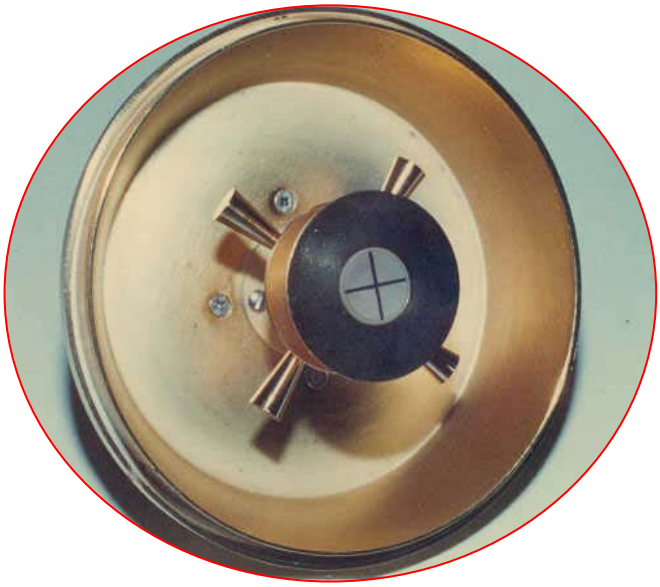
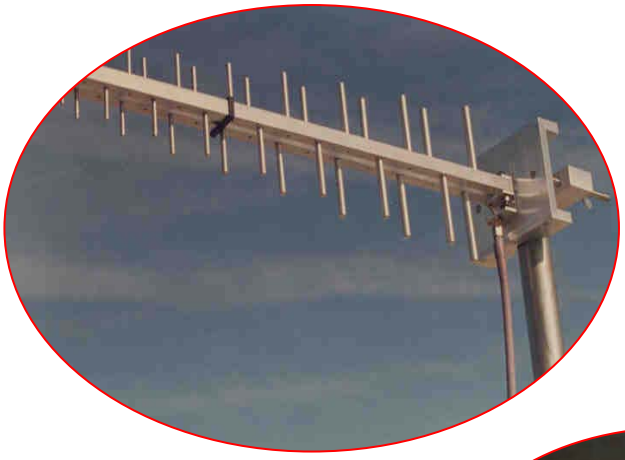
SAMA SISTEMI S.r.l.



CATALOG

Civil and Military Telecommunication Sistems



ISO 9001
CERTIFIED

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- INTRODUCTION -

SAMA SISTEMI S.r.l. was founded by a team of specialist in antennas field. The activity planned by the company is the design, develop and manufacturing of antennas for fixed, mobile communication and also special antennas according to customers requirements (**Telemetry – Field measurement – High temperature Operation – missile application – High security – Ultra broad-band antennas High efficiency and size reduced antennas – Conformal antennas – etc…..)**

Our antennas are realized according to highest standard for civil use, or to MIL specs for military application.

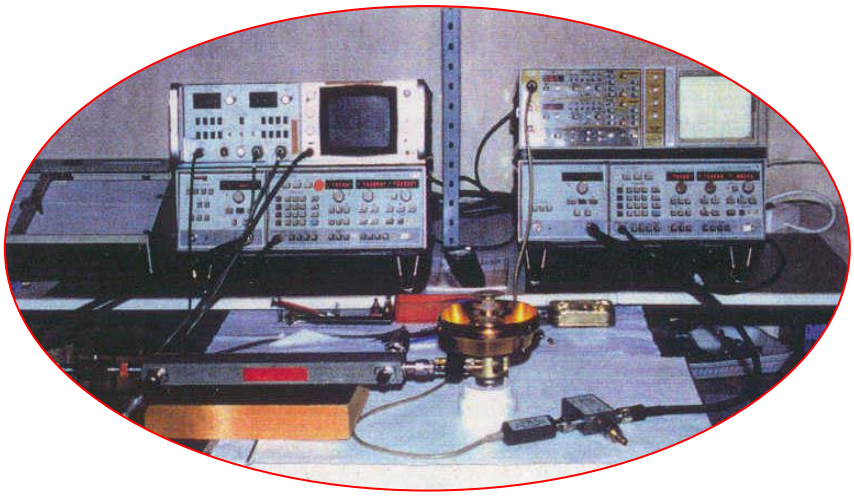
SAMA SISTEMI S.r.l. has ISO 9001 – 2000 qualification

SAMA SISTEMI S.r.l. has capability in design and manufactor for several types of antennas from HF to EHF (50 GHz) and an Anechoic Chamber " CTR type " for radiation pattern measurements and recording.

SAMA SISTEMI S.r.l. has in house all the facilities necessary to the production of all the device in this catalog.

Trough extensive use of quality control drawings and with the application of quality incoming inspection procedures can ensure that all purchased raw materials are of the required type.

For programs requiring high reliability and extreme care, such as in satellite and missile application SAMA SISTEMI S.r.l. has fully implemented the necessary technical combination of hardware and software capabilities well suited to produce " HI-REL " components.



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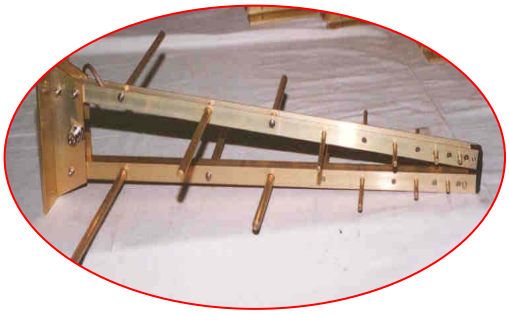

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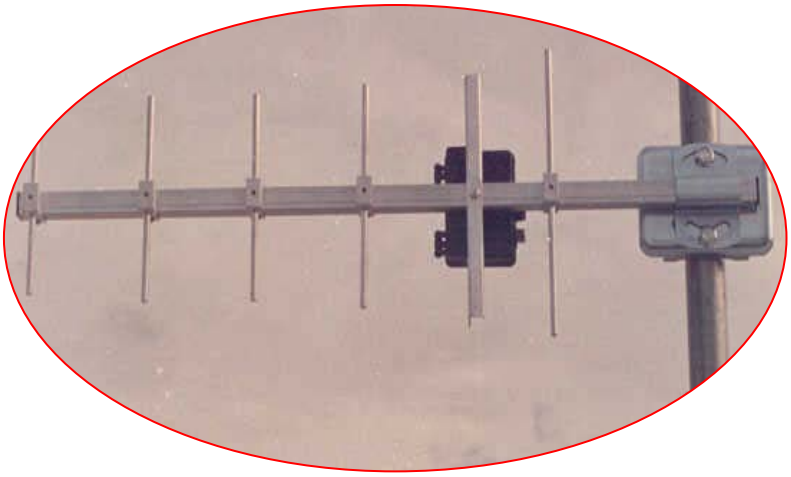
BASE STATION ANTENNAS

-

(Single Yagi Antenna)

Frequency (MHz)	Model
60 – 87.5	SYA – 110
144 – 174	SYA – 116
450 – 480	SYA – 122
870 – 960	SYA – 128
1.700 – 1.880	SYA – 134
1.850 – 1.990	SYA – 140
2.100 – 2.300	SYA - 160

(*) Other frequencies are available upon request



Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 1.5 : 1
• **Gain (dBi)**	See table 1
• **Polarization**	Linear PO / PV
• **Beamwidth**	**E-plane:** 52°
	H-plane: 60°
• **Input connector**	N - f / SMA – f
• **Front-back ratio**	≥ 15 dB
• **Max power (W)**	100
• **Lighting protection**	DC grounded

Properties

- **Higly directional**
- **Light weight**
- **Excellent resistance to rough weather**
- **Easy installation**

Mechanical Data

• **Radiating elements**	Aluminium Alloy
• **Support boom**	Aluminium Alloy
• **Mounting bracket**	Galvanized Steel
• **Mounting diameter**	30 – 60 mm
• **Finish**	Epoxy Paint Grey
• **Wind load**	100 mph - 160 km/h
• **Temperature range**	-20°C - +60°C

