

# VUHF Antennas

## PRODUCT MANUAL

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## 1. Bespoke Antenna Design

Bespoke antenna design for specific applications and antenna customisation, thoroughly tested throughout design and manufacture.

We are experienced in the design of antennas for specific applications. We can also customise any antenna featured in our product portfolio to suit your required radio specification. All antennas are thoroughly tested throughout design and manufacturing process to ensure they meet the quoted specification.

We are happy to discuss your specific requirements in more detail, if you are looking for a bespoke antenna design. Please contact us for more information.

### **What is your Antenna Specification:**

What antenna type do you require?

Which application will it be used for?

What is the frequency range to will be operating in?

What is the Gain?

What is the beam width?

Are there any size or weight limitations?

Which type of environment will the antenna be situated in?

Which type of connectors do you require?

What quantity are you looking for?

## 2. Desktop Antennas

Desktop Antennas, omni-directional design, weighted base with rubber feet, easy to relocate for better signal quality and strength, ideal for use in WiFi applications.

This sturdy omni directional antenna design has a weighted base with rubber feet to keep it stable on the desktop. The desktop antenna can be mounted to ceilings, walls, or inside windows using the single-screw-attach feature in the base. This antenna's 5 ft.-tall profile is attractively designed in a smooth, moulded plastic.

The Antenna is an ideal solution for allowing you to re-locate the antenna for better signal quality and strength by extending the antenna to your desktop. Its' omni directional design allows for uniform coverage area around the antenna and is ideal for use in WiFi applications.



**Desktop Antenna**

**Electrical Specification:**

Frequency Range:	136-174 MHz/ 403-470 MHz
Gain:	Unity
Polarization:	Vertical
Power Rating:	40 Watts
Impedance:	50 Ohms
VSWR:	1.5:1
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

**Mechanical Specification:**

Height::	600 mm
Weight::	700 - 1000 g
Colour Finish:	Stainless Steel and black base.

## 3. Dipole Antennae

Dipole antennae are available with one, two, four or eight dipole elements.

Depending on the number of elements used these dipole antennae can be employed for heavy duty and light weight operational requirements providing maximum bandwidth and minimum pattern distortion.

The two, four and eight element units are fitted with a binary cable harness is used to ensure equal in-phase power distribution to all radiating elements.

The antenna metalwork is made from 6063-T6 Aluminium tubes.



**JA1DP-VHFL 1 Element Dipole (66 - 88 MHZ)**

**Electrical Specification:**

Frequency Range:	66-88 MHz
Gain:	0db
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni
Power Rating:	60 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

**Mechanical Specification:**

Height::	1.5 m
Weight::	5 kg
Colour Finish:	6063-T6 Aluminium

**JA2DP-VHFL 2 Element Dipole (66 - 88 MHz)**

**Electrical Specification:**

Frequency Range:	66-88 MHz
Gain:	3db Omni/ 6db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	125 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

**Mechanical Specification:**

Height::	6.32 m
Weight::	11 kg
Colour Finish:	6063-T6 Aluminium

**JA4DP-VHFL 4 Element Dipole (66 - 88 MHz)**

**Electrical Specification:**

Frequency Range:	66 - 88 MHz
Gain:	6db Omni/ 9db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	250 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	14.68 m
Weight::	24 kg
Colour Finish:	6063-T6 Aluminium

**JA8DP-VHFL 8 Element Dipole (66 - 88 MHz)**

**Electrical Specification:**

Frequency Range:	66 - 88 MHz
Gain:	9db Omni/ 12db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	500 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	30 m
Weight::	50 kg
Colour Finish:	6063-T6 Aluminium

**JA1DP-VHFH 1 Element Dipole (136 - 174 MHz)**

**Electrical Specification:**

Frequency Range:	136 - 174 MHz
Gain:	0db
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni
Power Rating:	60 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	0.55 m
Weight::	1.1 kg
Colour Finish:	6063-T6 Aluminium

