



amateur  
amateur



fire rescue  
fire rescue



air band  
air band



rescue  
rescue



marine  
marine

2009  
2010

VHF-UHF HAM

Antennas designed and manufactured in Italy

## Technological Research, Quality, Assurance

The history of Sirio Antenne Dates to the early-1970s when our Director, Giuseppe Grazioli founded the company. The product offering was a diverse mix of high quality antennas, serving primarily the German and Italian market. During this 30 year the company has experienced considerable growth on the international market and earned a reputation as a reliable, high quality supplier to the industry in the field of communication. Thanks to its high quality standards, technological research and know-how, Sirio Antenne has been able to develop a wide range of products in accordance with demand from the market.

We are listening to our customers. Providing efficient, effective solutions to their needs as expressed by them. TRY US!

## QUALITY SYSTEM

SIRIO antennae is a qualified ISO9001:2000 company since February 2004 Certification issued by international company DNV



## Research & Development Department

SIRIO Antenne develops OEM Projects upon customers' request



CAD station for mechanical design



3D electromagnetics computer simulator



Microwave anechoic chamber.



Open site antenna measurement



RF & Microwave lab.



Computer controlled climatic chamber



## PRODUCTION DEPT



Mobile antennas production department



Base antennas production department



Final test with network analyzer



CNC winding machine



Ultrasonic welding machine

## MACHINES SHOP



HURCO machining centre



BIGLIA CNC-lathe



GILDEMEISTER Sliding headstock CNC-lathe



Moulds and equipments production: milling machine and spark erosion machine



CITIZEN Sliding headstock CNC-lathe

## WAREHOUSE DEPT



Incoming quantity check



Storing area zone A



Storing area zone B



## REFERENCE TABLE



Here below you'll find some tables that will help you find out the most suitable product for your purpose more easily in the catalogue.

**1) CHOOSE THE TYPE OF INSTALLATION.** BASE station antennas are in table **A**, MOBILE antennas (vehicular or portable) are in table **B** and MARINE antennas are in table **C**.

**2) CHOOSE THE FREQUENCY.** At the top of the table you can choose your desired frequency range. If it is not mentioned, you can select the nearest one.

**3) CHOOSE THE PRODUCT.** Follow the vertical line of the chosen frequency range till you find the **coloured squares** that show the frequency bands covered. The name of the product and its corresponding data page is on the left side. You can easily find the page of your selected product.

### ADDITIONAL INFORMATION

**RED:** means that the antenna is **TUNABLE**. The product doesn't cover the full band but just a part of it and the fine tuning can be obtained only by tuning one or more elements of the aerial. When the chosen frequency is written in this way 140...175 MHz it means that the product requires tuning.

**BLUE:** means that the antenna has a **FIXED** band and cannot be modified. No tuning is required and the corresponding frequency range is covered within a SWR limit indicated in the product's electrical data. In this case the frequency range will be indicated as: 400 - 470 MHz.

## TABLEAUX DE REFERENCES

Vous trouverez ci-dessous des tableaux qui faciliteront la recherche d'un produit dans le catalogue. La procédure de recherche est la suivante:

**1) CHOISIR LE TYPE D'INSTALLATION:** les antennes de stations **FIXES** sont dans le tableau **A**. Les antennes **MOBILES** et **PORTABLES** sont dans le tableau **B**. Les antennes **MARINES** sont dans le tableau **C**.

**2) CHOISIR LA FREQUENCE:** en haut du tableau, choisissez la bande de fréquences désirée. Si elle n'est pas mentionnée, veuillez choisir celle qui s'en rapproche le plus.

**3) CHOISIR LE PRODUIT:** suivez la ligne verticale de la gamme de fréquences choisie jusqu'à ce que vous trouviez les **emplacements colorés** qui désignent les bandes de fréquences couvertes. Le nom du produit et la page correspondante dans le catalogue sont sur le côté gauche. Vous trouverez ainsi plus facilement la page du produit sélectionné.

### INFORMATIONS COMPLEMENTAIRES

**ROUGE:** veut dire que l'antenne est **RÉGLABLE**. Le produit ne couvre pas totalement la bande complète mais juste une partie et le bon réglage peut être obtenu seulement en réglant un ou plusieurs éléments de l'aérien. Quand la bande de fréquences est séparée de 3 points: 140...175 MHz, cela signifie qu'il faut régler le produit.

**BLEU:** veut dire que l'antenne a une bande de fréquences **FIXE** et qu'on ne peut pas la modifier. Aucun réglage n'est nécessaire et la limite de SWR de la bande de fréquences couverte est indiquée dans les données électriques du produit. Dans ce cas, le début et la fin de la bande de fréquences sera séparée par un tiret: 400-470 MHz.



## TABELLE DI RICERCA



Qui di seguito sono riportate alcune tabelle con lo scopo di facilitare la ricerca dei prodotti. La procedura di ricerca consiste in:

**1) SCELTA TIPO DI INSTALLAZIONE.** Antenne per **stazione BASE** sono riportate in tabella **A**, antenne **MOBILE** per installazione su veicoli e/o per apparecchi portatili in tabella **B** e **NAUTICHE** in tabella **C**.

**2) SCELTA FREQUENZA DI LAVORO.** Individuare nella **riga superiore** della tabella la frequenza di lavoro desiderata. Se non fosse riportata individuare quelle più vicine.

**3) SCELTA PRODOTTO.** Scorrere la riga verticale corrispondente alla frequenza di lavoro voluta fino ad incrociare i **rettangoli colorati** che indicano la banda di frequenza coperta. Pagina e modello sono riportati sulla stessa riga alla sinistra dei rettangoli così individuati. Consultare quindi la pagina del prodotto per conoscere tutte le particolarità.

### INFORMAZIONI AGGIUNTIVE

**ROSSO:** indica che l'antenna è **SINTONIZZABILE**. L'antenna non copre tutta la banda dichiarata contemporaneamente ma solo una sua porzione e la frequenza di lavoro dovrà essere scelta agendo sulla lunghezza di uno o più elementi dell'antenna stessa. La banda di frequenza indicata sarà separata da 3 puntini (es. 140...175 Mhz).

**AZZURRO:** indica che l'antenna ha una banda **FISSA** non modificabile. Non occorre tarare nulla e tutta la banda dichiarata è coperta entro un limite di SWR specificato. In questo caso nella pagina del prodotto gli estremi della frequenza di lavoro saranno separati da un trattino (es. 400 - 470 Mhz).



## INDICE



A continuación algunas referencias para facilitar la búsqueda de los productos. El procedimiento de la búsqueda consiste en:

**1) TIPO DE INSTALACIÓN ELEGIDA.** Antenas para estación **BASE** indicadas en la tabla **A**, antenas **MÓVILES** para la instalación en vehículos y/o para los equipos portátiles, en la tabla **B** y antenas **MARINAS** en la tabla **C**.

**2) ELECCION DE LA FRECUENCIA.** Seleccione en la línea superior de la tabla, el rango de frecuencia deseado. Si la frecuencia de trabajo no está indicada, usted puede seleccionar la más cercana.

**3) ELECCION DEL PRODUCTO.** Siga la línea vertical correspondiente al rango de frecuencia escogida hasta que usted encuentra los **cuadrados coloreados** que muestran las bandas de frecuencia cubiertas. El nombre del producto y los datos correspondientes, está en el lado izquierdo de la página. De esta manera, usted puede encontrar la página de su producto fácilmente.

### INFORMACION ADICIONAL

**ROJO:** indica que la antena es **SINTONIZABLE**. La antena no cubre toda la banda de frecuencia deseada, solo una parte. Deberemos seleccionar y ajustar la longitud de uno o más elementos de la antena. Cuando la banda de frecuencias se separa de 3 puntos: 140...175 MHz, eso significa qu'il es necesario regular el producto.

**AZUL:** indica que la antena es de banda **FIJA**, no es modificable. No requiere ningún ajuste. El rango de frecuencia esta en el limite del SWR. Ejemplo (400-470 MHz).

The frequencies table for the most common systems / Tabella delle bande di frequenze dei sistemi più utilizzati

Band	Frequency	System / Name	Band	Frequency	System / Name
VHF	30 - 68 MHz	Low Band	UHF	450 - 470 MHz	NMT 450
VHF	68 - 87.5 MHz	4m band	UHF	824 - 896 MHz	AMPS
VHF	87.5 - 108 MHz	FM radio	UHF	810 - 958 MHz	DoCoMo
VHF	108 - 136 MHz	Aircraft radio	UHF	880 - 960 MHz	GSM 900
VHF	146 - 174 MHz	2m band	UHF	890 - 960 MHz	NMT 900, Natel C
UHF	225 - 380 MHz	Aircraft radio	VHF	1575.42 MHz	GPS
UHF	380 - 400 MHz	TETRA (Terrestrial Trunked Radio)	UHF	1710 - 1880 MHz	PCN / GSM 1800, DCS 1800
UHF	400 - 470 MHz	70 cm band	UHF	1850 - 1990 MHz	PCS, DCS 1900 / GSM 1900
UHF	410 - 430 MHz	Trunking system, Chekker, Modacom, Mobitex	UHF	1920 - 2170 MHz	UMTS

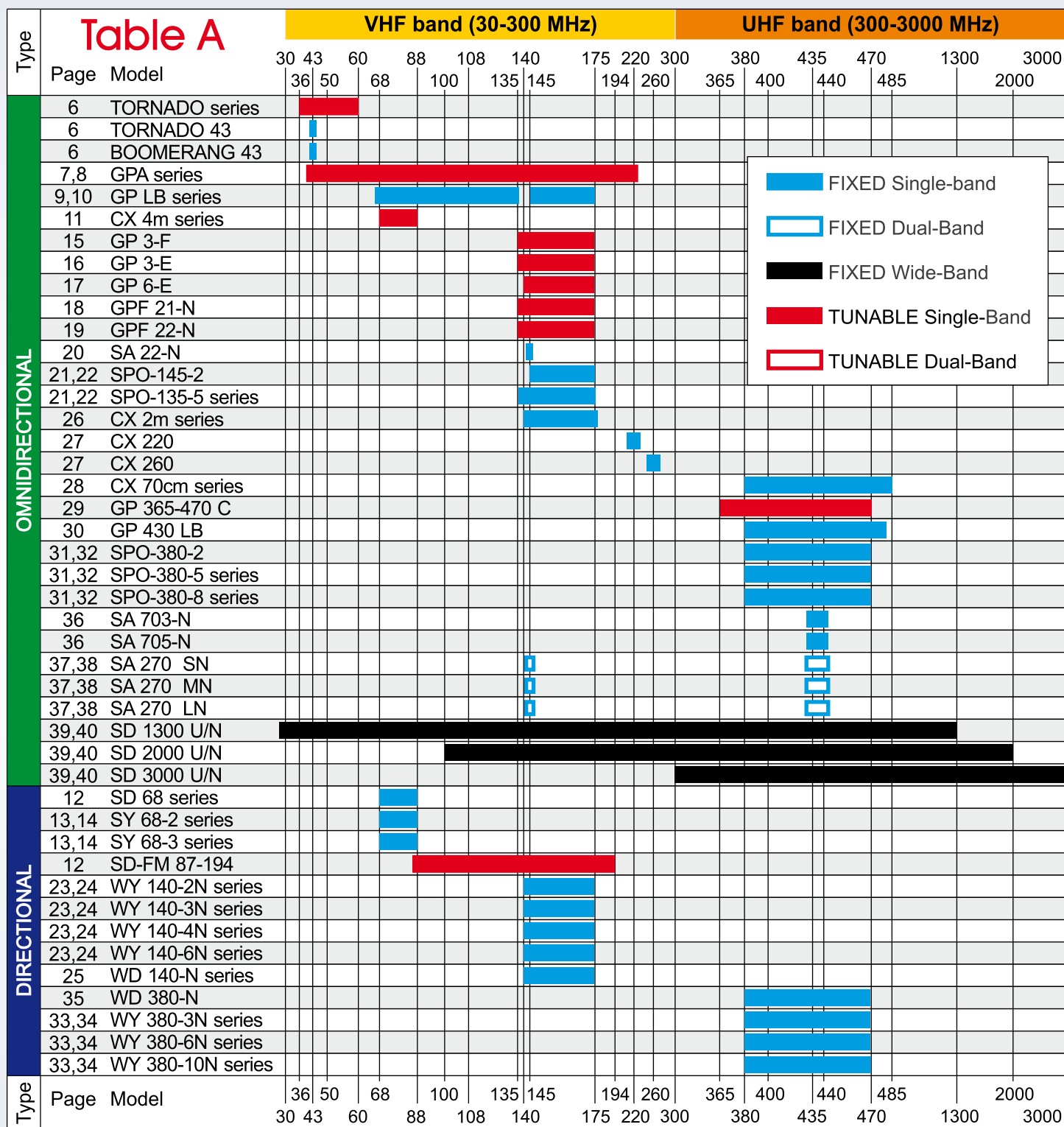
Band Designation	Frequency MHz
HF (high frequency)	
VHF (very high frequency)	
UHF (ultra high frequency)	

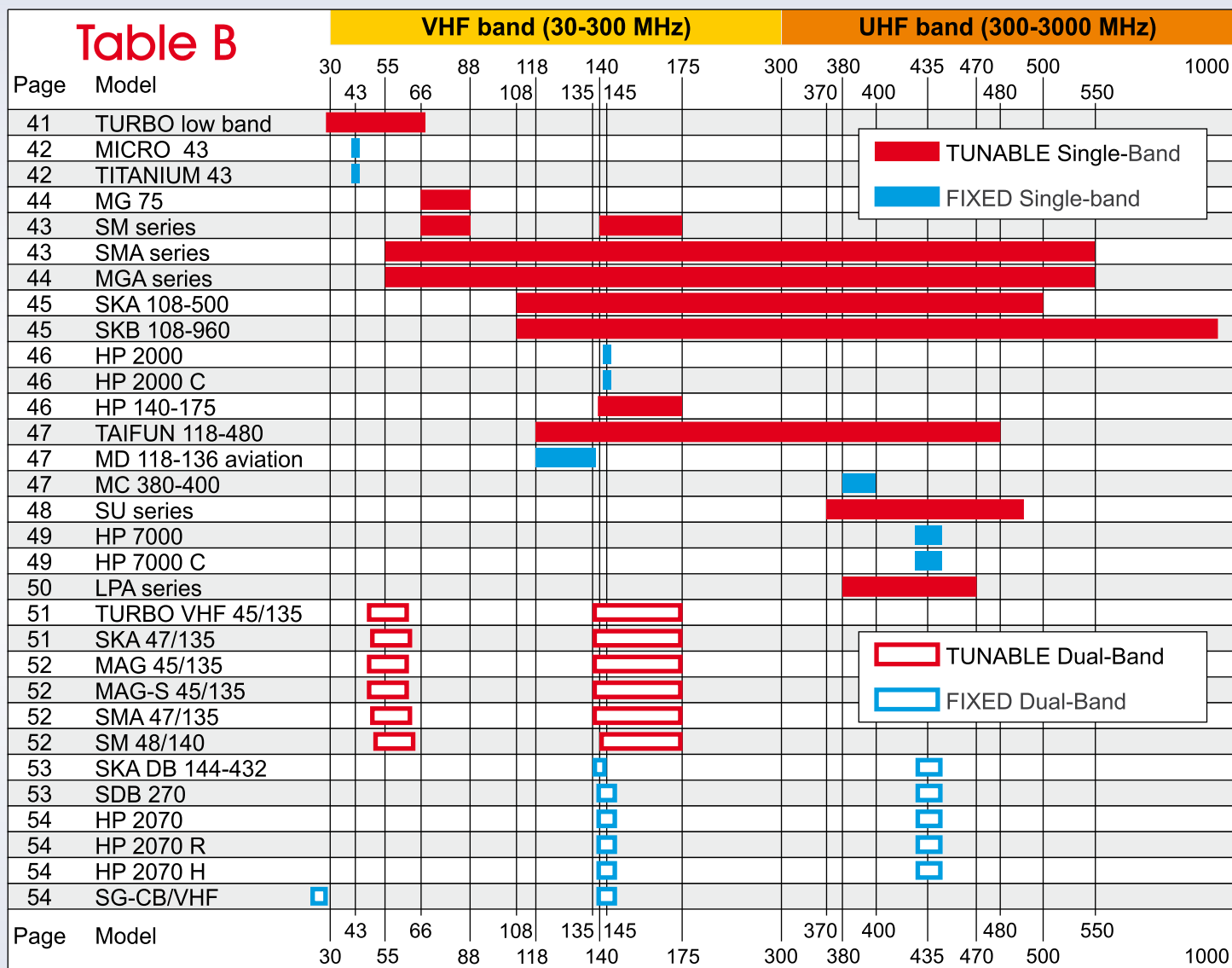
3 30

300

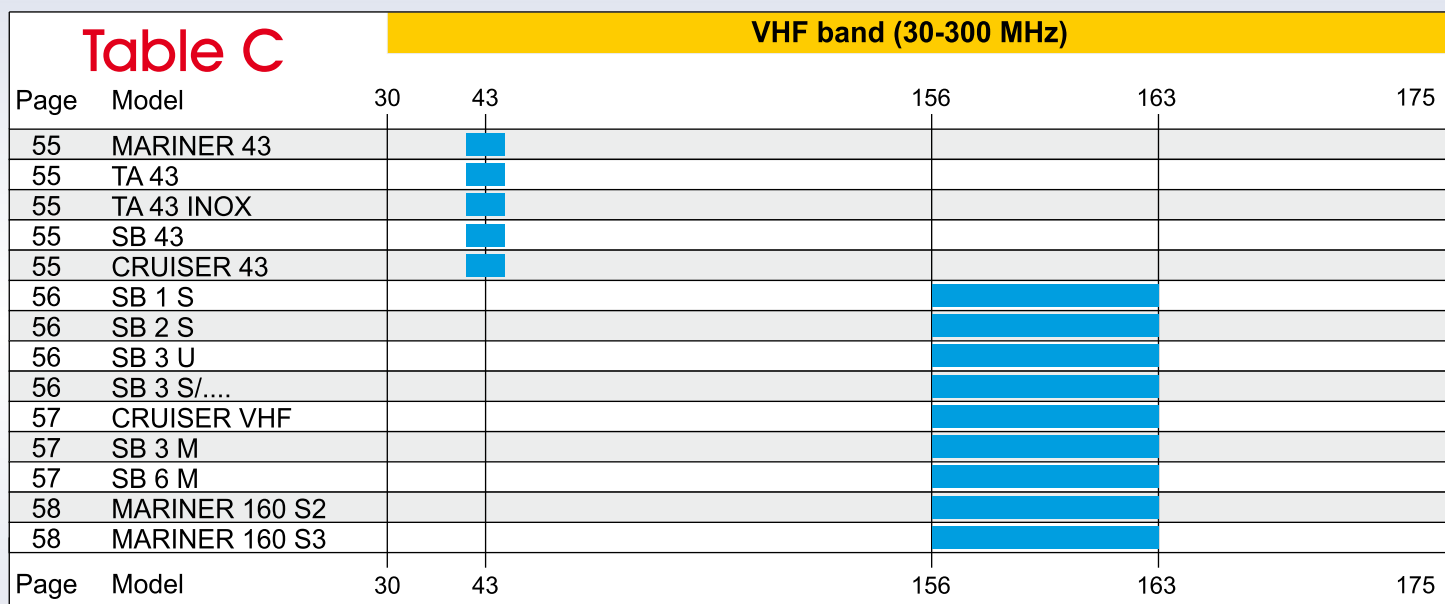
3000







## Marine antennas

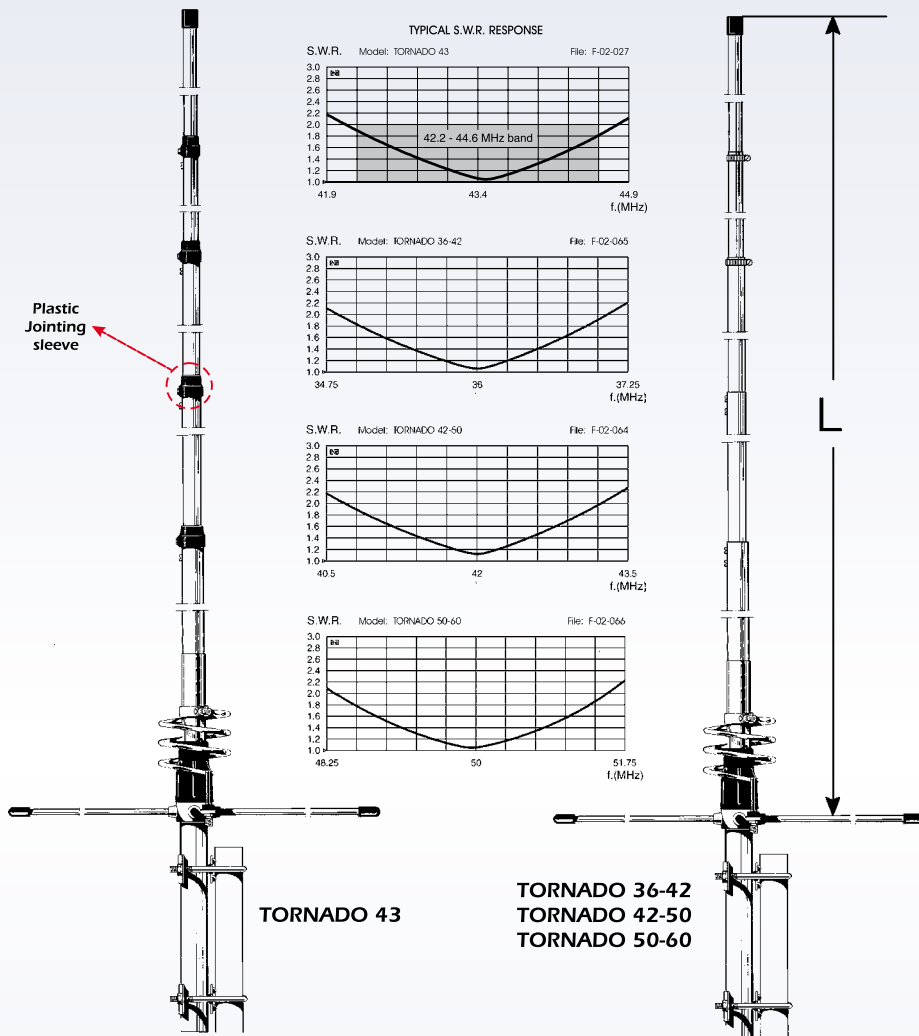




## TORNADO series

### Features:

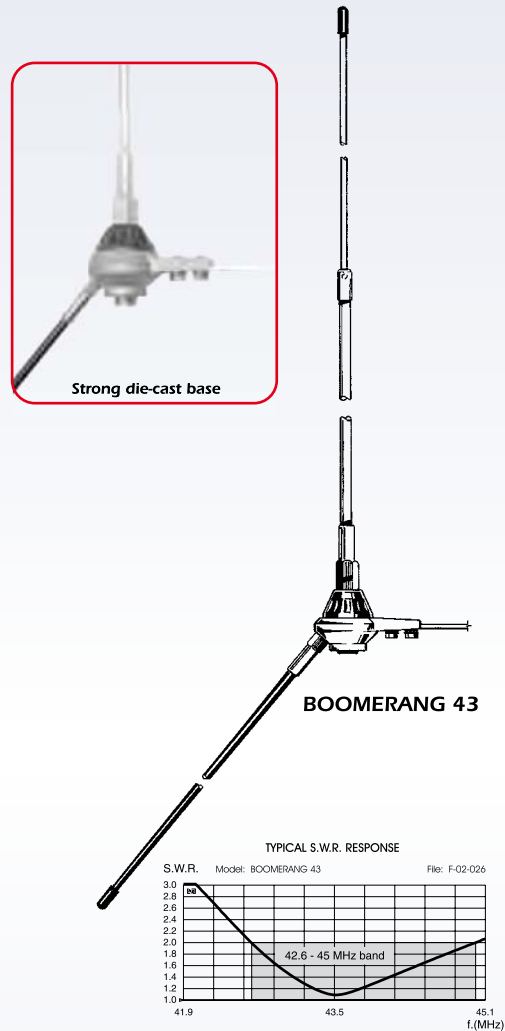
- # Base station antenna, Mono-band
- # Low-gain, Omnidirectional
- # TORNADO 36-42, 42-50 and 50-60 tunable by whip lenght adjust
- # Made of aluminium alloy 6063 T-832