Tab.1

N° Elements	Gain
2	5
3	6.5
4	8
5	9
6	10
7	10.4
10	11.2

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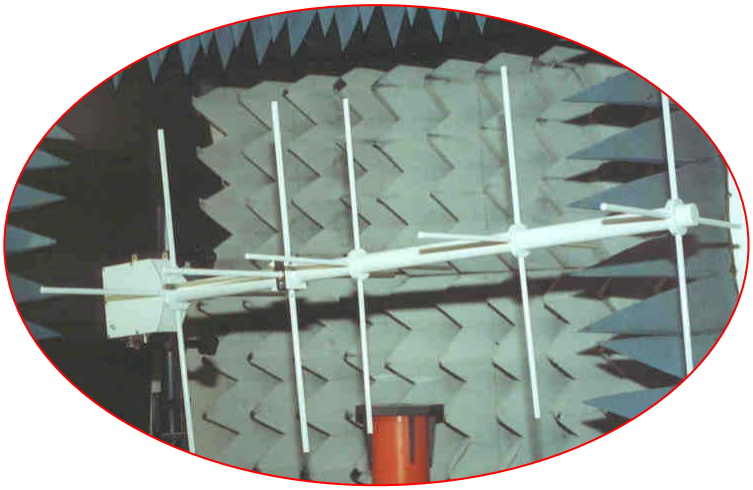
BASE STATION ANTENNAS

-

(Crossed - Yagi Antenna)

Frequency (MHz) (*)	Model
230 – 260	CYA – 210
400 – 440	CYA – 216

(*) Other frequencies are available upon request



Electrical Data

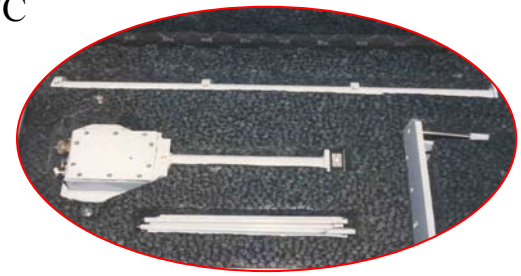
Impedance (Ω)	50
V.S.W.R. at Fo	≤ 1.8 : 1
Gain (dBi)	9 for 5 elements
Polarization	Circular LH / RH
Input connector	Type BNC-f / N-f
Front-back ratio	≥ 12 dB
Max power (W)	100
Lighting protection	DC Grounded
Isolation between pol.	≥ 20 dB

Properties

- **Higly directional**
- **Easy installation**
- **Excellent Gain**

Mechanical Data

Radiating elements	6061–T6 Aluminium
Support boom	6061–T6 Aluminium
Mounting bracket	Stainless Steel
Mounting diameter	30 – 60 mm
Finish	Epoxy Pain Grey
Wind load	75 mph – 120 km/h
Temperature range	-20°C / +60°C



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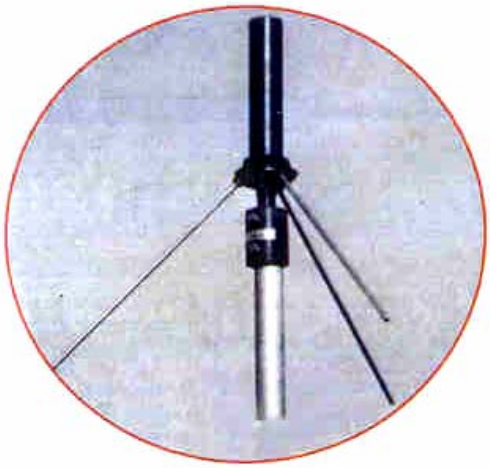
BASE STATION ANTENNAS

-

(Ground Plane Antenna)

Frequency (MHz) (*)	Model
68 – 88	GPA – 78
88 – 108	GPA – 98
118 – 136	GPA – 127
225 – 400	GPA – 310
860 – 960	GPA – 900
920 – 960	GPA – 940

(*) Other frequencies are available upon request



Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 1.5 : 1
• **Gain (dBi)**	2
• **Polarization**	Vertical
• **Beamwidth**	**E-plane:** 80°
	H-plane: omni +/- 0.6 dB
• **Input connector**	SMA – f / N – f
• **Max power (W)**	5 ÷ 50
• **Lighting protection**	DC Grounded

Properties

- **Nominal central freq. (Fo) must be specified**
- **Can be stacked in array to achieve desired Pattern**
- **Low maintenance**
- **Easy installation**

Mechanical Data

• **Radiating elements**	6061-T6 Aluminium
• **Protection cover**	PVC / Fiberglass
• **Mounting bracket**	Stainless Steel
• **Mounting diameter**	30 – 60 mm
• **Finish**	Epoxy Paint Grey
• **Wind load**	75 mph – 120 km/h
• **Temperature range**	-20°C / +50°C

Frequency (MHz)	Model
1.050 – 1.180	GPA - 1110
1.150 – 1.350	GPA – 1245
1.350 – 1.550	GPA – 1450
1.500 – 1.700	GPA – 1600
1.700 – 1.900	GPA – 1800
1.850 – 2.000	GPA - 1900
2.000 – 2.150	GPA – 2100
2.150 – 2.400	GPA - 2250
2.300 – 2.500	GPA – 2400
2.400 – 2.500	GPA - 2450
2.700 – 2.900	GPA - 2800

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BASE STATION ANTENNAS

-

(Vertical Collinear Antenna)

Frequency (MHz) (*)	Model
118 – 136	VCA - 410
100 – 156	VCA - 425
225 – 400	VCA - 440
430 – 440	VCA – 435
860 – 940	VCA - 900
920 – 960	VCA - 940
2.100 - 2.300	VCA – 2200
2.300 – 2.500	VCA - 2400
2.500 – 2.700	VCA - 2600

(*) Other frequencies are available upon request

Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 1.6 : 1
• **Gain (dBi)**	2 - 8
• **Polarization**	Vertical
• **Beamwidth**	**E-plane:** 40° at +/- 3dB **H-plane:** omni +/-0.6 dB
• **Input connector**	N – f / SMA – f
• **Max power (W)**	100
• **Lighting protection**	DC Grounded

Properties

- **Extremely broad band**
- **Omnidirectional coverage**
- **Rugged construction**
- **Easy installation**
- **No ground plane**

Mechanical Data

• **Radiating elements**	6061-T6 Aluminium
• **Support boom**	6061-T6 Aluminium
• **Radome**	PVC / Fiberglass
• **Mounting bracket**	Stainless Steel
• **Mounting diameter**	30 – 50 mm
• **Finish**	Epoxy Paint Grey
• **Wind load**	75 mph – 120 km/h
• **Temperature range**	-30°C / +70°C

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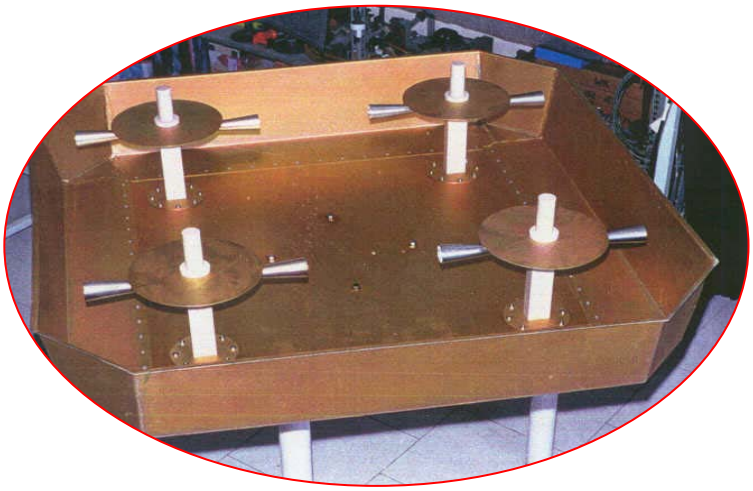
BASE STATION ANTENNAS

-

(Short Back – Fire Antenna)

Frequency (MHz) (*)	Model
460 – 860	SBF - 510
1.000 – 2.000	SBF – 515
1.500 - 3.000	SBF – 520
2.000 – 4.000	SBF – 530

(*) Other frequencies are available upon request



Electrical Data

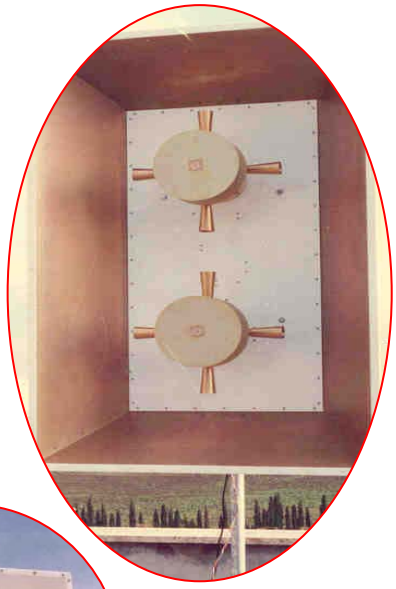
Impedance (Ω)	50
V.S.W.R. at Fo	≤ 1.6 : 1
Gain (dBi)	8 – 12
Polarization	Linear / Circular
Input connector	SMA - f / N – f
Front-back ratio	≥ 20 dB
Max power (W)	100