**JA2DP-VHFH 2 Element Dipole (136 - 174 MHz)**

**Electrical Specification:**

Frequency Range:	136 - 174 MHz
Gain:	3db Omni/ 6db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	125 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	3.25 m
Weight::	5.5 kg
Colour Finish:	6063-T6 Aluminium

**JA4DP-VHFH 4 Element Dipole (146 - 174 MHz)**

**Electrical Specification:**

Frequency Range:	136 - 174 MHz
Gain:	6db Omni/ 9db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	250 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	6 m
Weight::	13 kg
Colour Finish:	6063-T6 Aluminium

**JA8DP-VHFH 8 Element Dipole (136 - 174 MHz)**

**Electrical Specification:**

Frequency Range:	136 - 174 MHz
Gain:	9db Omni/ 12db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	500 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	12 m
Weight::	30 kg
Colour Finish:	6063-T6 Aluminium

**JA1DP-UHF 1 Element Dipole (403 - 470 MHz)**

**Electrical Specification:**

Frequency Range:	403 - 470 MHz
Gain:	0db
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni
Power Rating:	60 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	0.55 m
Weight::	0.9 kg
Colour Finish:	6063-T6 Aluminium

**JA2DP-UHF 2 Element Dipole (403 - 470 MHZ)**

**Electrical Specification:**

Frequency Range:	403 - 470 MHz
Gain:	3db Omni/ 6db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	125 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	1.7 m
Weight::	3.2 kg
Colour Finish:	6063-T6 Aluminium

**JA4DP-UHF 4 Element Dipole (403 - 470 MHZ)**

**Electrical Specification:**

Frequency Range:	403 - 470 MHz
Gain:	6db Omni/ 9db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	250 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

Height::	2.7 m
Weight::	6.3 kg
Colour Finish:	6063-T6 Aluminium

**JA8DP-UHF 8 Element Dipole (403-470 MHz)**

**Electrical Specification:**

Frequency Range:	403 - 470 MHz
Gain:	9db Omni/ 12db Elliptical
Polarization:	Vertical
Horizontal Radiation Pattern:	Omni/ Elliptical
Power Rating:	500 Watts
Impedance:	50 Ohms
VSWR:	<1.5:1
Connector:	Captive N Type Male

**Mechanical Specification:**

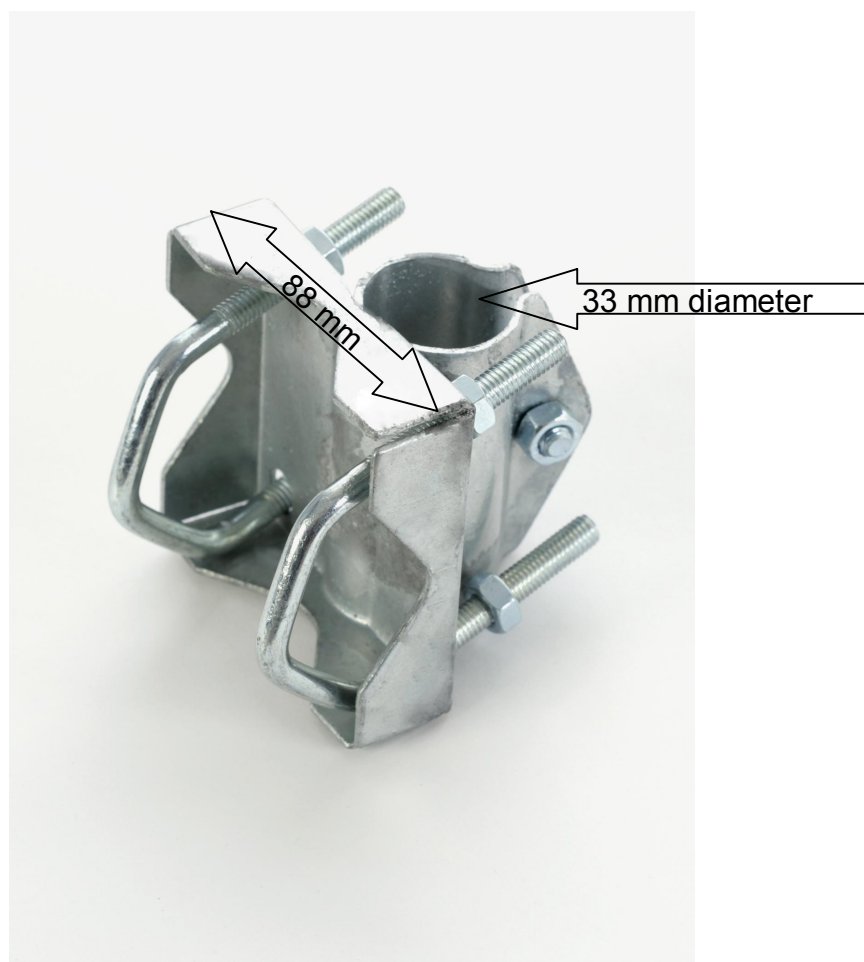
Height::	5.5 m
Weight::	13.8 kg
Colour Finish:	6063-T6 Aluminium