## BOOMERANG 43

### Features:

- # Balcon or temporary installation antenna
- # Mono-band, Unity-gain, Omnidirectional



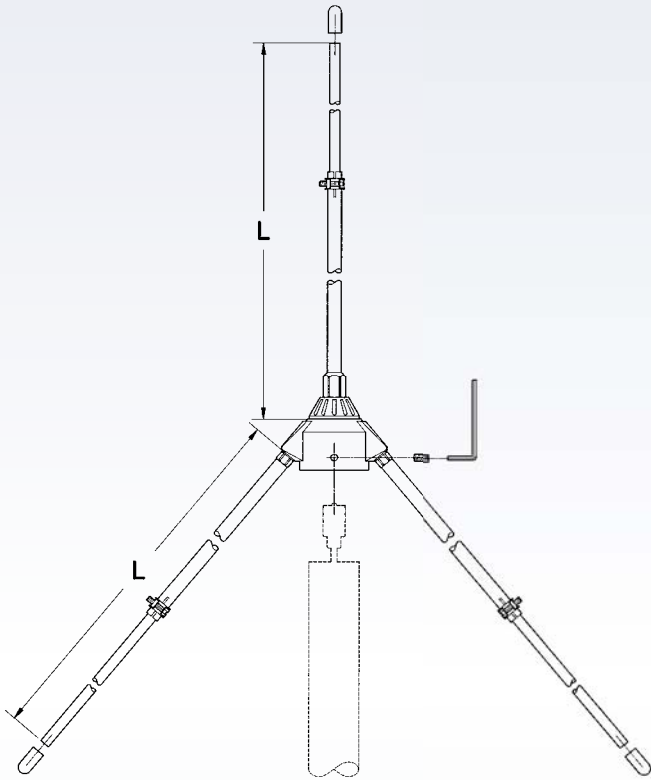
Electrical Data	TORNADO 43	TORNADO 36-42	TORNADO 42-50	TORNADO 50-60
Type	5/8 λ Ground Plane			
Frequency Range	42.2 - 44.6 MHz @ SWR ≤ 2	tunable 36...42 MHz	tunable 42...50 MHz	tunable 50...60 MHz
Impedance	50 Ω			
Radiation (H-plane)	360° Omnidirectional			
Polarization	Linear Vertical			
Gain	1.2 dBd - 3.35 dBi			
SWR @ res. freq.	≤ 1.2 @ 43.4 MHz	≤ 1.2 @ 36 MHz	≤ 1.2 @ 42 MHz	≤ 1.2 @ 50 MHz
Bandwidth @ SWR ≤ 2	/	≥ 2.2 MHz @ 36 MHz	≥ 2.4 MHz @ 42 MHz	≥ 3.1 MHz @ 50 MHz
Max Power (CW) @30°C	1000 Watts			
Connector	UHF-female			
Mechanical Data				
Materials	Aluminium, Nylon, Brass			
Wind Load @ 150 km/h	146 N	178 N	167 N	138 N
Wind Resistance	150 Km/h			
Wind Surface	0.13 m²	0.15 m²	0.14 m²	0.12 m²
Height (approx.)	4580 mm	5650 mm	5010 mm	4100 mm
Weight (approx.)	2100 gr			
Radial Length (approx.)	1170 mm			
Mounting Mast	Ø 35 - 42 mm			
P/N	2108701.00	2108601.00	2107801.00	2108901.00

Electrical Data	BOOMERANG 43
Type	1/4 λ Ground Plane Boomerang
Frequency Range	42.6-45 MHz @ SWR ≤ 2
Impedance	50 Ω
Radiation (H-plane)	360° Omnidirectional
Polarization	Linear Vertical
Gain	0 dBd - 2.15 dBi
Max Power (CW) @30°C	150 Watts
Connector	UHF-female
<b>Mechanical Data</b>	
Materials	Aluminium, Fiberglass, Steel
Wind Load @150 km/h	22 N
Wind Resistance	150 Km/h
Wind Surface	0.02 m <sup>2</sup>
Height (approx.)	2270 mm
Weight (approx.)	460 gr
Radial Length (approx.)	700 mm
P/N	2107101.00

## GPA series

Ground Plane Aluminium 40...230 MHz

Rapid installation on the mast.  
Easy tuning acting on L



Top Size:  $\varnothing$  38 mm  
for antenna fitting

Installation mast sizes  
 $\varnothing$  45/50 mm



Side mast mounting  
Optional bracket FT-2  
P/N 2510004.00



Strong die-cast base, bottom view  
UHF-female connector





## GPA series

### Ground Plane Aluminium 40...230 MHz

#### Features:

- # Base station antenna, Mono-band
- # Unity-gain, Omnidirectional
- # Tunable by whip lenght adjust
- # Made of aluminium alloy 6063 T-832
- # Side mast mounting allowed by optional bracket FT-2 code 2510004.00

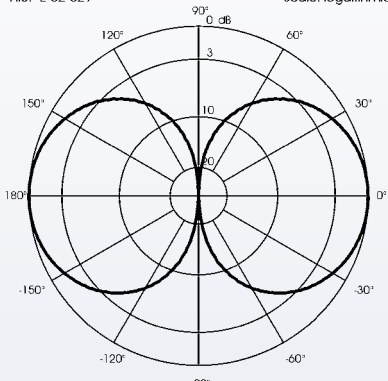
Electrical Data	GPA 40-70	GPA 66-108	GPA 108-136	GPA 135-175	GPA 170-230
Type	1/4 $\lambda$ Ground Plane				
Frequency Range tunable	40...70 MHz	66...108 MHz	108...136 MHz	135...175 MHz	170...230 MHz
Impedance	50 $\Omega$				
Radiation (H-plane)	360° Omnidirectional				
Radiation (E-plane)	Beamwidth @ -3dB = 86°				
Radiation angle deg.	0°				
Polarization	Linear Vertical				
Gain	0 dBd - 2.15 dBi				
SWR @ res. freq.	$\leq 1.2$ @ 40 MHz	$\leq 1.2$ @ 66 MHz	$\leq 1.2$ @ 108 MHz	$\leq 1.2$ @ 135 MHz	$\leq 1.2$ @ 170 MHz
Bandwidth @ SWR $\leq 2$	$\geq 3.7$ MHz @ 40 MHz	$\geq 6.5$ MHz @ 66 MHz	$\geq 12.2$ MHz @ 108 MHz	$\geq 13$ MHz @ 135 MHz	$\geq 19$ MHz @ 170 MHz
Max Power (CW) @ 30°C	1000 Watts	500 Watts	500 Watts	300 Watts	300 Watts
Connector	UHF-female				
Mechanical Data	Aluminium, Chromed Brass, Nylon				
Materials	Aluminium, Chromed Brass, Nylon				
Wind Load @ 150 km/h	85 N	54 N	35 N	29 N	24 N
Wind Resistance	150 Km/h	150 Km/h	150 Km/h	180 Km/h	180 Km/h
Wind Surface	0.07 m <sup>2</sup>	0.05 m <sup>2</sup>	0.03 m <sup>2</sup>	0.03 m <sup>2</sup>	0.02 m <sup>2</sup>
Height (approx.)	3200 mm	1930 mm	1185 mm	960 mm	760 mm
Weight (approx.)	935 gr	700 gr	565 gr	520 gr	480 gr
Radial Length (approx.)	1800 mm	1080 mm	650 mm	520 mm	410 mm
Mounting Mast	$\varnothing$ 35 - 40 mm				
P/N	2101401.00	2101501.00	2108501.00	2101601.00	2105001.00

#### GPA series

TYPICAL RADIATION PATTERN in E-plane at mid band

File: E-02-029

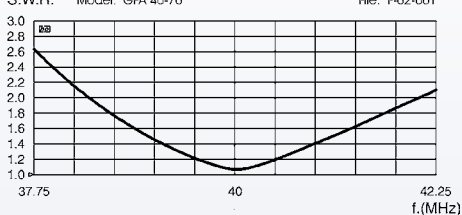
Scale: logarithmic



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GPA 40-70

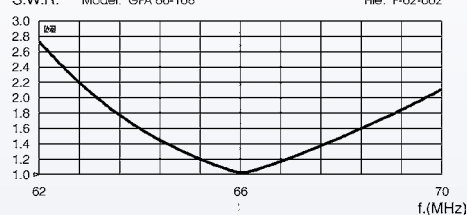
File: F-02-001



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GPA 66-108

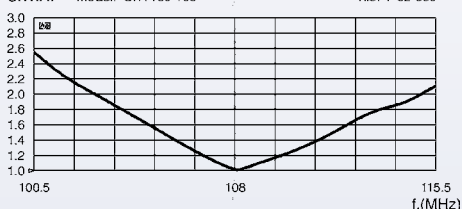
File: F-02-002



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GPA 108-136

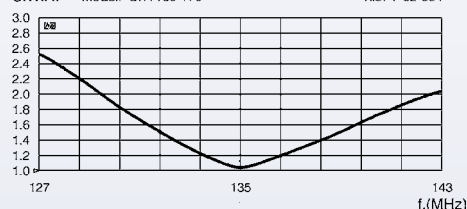
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TYPICAL S.W.R. RESPONSE

S.W.R. Model: GPA 135-175

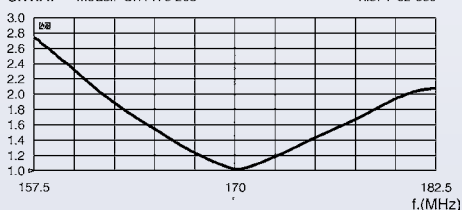
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TYPICAL S.W.R. RESPONSE

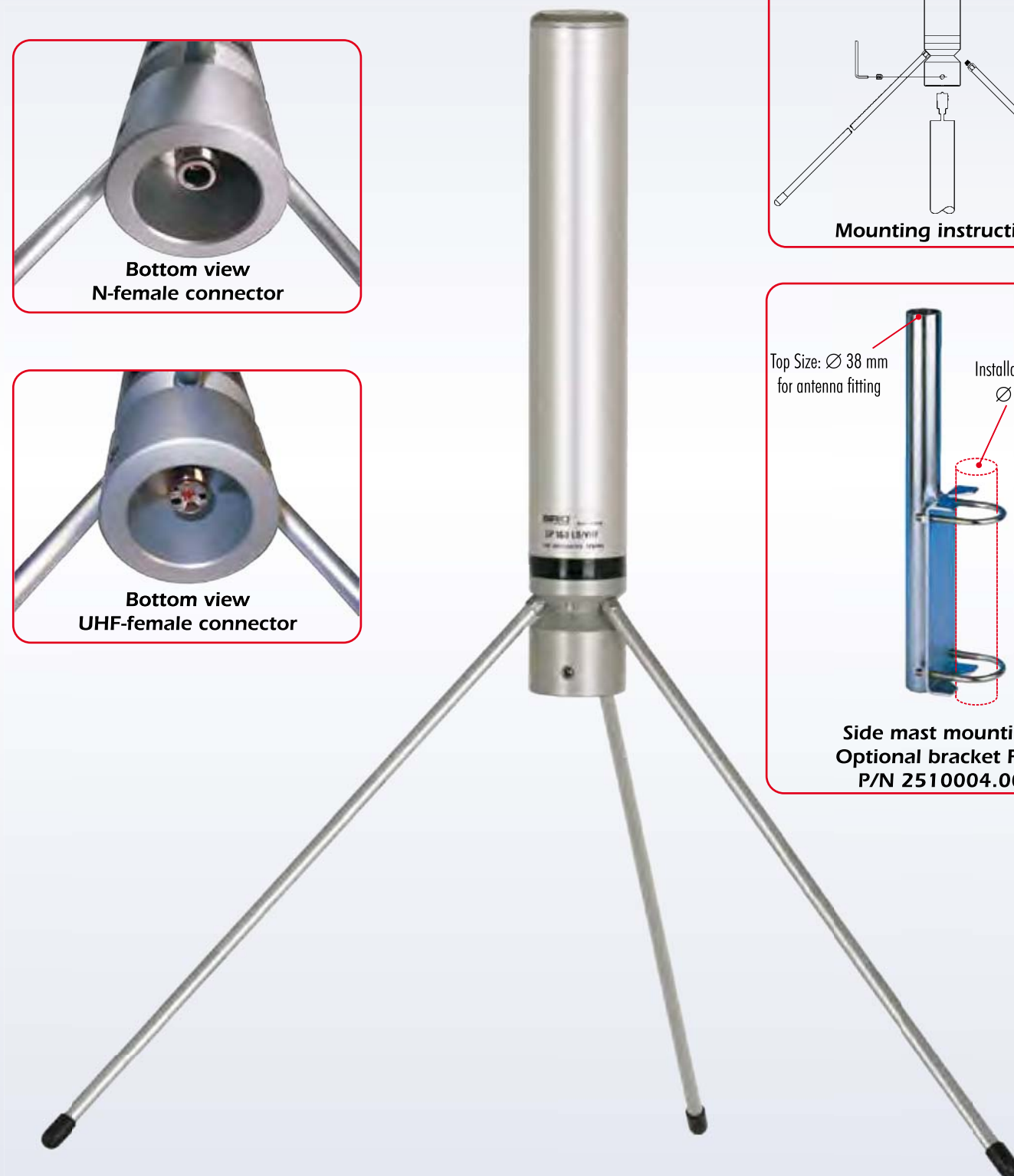
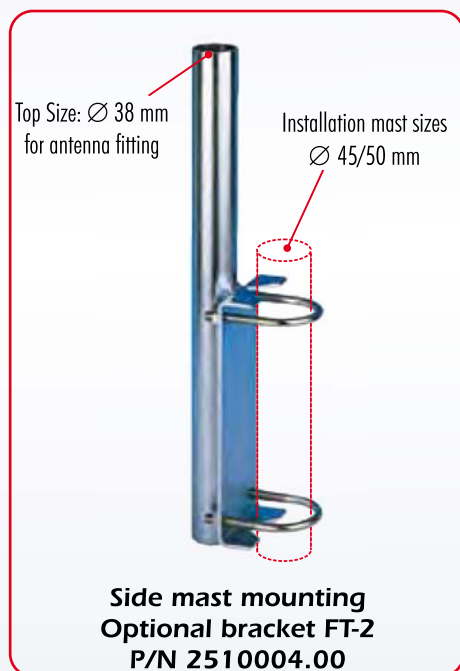
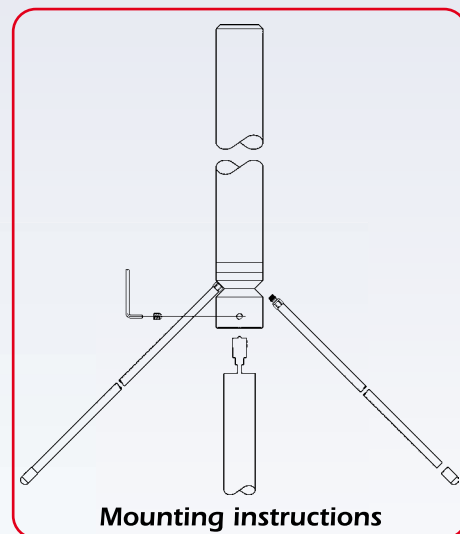
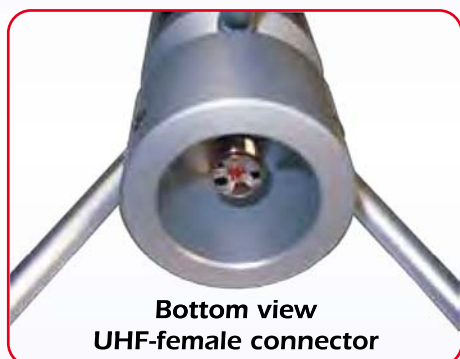
S.W.R. Model: GPA 170-230

File: F-02-005



## GP-LB series

Ground Plane Large Band 66-175 MHz





## GP-LB series

### Ground Plane Large Band 66-175 MHz

#### Features:

- # Base station antenna, Wide-band
- # Unity-gain, Omnidirectional
- # Protection from static discharges DC-Ground
- # Made of anodized aluminium alloy
- # Protection against the worst weather conditions
- # Radials locking system "screw-on", Stainless steel hardware
- # Side mast mounting allowed by optional bracket FT-2 code 2510004.00

Electrical Data	GP 66-78 LB	GP 76-88 LB	GP 87-108 LB	GP 108-136 LB	GP 160 LB
Type	1/4 $\lambda$ Ground Plane Large Band				
Frequency Range	66-78MHz @ SWR $\leq$ 2	76-88MHz @ SWR $\leq$ 2	87-108 MHz @ SWR $\leq$ 2.5	RX 108-136 MHz TX 118-136MHz @ SWR $\leq$ 2	145-175MHz @ SWR $\leq$ 2
Impedance	50 $\Omega$				
Radiation (H-plane)	360° Omnidirectional				
Radiation (E-plane)	Beamwidth @ -3dB = 78°				
Radiation angle deg.	0°				
Polarization	Linear Vertical				
Gain	0 dBd - 2.15 dBi				
Max Power (CW) @ 30°C	1000 Watts				
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short				
Connector	UHF-female with gold plated central pin or N-female with gold plated central pin and teflon insulator				

#### Mechanical Data

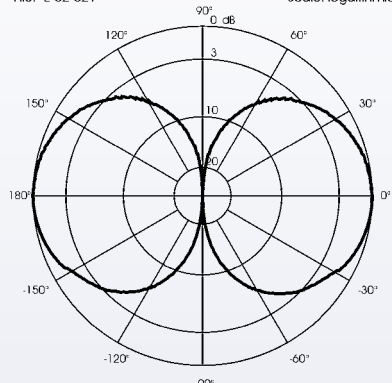
Materials	Anodized Aluminium, Nylon, Stainless Steel				
Wind Load at 150 km/h	98 N	85 N	67 N	56 N	43 N
Wind Resistance	130 Km/h	130 Km/h	160 Km/h	160 Km/h	160 Km/h
Wind Surface	0.09 m <sup>2</sup>	0.07 m <sup>2</sup>	0.05 m <sup>2</sup>	0.05 m <sup>2</sup>	0.04 m <sup>2</sup>
Height (approx.)	1640 mm	1400 mm	1190 mm	890 mm	700 mm
Weight (approx.)	1930 gr	1710 gr	1500 gr	1310 gr	1150 gr
Radial Length (approx.)	1160 mm	1030 mm	900 mm	655 mm	520 mm
Mounting Mast	$\varnothing$ 36 - 40 mm				
P/N with "UHF" connector	2105601.00	2105701.00	2105801.00	2101901.00	2102001.00
P/N with "N" connector	2105601.00/N	2105701.00/N	2105801.00/N	2101901.00/N	2102001.00/N

#### GP-LB series

TYPICAL RADIATION PATTERN in E-plane at mid band

File: F-02-021

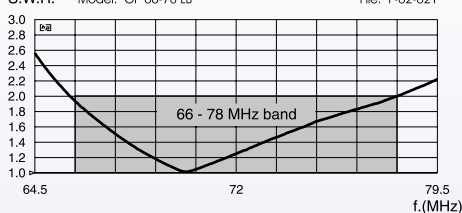
Scale: logarithmic



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GP 66-78 LB

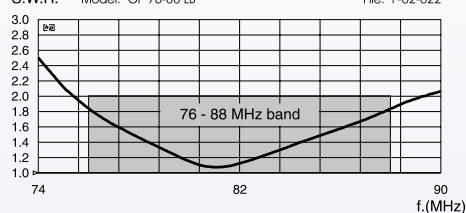
File: F-02-021



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GP 76-88 LB

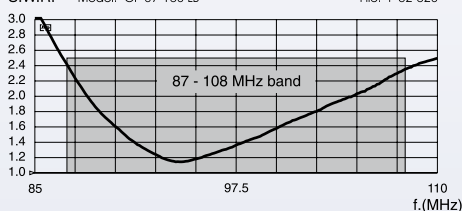
File: F-02-022



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GP 87-108 LB

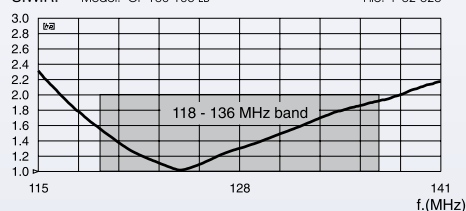
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TYPICAL S.W.R. RESPONSE

S.W.R. Model: GP 108-136 LB

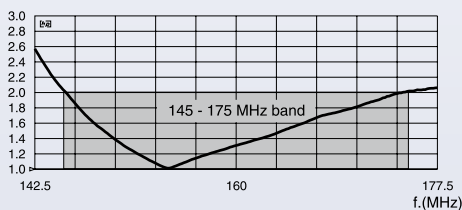
File: F-02-020



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GP 160 LB

File: F-02-019



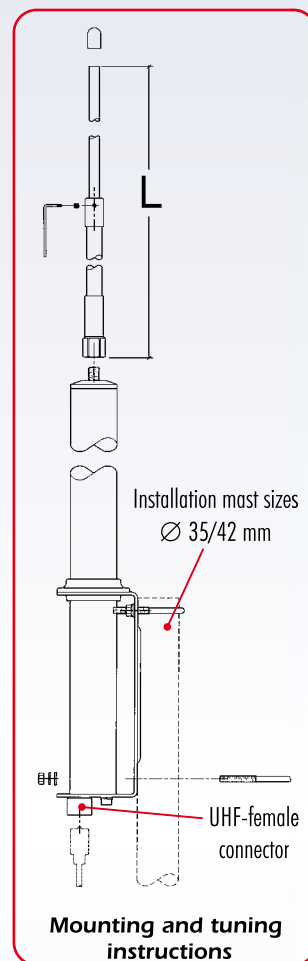
# CX 4 m series

## CoaXial J-pole 68...88 MHz

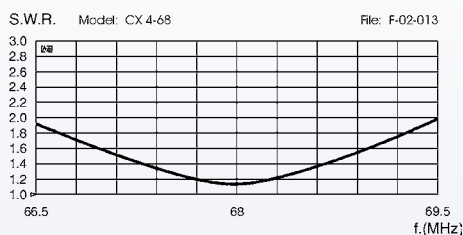
### Features:

- # Base station antenna, Low-gain, Omnidirectional, Mono-band
- # Tunable by whip lenght adjust
- # Protection from static discharges DC-Ground
- # Made of aluminium alloy 6063 T-832

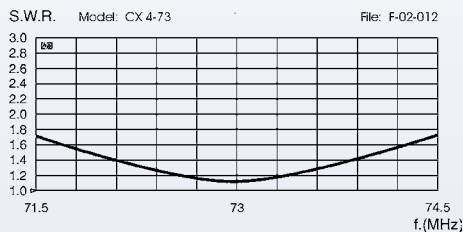
Electrical Data	CX 4-68	CX 4-73	CX 4-78	CX 4-83
Type	3/4 $\lambda$ Coaxial J/pole			
Frequency Range	tunable 68...73 MHz	tunable 73...78 MHz	tunable 78...83 MHz	tunable 83...88 MHz
Impedance	50 $\Omega$			
Radiation (H-plane)	360° Omnidirectional			
Radiation (E-plane)	Beamwidth @ -3 dB = 60°			
Radiation angle deg.	3°			
Polarization	Linear Vertical			
Gain	2 dBd - 4.15 dBi			
SWR @ res. freq.	≤ 1.2 @ 68 MHz	≤ 1.2 @ 73 MHz	≤ 1.2 @ 78 MHz	≤ 1.2 @ 83 MHz
Bandwidth @ SWR ≤1.5	≥ 1.7 MHz @ 68 MHz	≥ 2.2 MHz @ 73 MHz	≥ 2.6 MHz @ 78 MHz	≥ 2.6 MHz @ 83 MHz
Max Power (CW) @ 30°C	500 Watts			
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short			
Connector	UHF-female			
Mechanical Data				
Materials	Aluminium, Nylon, Zinc Plated Steel, Brass			
Wind Load @ 150 km/h	97 N	95 N	91 N	90 N
Wind Resistance	150 Km/h			
Wind Surface	0.08 m <sup>2</sup>			
Height (approx.)	3325 mm	3090 mm	2900 mm	2720 mm
Weight (approx.)	2000 gr	1920 gr	1850 gr	1800 gr
Mounting Mast	Ø 35 - 42 mm			
P/N	2104301.00	2104401.00	2104501.00	2104601.00