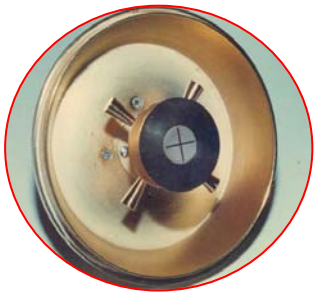
Properties

- **High directivity**
- **Highly efficient radiator**
- **Sturdy and light construction**
- **Easy installation**

Mechanical Data

Radiating elements	Brass
Mounting bracket	Stainless Steel
Mounting diameter	30 – 50 mm
Finish	Epoxy Paint Grey
Wind load	75 mph / 120 km/h
Temperature range	-20°C / +60°C
Net weight	1 Kg typical





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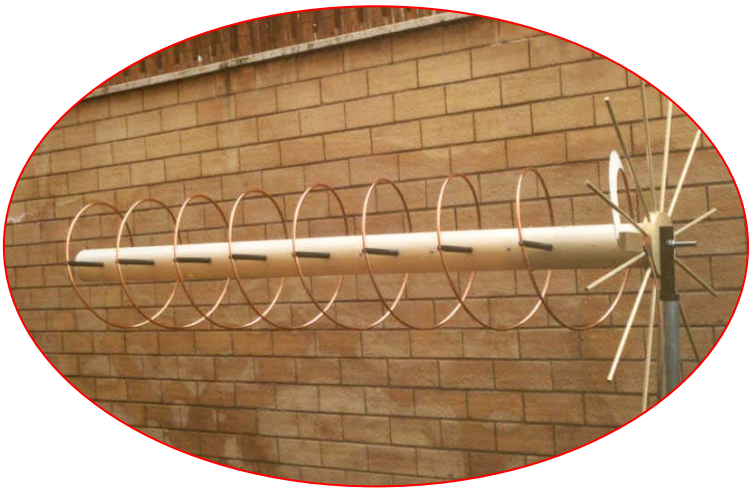
BASE STATION ANTENNAS

-

(Helical Antenna)

Frequency (MHz) (*)	Model
108 – 136	HA – 610
215 – 265	HA – 615
300 – 520	HA – 622
850 – 1.100	HA – 630
1.000 – 2.000	HA – 650
2.300 – 2.500	HA – 655
2.400 – 2.700	HA - 670

(*) Other frequencies are available upon request

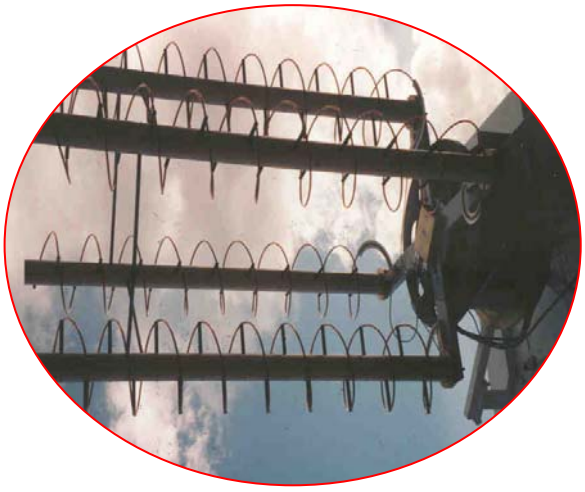


Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 1.6 : 1
• **Gain (dBi)**	8 – 15
• **Polarization**	Circular
• **Beamwidth**	**E-plane:** 30° - 50°
• **Side lobes**	- 13 dBp
• **Input connector**	SMA – f / N – f
• **Front-back ratio**	≥ 12 dB
• **Max power (W)**	100

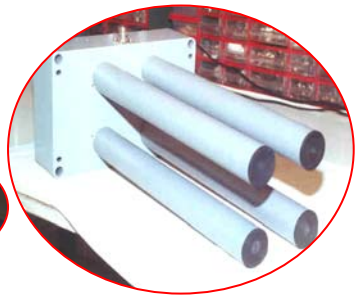
Properties

- **All weather construction**
- **Good axial ratio**
- **Light weight**
- **Easy installation**
- **RHCP / LHCP**



Mechanical Data

• **Radiating elements**	Copper / Brass
• **Protection cover**	PVC / Fiberglass
• **Mounting bracket**	Stainless Steel
• **Mounting diameter**	30 – 50 mm
• **Finish**	Epoxy Paint Grey
• **Wind load**	75 mph / 120 km/h
• **Temperature range**	-20°C / +60°C
• **Net weight**	1.5 Kg typical



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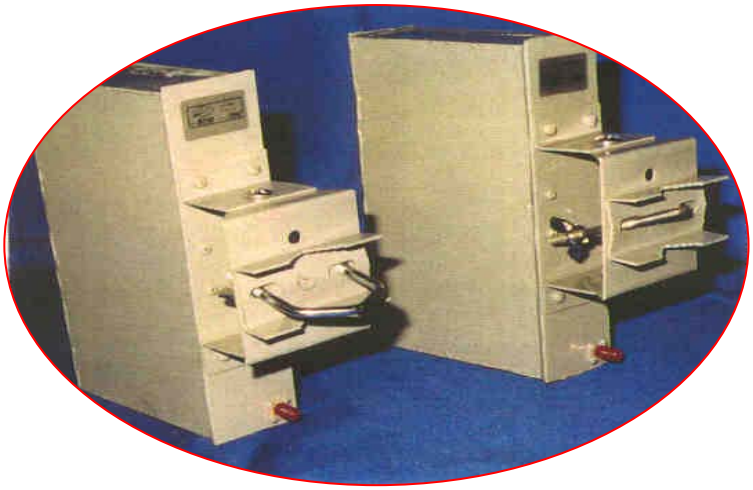
BASE STATION ANTENNAS

-

(Yagi for Cellular)

Frequency (MHz) (*)	Model
850 – 950	YAT – 900
1.750 – 1.850	YAT – 1.800

(*) Other frequencies are available upon request



Electrical Data

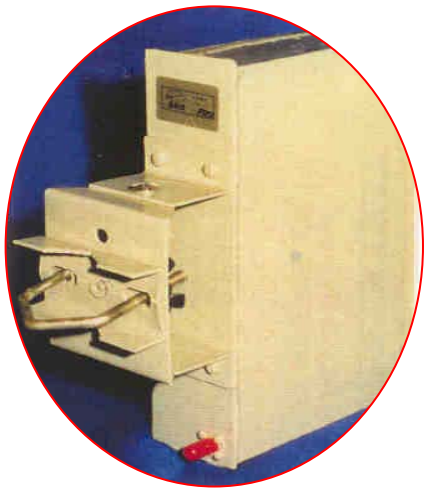
Impedance (Ω)	50
V.S.W.R. at Fo	≤ 1.5 : 1
Gain (dBi)	7
Polarization	Linear (PO - PV)
Input connector	SMA – f / N – f
Max power (W)	10

Properties

- **All weather construction**
- **Light weight**
- **Easy installation**

Mechanical Data

Radiating elements	Copper / Brass
Protection cover	PVC / Fiberglass
Mounting bracket	Stainless Steel
Mounting diameter	30 – 60 mm
Finish	Epoxy Paint Grey
Wind load	75 mph / 120 km/h
Temperature range	-20°C / +60°C



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BASE STATION ANTENNAS

-

(Log – Periodic Antenna)

Frequency (MHz) (*)	Model
225 – 400	LPA – 310 – (**)
470 – 860	LPA – 660 – (**)
610 – 960	LPA – 780 – (**)
850 – 980	LPA – 910 – (**)
500 – 18.000	LPA – 0518 – (F1)
1.000 – 18.000	LPA – 1018 – (F2)
2.000 – 18.000	LPA – 2018 – (F3)
1.000 – 2.000	LPA – 1002 – (**)

(*) Other frequencies are available upon request

Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 2.5 : 1
• **Gain (dBi)**	(**) 6 - 12
• **Polarization**	Linear PO / PV
• **Beamwidth**	**E-plane:** 40° - 50°
	H-plane: 50° - 70°
• **Input connector**	SMA – f / N – f
• **Front-back ratio**	≥ 13 dB
• **Max power (W)**	100
• **Lighting protection**	DC Grounded