## 3.1. Mounting Brackets

### JA-BRK Antenna Mounting Bracket

#### Mechanical Specification:

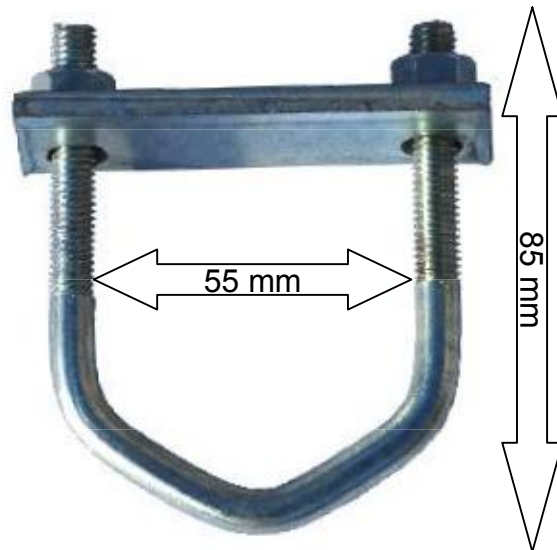
Dimensions:	88 x 88 mm, diameter 33 mm
Weight::	600 g
Colour Finish:	6063-T6 Aluminium



## JA-UB Antenna U-Bolt

### Mechanical Specification:

Dimensions:	55 x 85 mm
Weight::	200 g
Colour Finish:	6063-T6 Aluminium



## 4. Film Antennas

Film antenna, discreet VHF/UHF antenna for vehicle use and telemetry applications. Attached to a transparent adhesive membrane, supplied with a backing strip, when fitted is virtually unnoticeable. No visible whip to vandalize. A film antenna is a discreet VHF/UHF antenna for vehicle use and telemetry applications.

This film antenna can be attached to a clean none-metallic surface such as the rear windscreen of a vehicle. Without a visible whip to vandalize and no external projection parts this antenna is inconspicuous and car wash proof.

The film is 200 microns thick and has a BNC/GT- 5 connector attached to RG174 cable. The cable can be terminated at the centre and the end of the antenna.

The antenna is attached to a transparent adhesive membrane, which is supplied with a backing strip and when fitted is virtually unnoticeable.



