.5          |
| F-82      | 23                       | 73                        | 557                       | 1170                        |                             | 0.82           | 0.52           | 0.25          | 1.7          |
| F-50B     | 48                       | 150                       | 1140                      | 2400                        |                             | 0.5            | 0.31           | 0.5           | 1.6          |
| F-50A     | 24                       | 75                        | 570                       | 1200                        | 3000                        | 0.5            | 0.31           | 0.25          | 1.45         |
| F-50      | 22                       | 68                        | 523                       | 1100                        | 2750                        | 0.5            | 0.28           | 0.19          | 1.1          |
| F-37      | 18                       | 55                        | 420                       | 884                         | 2210                        | 0.37           | 0.19           | 0.12          | 0.85         |
| F-23      | 8                        | 25                        | 188                       | 396                         |                             | 0.23           | 0.12           | 0.06          | 0.75         |

To order specify core size and Mix. Example: F240-61

Available in sizes that have mH per 1000 turns shown in the table.

## Balun Cores

| Part Number | Length | Width x Thickness | Hole Dia. | Mix | Price  |
|-------------|--------|-------------------|-----------|-----|--------|
| BLN-24-43   | .25"   | .28" x .16"       | .07"      | 43  | \$ .70 |
| BLN-68-61   | 1.1"   | .53" x .3"        | .15"      | 61  | \$3.30 |



## IRON POWDER TOROID CORES

Iron powder cores are more stable than ferrites and do not saturate as easily so they are best for tuned circuits, filters, and high power inductors. They come in different “Mixes” for use at different frequencies. For best “Q” use the Mix specified for your frequency. To find the number of turns to give the desired inductance for your coil use the formula below.

$$\text{Turns} = 100 \times \sqrt{(\text{Desired } L \text{ in } \mu\text{H}) / (\mu\text{H per 100 turns (from table)})}$$