Properties

- **Broad Band and ultra broad band**
- **Excellent resistance to rough weather**
- **Medium gain**
- **Easy installation**

Mechanical Data

• **Radiating elements**	6061-T6 Aluminium
• **Support boom**	6061-T6 Aluminium
• **Mounting bracket**	Stainless Steel
• **Mounting diameter**	30 – 50 mm
• **Finish**	Epoxy Paint Grey
• **Wind load**	100 mph / 160 km/h
• **Temperature range**	-20°C / +60°C
• **Net weight**	2 Kg typical

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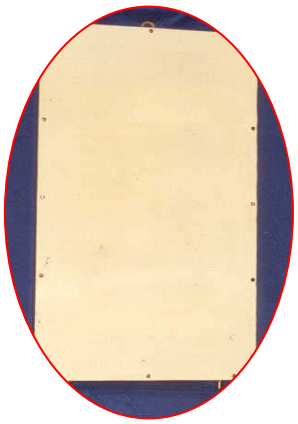
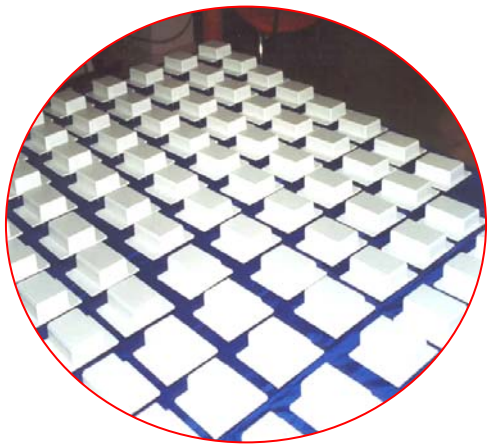
BASE STATION ANTENNAS

-

(Planar / Patch Antenna)

Frequency (MHz) (*)	Model
824 – 896	PTA – 860 - 7
870 – 960	PTA – 915 - 7
1.050 – 1.180	PTA – 1115 - 7
1.150 – 1.350	PTA – 1250 - 7
1.350 – 1.550	PTA – 1450 - 7
1.500 – 1.700	PTA – 1600 - 7
1.700 – 1.900	PTA – 1800 - 7





Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 1.5 : 1
• **Gain (dBi)**	7
• **Polarization**	Linear / Circular
• **Beamwidth**	**E-plane:** 50°
	H-plane: 80°
• **Input connector**	SMA – f
• **Front-back ratio**	≥ 13 dB
• **Max power (W)**	50

Mechanical Data

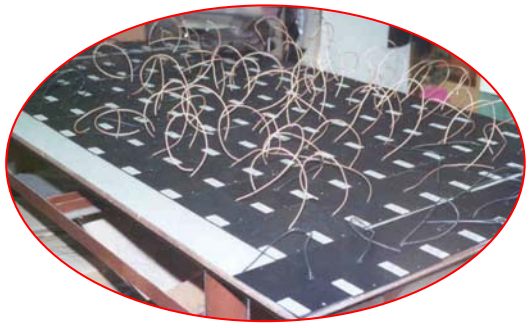
• **Radiating elements**	Brass
• **Protection cover**	PVC
• **Mounting bracket**	Stainless Steel
• **Finish**	Epoxy Paint Grey
• **Temperature range**	-20°C / + 60°C
• **Net weight**	0.3 Kg typical

Properties

- **Low profile**
- **Suitable for cellular applications**
- **Easy installation**
- **Linear or circular polarizations**

Frequency (MHz) (*)	Model
1.850 – 2.000	PTA – 1925 - 7
2.000 – 2.150	PTA – 2075 - 7
2.150 – 2.400	PTA – 2275 - 7
2.300 – 2.500	PTA – 2400 - 7
2.400 – 2.500	PTA – 2450 - 7
2.700 – 2.900	PTA – 2800 - 7

(*) Other frequencies are available upon request



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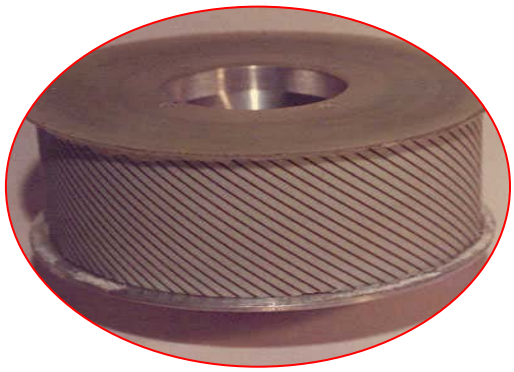
BASE STATION ANTENNAS

-

(Biconical Antenna)

Frequency (MHz) (*)	Model
2.000 – 18.000 (o)	BCA – 210
12.000 – 18.000 (oo)	BCA – 220

(*) Other frequencies are available upon request



Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 2.5 : 1
• **Gain (dBi)**	0 – 4
• **Polarization**	Linear - Circular
• **Beamwidth**	**E-plane:** 20° - 100°
	H-plane: omni +/-2dB
• **Input connector**	SMA – f
• **Max power (W)**	20

Properties

- **Sturdy and light construction**
- **(o) Vertical polarization Mod. BCA – XXX – A**
- **(oo) Slant 45° linear polarization Mod. BCA – XXX – B Five – layer wires Polarizer**

Mechanical Data

• **Radiating elements**	Brass /Aluminium
• **Mounting bracket**	Stainless Steel
• **Mounting diameter**	30 – 50 mm
• **Finish**	Epoxy Paint Grey
• **Wind load**	75 mph / 120 km/h
• **Temperature range**	-20°C / +60°C
• **Net weight**	1 Kg typical

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BASE STATION ANTENNAS
-
(Rod Antenna)

Frequency (MHz) (*)	Model
0.1 – 30 (untuned)	SRA – 15 – 0
1.5 – 30 (untuned)	SRA – 20 – 0

(*) Other frequencies are available upon request

Electrical Data

- **Impedance (Ω)** 50
- **V.S.W.R. at Fo** ≤ 3 : 1
- **Gain (dBi)** 0
- **Polarization** Vertical
- **Beamwidth** **E-plane:** 80°
  H-plane: omni +/- 3 dB
- **Input connector** N – f
- **Max power (W)** 200

Properties

- **Sturdy construction**
- **In conjunction with an antenna tuning unit they can also be used for transmission**

Mechanical Data

- **Radiating elements** Stainless Steel
- **Wind load** 75 mph - 120 km/h
- **Temperature range** -20°C / +60°C
- **Net weight** 5 Kg max

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BASE STATION ANTENNAS

-

(Omnidirectional Antenna)

Frequency (MHz) (*)	Model
30 – 80	OMA – 105 – A1
30 – 200	OMA – 108 – A1
30 – 400	OMA – 115 – A1

(*) Other frequencies are available upon request

Electrical Data

- **Impedance (Ω)** 50
- **V.S.W.R. at Fo** ≤ 4 : 1
- **Gain (dBi)** 0
- **Polarization** Vertical
- **Beamwidth** **E-plane:** 80° **H-plane:** omni +/- 1 dB
- **Input connector** N – f
- **Max power (W)** 200

Properties

- **Easy installation**

Mechanical Data

- **Radiating elements** Brass / Aluminium
- **Height of antenna** 1.5 mt.
- **Mounting bracket** Stainless Steel
- **Radome** PVC / Fiberglass
- **Finish** Epoxy Paint Grey
- **Wind load** 75 mph / 120 km/h
- **Temperature range** -20°C / +50°C
- **Net weight** ≤ 15 Kg typical

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MOBILE ANTENNAS

-

(Low profile Antenna)

Frequency (MHz) (*)	Model
108 – 134	LPAV – 110
134 – 148	LPAV – 115
148 – 174	LPAV – 120
400 – 512	LPAV – 125
600 – 1.500	LPAV – 129

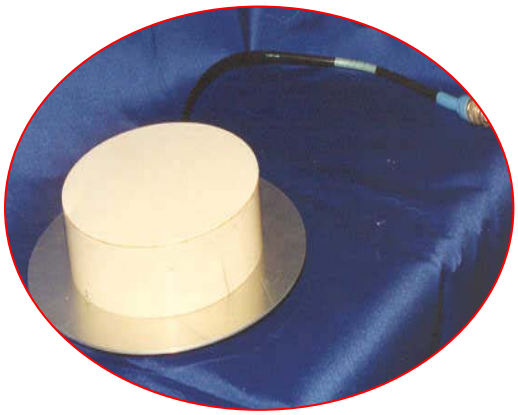
(*) Other frequencies are available upon request

Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 1.6 : 1
• **Gain (dBi)**	2
• **Polarization**	Linear - PV
• **Beamwidth**	**E-plane:** 60°
	H-plane: omni +/- 1 dB
• **Input connector**	BNC - SMA - N / f
• **Max power (W)**	100
• **Lighting protection**	DC Grounded

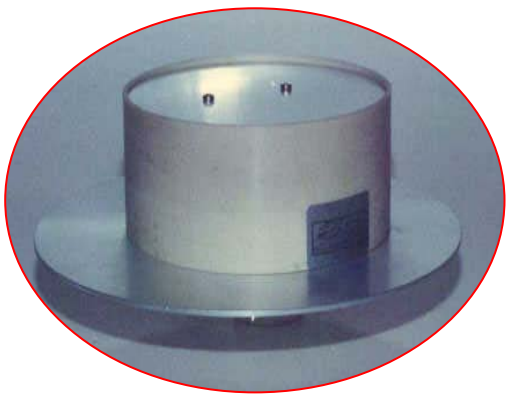
Properties

- **Wide bandwidth**
- **Light construction**
- **No ground plane required**
- **Easy to mount**



Mechanical Data

• **Radiating elements**	Brass
• **Support boom**	Aluminium
• **Radome**	PVC / Fiberglass
• **Mounting diameter**	30 mm
• **Finish**	Epoxy Paint Grey
• **Temperature range**	-20°C / +60°C
• **Net weight**	0.5 Kg typical



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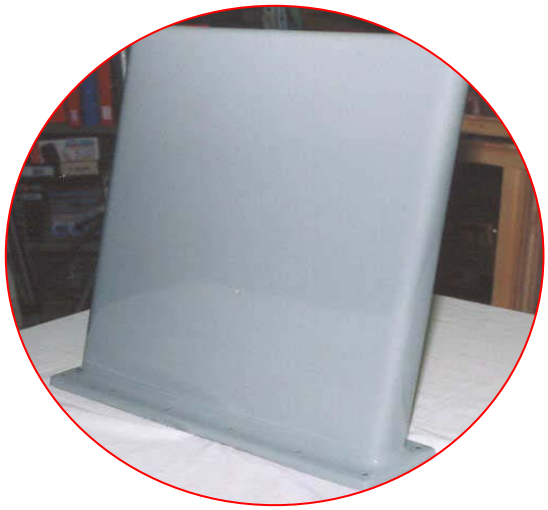
MOBILE ANTENNAS

-

(Aerodynamic Blade)

Frequency (MHz) (*)	Model
108 – 134	LMAV – 120
134 – 180	LMAV – 160
180 – 400	LMAV – 300
450 – 465	LMAV – 450
870 – 950	LMAV – 900
500 – 2.000	LMAV - 1500

(*) Other frequencies are available upon request



Electrical Data

• **Impedance (Ω)**	50
• **V.S.W.R. at Fo**	≤ 1.6 : 1
• **Gain (dBi)**	1.5
• **Polarization**	Linear - PV
• **Beamwidth**	**E-plane:** 70°
	H-plane: omni +/- 0.6 dB
• **Input connector**	SMA – f / N –f
• **Max power (W)**	100
• **Lighting protection**	DC Grounded

Properties

- **Light construction**
- **Easy to mount**
- **Low Drag**

Mechanical Data

• **Radiating elements**	Brass Aluminium
• **Support base**	6061-T6 Aluminium
• **Radome**	PVC / Fiberglass
• **Finish**	Epoxy Paint Grey
• **Wind load**	75 mph / 120 km/h
• **Temperature range**	-20°C / +60°C
• **Net weight**	1.5 Kg typical

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EMI ANTENNAS

-

(Electric Field Antenna)

SPECIFICATIONS

- **Frequency range** **10 KHz – 200 MHz**
- **Zo** **50 ohm**
- **Antenna** **Whip**
- **Connector** **Type “N” – female**
- **Supply voltage** **9 + 9 Volt**

DESCRIPTION

- This antenna is well suited for all RF monitoring applications
  (EMC – EMI – RF spectrum surveillance – Field strenght measurements)
  connecting output to a power meter or to an oscilloscope.

  A wood tripod support is suggested for field measurement.

  Particular design of internal amplifier – buffer offer a flat response over the entire frequency band.

  The unit is delivered with instruction manual and calibration curve to convert the output level into the incoming field strenght.

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EMI ANTENNAS

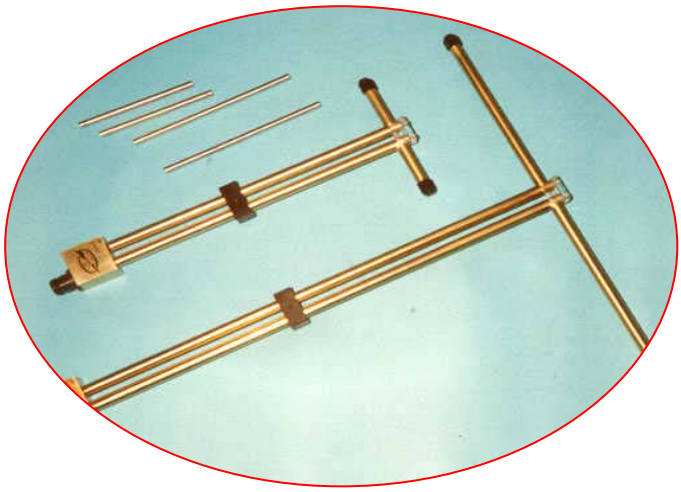
-

(Tunable Dipole Antenna)

SPECIFICATIONS

Frequency (MHz)	Model
200 - 400	TDA – 210
400 – 1.000	TDA – 220

- **Z** **50 ohm**
- **Connector** **Type "N" - female**



DESCRIPTION

- Each dipole is provided with tunable balun and lenght of radiating arms.

  A dielectric ruler permits to adjust the lenght of arms and short circuit distance in easy way.

  The antenna can be tuned at a specific frequency within it's operating band and offers a standard of gain measurements antenna well suited for several applications where field measurements are needed.

  Wood support is available upon request.

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EMI ANTENNAS

-

(Small Loop Antenna)

SPECIFICATIONS

Frequency (MHz)	Model
0.015 - 30	SLA – 100

- **15” diameter loop**
- **Low frequency applications**
- **Magnetic field sensitive**

DESCRIPTION

- This kind of antenna is particularly suitable for EMI measurements and for all applications where magnetic field sensor is required.

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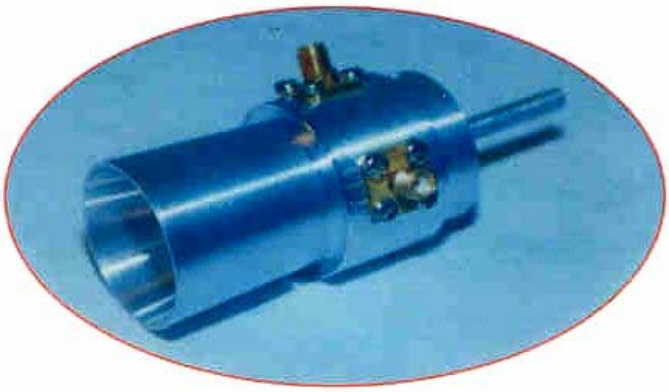
Our product line includes

Coaxial rotary joints

Circulary polarized horn antennas



Planar spiral antennas

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MICROWAVES ANTENNAS

-

(Reflectors)

GENERAL FEATURES

- **This kind of antenna is well suitable for microwave point to point link, and for all applications where high gain and low sidelobes are requested.**
- **Effective diameter (cm)**
  40 – 60 – 90 – 120 – 150 – 180

DESCRIPTION

Frequency range	Upon request (from “L” band to “KA” band)
Gain	≥ 25 dB (upon customer’s request)
Sidelobes	Better than 25 dB / peak
Polarization	Linear (PO / PV) – Circular (upon request)
Special design	Ultra low sidelobes configurations are available upon request for relay link applications