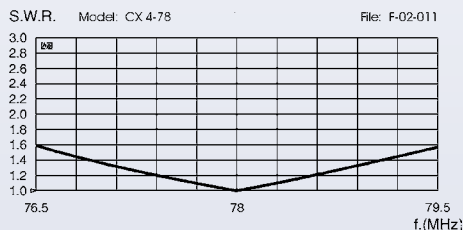
TYPICAL S.W.R. RESPONSE



TYPICAL S.W.R. RESPONSE

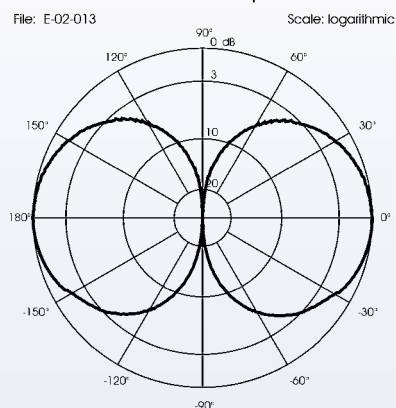


TYPICAL S.W.R. RESPONSE

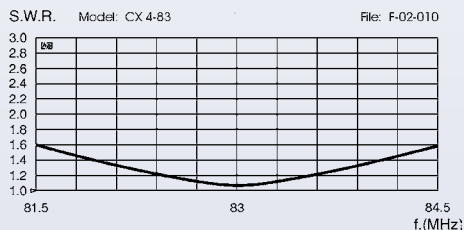


CX 4m series

TYPICAL RADIATION PATTERN in E-plane at mid band



TYPICAL S.W.R. RESPONSE





## SD 68 series, SD-FM 87-194

### Sirio Dipole 66-88 MHz, 87...194 MHz

#### Features:

- # Directional base station antenna, Mono-band
- # SD68, SD78: frequency range 66-88 MHz for Low VHF applications. No tuning required
- # SD-FM 87-194: tunable from 87 to 194 MHz for FM applications
- # Made of aluminium alloy 6063 T-832
- # Steel bracket placed in the rear position for the best performance in vertical and horizontal polarization
- # UHF female connector protected by rubber cap suitable for RG58 or RG213 cables
- # Vertical stacked array for higher gain
- # Gamma match feed system

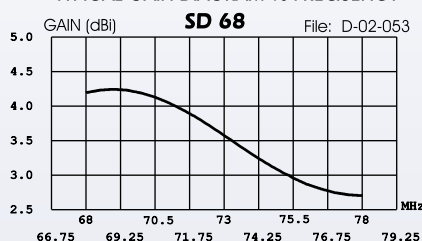
Electrical Data	SD 68	SD 78	SD-FM 87-194
Type	Dipole		
Frequency Range	68 - 78 MHz @ SWR ≤ 1.5	78 - 88 MHz @ SWR ≤ 1.5	tunable 87...194 MHz
Impedance	50 Ω		
Radiation (H-plane)	beamwidth @ -3 dB = 240° (vertical polarization only)		
Radiation (E-plane)	beamwidth @ -3 dB = 80° (vertical polarization only)		
Front to back ratio	≥ 4 dB (vertical polarization only)		
Polarization	Linear Vertical or Horizontal		
Gain	1.85 dBi - 4 dBi (vertical polarization only)		
SWR @ res. freq.	/	/	≤ 1.2* @ 87 MHz
Bandwidth @ SWR ≤ 2	/	/	≥ 14.5* MHz @ 87 MHz
Max Power (CW) @ 30°C	350 Watts		300 Watts
Grounding Protection	All metal parts are DC-grounded, the inner conductor is coupled capacitively		
Connector	UHF-female with rubber protection cap		

#### Mechanical Data

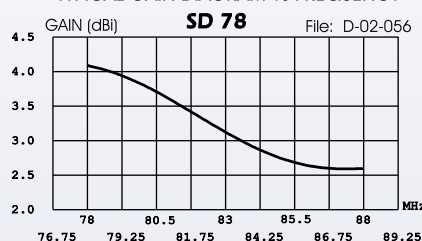
Materials	Aluminium, Die-cast zamak, EPDM rubber, zinc plated steel, Chromed Brass		
Wind Load @ 150 km/h	113 N	108 N	99 N
Wind Resistance	160 Km/h	160 Km/h	160 Km/h
Wind Surface	0.087 m <sup>2</sup>	0.084 m <sup>2</sup>	0.080 m <sup>2</sup>
Dimensions W x H (approx.)	1065 x 1912 mm	1065 x 1675 mm	1030 x 1600 mm
Turning radius (approx.)	1065* mm	1065* mm	990* mm
Weight (approx.)	2020 gr	1980 gr	1850 gr
Operating temperature	-40° C to +80° C		
Mounting Mast	Ø 35 - 52 mm		
Boom Diameter / Element Diameter	Ø 33 mm / Ø 16 mm		
P/N	2108801/68	2108801/78	2108801.00

\* Valid data only for vertical polarization

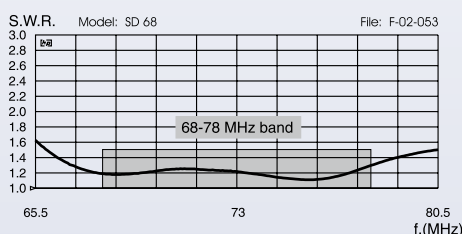
TYPICAL GAIN DIAGRAM vs FREQUENCY



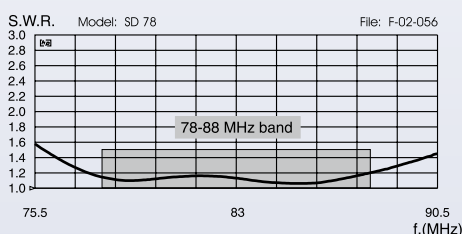
TYPICAL GAIN DIAGRAM vs FREQUENCY



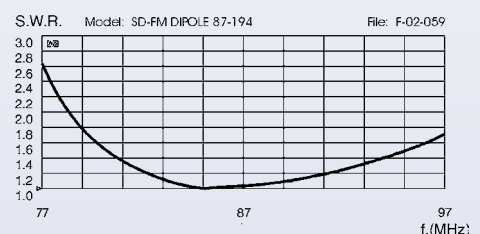
TYPICAL S.W.R. RESPONSE



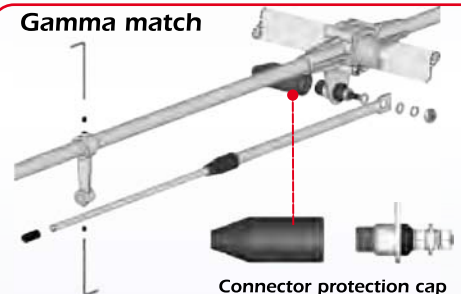
TYPICAL S.W.R. RESPONSE



TYPICAL S.W.R. RESPONSE



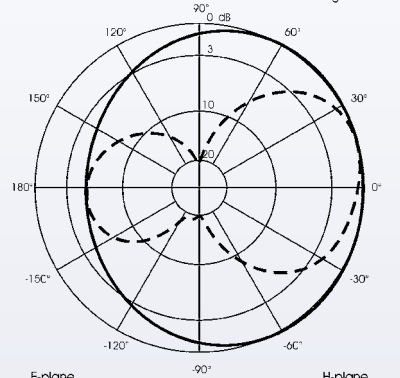
#### Gamma match



#### SD series

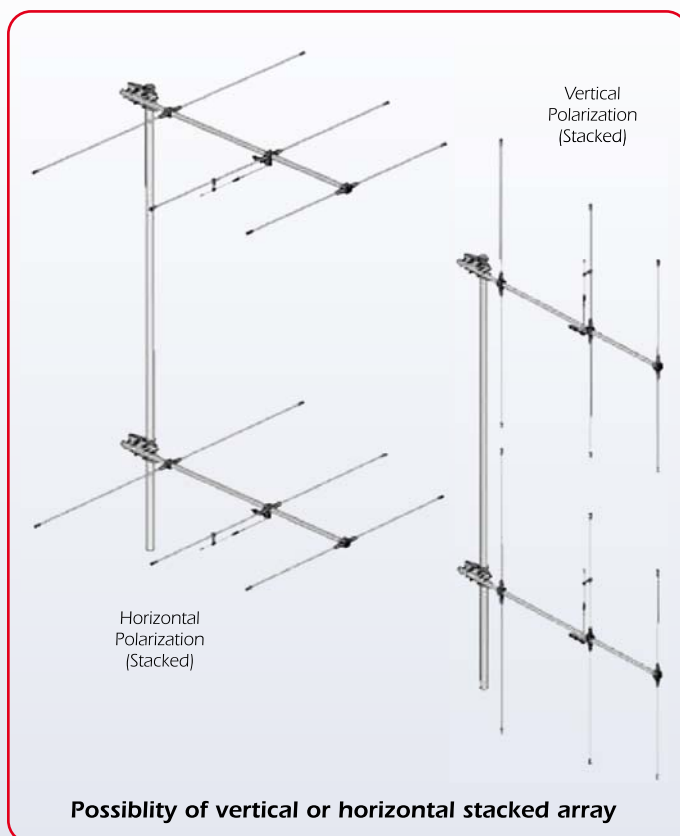
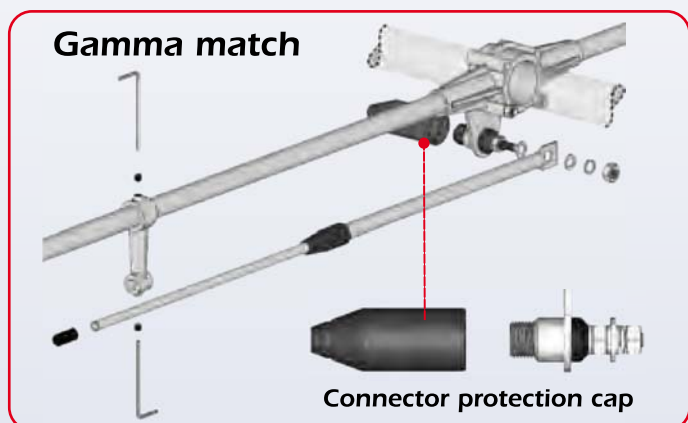
TYPICAL RADIATION PATTERN at mid-band

File: F-02-056 Scale: logarithmic



## SY 68-2, SY 68-3 series

Sirio Yagi 66-88 MHz



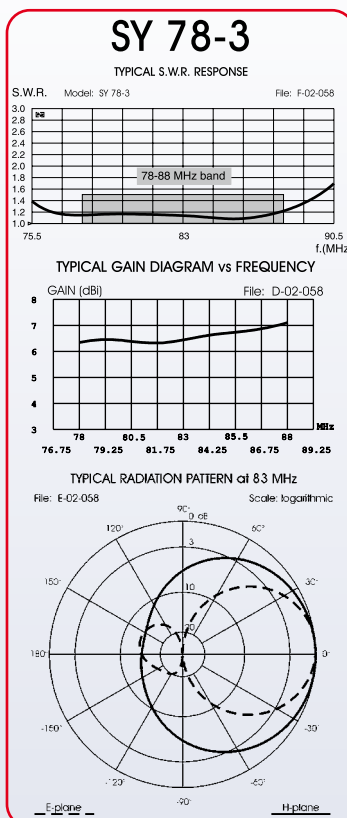
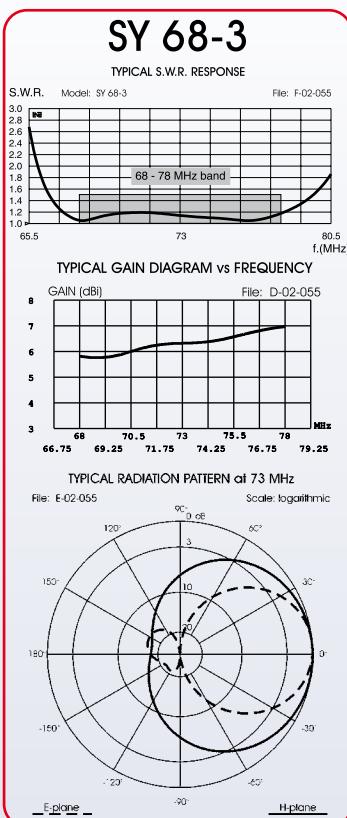
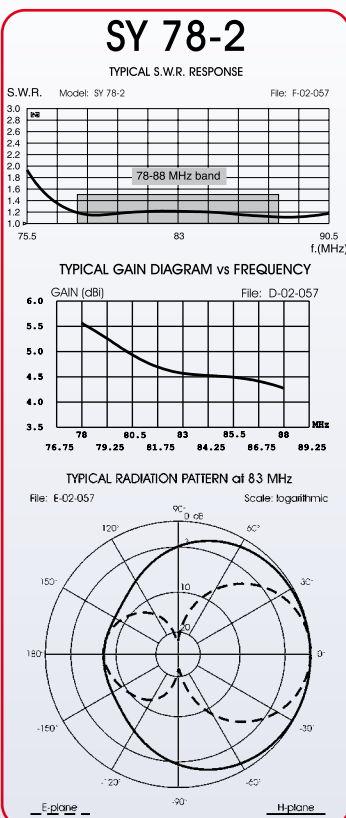
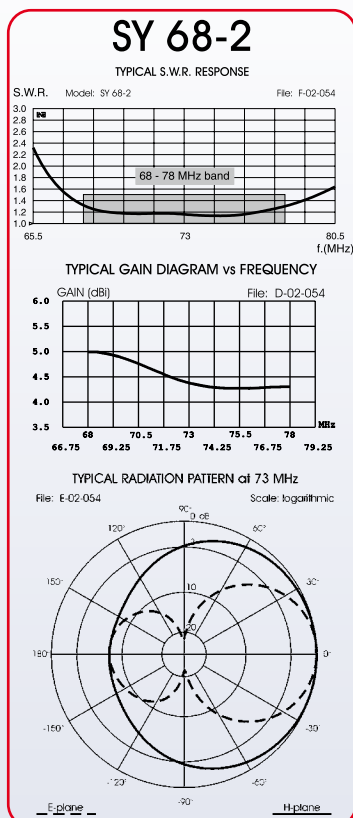
## SY 68-2, SY 68-3 series

### Sirio Yagi 66-88 MHz

#### Features:

- # Directional base station antenna, Mono-band
- # Made of aluminium alloy 6063 T-832
- # Steel bracket placed in the rear position for the best performance in vertical and horizontal polarization
- # All connections are waterproof, UHF female connector protected by rubber cap suitable for RG58 or RG213 cables
- # Possibility of stacked or bayed array for higher gain
- # Gamma match feed system

Electrical Data	SY 68-2	SY 78-2	SY 68-3	SY 78-3
Type	2 elements Yagi		3 elements Yagi	
Frequency Range @ SWR ≤ 1.5	68 - 78 MHz	78 - 88 MHz	68 - 78 MHz	78 - 88 MHz
Impedance	50 Ω			
Radiation (H-plane) beamwidth @ -3 dB	180°	180°	130°	130°
Radiation (E-plane) beamwidth @ -3 dB	75°	75°	70°	70°
Front to back ratio	≥ 8 dB	≥ 8 dB	≥ 15 dB	≥ 15 dB
Polarization	Linear Vertical or Horizontal			
Gain	2.85 dBd - 5 dBi	2.85 dBd - 5 dBi	4.85 dBd - 7 dBi	4.85 dBd - 7 dBi
Max Power (CW) @ 30°C	350 Watts			
Grounding Protection	All metal parts are DC-grounded, the inner conductor is coupled capacitively			
Connector	UHF-female with rubber protection cap			
Mechanical Data				
Materials	Aluminium, Die-cast zamak, EPDM rubber, zinc plated steel, Chromed Brass			
Wind Load @ 150 km/h	159 N	148 N	203 N	190 N
Wind Resistance	140 Km/h	140 Km/h	120 Km/h	120 Km/h
Wind Surface	0.128 m <sup>2</sup>	0.118 m <sup>2</sup>	0.166 m <sup>2</sup>	0.154 m <sup>2</sup>
Dimensions W x H (approx.)	1250 x 2235 mm	1250 x 1895 mm	1600 x 2235 mm	1600 x 1955 mm
Turning radius (approx.)	1565 mm	1490 mm	1875 mm	1815 mm
Weight (approx.)	2695 gr	2610 gr	3360 gr	3270 gr
Operating temperature	-40° C to +80° C			
Mounting Mast	Ø 35 - 52 mm			
Boom Diameter / Element Diameter	Ø 33 mm / Ø 16 mm			
P/N	2105901/68	2105901/78	2105101/68	2105101/78





# GP 3-F

## Ground Plane Fiber

### 135...175 MHz

#### Features:

- # Base station antenna, Omnidirectional
- # Low-gain, Mono-band
- # Suitable for land and marine service
- # Tunable by whip cutting
- # Protection from static discharges DC-Ground
- # White fiberglass conic whip and radials
- # Side mast mounting allowed by optional bracket FT-3 P/N 2511301.00

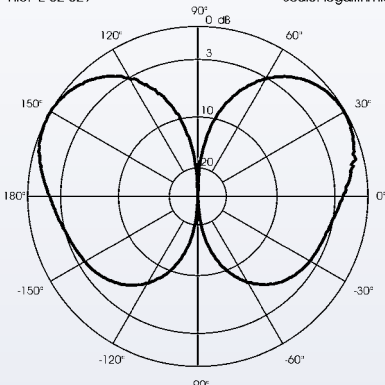
Electrical Data	GP 3-F
Type	5/8 $\lambda$ Ground Plane
Frequency Range	tunable 135...175 MHz
Impedance	50 $\Omega$
Radiation (H-plane)	360° Omnidirectional
Radiation (E-plane)	Beamwidth @ -3dB = 68°
Radiation angle deg.	25°
Polarization	Linear Vertical
Gain	1.5 dBd - 3.65 dBi
SWR @ res. freq.	see diagram
Bandwidth @ SWR $\leq$ 2	see diagram
Max Power (CW) @ 30°C	200 Watts
Grounding Protection	All metal parts are DC-grounded, inner conductor shows a DC short
Connector	UHF-female, gold plated central pin

#### Mechanical Data

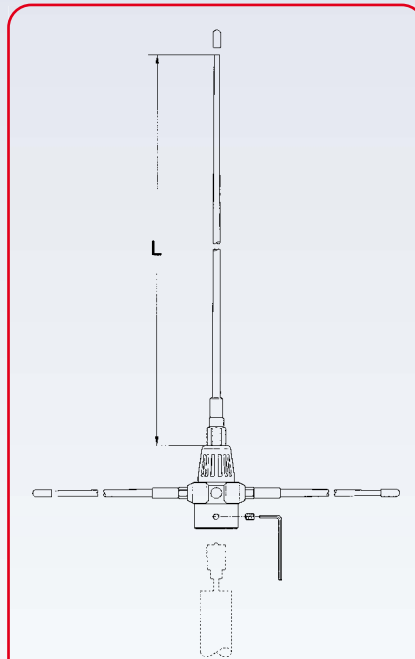
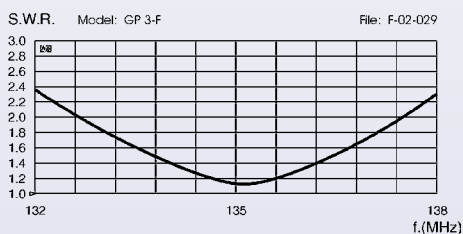
Materials	Fiberglass, Chromed Brass, Nylon
Wind Load at 150 km/h	23 N
Wind Resistance	150 Km/h
Wind Surface	0.02 m <sup>2</sup>
Height (approx.)	1335 mm
Weight (approx.)	585 gr
Radial Length (approx.)	470 mm
Mounting Mast	$\varnothing$ 25-30 mm
P/N	<b>2108020.00</b>

TYPICAL RADIATION PATTERN in E-plane at 145 MHz

File: E-02-029 Scale: logarithmic



TYPICAL S.W.R. RESPONSE

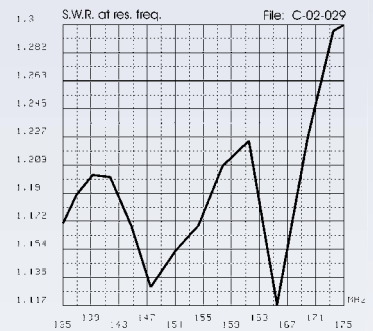


Mounting and tuning instructions

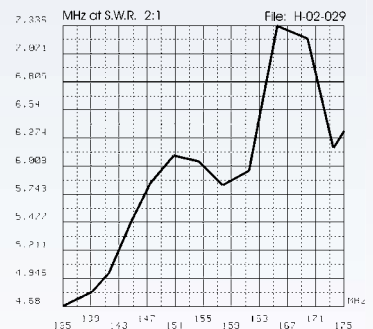


Bottom view  
UHF-female connector

TYPICAL MATCHING DIAGRAM vs FREQUENCY

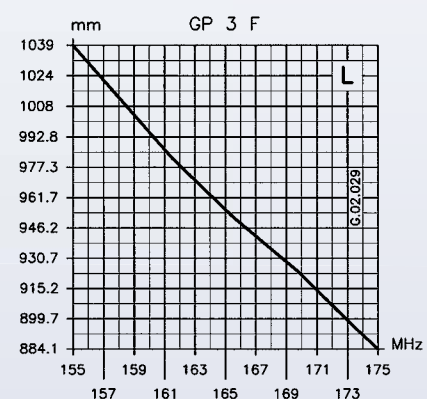
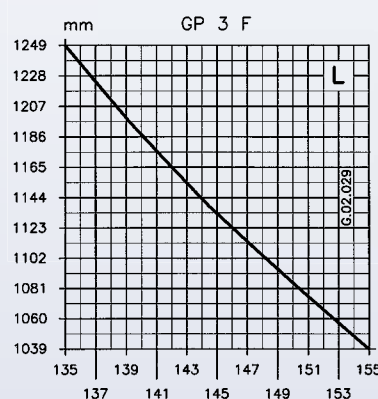


TYPICAL BANDWIDTH DIAGRAM vs FREQUENCY



TYPICAL TUNING DIAGRAMS\*

\* Use the curves just as a guide. For fine-tuning please use an SWR-meter



### GP 3-E

## Ground Plane Eco

135...175 MHz

#### Features:

- # Base station antenna, Omnidirectional
- # Low-gain, Mono-band
- # Suitable for land and marine service
- # Tunable by whip length adjust
- # Protection from static discharges DC-Ground
- # Made of aluminium alloy 6063 T-832
- # Side mast mounting allowed by optional bracket FT-3 P/N 2511301.00

Electrical Data	GP 3-E
Type	5/8 $\lambda$ Ground Plane
Frequency Range	tunable 135...175 MHz
Impedance	50 $\Omega$
Radiation (H-plane)	360° Omnidirectional
Radiation (E-plane)	Beamwidth @ -3dB = 67°
Radiation angle deg.	18°
Polarization	Linear Vertical
Gain	1.5 dBd - 3.65 dBi
SWR @ res. freq.	see diagram
Bandwidth @ SWR $\leq 2$	see diagram
Max Power (CW) @ 30°C	200 Watts
Grounding Protection	All metal parts are DC-grounded, inner conductor shows a DC short
Connector	UHF-female, gold plated central pin

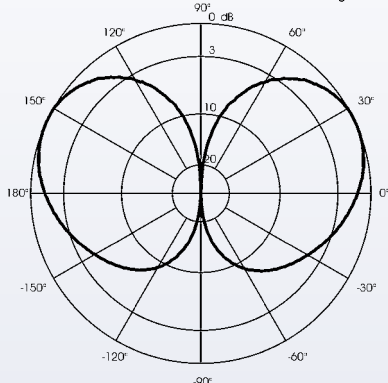
#### Mechanical Data

Materials	Aluminium, Copper, Nylon
Wind Load at 150 km/h	28 N
Wind Resistance	150 Km/h
Wind Surface	0.02 m <sup>2</sup>
Height (approx.)	1480 mm
Weight (approx.)	570 gr
Radial Length (approx.)	530 mm
Mounting Mast	$\varnothing$ 25-30 mm
P/N	2101801.00