## Electrical/ Mechanical Specification

### 4.1. JFA1052 Film Antenna Centre Feed

Frequency Range:	138 - 512 MHz
Gain:	Unity
Polarization:	Linear
Power Rating:	50 Watts
VSWR:	<2:1
Connector:	BNC plug, TNC plug, Mini-UHF or any type

### Mechanical Specification:

Length:	814 mm
Width:	30 mm
Weight::	90 g
Colour Finish:	Red, self adhesive surface



## 4.2. JFA1036 Film Antenna End Feed

Frequency Range:	138 - 512 MHz
Gain:	Unity
Polarization:	Linear
Power Rating:	25 Watts
VSWR:	<2:1
Connector:	BNC plug, TNC plug, Mini-UHF or any type

### Mechanical Specification:

Length:	760 mm
Width:	20 mm
Weight::	90 g
Colour Finish:	Red, self adhesive surface



## 5. Helical Antennas

Helical antenna, specialized antenna emits and responds to electromagnetic fields with rotating (circular) polarization, commonly used at earth-based stations in satellite communications systems and two-way radio applications.

A helical antenna is a specialized antenna that emits and responds to electromagnetic fields with rotating (circular) polarization. These antennas are commonly used at earth based stations in satellite communications systems and two-way radio applications such as hand held radios.

This type of antenna is designed for use with an unbalanced feed line such as coaxial cable. The centre conductor of the cable is connected to the helical element, and the shield of the cable is connected to the reflector.



## JHA1019 Helical Antenna Standard

### Electrical Specification:

Frequency Range:	136 - 174 MHz
Gain:	Unity
Polarization:	Vertical
Radiation:	Omni
Power Rating:	5 Watts
Impedance:	Nom. 50 Ohms
VSWR:	<1.5:1
Antenna Type:	¼ Wave Length
Connector:	SMA, Screw, BNC, TNC or any type

### Mechanical Specification:

Height::	170 mm
Weight::	35 kg
Colour Finish:	Black
Antenna Cover:	Polyurethane

## JHA1020 Helical Antenna Slim

### Electrical Specification:

Frequency Range:	868 MHz
Gain:	Unity
Polarization:	Vertical
Radiation:	Omni
Power Rating:	5 Watts
Impedance:	Nom. 50 Ohms
VSWR:	<1.5:1
Antenna Type:	¼ Wave Length
Connector:	SMA, Screw, BNC, TNC or any type

### Mechanical Specification:

Height::	190 mm
Weight::	23 kg
Colour Finish:	Black
Antenna Cover:	Polyurethane

## 6. Whip Antennas

Whip antenna, single-element antenna used with unbalanced feed line such as coaxial cable, or attached directly to a wireless transmitter, receiver, or transceiver.

A whip antenna is a single-element antenna that can be used with an unbalanced feed line such as coaxial cable, or attached directly to a wireless transmitter, receiver, or transceiver. The whip resembles a ground-plane antenna without the radial system.

The short, flexible "rubber duck" antennas found on handheld two-way radios and cell phones are examples of whip antennas. So are the long, flexible, stainless-steel antennas used in Citizens Band mobile installations. Some portable whip antennas can be telescoped down to a length of only few inches for transport and storage, and extended to several feet for operation.



**JWA1051/ 66-88 Whip Antenna (66-88 MHZ)**

**Electrical Specification:**

Frequency Range:	66 - 88 MHz
Gain:	Unity
Polarization:	Vertical
Power Rating:	50 Watts
Impedance:	Nom. 50 Ohms
VSWR:	<1.5:1
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

**Mechanical Specification:**

Height::	1050 mm
Weight::	400 g
Colour Finish:	Stainless Steel



## JWA1051 Whip Antenna

### Electrical Specification:

Frequency Range:	136 - 174 / 403 - 470 MHz
Gain:	Unity
Polarization:	Vertical
Power Rating:	50 Watts
Impedance:	Nom. 50 Ohms
VSWR:	<1.5:1
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