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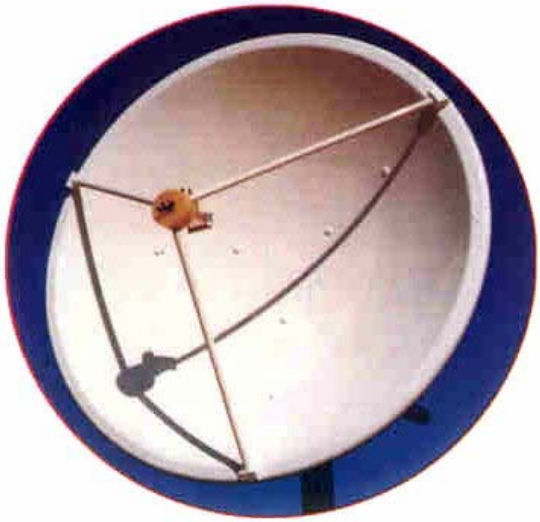
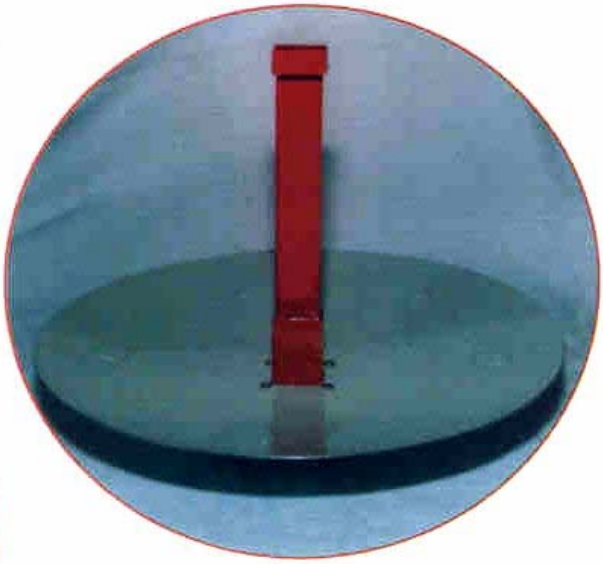
MICROONDE SAMA ANTENNE





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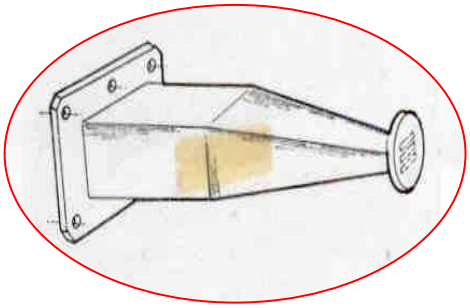
FEED FOR REFLECTORS

-

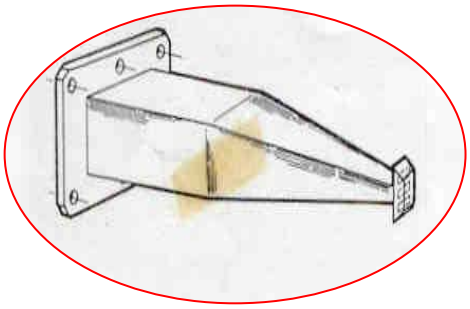
Linear Polarized Feed
Dual Polarized Feed
Circular Polarized Feed

TECHNICAL DESCRIPTION :

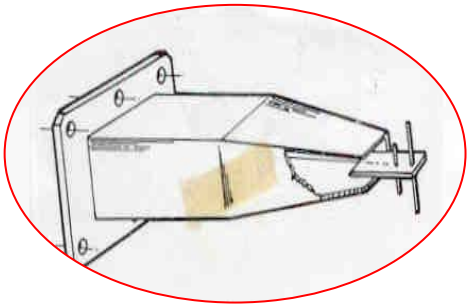
- The following feeds are only few examples of radiators suitable for parabolic Reflectors.
  Many other types of versions can be designed to meet customer's requirements.



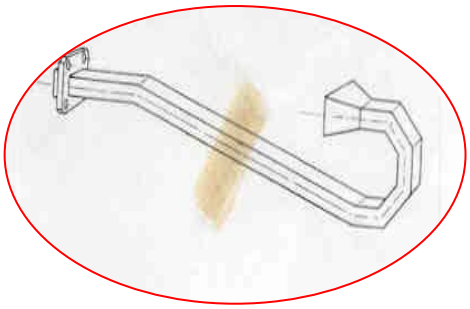
CUTLER FEED
-
Mod. F / RCT (1)
Bandwidth for 1.5 : 1 VSWR
3 % of Fo



REAR FEED
-
Mod. F / RTW (1)
Bandwidth for 1.5 : 1 VSWR
8 % of Fo



Wave guide **" CUTLER FEED "**
-
Mod. FFF / RWD (1)
Bandwidth for 1.5 : 1 VSWR
12 % of Fo



GOOSE NECK FEED
-
Mod. FG / N (1)
Bandwidth for 1.5 : 1 VSWR
15 % of Fo

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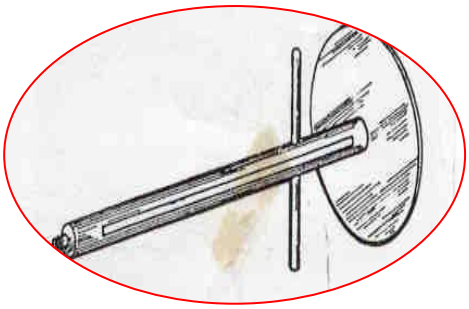
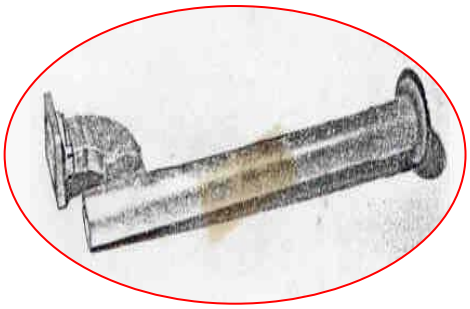
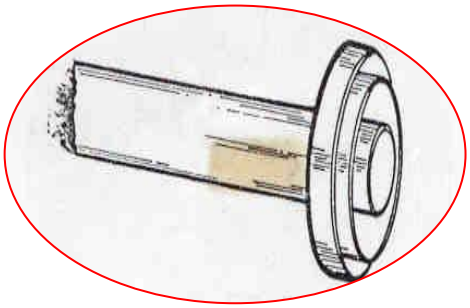


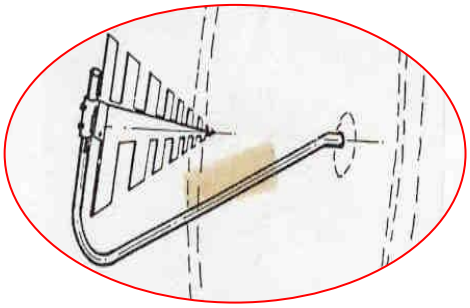
Coax “ **DIPOLE FEED** “
-
Mod. F / RDP (1)
Bandwidth for 1.5 : 1 VSWR
12 % of Fo



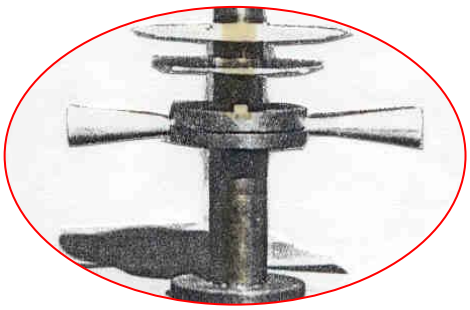
RING FOCUS
-
Mod. F / FR (1)
Bandwidth for 1.5 : 1 VSWR
8 % of Fo



ANULAR FEED
-
Mod. F / AF (1)
Bandwidth for 1.5 : 1 VSWR
7 % of Fo



LOG FEED
-
Mod. F / LP – Fl / Fh (1)
Extraordinary wide band
For 2.5 : 1 VSWR 0,5 – 18 GHz



SHORT BACK - FIRE FEED
-
Mod. FF / SDB – Fl / Fh (1)
Bandwidth for 2 : 1 VSWR
one octave - Fmax : 4 GHz

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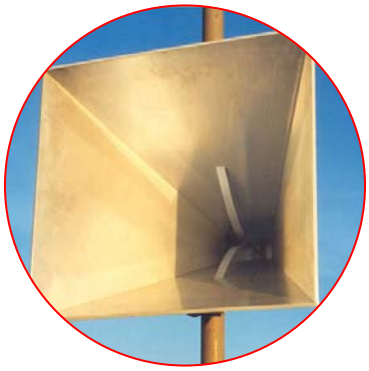
MICROWAVES ANTENNAS
-
(Horn Antenna)

GENERAL FEATURES

- **Wide range of beamwidths**
- **Low VSWR**
- **Linearly polarized**
- **Standard waveguide band**
- **Light – weight aluminium**
- **SMA – N connector available**
- **(*) 10 – 15 – 20 dB Gain**



GENERTAL DESCRIPTION

- Rectangular Horn Antennas are Typically linearly polarized with different beam widths and " H " planes.