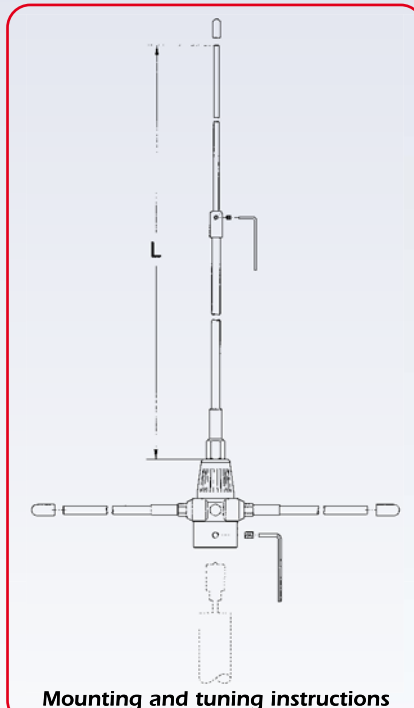
#### TYPICAL RADIATION PATTERN in E-plane at 145 MHz

File: E-02-014

Scale: logarithmic



TYPICAL S.W.R. RESPONSE

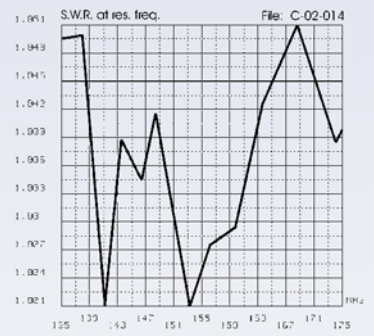


Mounting and tuning instructions

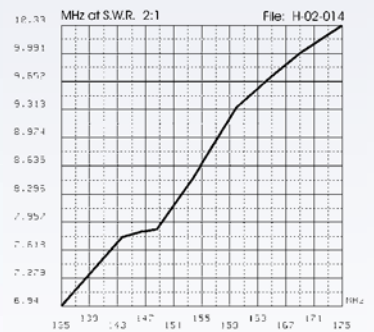


Bottom view  
UHF-female connector

#### TYPICAL MATCHING DIAGRAM vs FREQUENCY

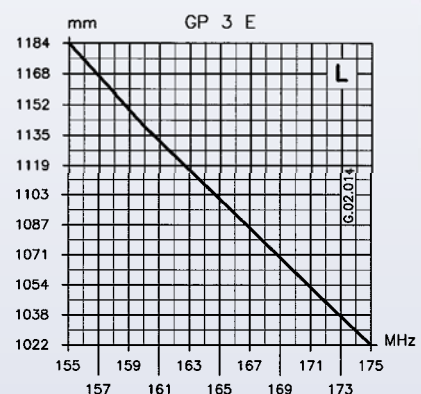
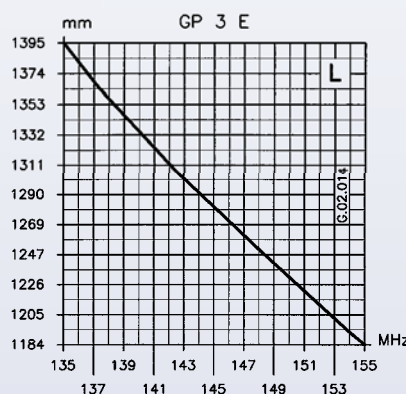


#### TYPICAL BANDWIDTH DIAGRAM vs FREQUENCY



#### TYPICAL TUNING DIAGRAMS\*

\* Use the curves just as a guide. For fine-tuning please use an SWR-meter



### GP 6-E

## Ground Plane Eco

### 140...175 MHz

#### Features:

- # Base station antenna, Omnidirectional
- # Medium-gain, Mono-band
- # Suitable for land and marine service
- # Tunable by whip cutting
- # Protection from static discharges DC-Ground
- # Made of aluminium alloy 6063 T-832
- # Side mast mounting allowed by optional bracket FT-3 P/N 2511301.00

Electrical Data	GP 6-E
Type	2 x 5/8 $\lambda$ Ground Plane Colinear
Frequency Range	tunable 140...175 MHz
Impedance	50 $\Omega$
Radiation (H-plane)	360° Omnidirectional
Radiation (E-plane)	Beamwidth @ -3dB = 30°
Radiation angle deg.	3.6°
Polarization	Linear Vertical
Gain	3.8 dBd - 5.95 dBi
SWR @ res. freq.	see diagram
Bandwidth @ SWR $\leq 2$	see diagram
Max Power (CW) @ 30°C	200 Watts
Grounding Protection	All metal parts are DC-grounded, inner conductor shows a DC short
Connector	UHF-female, gold plated central pin

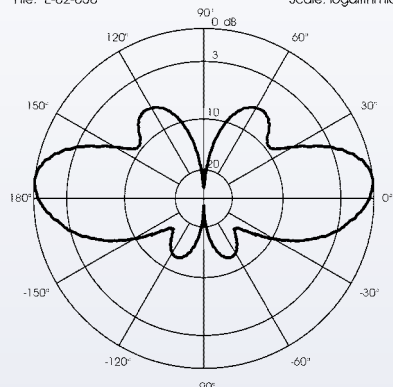
#### Mechanical Data

Materials	Aluminium, Chromed Brass, Nylon
Wind Load at 150 km/h	46 N
Wind Resistance	120 Km/h
Wind Surface	0.04 m <sup>2</sup>
Height (approx.)	3060 mm
Weight (approx.)	750 gr
Radial Length (approx.)	530 mm
Mounting Mast	$\varnothing$ 25-30 mm
P/N	2108101.00

TYPICAL RADIATION PATTERN in E-plane at 145 MHz

File: E-02-030

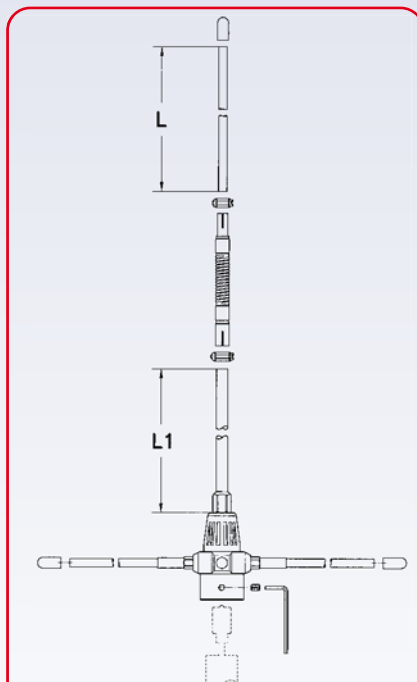
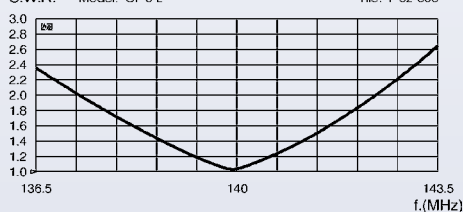
Scale: logarithmic



TYPICAL S.W.R. RESPONSE

S.W.R. Model: GP 6-E

File: F-02-030

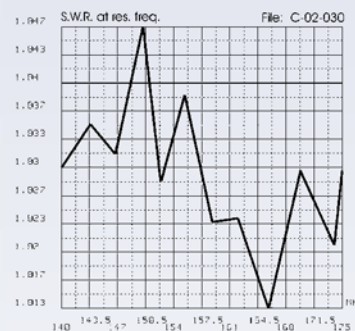


Mounting and tuning instructions

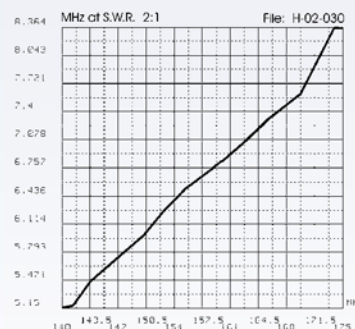


Bottom view  
UHF-female connector

TYPICAL MATCHING DIAGRAM vs FREQUENCY

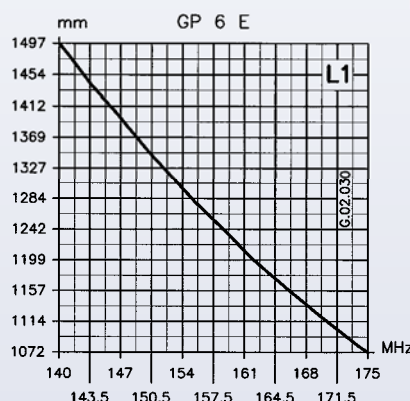
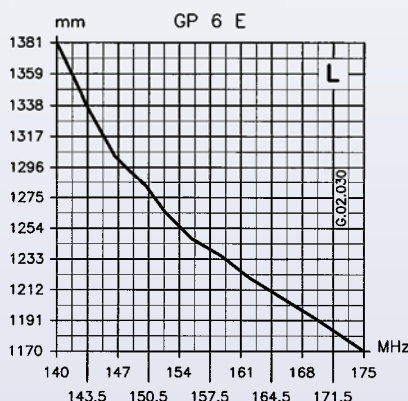


TYPICAL BANDWIDTH DIAGRAM vs FREQUENCY



TYPICAL TUNING DIAGRAMS\*

\* Use the curves just as a guide. For fine-tuning please use an SWR-meter





# GPF 21-N

## Ground Plane Fiber

### 135...175 MHz

#### Features:

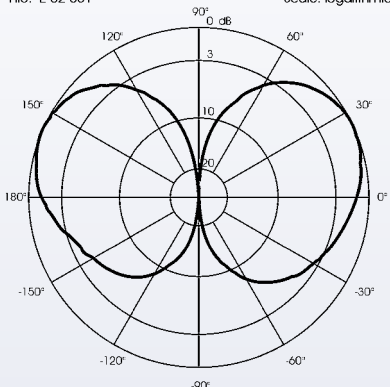
- # Base station antenna, Mono-band
- # Low-gain, Omnidirectional
- # Suitable for land and marine service
- # Tunable by whip cutting
- # Protection from static discharges DC-Ground
- # Stainless steel hardware and radials
- # Equipped with anodized aluminium bracket for an easy side mast installation
- # High quality whip made of brass and copper protected by fiberglass tube

Electrical Data	GPF 21 N
Type	5/8 $\lambda$ Ground Plane
Frequency Range	tunable 135...175 MHz
Impedance	50 $\Omega$
Radiation (H-plane)	360° Omnidirectional
Radiation (E-plane)	Beamwidth @ -3dB = 80°
Radiation angle deg.	28°
Polarization	Linear Vertical
Gain	1.5 dBd - 3.65 dBi
SWR @ res. freq.	see diagram
Bandwidth @ SWR $\leq 2$	see diagram
Max Power (CW) @ 30°C	200 Watts
Grounding Protection	All metal parts are DC-grounded, inner conductor shows a DC short
Connector	N-female, gold plated central pin

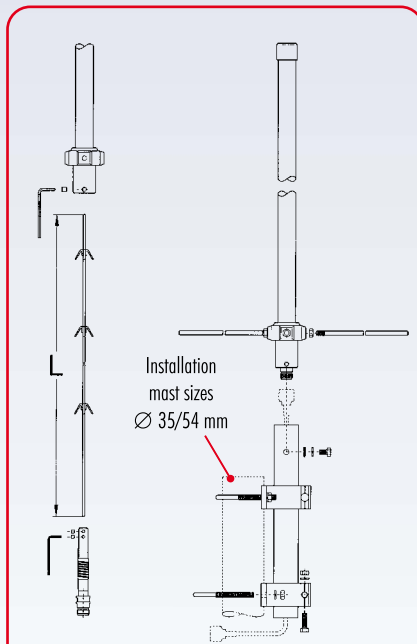
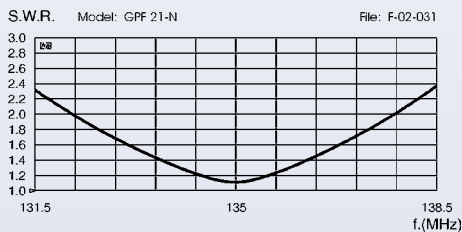
#### Mechanical Data

Materials	Fiberglass, Aluminium, Brass
Wind Load at 150 km/h	55 N
Wind Resistance	200 Km/h
Wind Surface	0.05 m <sup>2</sup>
Height (approx.)	1730 mm
Weight (approx.)	1200 gr
Radial Length (approx.)	495 mm
Mounting Mast	$\varnothing$ 35-54 mm
P/N	2109720.00

TYPICAL RADIATION PATTERN in E-plane at 145 MHz  
 File: E-02-031 Scale: logarithmic



TYPICAL S.W.R. RESPONSE

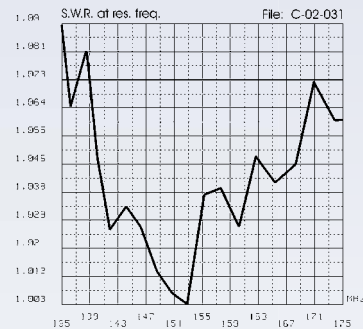


Mounting and tuning instructions

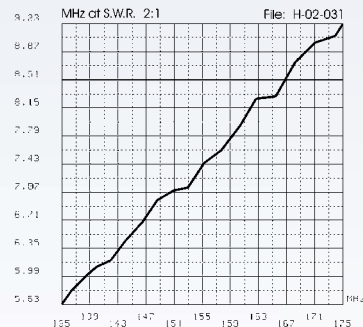


Bottom view  
 N-female connector

TYPICAL MATCHING DIAGRAM vs FREQUENCY

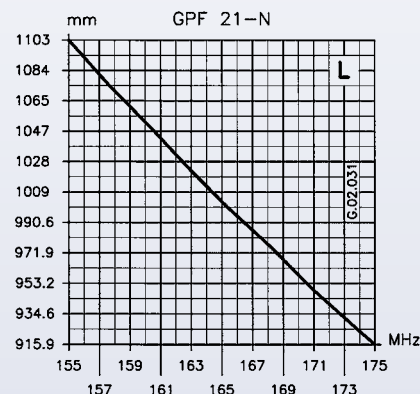
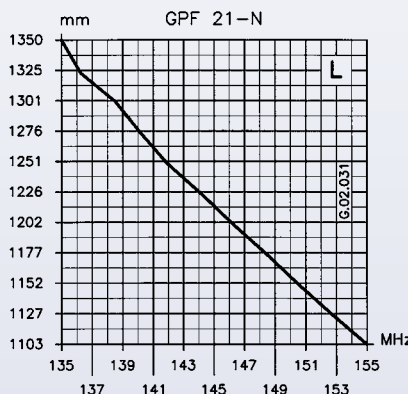


TYPICAL BANDWIDTH DIAGRAM vs FREQUENCY



TYPICAL TUNING DIAGRAMS\*

\* Use the curves just as a guide. For fine-tuning please use an SWR-meter



# GPF 22-N

## Ground Plane Fiber

### 135...175 MHz

#### Features:

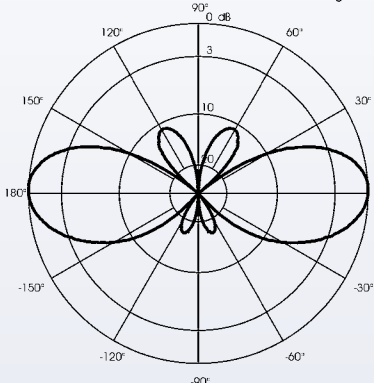
- # Base station antenna, Mono-band
- # Medium-gain , Omnidirectional
- # Suitable for land and marine service
- # Tunable by whip cutting
- # Stainless steel hardware and radials
- # Equipped with anodized aluminium bracket for an easy side mast installation
- # High quality whip made of brass and copper protected by fiberglass tube

Electrical Data	GPF 22-N
Type	2 x 5/8 $\lambda$ Ground Plane Colinear
Frequency Range	tunable 135...175 MHz
Impedance	50 $\Omega$
Radiation (H-plane)	360° Omnidirectional
Radiation (E-plane)	Beamwidth @ -3dB = 35°
Radiation angle deg.	0°
Polarization	Linear Vertical
Gain	3.8 dBi - 5.95 dBi
SWR @ res. freq.	see diagram
Bandwidth @ SWR $\leq$ 2	see diagram
Max Power (CW) @ 30°C	200 Watts
Grounding Protection	All metal parts are DC-grounded, the inner conductor is coupled capacitively
Connector	N-female, gold plated central pin

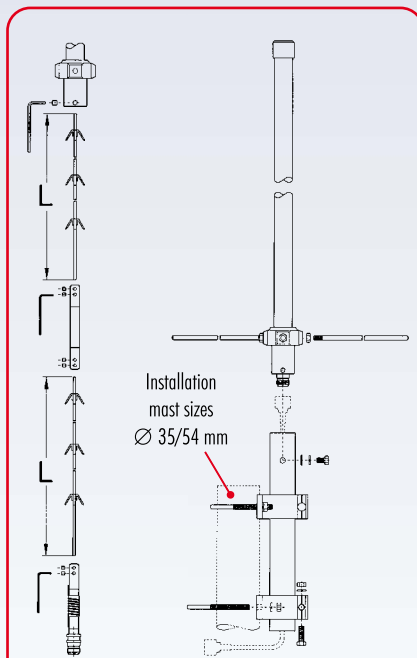
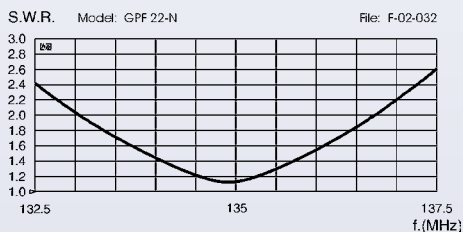
#### Mechanical Data

Materials	Fiberglass, Aluminium, Brass
Wind Load at 150 km/h	95 N
Wind Resistance	150 Km/h
Wind Surface	0.08 m <sup>2</sup>
Height (approx.)	3230 mm
Weight (approx.)	1630 gr
Radial Length (approx.)	495 mm
Mounting Mast	$\varnothing$ 35-54 mm
P/N	2109820.00

TYPICAL RADIATION PATTERN in E-plane at 145 MHz  
 File: E-02-032 Scale: logarithmic



TYPICAL S.W.R. RESPONSE

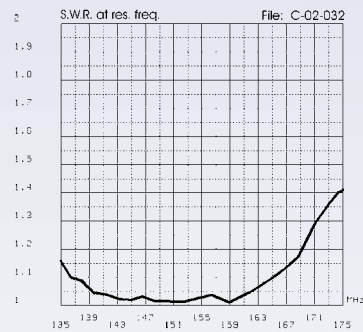


Mounting and tuning instructions

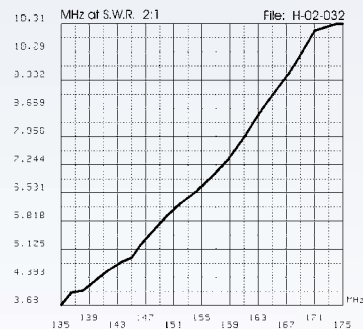


Bottom view  
 N-female connector

TYPICAL MATCHING DIAGRAM vs FREQUENCY

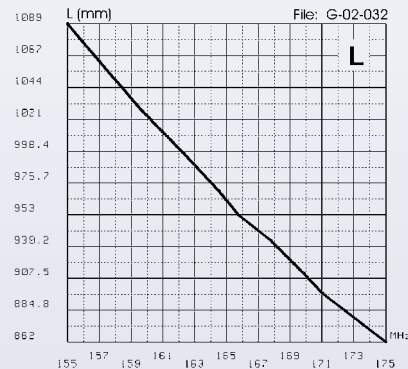
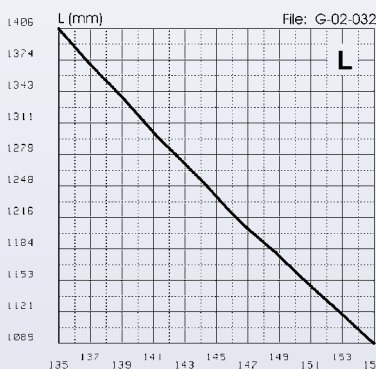


TYPICAL BANDWIDTH DIAGRAM vs FREQUENCY



TYPICAL TUNING DIAGRAMS\*

\* Use the curves just as a guide. For fine-tuning please use an SWR-meter



## SA 22-N

### Sirio Amateur 2m band

#### Features:

- # Omnidirectional base station antenna
- # Medium-gain, Mono-band
- # Protection from static discharges DC-Ground
- # Perfect protection against the worst weather conditions
- # Stainless steel hardware and radials
- # Fiberglass whip made of two conic sections jointed by ABS parts for distortion free radiation diagram
- # Equipped with anodized aluminium bracket for an easy side mast installation

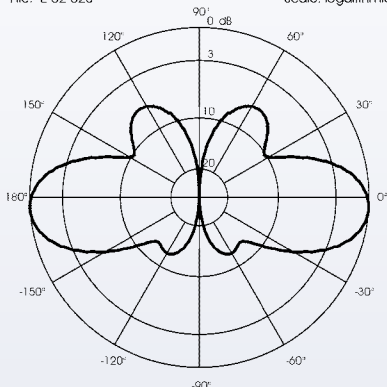
Electrical Data	SA 22-N
Type	2 x 5/8 $\lambda$ Ground Plane Colinear
Frequency Range	142-148 MHz @ SWR $\leq$ 2
Impedance	50 $\Omega$
Radiation (H-plane)	360° Omnidirectional
Radiation (E-plane)	Beamwidth at -3dB = 35°
Radiation angle deg.	-6°
Polarization	Linear Vertical
Gain	3.6 dBd - 5.75 dBi
Max Power (CW) @ 30°C	200 Watts
Grounding Protection	All metal parts are DC-grounded, the inner conductor is coupled capacitively
Connector	N-female, gold plated central pin

Mechanical Data	
Materials	Fiberglass, Stainless Steel, Brass
Wind Load at 150 km/h	81 N
Wind Resistance	160 Km/h
Wind Surface	0.07 m <sup>2</sup>
Height (approx.)	2790 mm
Weight (approx.)	1220 gr
Radial Length (approx.)	495 mm
Mounting Mast	$\varnothing$ 35-54 mm
P/N	2106220.00

TYPICAL RADIATION PATTERN in E-plane at 145 MHz

File: E-02-023

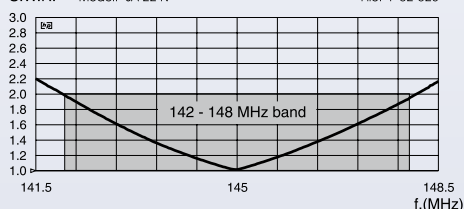
Scale: logarithmic



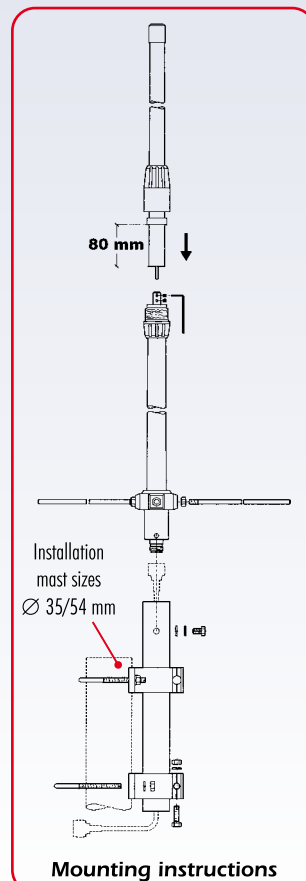
TYPICAL S.W.R. RESPONSE

S.W.R. Model: SA 22 N

File: F-02-023



ABS plastic  
jointing sleeve





## SPO series

Sirio Professional Omni 135-175 MHz

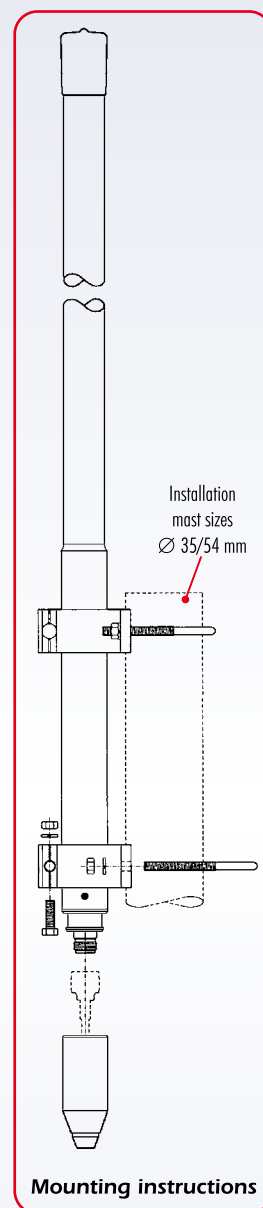
**WIDE-BAND**  
**Fiberglass**  
**dipole and colinear**