### Mechanical Specification:

Height::	600 mm
Weight::	250 g
Colour Finish:	Stainless Steel



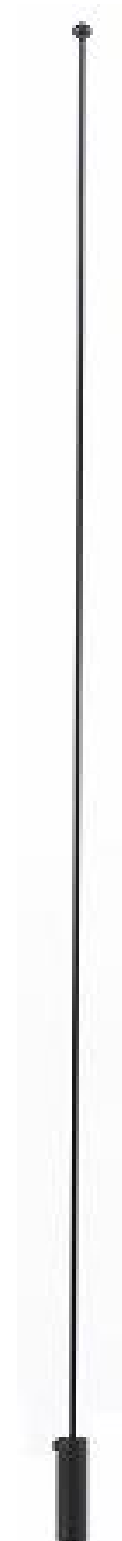
## JWA1032 GPI VHF Whip Antenna

### Electrical Specification:

Frequency Range:	136 - 174 MHz
Gain:	Unity
Polarization:	Vertical
Power Rating:	25 Watts
Impedance:	Nom. 50 Ohms
VSWR:	<1.5:1 Bandwidth 15 MHz
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

### Mechanical Specification:

Height::	900 mm
Weight::	400 g
Colour Finish:	Stainless Steel or Black Anodised



## JWA1033 GPI UHF Whip Antenna

### Electrical Specification:

Frequency Range:	380 - 470 MHz
Gain:	Unity
Polarization:	Vertical
Power Rating:	25 Watts
Impedance:	Nom. 50 Ohms
VSWR:	<1.5:1 Bandwidth 15 MHz
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

### Mechanical Specification:

Height::	500 mm
Weight::	240 g
Colour Finish:	Stainless Steel or Black Anodised



**JWA1051/ 3.5dB Whip Antenna (403 - 470 MHz)**

**Electrical Specification:**

Frequency Range:	403 - 470 MHz
Gain:	Unity
Polarization:	Vertical
Power Rating:	50 Watts
Impedance:	Nom. 50 Ohms
VSWR:	<1.5:1
Connector:	BNC plug, TNC plug, PL259 UHF crimp plug, PL259 UHF or any type