**Chart showing  $\mu\text{H}$  (micro henrys) per 100 turns**

| CORE SIZE | Mix 26                                 | Mix 3                         | Mix 15                                | Mix 1                         | Mix 2                         | Mix 7                        | Mix 6                           | Mix 10                         | Mix 12                                  | Mix 0                        | SIZE O.D. Inches | SIZE I.D. Inches | SIZE Height Inches | PRICE \$ (U.S.) |
|-----------|--|-------------------------------|---------------------------------------|-------------------------------|-------------------------------|------------------------------|---------------------------------|--------------------------------|---|------------------------------|------------------|------------------|--------------------|-----------------|
|           | $\mu=75$<br>0-1 Mhz<br>Yellow<br>White | $\mu=35$<br>.02-1 MHz<br>Grey | $\mu=25$<br>0.1-3 MHz<br>Red<br>White | $\mu=20$<br>.15-2 MHz<br>Blue | $\mu=10$<br>.25-10 MHz<br>Red | $\mu=9$<br>1-20 MHz<br>White | $\mu=8.5$<br>2-30 MHz<br>Yellow | $\mu=6$<br>10-100 MHz<br>Black | $\mu=4$<br>20-200 MHz<br>Green<br>White | $\mu=1$<br>50-250 MHz<br>Tan |                  |                  |                    |                 |
| T-400A    | 2600                                   |                               |                                       |                               | 360                           |                              |                                 |                                |   |                              | 4                | 2.25             | 1.3                | \$37.50         |
| T-400     | 1320                                   |                               |                                       |                               | 185                           |                              |                                 |                                |   |                              | 4                | 2.25             | 0.65               | \$18.75         |
| T300A-2   |  |                               |                                       |                               | 228                           |                              |                                 |                                |   |                              | 3.04             | 1.94             | 1                  | \$15.00         |
| T-300     | 825                                    |                               |                                       |                               | 115                           |                              |                                 |                                |   |                              | 3.05             | 1.93             | 0.5                | \$11.00         |
| T-250     |  |                               |                                       |                               | 310                           |                              |                                 |                                |   |                              | 2.5              | 1.25             | 1                  | \$15.40         |
| T-225A    |  |                               |                                       |                               | 215                           |                              |                                 |                                |   |                              | 2.25             | 1.4              | 1                  | \$11.00         |
| T-225     | 950                                    | 425                           |                                       |                               | 120                           |                              | 100                             |                                |   |                              | 2.25             | 1.4              | 0.55               | \$9.60          |
| T-200A    | 1550                                   |                               |                                       |                               | 218                           |                              |                                 |                                |   |                              | 2                | 1.25             | 1                  | \$8.25          |
| T-200     | 895                                    | 425                           |                                       | 250                           | 120                           |                              | 100                             |                                |   |                              | 2                | 1.25             | 0.55               | \$6.85          |
| T-184     | 1640                                   | 720                           |                                       | 500                           | 240                           |                              | 195                             |                                |   |                              | 1.84             | 0.95             | 0.71               | \$7.25          |
| T-157     | 970                                    | 420                           | 360                                   | 320                           | 140                           |                              | 115                             |                                |   |                              | 1.57             | 0.95             | 0.57               | \$5.50          |
| T-130     | 785                                    | 350                           | 250                                   | 200                           | 110                           |                              | 96                              |                                | 40                                      | 15                           | 1.3              | 0.78             | 0.44               | \$3.45          |
| T-106     | 900                                    | 450                           | 345                                   | 325                           | 135                           |                              | 116                             |                                | 51                                      | 19                           | 1.06             | 0.57             | 0.44               | \$2.75          |
| T-94      | 590                                    | 248                           | 200                                   | 160                           | 84                            |                              | 70                              | 58                             | 32                                      | 10.6                         | 0.94             | 0.56             | 0.31               | \$2.40          |
| T-80      | 450                                    | 180                           | 170                                   | 115                           | 55                            |                              | 45                              | 32                             | 22                                      | 8.5                          | 0.8              | 0.5              | 0.25               | \$2.10          |
| T-68      | 420                                    | 195                           | 180                                   | 115                           | 57                            | 52                           | 47                              | 32                             | 21                                      | 7.5                          | 0.68             | 0.37             | 0.19               | \$1.35          |
| T-50      | 320                                    | 175                           | 135                                   | 100                           | 49                            | 43                           | 40                              | 31                             | 18                                      | 6.4                          | 0.5              | 0.3              | 0.19               | \$1.00          |
| T-44      | 360                                    | 180                           | 160                                   | 105                           | 52                            | 46                           | 42                              | 33                             | 19                                      | 6.5                          | 0.44             | 0.23             | 0.16               | \$0.90          |
| T-37      | 275                                    | 120                           | 90                                    | 80                            | 40                            | 32                           | 30                              | 25                             | 15                                      | 4.9                          | 0.37             | 0.2              | 0.13               | \$0.85          |
| T-30      | 325                                    | 140                           | 93                                    | 85                            | 43                            |                              | 36                              | 25                             | 16                                      | 6                            | 0.3              | 0.15             | 0.13               | \$0.80          |
| T-25      |  | 100                           | 85                                    | 70                            | 34                            |                              | 27                              | 19                             | 12                                      | 4.5                          | 0.25             | 0.12             | 0.1                | \$0.60          |
| T-20      |  | 90                            | 65                                    | 52                            | 27                            |                              | 22                              | 16                             | 10                                      | 3.5                          | 0.2              | 0.09             | 0.07               | \$0.60          |
| T-16      |  | 61                            | 55                                    | 44                            | 22                            |                              | 19                              | 13                             | 8                                       | 3                            | 0.16             | 0.08             | 0.06               | \$0.50          |
| T-12      |  | 60                            | 50                                    | 48                            | 20                            |                              | 17                              | 12                             | 7                                       | 3                            | 0.12             | 0.06             | 0.05               | \$0.50          |

To order specify core size and mix. Available in sizes that have  $\mu\text{H}$  per 100 turns shown in table.

Chart showing  $\mu\text{H}$  per 100 turns

Note: Mix 7 has lowest temperature coefficient. Use for VFO's.

Note: Mix 17 available in same sizes as Mix 12,  $\mu=4$ , Blue/Yellow

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## FERRITE BEADS



Ferrite beads are used for RF shielding, parasitic suppression and RF decoupling. When placed over a coaxial cable they prevent RF from flowing on the outside of the shield but do not affect the signal inside the cable.

For RFI use, mix 31 is effective from 1-300 Mhz, mix 43 works from 20-300 Mhz. and mix 77 favors .5-20 MHz. These frequencies are those of the interfering signal to be eliminated, not the operating frequencies of the equipment to be protected