SPO 145-2  
Dipole



SPO 135-5  
 SPO 145-5  
 SPO 150-5  
 SPO 158-5  
 Colinear



## SPO series

### Sirio Professional Omni 135-175 MHz

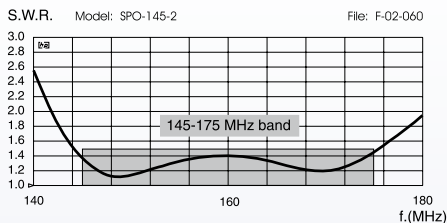
#### Features:

- # Fiberglass wide-band omnidirectional base station antenna
- # SPO 145-2: Unity-gain; SPO 135/145/158-5: Medium-gain
- # Suitable for land and marine service, Perfect protection against the worst weather conditions
- # Protection from static discharges DC-Ground, Designed to work without Ground Plane
- # Stainless steel hardware

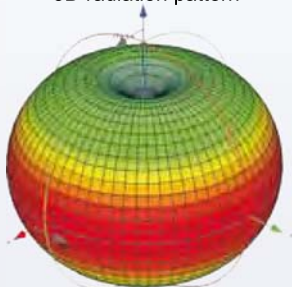
Electrical Data	SPO 145-2	SPO 135-5	SPO 145-5	SPO 150-5	SPO 158-5
Type	Dipole		Colinear		
Frequency Range @ SWR ≤ 1.5	145 - 175 MHz	135-147 MHz	145-160 MHz	150-165 MHz	158-175 MHz
Impedance	50 Ω				
Radiation (H-plane)	360° Omnidirectional				
Radiation (E-plane) beamwidth @ -3 dB	78°	40°	40°	40°	40°
Polarization	Linear Vertical				
Gain	0 dBd - 2.15 dBi	3 dBd - 5.15 dBi	3 dBd - 5.15 dBi	3 dBd - 5.15 dBi	3 dBd - 5.15 dBi
Max Power (CW) @ 30°C	100 Watts				
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short				
Connector	N-female with rubber protection cap				
Mechanical Data					
Materials	White cylindrical fiberglass radome Ø 28.6 mm, anodized 6063-T5 aluminium, brass, stainless steel, copper, EPDM rubber				
Wind Load @ 150 km/h	53 N	104 N	98 N	98 N	93 N
Wind Resistance	180 Km/h	150 Km/h	150 Km/h	150 Km/h	150 Km/h
Wind Surface	0.044 m²	0.089 m²	0.083 m²	0.083 m²	0.078 m²
Height (approx.)	1380 mm	2940 mm	2740 mm	2740 mm	2590 mm
Weight (approx.)	1315 gr	2160 gr	2045 gr	2000 gr	1950 gr
Operating temperature	-40° C to +80° C				
Mounting Mast	Side mounting whit "V" bolt, mast Ø 35 - 54 mm				
P/N	2115020/145	2115120/135	2115120/145	2115120/150	2115120/158

#### SPO 145-2

##### TYPICAL S.W.R. RESPONSE

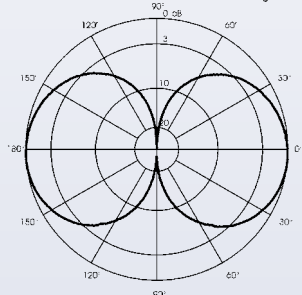


##### 3D radiation pattern



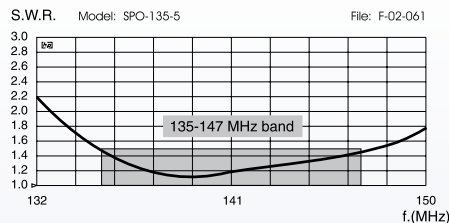
##### TYPICAL RADIATION PATTERN in E-plane at mid-band

File: E-02-060 Scale: logarithmic

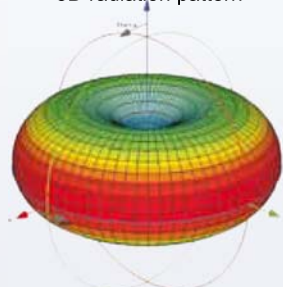


#### SPO 1..-5 series

##### TYPICAL S.W.R. RESPONSE

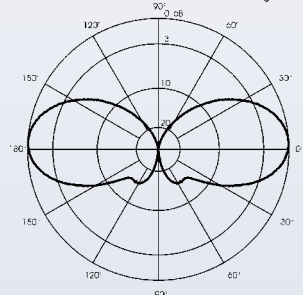


##### 3D radiation pattern

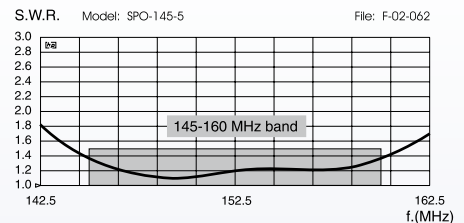


##### TYPICAL RADIATION PATTERN in E-plane at mid-band

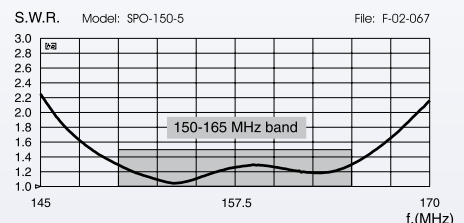
File: E-02-063 Scale: logarithmic



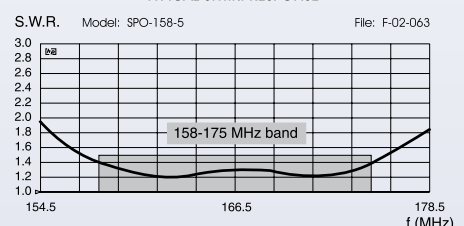
##### TYPICAL S.W.R. RESPONSE



##### TYPICAL S.W.R. RESPONSE



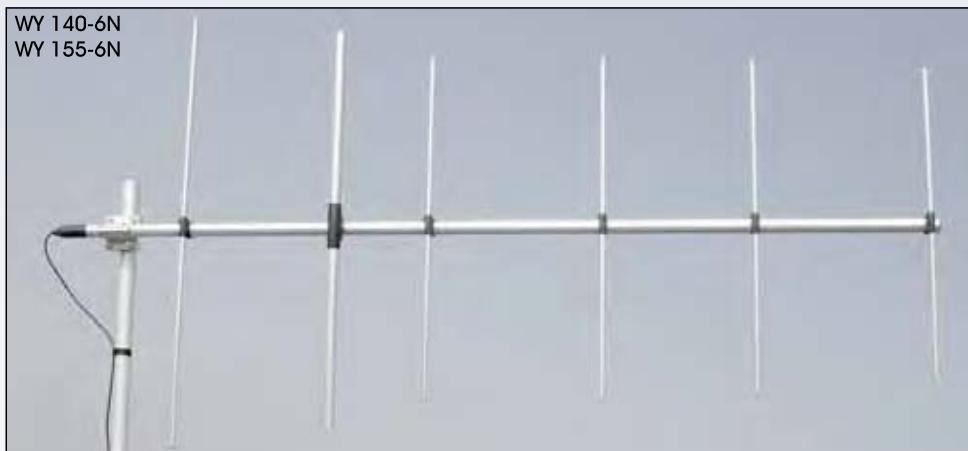
##### TYPICAL S.W.R. RESPONSE



## WY series

### Wide-band Yagi 140-175 MHz

WY 140-6N  
WY 155-6N



## WIDE-BAND YAGI

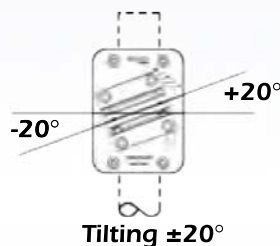
**New feed system for High symmetrical pattern**  
**Completely computer designed for the best performances**  
**Patent pending**

WY 140-4N  
WY 155-4N



### Optional Tilting bracket P/N 2519803.00

Materials & Hardware: zinc plated steel  
Dimensions: 110 x 150 x 6 mm.  
Weight: 800 gr



### Standard Mounting bracket

Materials: extruded aluminum  
Hardware: stainless & zinc plated steel  
Dimensions: 80 x 76 x 65 mm  
Weight: 460 gr



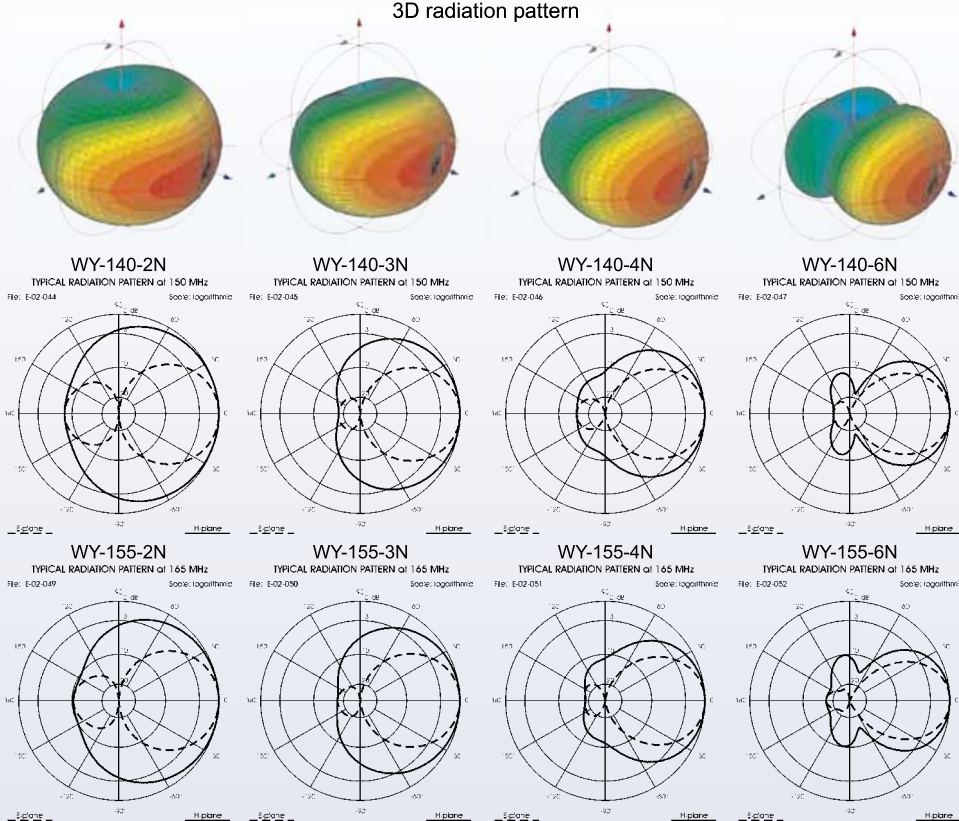
WY 140-3N  
WY 155-3N



WY 140-2N  
WY 155-2N



### 3D radiation pattern



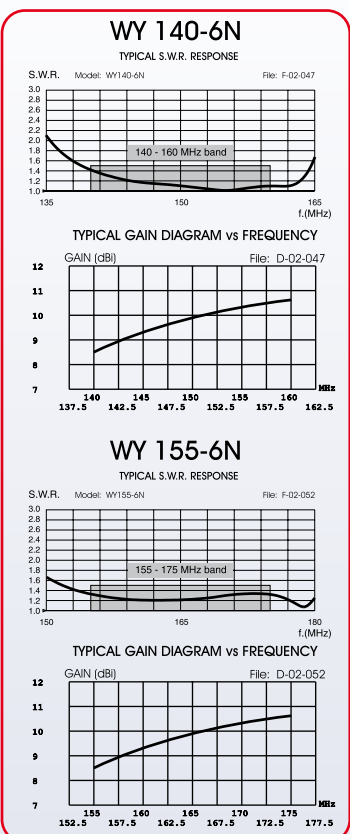
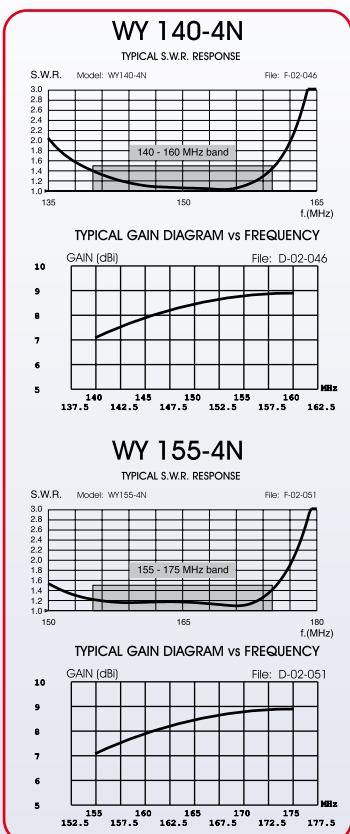
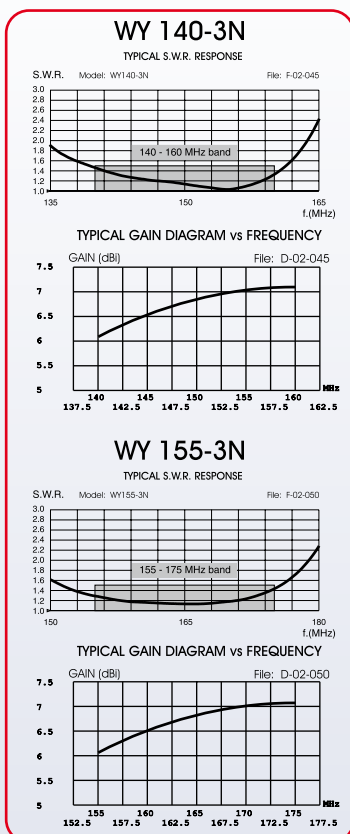
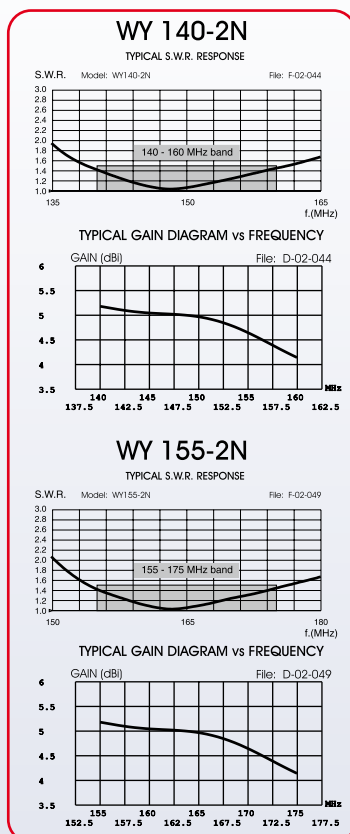
## WY series

### Wide-band Yagi 140-175 MHz

#### Features:

- # Wide-band directional base station antenna
- # Exclusive feed system conceived for the highly symmetrical radiation pattern in both planes (E and H), patent pending applied
- # Completely computer designed to get the best performance of gain and front-to-back ratio in the band of interest
- # Made of anodized 6063-T5 aluminium, extruded aluminium bracket, rear mounting
- # N female connector protected by EPDM rubber cap for RG58 or RG213 cables
- # Stacked & bayed array for higher gain, Optional tilting bracket

Electrical Data	WY 140-2N	WY 155-2N	WY 140-3N	WY 155-3N	WY 140-4N	WY 155-4N	WY 140-6N	WY 155-6N
Type	2 elements Yagi		3 elements Yagi		4 elements Yagi		6 elements Yagi	
Frequency Range @ SWR ≤ 1.5	140-160 MHz	155-175 MHz	140-160 MHz	155-175 MHz	140-160 MHz	155-175 MHz	140-160 MHz	155-175 MHz
Impedance	50 Ω							
Radiation (H-plane) beamwidth @ -3 dB	195°	165°	140°	130°	100°	100°	80°	75°
Radiation (E-plane) beamwidth @ -3 dB	75°	75°	70°	70°	65°	65°	60°	55°
Front to back ratio	≥ 9 dB	≥ 9 dB	≥ 16 dB	≥ 16 dB	≥ 16 dB	≥ 16 dB	≥ 16 dB	≥ 16 dB
Polarization	Linear Vertical or Horizontal							
Gain	3.05 dBd-5.2 dBi	3.05 dBd-5.2 dBi	4.85 dBd - 7 dBi	4.85 dBd - 7 dBi	6.35 dBd-8.5 dBi	6.35 dBd-8.5 dBi	8.35dBd-10.5dBi	8.35dBd-10.5dBi
Max Power (CW) @ 30°C	200 Watts							
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short							
Connector	N-female with rubber protection cap							
Mechanical Data								
Materials	Anodized 6063-T5 Aluminium, EPDM rubber, thermoplastic UV stabilized, Chromed Brass							
Wind Load @ 150 km/h	92 N	88 N	114 N	109 N	147 N	141 N	184 N	176 N
Wind Resistance	180 Km/h	180 Km/h	160 Km/h	160 Km/h	140 Km/h	140 Km/h	120 Km/h	120 Km/h
Wind Surface	0.071 m²	0.068 m²	0.090 m²	0.086 m²	0.119 m²	0.114 m²	0.150 m²	0.145 m²
Dimensions W x H (approx.)	740 x 1110 mm	740 x 955 mm	990 x 1110 mm	990 x 985 mm	1600 x 1085 mm	1600 x 985 mm	2010 x 1085 mm	2010 x 985 mm
Turning radius (approx.)	770 mm	750 mm	970 mm	950 mm	1540 mm	1530 mm	1940 mm	1930 mm
Weight (approx.)	1490 gr	1450 gr	1740 gr	1680 gr	2070 gr	2015 gr	2440 gr	2390 gr
Operating temperature	-40° C to +60° C							
Mounting Mast	Ø 35 - 52 mm							
Boom / Dipole / Element Diameter	Ø 32 mm / Ø 24 mm / Ø 12 mm							
P/N	2113401/140	2113401/155	2113501/140	2113501/155	2113801/140	2113801/155	2113601/140	2113601/155





## WD 140-N series

### Wide-band Dipole

### 140-175 MHz

#### Features:

- # Base station antenna, Directional,
- # Wide band, no tuning required
- # Exclusive feed system
- # Made of anodized 6063-T5 aluminium
- # Extruded aluminium bracket, rear mounting
- # N female connector protected by EPDM rubber cap for RG58 or RG213 cables

Electrical Data	WD 140-N	WD 155-N
Type	Dipole	
Frequency Range @ SWR ≤ 1.5	140 - 160 MHz	155 - 175 MHz
Impedance	50 Ω	
Radiation (H-plane) beamwidth @ -3 dB	245°	
Radiation (E-plane) beamwidth @ -3 dB	80°	85°
Front to back ratio	≥ 5 dB	
Polarization	Linear Vertical	
Gain	1.85 dBd - 4 dBi	
Max Power (CW) @ 30°C	200 Watts	
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short	
Connector	N-female with rubber protection cap	

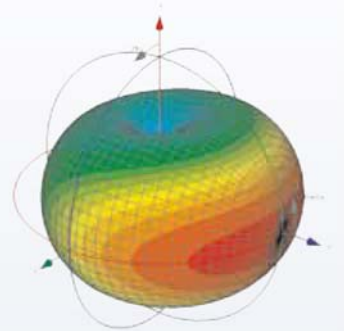
#### Mechanical Data

Materials	Anodized 6063-T5 Aluminium, EPDM rubber, thermoplastic UV stabilized, Chromed Brass	
Wind Load @ 150 km/h	77 N	
Wind Resistance	200 Km/h	
Wind Surface	0.06 m²	
Dimensions W x H (approx.)	730 x 915 mm	730 x 835 mm
Turning radius (approx.)	600 mm	
Weight (approx.)	1390 gr	
Operating temperature	-40° C to +60° C	
Mounting Mast	∅ 35 - 52 mm	
Boom Diameter / Dipole Diameter	∅ 32 mm / ∅ 24 mm	
P/N	2113301/140	2113301/155



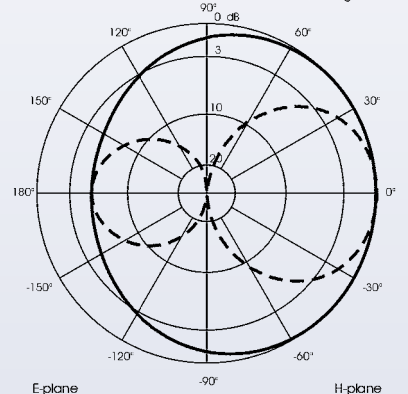
WD 140-N, WD 155-N

3D radiation pattern

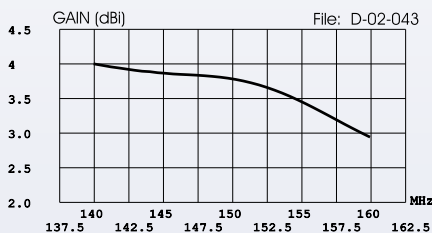


TYPICAL RADIATION PATTERN at 150 MHz

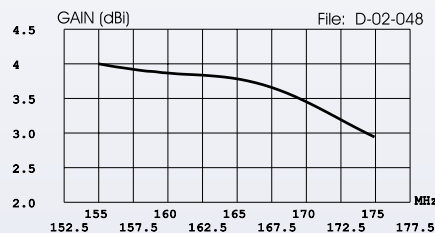
File: E-02-043 Scale: logarithmic



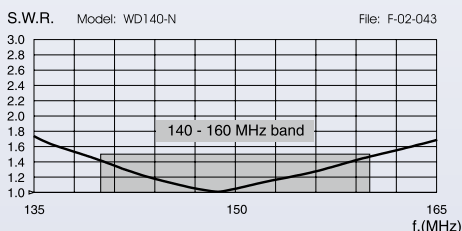
TYPICAL GAIN DIAGRAM vs FREQUENCY



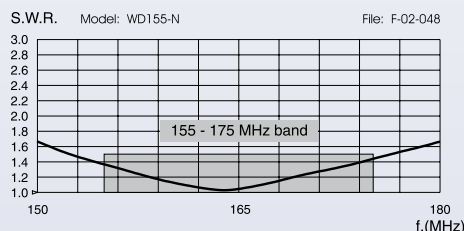
TYPICAL GAIN DIAGRAM vs FREQUENCY



TYPICAL S.W.R. RESPONSE



TYPICAL S.W.R. RESPONSE



## CX 2m series

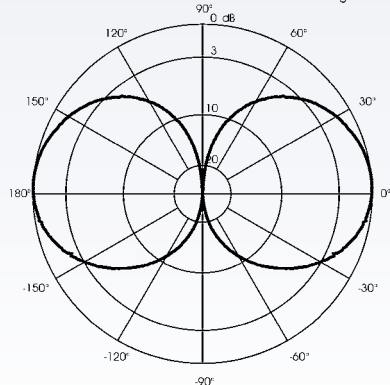
### CoaXial J-pole

### 140-176 MHz

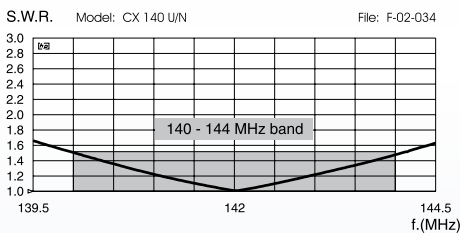
#### Features:

- # Base station antenna, Low-gain
- # Omnidirectional, Mono-band
- # Protection from static discharges DC-Ground
- # Made of aluminium alloy 6063 T832
- # New N-female connector versions available

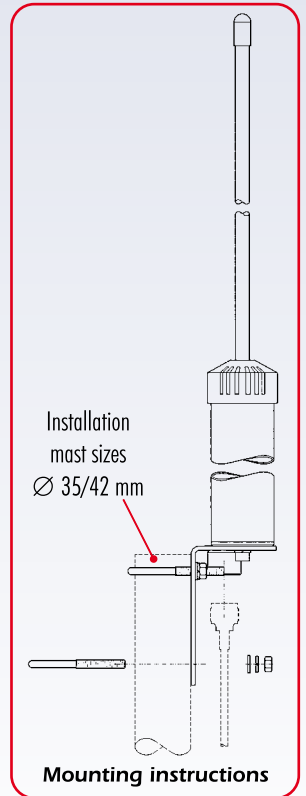
TYPICAL RADIATION PATTERN in E-plane at mid band  
 File: E-02-034 Scale: logarithmic



TYPICAL S.W.R. RESPONSE



Bottom view  
N-female connector



Mounting instructions



Bottom view  
UHF-female connector

Electrical Data	CX 140 U/N	CX 144 U/N	CX 148 U/N	CX 152 U/N	CX 156 U/N	CX 160 U/N	CX 164 U/N	CX 168 U/N	CX 172 U/N
Type	3/4 λ Coaxial J-pole								
Frequency Range @ SWR ≤ 1.5	140-144 MHz	144-148 MHz	148-152 MHz	152-156 MHz	156-160 MHz	160-164 MHz	164-168 MHz	168-172 MHz	172-176 MHz
Impedance	50 Ω								
Radiation (H-plane)	360° Omnidirectional								
Radiation (E-plane)	beamwidth @ -3 dB = 68°								
Radiation angle deg.	0°								
Polarization	Linear Vertical								
Gain	2 dBd - 4.15 dBi								
Max Power (CW) @30°C	250 Watts								
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short								
Connector	UHF-female or N-female (for N-female version ask for minimum quantity required)								
Mechanical Data									
Materials	Aluminium, Zamak, Steel, Brass								
Wind Load @ 150 km/h	50 N	49 N	48 N	48 N	47 N	46 N	45 N	44 N	43 N
Wind Resistance	180 Km/h								
Wind Surface	0.04 m <sup>2</sup>								
Height (approx.)	1660 mm	1620 mm	1580 mm	1540 mm	1500 mm	1460 mm	1430 mm	1400 mm	1370 mm
Weight (approx.)	750 gr								
Mounting Mast	Ø 35 - 42 mm								
P/N with UHF connector	2107201.00	2102201.00	2103501.00	2103901.00	2102301.00	2102401.00	2103601.00	2108401.00	2104001.00
P/N with N connector	2107201.00/N	2102201.00/N	2103501.00/N	2103901.00/N	2102301.00/N	2102401.00/N	2103601.00/N	2108401.00/N	2104001.00/N

## CX 220, CX260

### CoaXial J-pole

#### Features

- # Omnidirectional base station antenna, Low-gain , Mono-band
- # Protection from static discharges DC-Ground
- # Made of aluminium alloy 6063 T-832

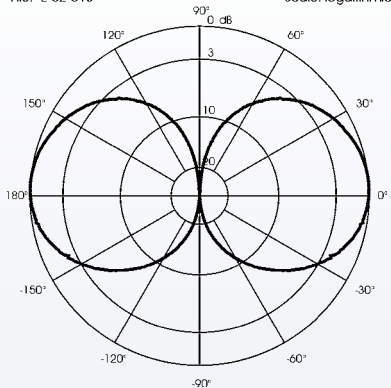
Electrical Data	CX 220 U/N	CX 260 U/N
Type	3/4 $\lambda$ Coaxial J-pole	
Frequency Range @ SWR $\leq 1.5$	219-226 MHz	255-264 MHz
Frequency Range @ SWR $\leq 2$	216-229 MHz	251-267 MHz
Impedance	50 $\Omega$	
Radiation (H-plane)	360° Omnidirectional	
Radiation (E-plane)	beamwidth @ -3 dB = 60°	
Radiation angle deg.	-2°	
Polarization	Linear Vertical	
Gain	2 dBd - 4.15 dBi	
Max Power (CW) @30°C	200 Watts	
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short	
Connector	UHF-female or N-female (for N-female version ask for minimum quantity required)	

#### Mechanical Data

Materials	Aluminium, Zamak, Steel, Brass	
Wind Load @ 150 km/h	36 N	
Wind Resistance	180 Km/h	
Wind Surface	0.03 m <sup>2</sup>	
Height (approx.)	630 gr	
Weight (approx.)	1100 mm	950 mm
Mounting Mast	$\varnothing$ 35 - 42 mm	
P/N with UHF connector	2106101.00	2106001.00
P/N with N connector	2106101.00/N	2106001.00/N

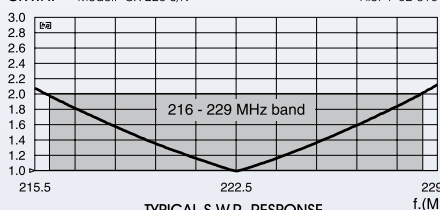
TYPICAL RADIATION PATTERN in E-plane at mid band

File: E-02-015 Scale: logarithmic



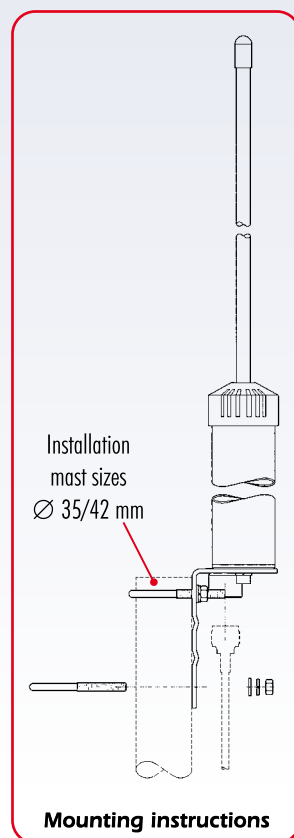
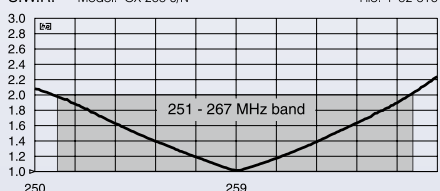
TYPICAL S.W.R. RESPONSE

S.W.R. Model: CX 220 U/N File: F-02-015

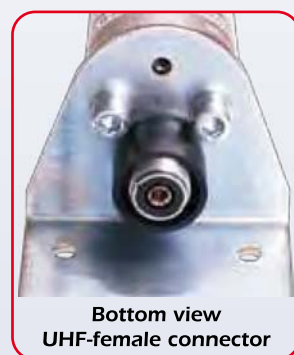


TYPICAL S.W.R. RESPONSE

S.W.R. Model: CX 260 U/N File: F-02-016



Bottom view  
N-female connector



Bottom view  
UHF-female connector

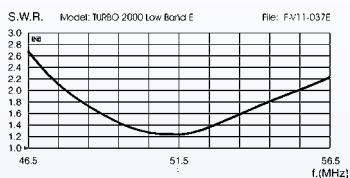
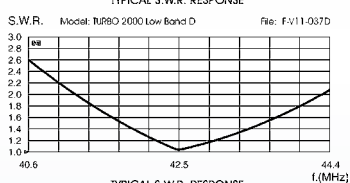
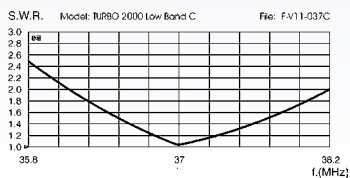
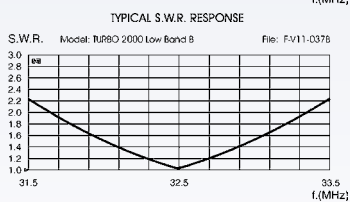
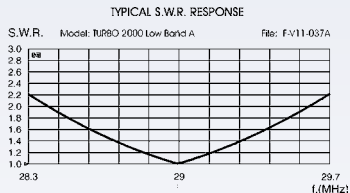
# TURBO 2000 Low Band Blue Line Series

## 29...67.5 MHz

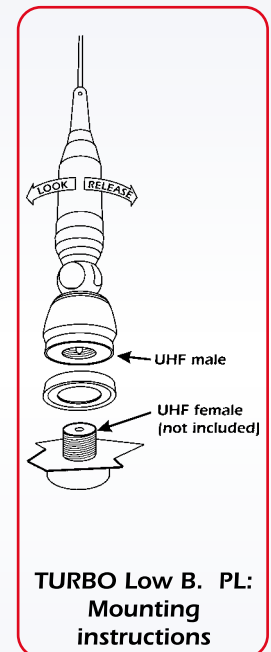
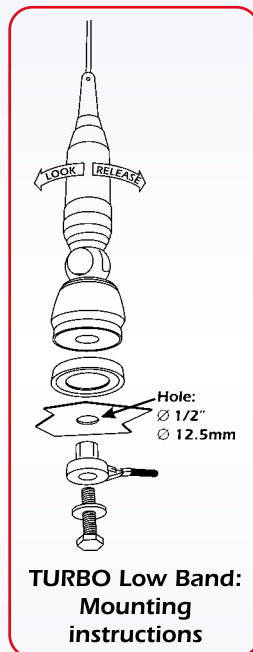
**UP-GRADE Features:** # New glazed chromed surface, blue plastic parts

### Features:

- # Mobile antenna, Mono-band, Unity-gain, Omnidirectional, Tunable by whip cutting
- # Protection from static discharges DC-Ground, 17/7 PH tapered stainless steel whip
- # 90° inclination and adjustable whip, detachable for car-washes access
- # Magnetic mount version available



**UP-GRADED  
MODELS**



Electrical Data	TURBO Low B. A type	TURBO Low B. B type	TURBO Low B. C type	TURBO Low B. D type	TURBO Low B. E type
Type	1/4 λ. Base Loaded				
Frequency Range tunable	29.0...32.5 MHz	32.5...37.0 MHz	37.0...43.0 MHz	42.5...51.5 MHz	51.5...67.5 MHz
Impedance	50 Ω				
Radiation (H-plane)	360° Omnidirectional				
Polarization	Linear Vertical				
Gain	0 dB ref to λ/4 whip				
SWR @ res. freq.	≤ 1.2 @ lower frequency				
Bandwidth @ SWR ≤ 2	≥ 1.2MHz @ 29.0 MHz	≥ 1.8MHz @ 32.5 MHz	≥ 2.1MHz @ 37.0 MHz	≥ 3.1MHz @ 42.5 MHz	≥ 7.5MHz @ 51.5 MHz
Max Power (CW) @30°C	250 Watts				
Grounding Protection	All metal parts are DC-grounded, inner conductor shows a DC short				
Connector	TURBO Low Band: NE-TURBO connection. TURBO Low Band PL: UHF-male				
Cable Length / Type	4m / RG 58 (TURBO 2000 only)				
Mechanical Data					
Materials	Stainless Steel 17/7 PH, Chromed Brass, Nylon				
Height (approx.)	1450 mm				
Weight (approx.)	400 gr				
Mounting Hole	Ø 12.5 mm (TURBO Low Band only)				
P/N TURBO Low Band	2213005.40/A	2213005.40/B	2213005.40/C	2213005.40/D	2213005.40/E
P/N TURBO Low B. PL	2213005.41/A	2213005.41/B	2213005.41/C	2213005.41/D	2213005.41/E



# MICRO 43

# TITANIUM 43

## 41.8-44.2 MHz

### Features:

- # Mobile antenna, Mono-band
- # Unity-gain, Omnidirectional
- # MICRO 43: 90° inclination and adjustable whip, detachable for car-washes access
- # TITANIUM 43: 180° inclination and adjustable whip, detachable for car-washes access
- # TITANIUM 43: 17/7 PH tapered stainless steel whip
- # TITANIUM 43: Wide range of optional mounting bases available

Electrical Data	MICRO 43	TITANIUM 43
Type	1/4 $\lambda$ Base Loaded	
Frequency Range	41.8 - 44.2 MHz @ SWR $\leq 2$	41.2 - 44.8 MHz @ SWR $\leq 2$
Impedance	50 $\Omega$	
Radiation (H-plane)	360° Omnidirectional	
Polarization	Linear Vertical	
Gain	0 dB ref. to $\lambda/4$ whip	
Max Power (CW) @30°C	30 Watts	100 Watts
Standar Mount	"CE-S" type	"N" type
Cable Lenght / Type	4 m / RG 58	

### Mechanical Data

Materials	Stainless Steel 17/7 PH, Nylon, Copper	
Height (approx.)	550 mm	1090 mm
Weight (approx.)	260 gr	400 gr
Mounting Hole	$\varnothing 10$ mm	$\varnothing 12.5$ mm
P/N	<b>2210806.38</b>	<b>2210906.02</b>



"CE-S" mount:  
Mounting hole:  $\varnothing 10$ mm  
Overall size:  $\varnothing 30$ mm



"N" mount:  
Mounting hole:  $\varnothing 12.5$ mm  
Overall size:  $\varnothing 41$ mm



"CE-S" mount:  
Spheric joint for 90°  
tilting (no tool required)

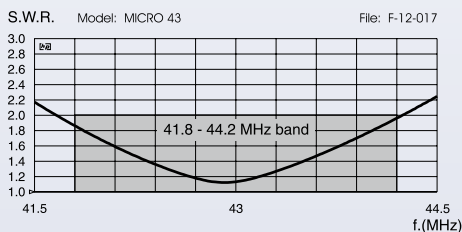


MICRO 43

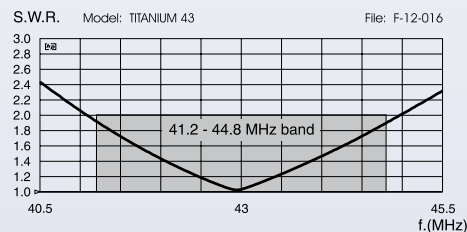


TITANIUM 43

TYPICAL S.W.R. RESPONSE



TYPICAL S.W.R. RESPONSE



## SM & SMA series

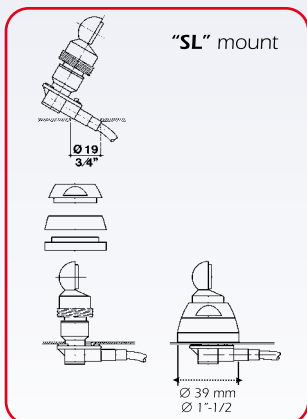
### 55...550 MHz

#### Features:

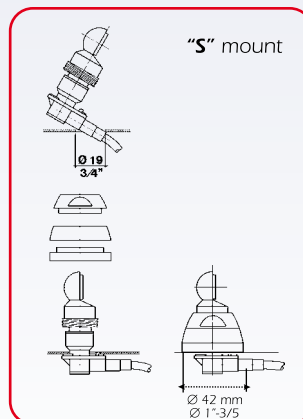
- # Mobile antenna, Mono-band, Unity-gain, Omnidirectional, Tunable by whip cutting
- # SM: Black fiberglass conic whip. SMA: 17/7 PH stainless steel cylindrical whip
- # SMA 108-550 PL: suitable for fitting on magnetic mounts, angular connectors, or portable transceiver



**SM 66-88**  
**SM 140-175**



**SMA 55-550**  
**SMA 108-550**



**SMA 108-550 PL**

Electrical Data	SM 66-88	SM 140-175	SMA 55-550	SMA 108-550	SMA 108-550 PL
Type	1/4 λ				
Frequency Range tunable	66...88 MHz	140...175 MHz	55...550 MHz	108...550 MHz	108...550 MHz
Impedance	50 Ω				
Radiation (H-plane)	360° Omnidirectional				
Polarization	Linear Vertical				
Gain	0 dB ref. to λ/4 whip				
SWR @ res. freq.	≤ 1.2 @ 66 MHz	≤ 1.5 @ 140 MHz	≤ 1.4 @ 55 MHz	≤ 1.8 @ 108 MHz	≤ 1.4 @ 108 MHz*
Bandwidth @ SWR ≤ 2	≥ 7.9MHz @ 66MHz	≥ 11MHz @140MHz	≥ 8.2 MHz @ 55 MHz	≥ 5.2 MHz @ 108 MHz	≥ 11MHz @ 108MHz*
Max Power (CW) @30°C	100 Watts				
Standar Mount	“SL” type				/
Cable Lenght / Type	5 m / RG 58				/
Alternative mount	“S” type, 55...300 MHz only or magnetic mount MAG 125 S				/
Connector	/				UHF-male (PL259)
Mechanical Data					
Materials	Fiberglass, Chromed Brass, Nylon		Stainless steel 17/7 PH, Chromed Brass, Nylon		
Height (approx.)	1085 mm	500 mm	1360 mm	720 mm	663 mm
Weight (approx.)	380 gr	200 gr	400 gr	400 gr	55 gr
Mounting Hole	Ø 19 mm				/
P/N radiator only	2409624.01	2405224.01	2409605.01	2405305.01	2430205.05
P/N “SL” mount	2209624.32	2205224.32	2209605.32	2205305.32	/
P/N “S” mount	2209624.28	2205224.28	2209605.28	2205305.28	/

\* measured on SIRIO's magnetic mount MAG 125 PL

## MG & MGA series

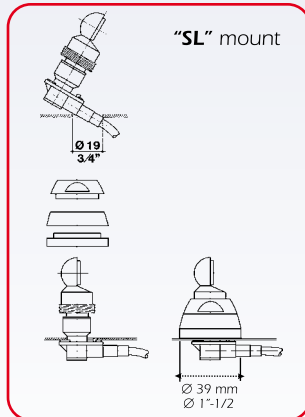
### 55...550 MHz

#### Features:

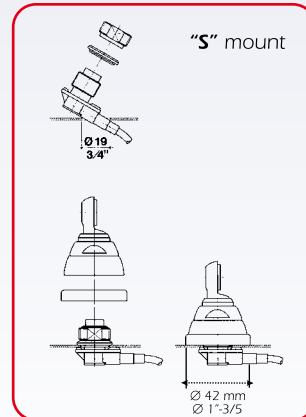
- # Mobile antenna, Mono-band, Unity-gain, Omnidirectional, Tunable by whip cutting, Supplied with a strong stainless steel spring
- # MG 75: Black fiberglass conic whip. MGA: 17/7 PH stainless steel cylindrical whip
- # MGA 108-550 PL: suitable for fitting on magnetic mounts, angular connectors, or portable transceiver



MG 75



MGA 55-550  
MGA 108-550



MGA 108-550 PL

Electrical Data	MG 75	MGA 55-550	MGA 108-550	MGA 108-550 PL
Type	1/4 $\lambda$			
Frequency Range tunable	66...88 MHz	55...550 MHz	108...550 MHz	108...550 MHz
Impedance	50 $\Omega$			
Radiation (H-plane)	360° Omnidirectional			
Polarization	Linear Vertical			
Gain	0 dB ref. to $\lambda/4$ whip			
SWR @ res. freq.	$\leq 1.2$ @ 66 MHz	$\leq 1.3$ @ 55 MHz	$\leq 1.8$ @ 108 MHz	$\leq 1.5$ @ 108 MHz*
Bandwidth @ SWR $\leq 2$	$\geq 9$ MHz @ 66 MHz	$\geq 6.4$ MHz @ 55 MHz	$\geq 6.3$ MHz @ 108 MHz	$\geq 11.5$ MHz @ 108 MHz*
Max Power (CW) @30°C	100 Watts			
Standar Mount	“SL” type			/
Cable Lenght / Type	5 m / RG 58			/
Alternative mount	“S” type, 55...300 MHz only or magnetic mount MAG 125 S			/
Connector	/			UHF-male (PL259)
Mechanical Data				
Materials	Fiberglass, Chromed Brass, Nylon	Stainless steel 17/7 PH, Chromed Brass, Nylon		
Height (approx.)	1110 mm	1400 mm	705 mm	670 mm
Weight (approx.)	500 gr	420 gr	420 gr	70 gr
Mounting Hole	$\varnothing$ 19 mm			/
P/N radiator only	2405824.01	2405905.01	2413805.01	2431505.05
P/N “SL” mount	2205824.32	2205905.32	2213805.32	/
P/N “S” mount	2205824.28	2205905.28	2213805.28	/

\* measured on SIRIO's magnetic mount MAG 125 PL

# SKA 108-500, SKB 108-960

## 108...960 MHz

### Features:

- # Mobile antenna, Mono-band, Unity-gain, Omnidirectional
- # Tunable by whip cutting, 17/7 PH stainless steel cylindrical whip
- # SKA 108-500: 90° inclination and adjustable whip, detachable for car-washes access
- # SKB 108-960: rigid whip detachable for car-washes access
- # SKB 108-960: magnetic mount version available CELL-MAG p/n 2510202.06

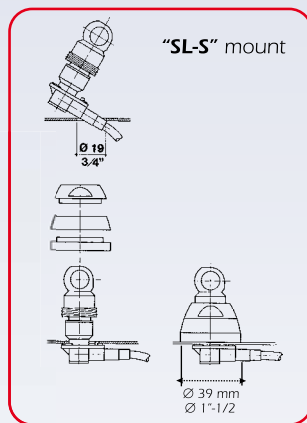
Electrical Data	SKA 108-500	SKB 108-960
Type	1/4 $\lambda$	
Frequency Range	tunable 108...500 MHz	tunable 108...960 MHz
Impedance	50 $\Omega$	
Radiation (H-plane)	360° Omnidirectional	
Polarization	Linear Vertical	
Gain	0 dB ref. to $\lambda/4$ whip	
SWR @ res. freq.	see diagram	
Bandwidth @ SWR $\leq 2$	see diagram	
Max Power (CW) @30°C	100 Watts	100 Watts for 108-550 MHz 30 Watts for 550-960 MHz
Standar Mount	"SL-S" type	"ML" type
Cable Lenght / Type	5 m / RG 58	
Alternative mount	/	"CELL MAG" magnetic mount 3m RG 58 with FME-female

### Mechanical Data

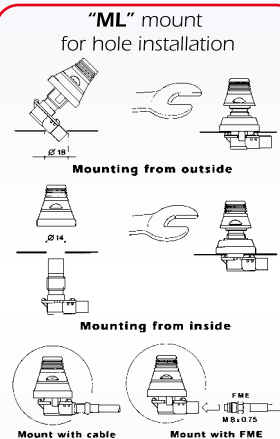
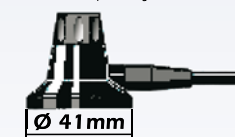
Materials	Stainless Steel 17/7 PH, Black Chromed Brass	
Height (approx.)	710 mm	700 mm
Weight (approx.)	360 gr	280 gr
Mounting Hole	$\varnothing 19$ mm	$\varnothing 14$ mm or $\varnothing 18$ mm
P/N "SL-S" mount	2206606.34	/
P/N "ML" mount	/	2209706.48
P/N "ML" w/FME	/	2209706.26
P/N "CELL MAG"	/	2209706.75

SKA 108-500

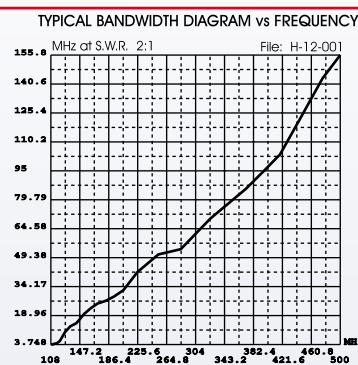
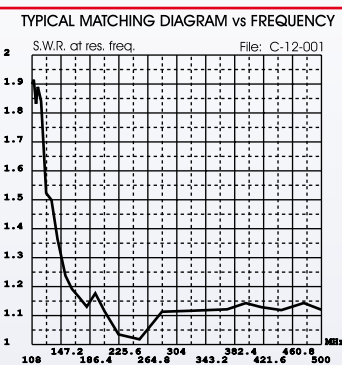
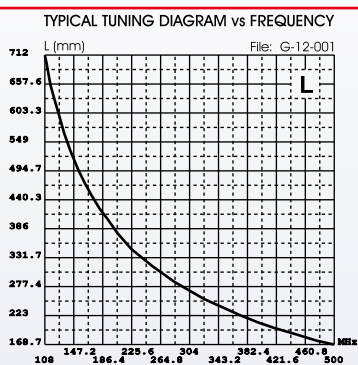
SKB 108-960