  The flare angle in each plane and resulting aperture dimension are designed to meet specified beam width, sidelobes and gain values.

Model	Frequency (GHz)	Wave Guide (WR)	Type (RG)	Flange Type UG	
HRA – L – (*)	1.12 – 1.70	650	103 / U	418 A / U	Rect B/U
HRA – R – (*)	1.70 – 2.60	430	105 / U	437 A / U	Rect B/U
HRA – S – (*)	2.60 – 3.95	284	75 / U	584 A / U	RD
HRA – H – (*)	3.95 – 5.85	187	95 / U	407 A / U	RD
HRA – C – (*)	5.85 – 8.20	137	106 / U	441 A / U	RD
HRA – X – (*)	8.15 – 12.4	90	67 / U	135 A / U	SQ
HRA – KU – (*)	12.4 – 18.0	75	349 / U	419 A / U	SQ
HRA – K – (*)	18 – 26.5	42	53 / U	595 A / U	SQ
HRA – KA – (*)	26.5 – 40	28	96 / U	599 A / U	SQ
HRA – 20 – (*)	7.5 – 18	D 750 D 20		FLG 750	

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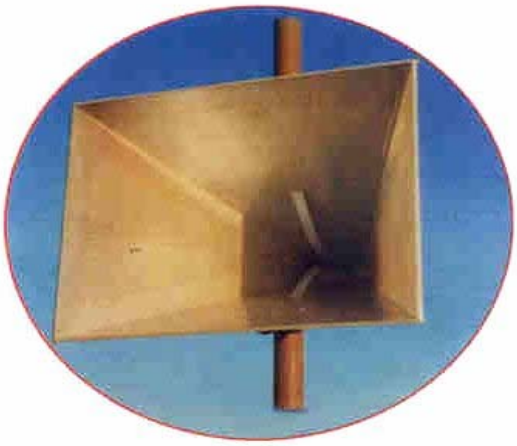
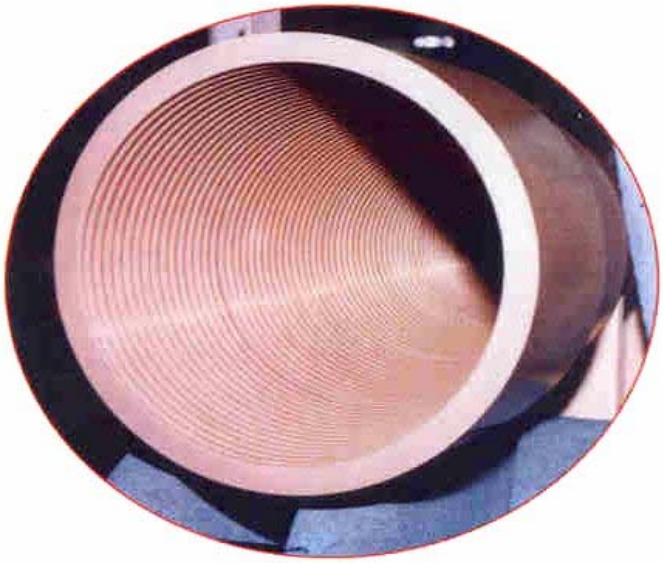
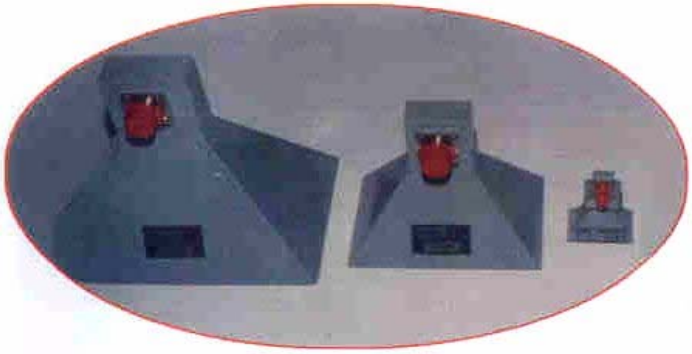
MICROONDE SAMA ANTENNE







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MICROWAVES COMPONENTS

-

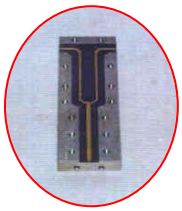
(Power Dividers / Combiners)

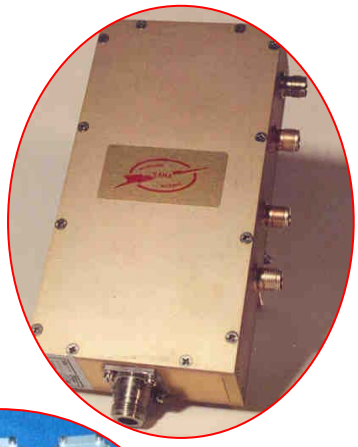
GENERAL FEATURES

N° Output	Coupling (dB)
2	3.0
3	4.8
4	6.0
5	7.0
6	7.8

PROPERTIES

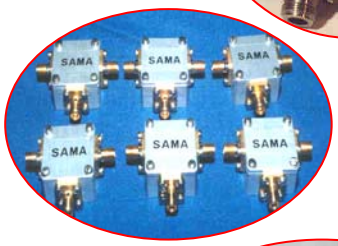
- Stripline power dividers are low cost, high performance components, which are primarly used to distribute or combine RF power from signal sources.





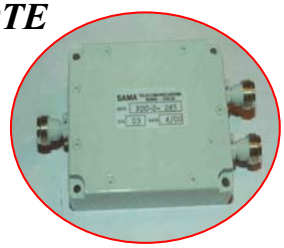
MINIMUM PERFORMANCE SPECIFICATION

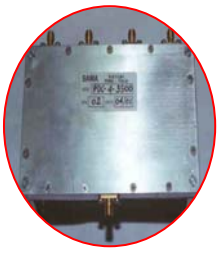
Model n°	PDC – (*) – (**)
Beamwidth	30 %
VSWR	< 1.3 : 1
Insertion loss	≤ 0.3 dB (2 OUT)
Amplitude balance	+/- 0.2 dB (2 OUT)
Phase balance	+/- 3°
Power Input (W cw)	1 – 5 – 10 – 50 – 100
Isolation between output	> 20 dB
Connector	N – TNC – SMA / f
Operating temperature	-30°C / +60°C