|                |       |            |            |            |                  |            |                      |            |
|----------------|-------|------------|------------|------------|------------------|------------|----------------------|------------|
|                |       | FB20       | FB63       | FB63       | FB56             | FB56       | FB102                | FB102      |
| Mix            |       | 43         | 43         | 77         | 31               | 43         | 31                   | 43         |
| Manf #         |       | 2643250402 | 2643006302 | 2677006302 | 2631540002       | 2643540002 | 2631102002           | 2643102002 |
| OD (A)         | Inch  | 0.25       | 0.375      | 0.375      | 0.562            | 0.562      | 1.02                 | 1.02       |
|                | mm    | 6.4        | 9.5        | 9.5        | 14.3             | 14.3       | 25.9                 | 25.9       |
| ID (B)         | Inch  | 0.125      | 0.193      | 0.193      | 0.25             | 0.25       | 0.505                | 0.505      |
|                | mm    | 2.95       | 4.75       | 4.75       | 6.4              | 6.4        | 12.8                 | 12.8       |
| Length (C)     | Inch  | 0.5        | 0.41       | 0.41       | 1.125            | 1.125      | 1.125                | 1.125      |
|                | mm    | 12.7       | 10.4       | 10.4       | 28.6             | 28.6       | 28.6                 | 28.6       |
| Max Wire Size  |       | #11 AWG    | #6 AWG     | #6 AWG     | RG-58, 8X, LM200 |            | RG-8,213,9913,LM-400 |            |
| RFI Use        | Mhz   | 20-300     | 20-300     | .5-20      | 1-300            | 20-300     | 1-300                | 20-300     |
| Coil Use       | Mhz   | .01-1      | .01-1      | 1-1        |                  | .01-1      |                      | .01-1      |
| Transformer    | Mhz   | .01-10     | .01-10     | 2-Jan      |                  | .01-10     |                      | .01-10     |
| Z (typical)    | Mhz   |            |            |            |                  |            |                      |            |
| per bead       | 1     | 15         | 5          | 25         | 35               | 25         | 31                   | 15         |
|                | 5     | 30         | 20         | 40         | 91               | 75         | 79                   | 60         |
|                | 10    | 43         | 34         | 33         | 119              | 105        | 103                  | 91         |
|                | 25    | 69         | 53         |            | 181              | 171        | 156                  | 145        |
|                | 100   | 101        | 80         |            | 300              | 250        | 260                  | 235        |
|                | 250   | 111        | 92         |            | 280              | 255        | 280                  | 275        |
| Price          | Qty   |            |            |            |                  |            |                      |            |
|                | 1-19  | \$0.40     | \$0.46     | \$0.46     | \$1.65           | \$1.65     | \$3.30               | \$3.30     |
|                | 20-99 | \$0.36     | \$0.40     | \$0.40     | \$1.50           | \$1.50     | \$2.95               | \$2.95     |
|                | 100+  | \$0.30     | \$0.35     | \$0.35     | \$1.25           | \$1.25     | \$2.50               | \$2.50     |
| Palomar Part # |       | FB20-43    | FB63-43    | FB63-77    | FB56-31          | FB56-43    | FB102-31             | FB102-43   |

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## RFI INTERFERENCE KIT

The RFI kit is designed to cure most household RFI problems. It contains ferrite toroids and beads selected to eliminate RFI from 1 to 1000 Mhz. The beads are easy to use, don't require modification of the protected equipment and work in almost all cases, even when plug-in filters fail.



**What causes RFI?** Strong signals from nearby amateur radio, CB, FM and other transmitters are picked up by long wires running through the house electric power wiring, telephone cables, alarm system wires, speaker wires, etc. They feed the interfering signals into the TV, telephone, stereo, alarm systems and computer modem.

**How to cure RFI** – Run the wires through ferrite cores right next to the affected appliance (the Tip Sheet gives details). Ferrites do not affect the signals going through the wires but they resist the passage of RF keeping the RF out of the appliance and stopping the RFI.

**What is in the kit?** 12 beads with 0.2” holes for small wires and cables, 4 toroid (donut shaped) cores with 1/2” holes, 4 with 3/4” holes, 4 split beads (toroids cut in half so you can put them over cables without disconnecting them) -two fit over RG-58 (1/4” hole) and two fit over RG-8 (1/2” hole)..

Kit Includes one dozen FB-63-77 beads and two each F82-43, F82-77, F114-43, F114-77, FSB-1/4 and FSB-1/2. Plus full instructions in the RFI Tip Sheet. A \$42.50 value for \$35.00.

**RFI-4.....\$35.00**

## KURT SPEAKS OUT

**Kurt  
Speaks  
Out**

By  
Kurt N Sterba

Kurt N Sterba, sometimes known as “Krusty Olde Kurt” or “The Krusty One” and often as “The Masked Avenger”, is fearless in exposing antenna manufacturers who lie or use deceptive numbers to inflate the gain dB's of their antennas. He also deflates those who use “new scientific breakthroughs” to explain the operation of their products. He pieces through the obfuscation of on-the-air antenna “experts” by explaining antennas, grounds, and feedlines in non-mathematical, simple English. His aim is to see that all understand the real basics of antennas, and are not taken in by the ever-prevalent, fine-sounding ad writers and other purveyors of false information.

This book contains 50 of his Kolumns from Worldradio 1990 to 2006. 105 pages. Read, learn, and enjoy. Included are unusual antennas: CCD, T2FD, OCF, Rattail Ver-Tee, G5RV, ZEPP, skeleton discone, and many others - which shows you that an antenna does not have to be resonant or have a low SWR to work DX! Bull feathers! Find out the real truth about antennas and STOP WASTING YOUR TIME and MONEY trying to get the lowest SWR! SPEND a measly \$20 and get educated by one of the experts - Krusty ole Kurt!!

**Kurt Speaks Out.....\$19.95**

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