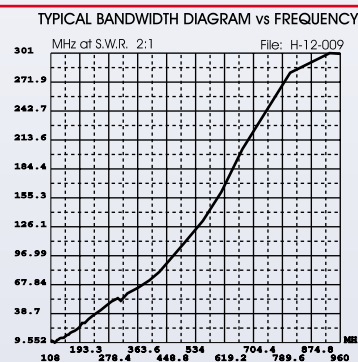
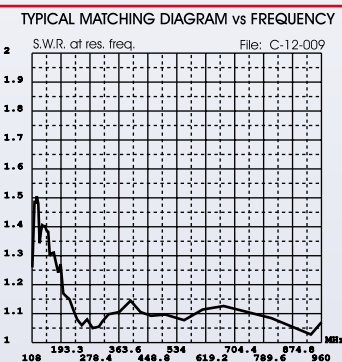
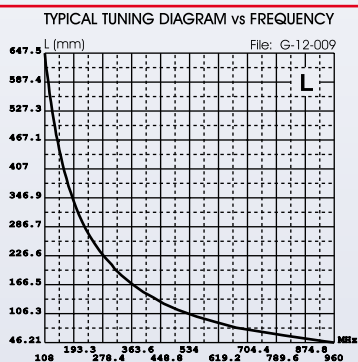
SKB 108-960 is available with mini magnetic mount "CELL-MAG" 2510202.06 for temporary installation



SKA 108-500



SKB 108-960



\* Use the curves just as a guide. For fine-tuning please use an SWR-meter



## HP 2000, HP 2000 C, HP 140-175

### High Performance Series 2m band

#### Features:

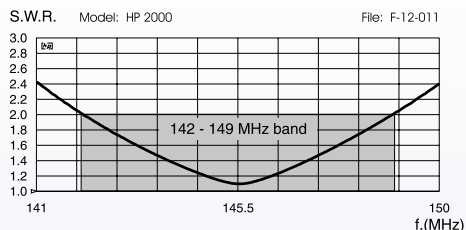
- # Mobile antenna, Mono-band
- # Low-gain, Omnidirectional
- # Suitable for fitting on magnetic mounts, angular connectors or portable transceiver
- # HP 140-175: tunable by whip cutting
- # Protection from static discharges DC-Ground
- # 17/7 PH tapered stainless steel whip
- # 90° tiltable whip and detachable for car-washes access
- # Magnetic mount version available

Electrical Data	HP 2000	HP 2000 C	HP 140-175
Type	1/2 $\lambda$	C-Loaded	5/8 $\lambda$
Frequency Range	142 - 149 MHz @ SWR $\leq 2$	137 - 157 MHz @ SWR $\leq 2$	tunable 139.3...175 MHz
Impedance	50 $\Omega$		
Radiation (H-plane)	360° Omnidirectional		
Polarization	Linear Vertical		
Gain	1.5 dB ref. to $\lambda/4$ whip	2 dB ref. to $\lambda/4$ whip	1.5 dB ref. to $\lambda/4$ whip
SWR @ res. freq.	/	/	$\leq 1.2$ @ 139.3 MHz
Bandwidth @ SWR $\leq 2$	/	/	$\geq 6.6$ MHz @ 139.3 MHz
Max Power (CW) @ 30°C	150 Watts		
Grounding Protection	All metal parts are DC-grounded, inner conductor is coupled capacitively		
Connector	UHF-male (PL 259)		

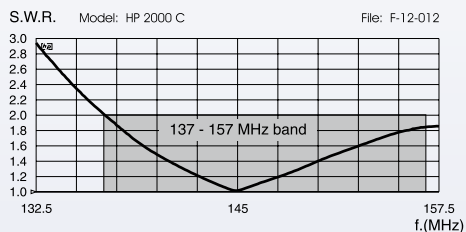
#### Mechanical Data

Materials	Stainless steel 17/7 PH, Nylon, Chromed Brass		
Height (approx.)	1060 mm	1410 mm	1435 mm
Weight (approx.)	320 gr		
P/N	2210105.05	2210205.05	2213405.05

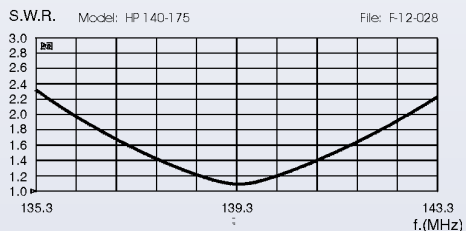
TYPICAL S.W.R. RESPONSE



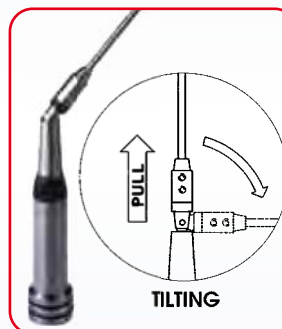
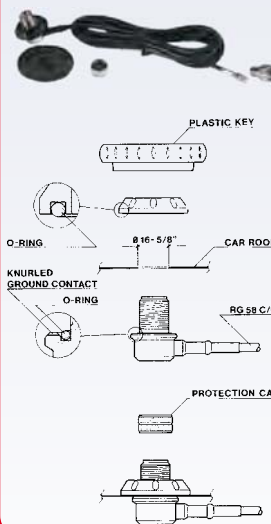
TYPICAL S.W.R. RESPONSE



TYPICAL S.W.R. RESPONSE



"HP-AC/U" mount  
Hole installation  
P/N 2510805.00



HP MAG 125 PL  
Magnetic Mount  
P/N 2511202.05



HP 2000  
HP 140-175



HP 2000 C

# MD 118-137 aviation

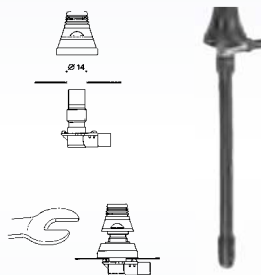
# TAIFUN 118-480

# MC 380-400

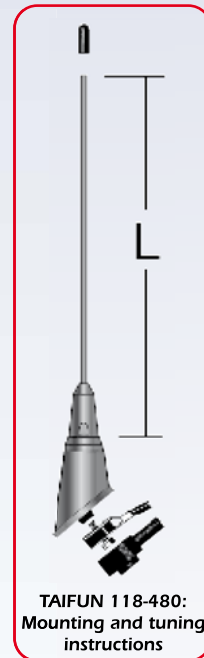
### Features:

- # Mobile antenna, Mono-band
- # Unity-gain, Omnidirectional
- # MD 118-137: recommended for installation on small aircraft; bottom flexible steel radial
- # MD 118-137, TAIFUN: 17/7 PH stainless steel cylindrical whip, detachable for car-washes
- # TAIFUN 118-480: tunable by whip cutting
- # MC 380-400: Protection from static discharges DC-Ground;
- # MC 380-400: Supplied with a strong stainless steel spring,
- # MC 380-400: Designed to work without Ground Plane

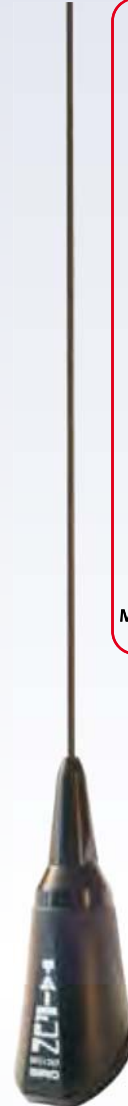
### MD 118-137: Mounting instructions



MD 118-137  
aviation



TAIFUN 118-480:  
Mounting and tuning  
instructions



TAIFUN 118-480

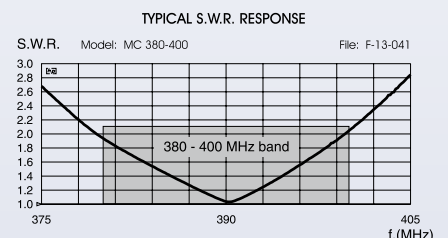
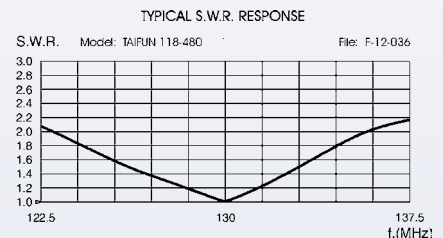


MC 380-400

Electrical Data	MD 118-137	TAIFUN 118-480	MC 380-400
Type	Dipole 1/2 $\lambda$ with loaded radial	1/4 $\lambda$ Mobile Antenna	1/2 $\lambda$
Frequency Range	118-137 MHz	tunable 118...480 MHz	380-400 MHz @ SWR $\leq$ 2.1
Impedance	50 $\Omega$		
Radiation (H-plane)	360° Omnidirectional		
Polarization	Linear Vertical		
Gain	0 dBd - 2.15 dBi	0 dB ref. to $\lambda/4$ whip	0 dBd - 2.15 dBi
SWR @ res. freq.	$\leq$ 1.5	$\leq$ 1.5	$\leq$ 1.2
Max Power (CW) @30°C	50 Watts	100 Watts	30 Watts
Grounding Protection	/	/	All metal parts are DC-grounded, inner conductor coupled capacitively
Standard Mount	/	/	"M1" bracket
Cable Length / Type	5 m / RG 58	5.5 m / RG 58	1.5 m / Low Loss
Cable Connector	FME-female	/	TNC-male

### Mechanical Data

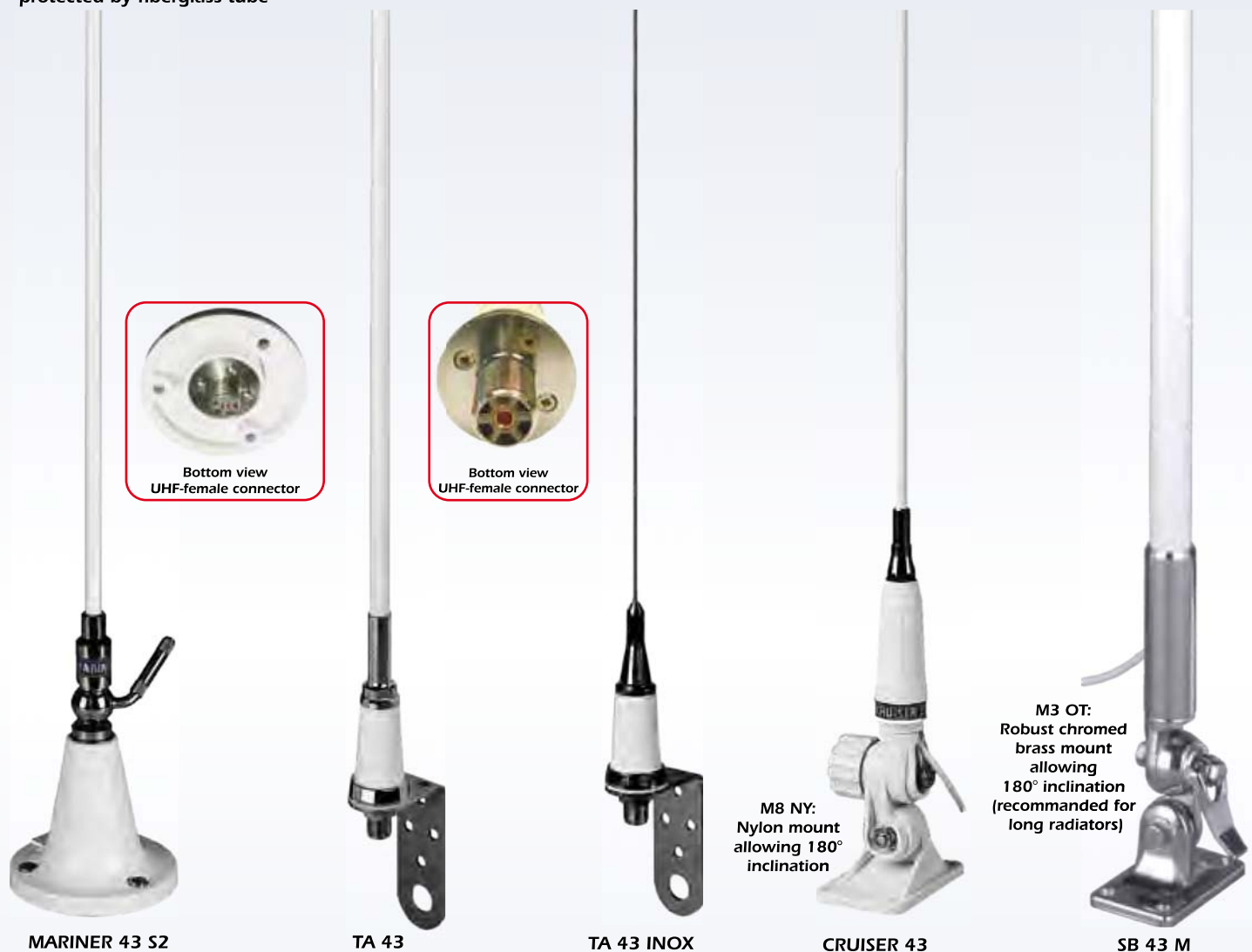
Materials	Black Stainless Steel 17/7 PH, Chromed Brass, Nylon, Zamac	Black Stainless Steel 17/7 PH, Chromed Brass, Nylon	Fiberglass, Chromed Brass, Stainless Steel, Nylon
Wind Resistance	220 Km/h	/	/
Height (approx.)	760 mm	700 mm	355 mm (without bracket)
Weight (approx.)	330 gr	350 gr	500 gr
Mounting Hole	$\varnothing$ 14 mm	$\varnothing$ 10 mm	/
P/N	2214806.26	2204715.00/VHF	2216320.80



## Marine antennas 43 MHz

### Features:

- # Omnidirectional marine antenna, Mono-band, Unity-gain, Designed to work without Ground Plane
- # Protection from static discharges DC-Ground, Perfect protection against the worst weather conditions; Stainless steel hardware
- # MARINER 43 S2, TA 43: High quality white fiberglass tapered whip; TA 43 INOX: 17/7 PH tapered stainless steel whip
- # SB 43 M, CRUISER 43: Supplied with white coaxial cable RG-58 C/U directly connected, High quality whip made of brass and copper protected by fiberglass tube



MARINER 43 S2

TA 43

TA 43 INOX

CRUISER 43

SB 43 M

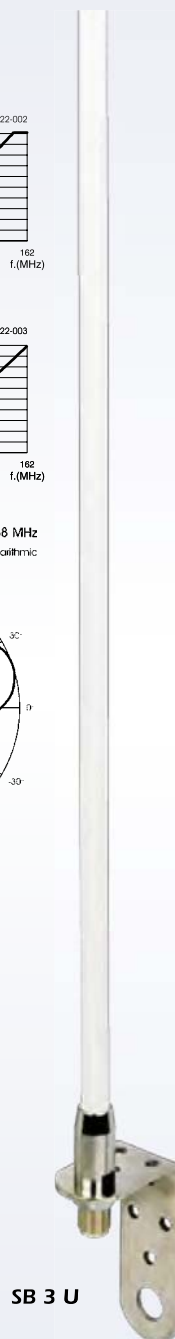
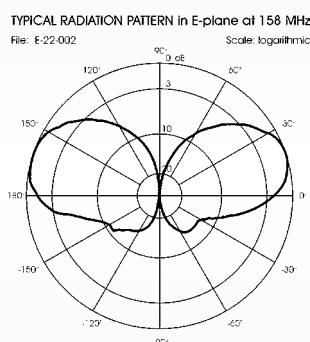
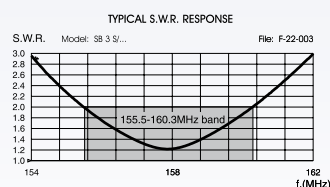
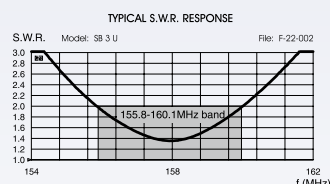
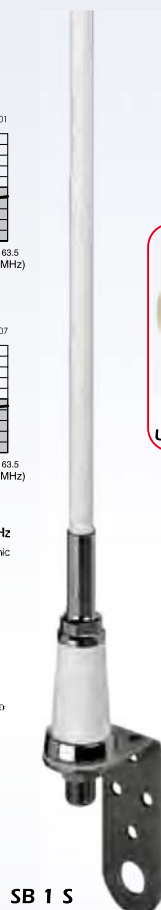
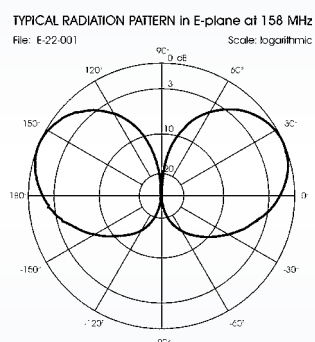
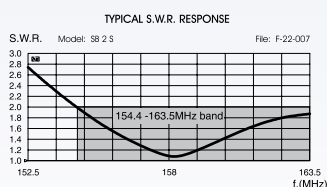
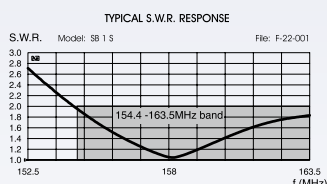
Electrical Data	MARINER 43 S2	TA 43	TA 43 INOX	SB 43 M	CRUISER 43
Type	1/4 $\lambda$ base loaded	1/4 $\lambda$ base loaded	1/4 $\lambda$ base loaded	3/8 $\lambda$	1/4 $\lambda$ base loaded
Frequency Range	39.4 - 46 MHz @ SWR $\leq$ 2	39.7 - 46.3 MHz @ SWR $\leq$ 2	39.7 - 46.3 MHz @ SWR $\leq$ 2	36.9 - 48.9 MHz @ SWR $\leq$ 2	38.9 - 47.3 MHz @ SWR $\leq$ 2
Impedance	50 $\Omega$				
Radiation (H-plane)	360° Omnidirectional				
Polarization	Linear Vertical				
Gain	0 dBd, 2.15 dBi				
Max Power (CW) @30°C	50 Watts				
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short				
Standar Mount	/	"M-1"	"M-1"	"M3-OT"	"M8-NY"
Cable Lenght / Type	/	/	/	7 m / white RG 58	5 m / white RG 58
Connector	UHF-Female	UHF-Female	UHF-Female	/	/
Mechanical Data					
Materials	Fiberglass, Nylon, Chromed Brass	Fiberglass, Nylon, Chromed Brass	Stainless Steel 17/7PH Chromed Brass, Nylon	Fiberglass, Chromed Brass, Nylon	Fiberglass, Chromed Brass, Nylon
Height (approx.)	1420 mm	1070 mm	1050 mm	2600 mm	1505 mm
Weight (approx.)	455 gr	385 gr	350 gr	1720 gr	720 gr
P/N	2304020.85	2304320.80	2304305.80	2304220.84	2304120.83

## SB series

### 156-163 MHz

#### Features:

- # Omnidirectional marine antenna, Mono-band, Designed to work without Ground Plane, SB 1, SB 2: Unity-gain. SB 3: Low-gain
- # Protection from static discharges DC-Ground, Perfect protection against the worst weather conditions, Stainless steel hardware
- # Provided with stainless steel bracket for an easy installation on mast top
- # SB 1, SB 3: High quality whip made of brass and copper protected by fiberglass tube; SB 2: 17/7PH tapered stainless steel whip



Electrical Data	SB 1 S	SB 2 S	SB 3 U	SB 3 S/...
Type	1/2 $\lambda$ base loaded		3/4 $\lambda$ J-pole	
Frequency Range @ SWR $\leq$ 2	154.4-163.5 MHz	154.4-163.5 MHz	155.8 - 160.1MHz	155.5 -160.3 MHz
Impedance	50 $\Omega$			
Radiation (H-plane)	360° Omnidirectional			
Radiation (E-plane)	Beamwidth @ -3dB=60°		Beamwidth @ -3dB=39°	
Radiation angle	23°		21°	
Polarization	Linear Vertical			
Gain	0 dBd, 2.15 dBi		2 dBd, 4.15 dBi	
Max Power (CW) @ 30° C	100 Watts			
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short			
Standard Mount	“M-1”			
Cable Lenght / Type	/	/	/	5, 18 or 25m/white RG58
Connector	UHF-Female	UHF-Female	UHF-female	/

#### Mechanical Data

Materials	Fiberglass, Chromed Brass, Nylon	17/7 PH Stainless Steel, Chromed Brass	Fiberglass, Chromed Brass, Nylon	Fiberglass, Chromed Brass, Nylon
Height (approx.)	1060 mm	1050 mm	1465 mm	1465 mm
Weight (approx.)	380 gr	330 gr	300 gr	485 gr
P/N	2300420.80	2301105.80	2300520.80	/
P/N 5 m cable	/	/	/	2300620.80
P/N 18 m cable	/	/	/	2300720.80
P/N 25 m cable	/	/	/	2301020.80



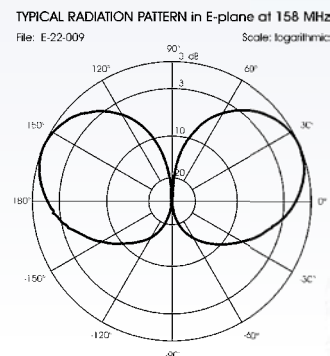
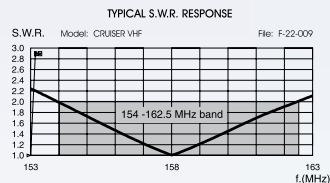


# CRUISER VHF, SB 3 M, SB 6 M

## 156-163 MHz

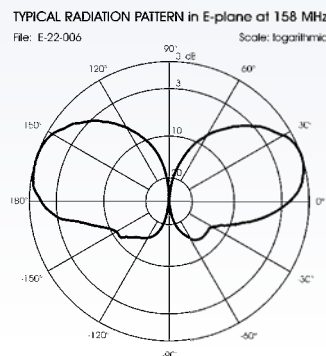
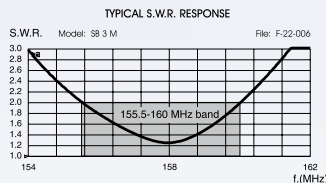
### Features:

- # Omnidirectional marine antenna, Mono-band, Designed to work without Ground Plane;
- # CRUISER VHF: Unity-gain, SB 3 M: Low-gain, SB 6 M: Medium-gain
- # Protection from static discharges DC-Ground; Perfect protection against the worst weather conditions; Stainless steel hardware
- # CRUISER VHF: 180° inclination and adjustable whip; High quality white fiberglass conic whip
- # SB 3 M, SB 6 M: High quality whip made of brass and copper protected by fiberglass tube



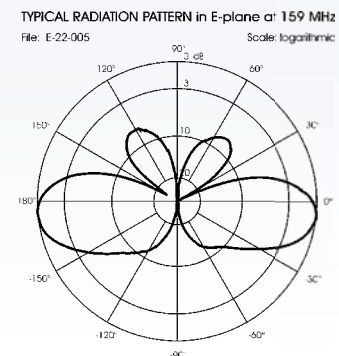
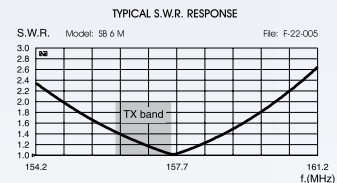
**M8 NY:**  
Nylon mount  
allowing 180°  
inclination

