

Section 3

RF HARDWARE

Updated 16 February 2011

Phasing Harness for Sidemount Dipole and Yagi Stack Arrays

Frequency
70 – 960 MHz

Bandwidth
10%



A phasing harness is for combining the feed of 2 or 4 antennas into a single 50 ohm input. The antennas may be a stack array formation of either Sidemount Dipoles or Yagi's.

Note that the bandwidth limitation of a phasing harness is 10 % around your centre frequency at -15 dB return loss, less than 1.5:1 VSWR. Broadcasters requiring better return loss or a broader bandwidth should use a power divider.

The ZCG Scalar range of phasing harnesses are assembled from highest quality RG11 coaxial cable and N-Type connectors. The junction box features a moulded thermoplastic design for effective water resistance and low passive intermodulation characteristics.

All operate on the same principle of transforming quarterwave sections. These sections are always uneven quarterwave multiples and the multiple is selected to allow correct stacking distance, plus formation of a neat stress relieving loop.

- ⇒ **PDD** models are for Sidemount Dipoles.
- ⇒ **PDY** harnesses suit Yagi's.
- ⇒ The suffix **2 or 4** in the product code signifies either a 2-Way or 4-Way harness.

When ordering, please specify your Transmit Tx and Receive Rx frequencies. Also, for a Yagi harness, we will need advice about the number of elements on each Yagi in the array.

Your harness will be manufactured to exact requirements to suit the standard stacking distances, unless you specify otherwise.

Sidemount Dipoles are generally stacked at 0.7 to 0.8 wavelength separation.

Yagi's are normally stacked to provide maximum forward gain. The separation distance will vary according to the number of elements and changes from approximately 1.3 wavelengths for 6 element models up to 2 wavelengths for 15 element Yagi's.

Frequency Ranges	For Sidemount Dipoles		For Yagi's	
	2-Way Harness	4-Way Harness	2-Way Harness	4-Way Harness
70 to 85 MHz	PDD22	PDD24	PDY22	PDY24
85 to 100 MHz	-	-	PDY52A	PDY54A
100 to 118 MHz	PDD52B	PDD54B	PDY52B	PDY54B
Air Band 118 to 136 MHz	-	-	PDYA2	PDYA4
148 to 174 MHz	PDD32	PDD34	PDY32	PDY34
Maximum Input Power	500 Watts	500 Watts	500 Watts	500 Watts
400 to 520 MHz	PDD42	PDD44	PDY42	PDY44
520 to 800 MHz	PDD62	PDD64	PDY62	PDY64
800 to 960 MHz	PDD82	PDD84	PDY82	PDY84
Maximum Input Power	50 Watts	50 Watts	50 Watts	50 Watts
Maximum Bandwidth	10% around your centre frequency, specify Tx and Rx frequencies			
Return Loss, VSWR	All harnesses are optimised for better than -15 dB, less than 1.5:1			
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Cable	RG11	RG11	RG11	RG11
Connectors	N-Female fitted on junction box input arm, N-Male on each output arm			