**Mechanical Specification:**

Height::	800 mm
Weight::	325 g
Colour Finish:	Stainless Steel or Black Anodised

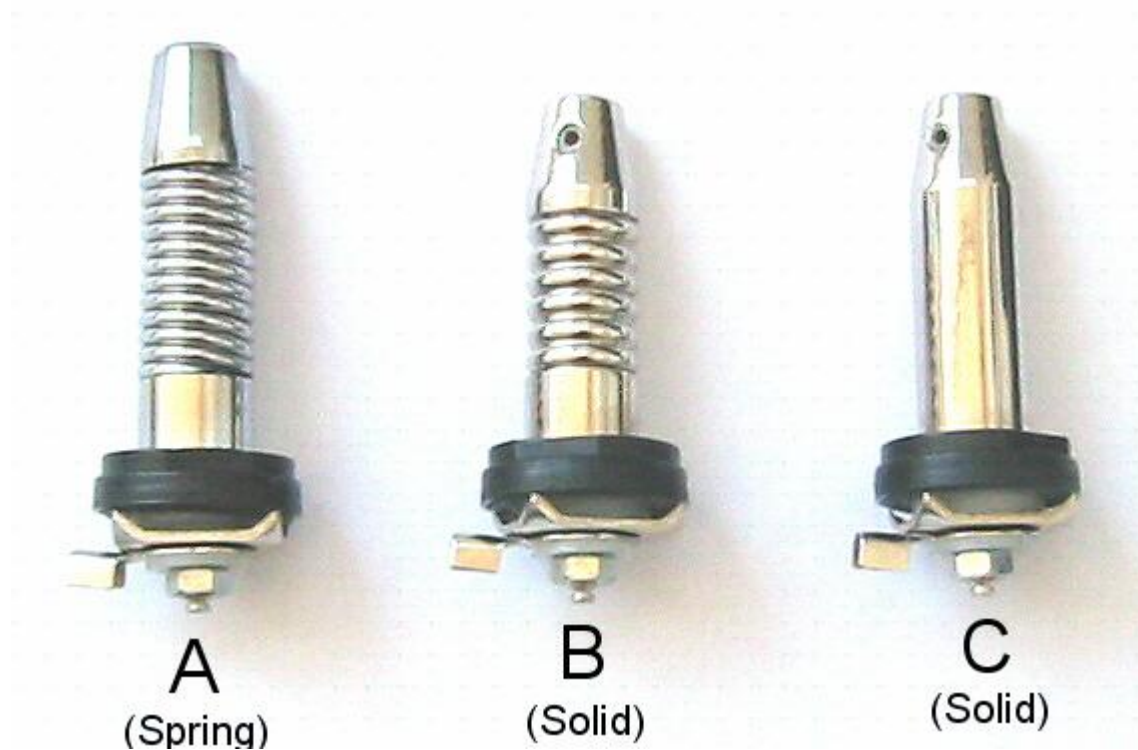


## 6.1. Couplers & Bases

We manufacture a range of couplers and antennae bases to suit individual antennae assemblies.

Our product range includes stainless steel and black anodised spring and solid couplers and bases.

Please contact us for more information.



## 7. Yagi Antennas

Yagi antenna is a directional antenna system consisting of an array of a dipole and additional closely coupled parasitic elements, popular among Amateur Radio and Citizens Band radio operators, used at surface installations in satellite communications systems.

This Yagi antenna is a directional antenna system consisting of an array of a dipole and additional closely coupled parasitic elements. The dipole in the array is driven, and another element, slightly longer, operates as a reflector. This arrangement gives the antenna directionality that a single dipole lacks. Directional antennas, such as the Yagi, are also commonly referred to as beam antennas.

This type of antenna is popular among Amateur Radio and Citizens Band radio operators. It is used at some surface installations in satellite communications systems.



## JYA-2 Directional Yagi Antenna 146 - 174 MHz

### Electrical Specification:

Frequency Range:	403 - 470 MHz
Gain:	3 dbd
Front to Back Ratio:	12 dbd
Polarization:	Vertical
Radiation Pattern:	Omni/ Elliptical
Power Rating:	Max. 150 Watts
Impedance:	Max. 50 Ohms
VSWR:	<1.5:1
Connector:	N-Type Male

### Mechanical Specification:

Height::	1.7m
Weight::	3.5 kg
Colour Finish:	6063-T6 Aluminium
Colour Finish:	RG-213, 50 Ω

## JYA-3 Directional Yagi Antenna 146 - 174 MHz

### Electrical Specification:

Frequency Range:	146 - 174 MHz
Gain:	6 dbd
Front to Back Ratio:	15 dbd
Polarization:	Vertical & Horizontal
Radiation Pattern:	Omni/ Elliptical
Power Rating:	Max. 150 Watts
Impedance:	Max. 50 Ohms
VSWR:	<1.5:1
Connector:	N-Type Male

### Mechanical Specification:

Height::	2 m
Weight::	4.5 kg
Colour Finish:	6063-T6 Aluminium
Colour Finish:	RG-213, 50 Ω

## JYA-4 Directional Yagi Antenna 146 - 174 MHz

### Electrical Specification:

Frequency Range:	146 - 174 MHz
Gain:	7.5 dbd
Front to Back Ratio:	15 dbd
Polarization:	Vertical & Horizontal
Radiation Pattern:	Omni/ Elliptical
Power Rating:	Max. 150 Watts
Impedance:	Max. 50 Ohms
VSWR:	<1.5:1
Connector:	N-Type Male

### Mechanical Specification:

Height::	2.7 m
Weight::	4.8 kg
Colour Finish:	6063-T6 Aluminium
Colour Finish:	RG-213, 50 Ω

## JYA-6 Directional Yagi Antenna 146 - 174 MHz

### Electrical Specification:

Frequency Range:	146 - 174 MHz
Gain:	8.5 dbd
Front to Back Ratio:	15 dbd
Polarization:	Vertical & Horizontal
Radiation Pattern:	Omni/ Elliptical
Power Rating:	Max. 150 Watts
Impedance:	Max. 50 Ohms
VSWR:	<1.5:1
Connector:	N-Type Male