CRUISER VHF



**M8 NY:**  
Nylon mount  
allowing 180°  
inclination

SB 3 M



**M3 OT:**  
Robust chromed  
brass mount  
allowing  
180° inclination  
(recommended for  
long radiators)

SB 6 M

Electrical Data	CRUISER VHF	SB 3 M	SB 6 M
Type	1/2 λ. base loaded	3/4 λ. J-pole	2 x 1/2 λ. Colinear
Frequency Range	154-162.5 MHz @ SWR ≤2	155.5-160 MHz @ SWR ≤2	156-157.4 MHz @ SWR ≤ 1.5
Impedance	50 Ω		
Radiation (H-plane)	360° Omnidirectional		
Radiation (E-plane)	Beamwidth @ -3dB = 60°	Beamwidth @ -3dB = 39°	Beamwidth @ -3dB = 44°
Radiation angle deg.	23°	21°	8°
Polarization	Linear Vertical		
Gain	0 dBd, 2.15 dBi	2 dBd - 4.15 dBi	3.8 dBd - 6 dBi
Max Power (CW) @ 30° C	100 Watts		
Grounding Protection	All metal parts are DC-grounded, the inner conductor is coupled capacitively	All metal parts are DC-grounded, the inner conductor shows a DC short	All metal parts are DC-grounded, the inner conductor shows a DC short
Standar Mount	"M8-NY"	"M8-NY"	"M3-OT"
Cable Lenght / Type	5.5 m / white RG 58	5 m / white RG 58	7 m / white RG 58
<b>Mechanical Data</b>			
Materials	Fiberglass, Chromed Brass, Nylon		
Height (approx.)	1100 mm	1480 mm	2600 mm
Weight (approx.)	680 gr	750 gr	1700 gr
P/N	2301520.83	2300820.83	2300920.84

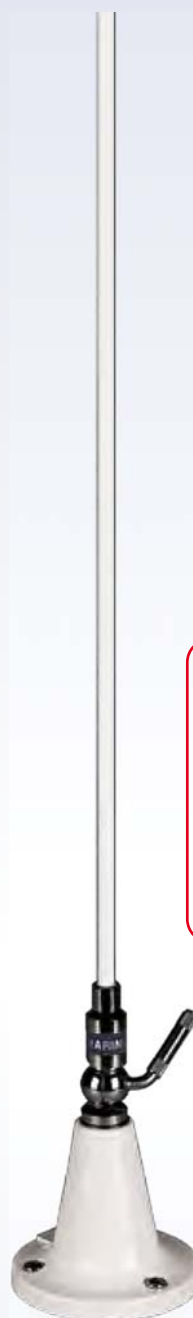
## MARINER 160 series

156-163 MHz

### Features:

- # Marine antenna, Mono-band
- # Omnidirectional
- # MARINER 160 S2 Unity-gain,  
MARINER 160 S3 Low-gain
- # Designed to work without Ground Plane
- # Protection from static discharges DC-Ground
- # Stainless steel hardware
- # High quality white fiberglass whip
- # 180° inclination and adjustable whip

Electrical Data	MARINER 160 S2	MARINER 160 S3
Type	1/2 $\lambda$	2 x 1/2 $\lambda$ colinear
Frequency Range	155.2 - 161.8 MHz @ SWR $\leq 2$	155.3 - 160.8 MHz @ SWR $\leq 2$
Impedance	50 $\Omega$	
Radiation (H-plane)	360° Omnidirectional	
Radiation (E-plane)	Beamwidth @ -3dB=60°	Beamwidth @ -3dB=35°
Radiation angle deg.	23°	-14°
Polarization	Linear Vertical	
Gain	0 dBd - 2.15 dBi	2 dBd - 4.15 dBi
Max Power (CW) @30°C	100 Watts	
Grounding Protection	All metal parts are DC-grounded, the inner conductor is coupled capacitively	
Connector	UHF-female	
Mechanical Data		
Materials	Fiberglass, Chromed Brass, Nylon	
Height (approx.)	900 mm	2000 mm
Weight (approx.)	420 gr	530 gr
P/N	2300320.82	2301620.82

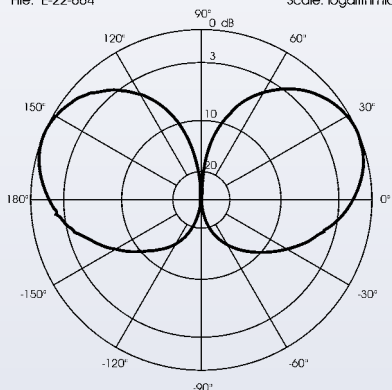


MARINER 160 S2



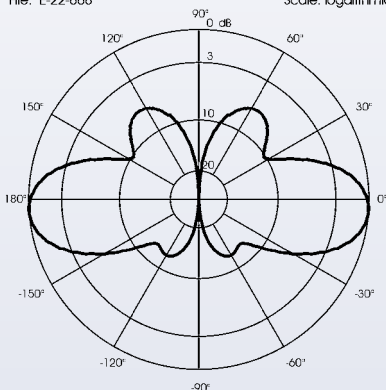
MARINER 160 S3

TYPICAL RADIATION PATTERN in E-plane at 158 MHz  
File: E-22-004 Scale: logarithmic



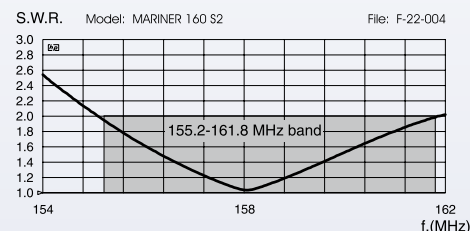
MARINER 160 S2

TYPICAL RADIATION PATTERN in E-plane at 158 MHz  
File: E-22-008 Scale: logarithmic

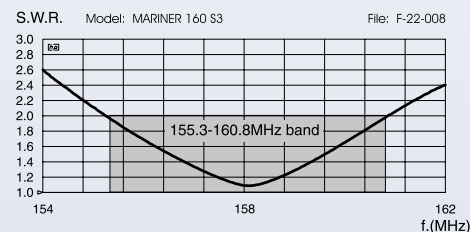


MARINER 160 S3

TYPICAL S.W.R. RESPONSE



TYPICAL S.W.R. RESPONSE





### "S" Mount

Frequency Range: from DC to 300 MHz  
 Overall Size:  $\varnothing$  42 mm  
 Mounting Hole:  $\varnothing$  19 mm  
 1 "S" Chrome ..... 2501002.01  
 2 "S" Black ..... 2501002.02



### "SL" Mount

Frequency Range: from DC to 500 MHz  
 Overall Size:  $\varnothing$  39 mm  
 Mounting Hole:  $\varnothing$  19 mm  
 1 "SL" Chrome ..... 2501102.01  
 2 "SL" Black ..... 2501102.02



### "SL-S" Mount

Frequency Range: from DC to 500 MHz  
 Overall Size:  $\varnothing$  39 mm  
 Mounting Hole:  $\varnothing$  19 mm  
 "SL-S" Black ..... 2501102.04



### "ML" Mount

Frequency Range: from DC to 1000 MHz  
 Overall Size:  $\varnothing$  30mm  
 Mounting Hole:  $\varnothing$  14 or 18 mm  
 "ML" ..... 2501202.06



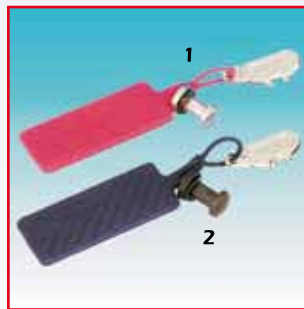
### "Screw & Bolt"

Materials: Chrome plated Brass and Zamak  
 1 Chrome ..... 2506206.00  
 2 Black ..... 2506207.00



### "Wing Bolt"

Materials: Chrome plated Brass  
 1 Chrome ..... 2506306.00  
 2 Black ..... 2506307.00



### "Safety Set"

Materials: Chrome plated Brass and Zamak  
 1 Chrome ..... 2506506.00  
 2 Black ..... 2506507.00



### "TRUNK TOP 2" Mount

Cable / Connector: 5.5m RG 58 / UHF-male  
 Connection: UHF-female or DV joint  
 DV to PL Chrome ..... 2504406.12  
 DV to PL Black ..... 2504407.13



### "ABN" Trunk Mount

Fixing Hole:  $\varnothing$  16 mm  
 Material: Painted Steel  
 ABN Black ..... 2504105.00



### "KF" Gutter Mount

Fixing Hole:  $\varnothing$  16 mm  
 Material: Painted Zamak  
 1 KF Black only ..... 2504205.00  
 1 + 2 KF Black w/Cable SO239 ..... 2504205.20



### "FT-2 Universal", "FT-3", "FT-4" Fixing Bracket

Top Size for antenna fitting: FT-2, FT-4 =  $\varnothing$  38 mm, FT-3 =  $\varnothing$  30 mm  
 Bottom Size: FT-2 =  $\varnothing$  45/50 mm most fitting, FT-3 =  $\varnothing$  35/54 mm most fitting, FT-4 = 2x  $\varnothing$  9 mm wall fitting (screws not included).  
 Weight (approx.): FT-2 = 1100 gr, FT-3 = 350gr, FT-4 = 780gr  
 Material: FT-2, FT-4 = Galvanized Steel, FT-3 = Anodized aluminium, Stainless steel  
 FT-2 Universal ..... 2510004.00, FT-3 ..... 2511301.00, FT-4 ..... 2513404.00



### "M-1", "M-2" Marine Brackets

Dimension: M1: 38x64x98mm, M2: 38x100x180mm  
 Material: Stainless Steel. Mounting Hole: 2x  $\varnothing$  16mm  
 1 M-1 Marine Bracket ..... 2503503.00  
 2 M-2 Marine Bracket ..... 2503203.00  
 3 With Optional fixing set ..... 2503203.00/SA or 2503503.00/SA



### "M-3" Marine Mount

Connection: standard 1"x14 threads  
 Dimension L x W x H : 60 x 95 x 130 mm  
 Weight (approx.): 860 gr  
 Materials: Chromed Brass, Stainless steel hardware  
 M-3 OT Marine Mount ..... 2503606.00



### "M-8" Marine Mount

Connection: standard 1"x14 threads  
 Dimension L x W x H : 67 x 94 x 124 mm  
 Weight (approx.): 330 gr  
 Materials: Nylon, Stainless steel hardware  
 M-8 NY Marine Mount ..... 2503301.00



### "M-10" Marine Mount

Connection: standard 1"x14 threads  
 Fixing diameter: 1"  
 Weight (approx.): 600 gr  
 Materials: Chromed Brass, Stainless steel hardware  
 M-10 OT Marine Mount ..... 2503406.00





### "MAG H 12" Magnet Mount

Frequency Range: from DC to 500 MHz. Overall size: Ø 92 mm  
 Materials: Ferrite magnet, Chromed Brass, Nylon, Rubber protection  
 Cable / Connector: 3.6 m RG 58 / PL 259 R male

MAG H 12 PL .....	2502502.05
MAG H 12 S .....	2502502.01
MAG H 12 S Black .....	2502502.02
MAG H 12 3/8 .....	2502502.03



### "MAG 145" Magnet Mount

Frequency Range: from DC to 500 MHz. Overall size: Ø 160 mm  
 Materials: Ferrite magnet, Chromed Brass, Nylon, Rubber protection  
 Cable / Connector: 3.6 m RG 58 / PL 259 R male

MAG 145 PL .....	2502702.05
MAG 145 S .....	2502702.01
MAG 145 S Black .....	2502702.02
MAG 145 3/8 .....	2502702.03



### "HP MAG H 12 PL" Magnet Mount

Frequency Range: from DC to 500 MHz  
 Overall size: Ø 92 mm  
 Materials: Ferrite magnet, Chromed Brass, Nylon, Rubber protection, Teflon insulator, Gold plated pin  
 Cable: 3.6m RG58 C/U MIL C17  
 HP MAG H 12 PL .....

2511802.05



### "HP-AC/U" Angular Connector

Frequency Range: from DC to 500 MHz.  
 Materials: Brass nichel plated, Teflon insulator, 5m RG58 C/U MIL C17  
 HP-AC/U .....

2510805.00

## AVAILABLE CONNECTION



### MAG .... S

Tilttable Joint Chromed or black



### MAG .... PL

UHF-female connector



### MAG .... 3/8

3/8" connection



### "MAG 125" Magnet Mount

Frequency Range: from DC to 500 MHz. Overall size: Ø 127 mm  
 Materials: Ferrite magnet, Chromed Brass, Nylon, Rubber protection  
 Cable / Connector: 3.6 m RG 58 / PL 259 R male

MAG 125 PL .....	2502602.05
MAG 125 S .....	2502602.01
MAG 125 S Black .....	2502602.02
MAG 125 3/8 .....	2502602.03



### "MAG 160" Magnet Mount

Frequency Range: from DC to 500 MHz. Overall size: Ø 166 mm  
 Materials: Chromed Brass, Nylon, Magnetic Rubber  
 Cable / Connector: 3.6 m RG 58 / PL 259 R male

MAG 160 PL .....	2502802.05
MAG 160 S .....	2502802.01
MAG 160 S Black .....	2502802.02
MAG 160 3/8 .....	2502802.03



### "HP MAG 125 PL" Magnet Mount

Frequency Range: from DC to 500 MHz  
 Overall size: Ø 127 mm  
 Materials: Ferrite magnet, Chromed Brass, Nylon, Rubber protection, Teflon insulator, Gold plated pin  
 Cable: 3.6m RG58 C/U MIL C17  
 HP MAG 125 PL .....

2511202.05



### "Antennas Display"

Materials: Silver painted zamak with rubber gasket  
 Fixing Hole: 8 x Ø 12.5 mm  
 ANTENNAS DISPLAY .....

2508008.00

### "Antennas' Dispenser"

Overall Dimension W x H: 86 x 230 cm  
 Material: Painted steel.  
 Antenna's dispenser .....

Max weight capacity: 20 Kg  
 32.0002




**SMA-male**

Frequency: from DC to 9 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.SMA001.00  
 Crimp type for RG 174, RG 316 ..... 30.SMA002.00


**SMA-female**

Frequency: from DC to 9 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.SMA003.00  
 Crimp type for RG 174, RG 316 ..... 30.SMA004.00


**SMA-male Reverse Polarity**

Frequency: from DC to 9 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.SMA005.00  
 Crimp type for RG 174, RG 316 ..... 30.SMA006.00


**SMA-female Panel**

Frequency: from DC to 9 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.SMA008.00  
 Crimp type for RG 174, RG 316 ..... 30.SMA007.00


**FME-male**

Materials: Nickel plated brass, Teflon insulator, Gold plated central pin.  
 Crimp type for RG 58, CO 100 ..... 30.FME001.00  
 Crimp type for RG 174, RG 316 ..... 30.FME005.00


**FME-female**

Materials: Nickel plated brass, Delrin insulator, Gold plated central pin.  
 Crimp type for RG 58, CO 100 ..... 30.FME002.00  
 Crimp type for RG 174, RG 316 ..... 30.FME003.00


**N-male**

Frequency: from DC to 6 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.N001.00


**N-female**

Frequency: from DC to 6 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.N002.00


**BNC-male**

Frequency: from DC to 4 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.BNC001.00


**TNC-male**

Frequency: from DC to 4 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.TNC001.00


**TNC-male Reverse Polarity**

Frequency: from DC to 4 GHz. Materials: Nickel plated brass, Teflon insulator, Gold plated pin.  
 Crimp type for RG 58, CO 100 ..... 30.TNC002.00


**FME-m / UHF-m adaptor**

Materials: Nickel plated brass, Delrin insulator, Gold plated central pin.  
 P/N ..... 30.AD002.00


**FME-m / TNC-m adaptor**

Materials: Nickel plated brass, Delrin insulator, Gold plated central pin.  
 P/N ..... 30.AD003.00


**FME-m / Mini UHF-m adaptor**

Materials: Nickel plated brass, Delrin insulator, Gold plated central pin.  
 P/N ..... 30.AD004.00


**FME-m / BNC-m adaptor**

Materials: Nickel plated brass, Delrin insulator, Gold plated central pin.  
 P/N ..... 30.AD005.00


**FME-m / N-m adaptor**

Materials: Nickel plated brass, Delrin insulator, Gold plated central pin.  
 P/N ..... 30.AD006.00

## COAXIAL CABLES Data

Type	Impedance	External diameter	Colour
<b>RG 58 C/U</b>	<b>50 Ω</b>	<b>4.95 mm</b>	<b>Black</b>
<b>CO 100</b>	<b>50 Ω</b>	<b>4.95 mm</b>	<b>White</b>
<b>RG 174</b>	<b>50 Ω</b>	<b>2.8 mm</b>	<b>Black</b>
<b>RG 316/U</b>	<b>50 Ω</b>	<b>2.5 mm</b>	<b>Brown</b>

### Attenuation dB for 100 m

Freq. Cable	25 MHz	50 MHz	100 MHz	200 MHz	300 MHz	400 MHz	500 MHz	800 MHz	1 GHz	1.6 GHz	1.8 GHz	2.0 GHz	2.2 GHz	2.4 GHz	2.5 GHz	3.0 GHz
<b>RG 58 C/U</b>	7	10	15	21	26	30	34	44	50	66	70	76	78	86	87	98
<b>CO 100</b>	5	7	10	14	17	20	23	29	33	42	45	48	50	53	54	60
<b>RG 174</b>	13	18	27	39	48	56	64	84	95	124	133	141	150	159	162	184
<b>RG 316/U</b>	12	17	26	38	47	55	62	80	91	118	126	134	141	149	152	169

## Introduction to the radiation patterns coordinate and plotting.

The technical data published on this catalog have been measured by means of the last generation of sophisticated equipment to minimise doubts or mistakes on measurements. When comparing two radiation diagrams you should keep into consideration following points:

- # Check that all patterns in this catalog have been normalized ( the outside of the pattern is the maximum gain of the antenna).
- # A very important point to remember it is that the shape of a pattern ( its general appearance ) is highly dependent on the grid system used for the plotting.
- # Our radiation polar patterns are represented in 30 dB logarithmic grid scale like most part of manufacturers. The main goal of such diagrams is to amplify the maximum gain area to better show all details.

## Gain measurement methods.

The gain values for base and marine antennas are expressed in dBd (Decibel relative to 1/2 wave dipole) and they are the result of the comparison between the reference antenna, in this case the 1/2 wave dipole, and the antenna to test. Same measurement method is used for vehicular antennas but the difference is the reference antenna which is a 1/4 wave whip mounted on centre car roof. It's possible to calculate the gain value in dBi (decibel relative to Isotropic radiator) or in dBd (decibel relative to 1/2 wave dipole) by adding or deducting 2.14 to the available value. If the available value is expressed in dBd you should add 2.14 to get the equivalent in dBi (Ex: 3 dBd + 2.14 = 5.14 dBi); if the value is expressed in dBi you should deduct 2.14 to get the equivalent value in dBd (Ex: 5.14 dBi - 2.14 = 3 dBd).

## Antenna radiation patterns.

An antenna radiating in space produces all around a high frequency electromagnetic field that can be considered as a 3D solid part ( see fig 3-A and 3-B). The radiation diagram is the graphic representation in polar or rectangular coordinates of the function signal-angle and it is a section of the solid diagram in its two main planes: electrical plane E (it contains the radiant element) and magnetic plane H (it's perpendicular to the radiant element).

From the radiation diagram you can get quite important parameters like:

Radiation Angle, Half Power Beamwidth, side lobes level, front-to-back ratio.

Radiation angle ( A ): is the angular value expressed in degree (°) respect to the horizon where the maximum gain has been measured (see fig 1 and fig 2). This is a very important value for long distance connection (DX) both for the omnidirectional and directional antennas. This parameter is directly influenced by the relation between wave-length and ground height.

Half Power Beam Width (  $\alpha$  ): is the angular value expressed in degree (°) inside which the radiated power is reduced of one half (-3 dB) respect to the maximum value (see fig 1 and fig 2). The -3 dB beamwidth is related to gain. The relationship is such that when gain increases the beamwidth decreases and vice versa.

Side lobes level ( B ): Side lobes are spurious lobes more or less marked that normally are closed to the main lobe and waste power towards undesired directions (see fig 1 and fig 2). To get a better efficiency and higher gain of the main lobe it's necessary to reduce the side lobes to an acceptable level.

Front to back ratio or F/B ratio ( C ): indicated only for directional antennas like: yagi, log-periodic, horn, etc. it is the ratio of the radiated power in a maximum radiation direction to the radiated power in the opposite direction (at 180° from maximum, see fig 1).

## Frequency range,Bandwidth and SWR measurement

For fixed frequency antennas the frequency range is the width inside which the SWR values are kept within specified limits (see fig 4-A). For frequency tunable antennas the frequency range is the frequency shift of resonance from the lower frequency to the high frequency, and the bandwidth is the width inside which the SWR values are kept within specified limits (see fig 4-B). In our technical data the SWR limit are from 1.5 to 2 (according to the model) and the SWR at frequency resonance is typically lower than 1.2. All our published technical data are measured at the antenna connector.

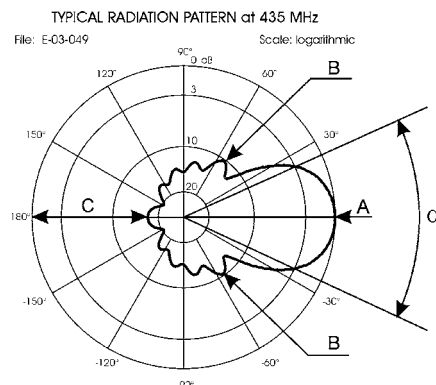


Fig 1

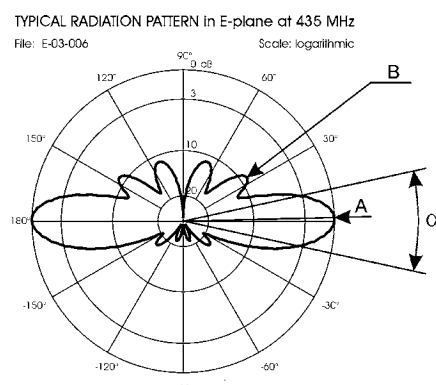


Fig 2

Yagi 3D radiation pattern

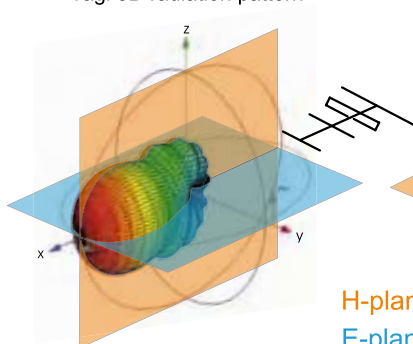
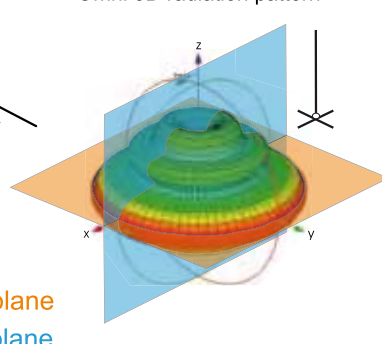


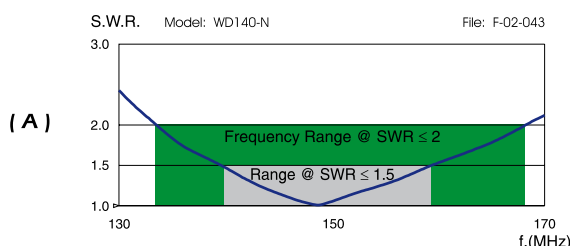
Fig 3 ( A )

Omni 3D radiation pattern



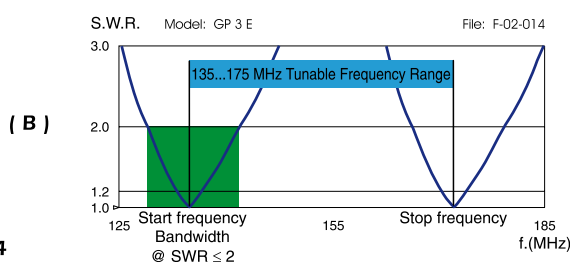
( B )

## TYPICAL S.W.R. OF FIXED FREQUENCY ANTENNAS



( A )

## TYPICAL S.W.R. OF TUNABLE FREQUENCY ANTENNAS



( B )

Fig 4

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Antennas designed and manufactured in Italy