### Mechanical Specification:

Height::	3.4 m
Weight::	5 kg
Colour Finish:	6063-T6 Aluminium
Colour Finish:	RG-213, 50 Ω

## JYA-8 Directional Yagi Antenna 146 - 174 MHz

### Electrical Specification:

Frequency Range:	146 - 174 MHz
Gain:	10 dbd
Front to Back Ratio:	19 dbd
Polarization:	Vertical & Horizontal
Radiation Pattern:	Omni/ Elliptical
Power Rating:	Max. 150 Watts
Impedance:	Max. 50 Ohms
VSWR:	<1.5:1
Connector:	N-Type Male

### Mechanical Specification:

Height::	4.3 m
Weight::	5.2 kg
Colour Finish:	6063-T6 Aluminium
Colour Finish:	RG-213, 50 Ω

**JYA-8 Directional Yagi Antenna 380 - 500 MHz**

**Electrical Specification:**

Frequency Range:	380 – 500 MHz
Gain:	10 dbd
Front to Back Ratio:	19 dbd
Polarization:	Vertical & Horizontal
Radiation Pattern:	Omni/ Elliptical
Power Rating:	Max. 150 Watts
Impedance:	Max. 50 Ohms
VSWR:	<1.5:1
Connector:	N-Type Male

**Mechanical Specification:**

Height::	1.5 m
Weight::	3.1 kg
Colour Finish:	6063-T6 Aluminium
Colour Finish:	RG-213, 50 Ω

## JYA-12 Directional Yagi Antenna 380 - 500 MHz

### Electrical Specification:

Frequency Range:	380 – 500 MHz
Gain:	12 dbd
Front to Back Ratio:	20 dbd
Polarization:	Vertical & Horizontal
Radiation Pattern:	Omni/ Elliptical
Power Rating:	Max. 150 Watts
Impedance:	Max. 50 Ohms
VSWR:	<1.5:1
Connector:	N-Type Male

### Mechanical Specification:

Height::	2.2 m
Weight::	4 kg
Colour Finish:	6063-T6 Aluminium
Colour Finish:	RG-213, 50 Ω

## 8. Phase Harness & Cable Assemblies

Phase harness, obtain circular polarization out of a crossed Yagi or an X-Quad antenna.

A phase harness is required to obtain circular polarization out of a crossed yagi or an X-Quad antenna. The phase harness is located directly at the antenna and consists of various coaxial lengths with varying impedances.

Thus the harness is responsible for the correct phase difference of the polarization planes and matches the system to meet the 50 Ohm impedance of the feed line.

Each Phase Harness is custom made depending on the length and frequency required.



**Phase Harness**

**Electrical Specification:**

Cable:	380 – 500 MHz
Termination:	12 db
Impedance:	20 db
Power for Frequency Ranges:	500 Watts
	70 -85 MHz
	85 – 100 MHz
	88 – 108 MHz
	100 – 118 MHz
	118 – 136 MHz
	148 – 174 MHz
Power for Frequency Ranges:	50 Watts
	400 – 500 MHz
	420 – 800 MHz
	800 – 960 MHz

## 8.1. Cable Grommets

With our own injection moulding facility based in the Middle east we can custom make any type of cable grommet.

We stock our own range which consists of three different sizes.

JSCG5	Sleeved Cable Grommet, Cable hole 5 mm, Length 35 mm, 1 bag of 50
JSCG6	Sleeved Cable Grommet, Cable hole bottom 6 mm, Cable hole top 3 mm x 5.4 mm, Length 24 mm, 1 bag of 50
JSCG7	Sleeved Cable Grommet, Cable hole 7 mm, Length 34 mm, 1 bag of 50