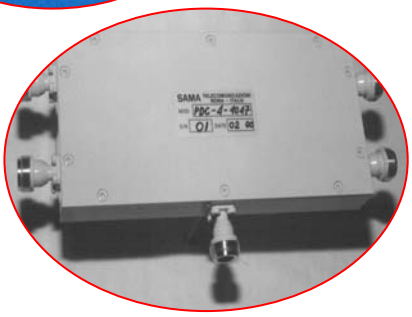


NOTE

- **(*) Number of output**
- **(**) Frequency range**







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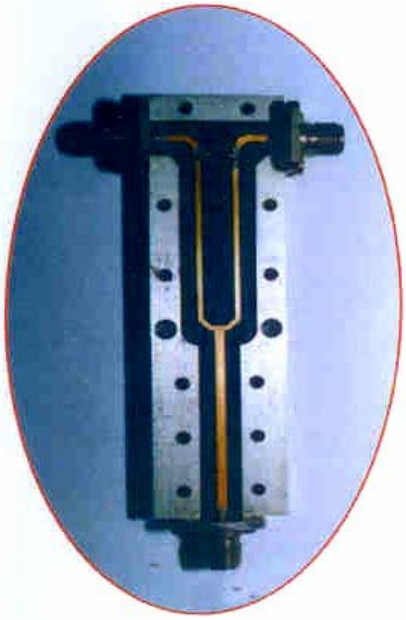
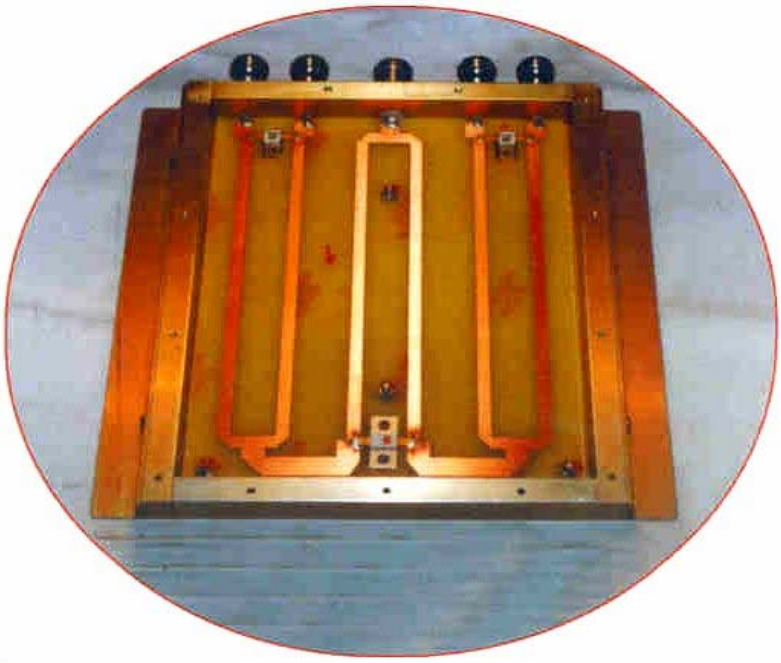
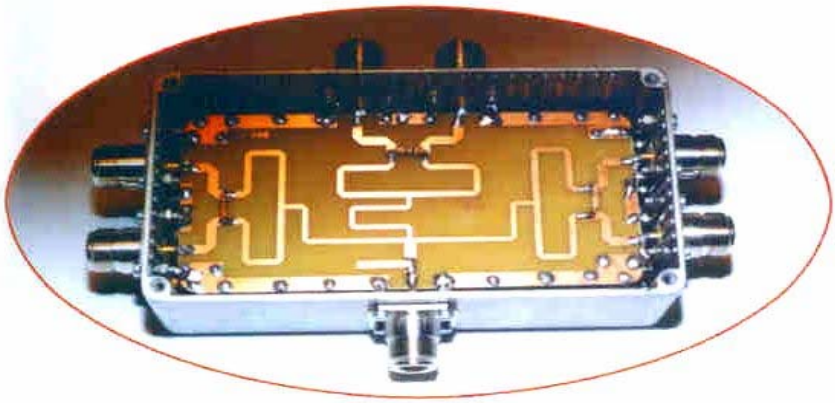
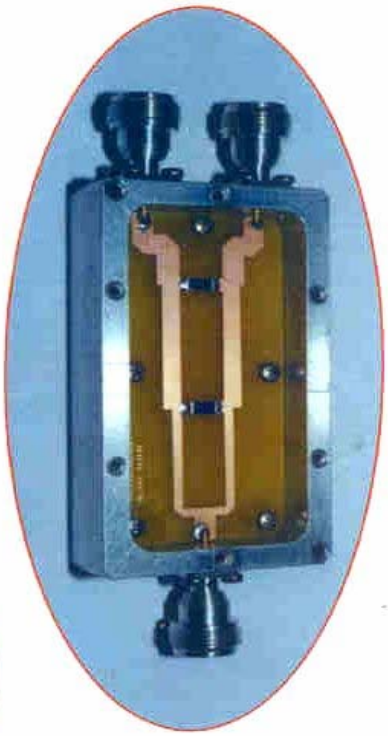
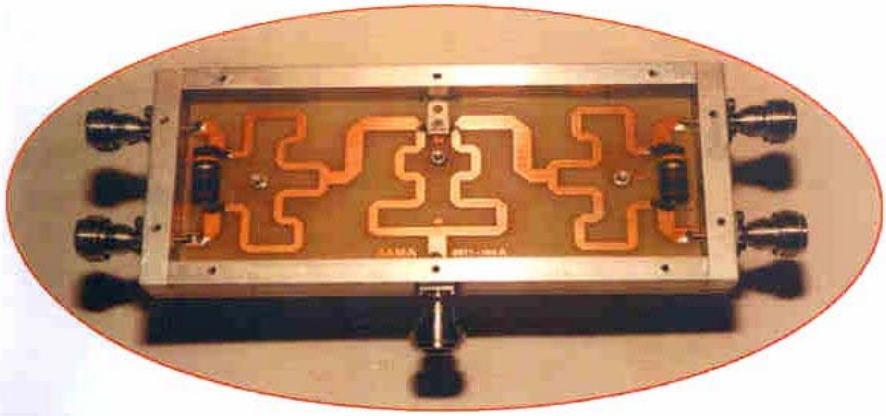
MICROONDE SAMA ANTENNE











MICROWAVES COMPONENTS

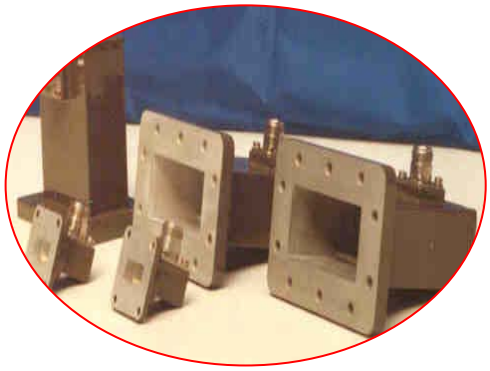
-

(Wave – guide to coaxial adapter)

GENERAL FEATURES

- **Low VSWR**
- **Broadband probes with optimum match**
- **Rectangular wave guide**
- **Standard wave – guide bands**
- **Coax impedance 50 ohm**
- **Rugged and small size for both lab. and field use**

Model	Frequency (GHz)	Wave Guide (WR)	Flange Type
AD – 100	1.12 – 1.70	650	UG 418 / U
AD – 110	1.70 – 2.60	430	UG 437 / U
AD – 120	2.60 – 3.95	284	UG 584 / U
AD – 130	3.95 – 5.99	187	UG 407 / U
AD – 140	5.85 – 8.20	137	UG 441 / U
AD – 150	7.05 – 10.0	112	UG 138 / U
AD – 160	8.20 – 12.4	90	UG 135 / U
AD – 170	10.0 – 15.0	75	UG 419 / U
AD – 180	11.9 – 18.0	62	UG 1665 / UR
AD – 190	18.0 – 26.5	42	



SPECIFICATION

- **Connector** SMA / N – female typical
- **Finish** Epoxy Paint Grey
- **Temperature** -30°C / +60°C
- **Materials** Aluminium – Brass – Teflon

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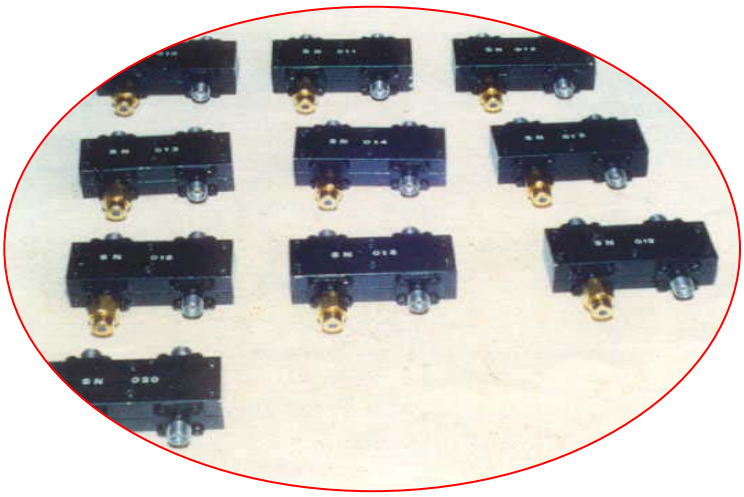
MICROWAVES COMPONENTS

-

(90° Hybrid 3dB)

Frequency (MHz) (*)	Model
108 – 134	HYB – 100
134 – 180	HYB – 110
180 – 400	HYB – 120
450 – 465	HYB – 130
870 – 950	HYB – 140
500 – 2.000	HYB – 150

(*) Other frequencies are available upon request



Electrical Data

- **V.S.W.R. max** ≤ 1.25 : 1
- **Coupling (dB)** 3.1 +/- 0.6
- **Phase (°)** 90° +/- 2
- **ISO (dB)** ≥ 20
- **RF power (W)** 30
- **Connector** SMA – N type

Mechanical Data

- **Finish** Epoxy Paint Grey
- **Temperature range** -20°C / +60°C

Properties

- **The HYB – series consist of four - port hybrids which divides an input signal at J1 into two equal signals at J2 and J3, with the fourth port J4 isolated. The split signals are in quadrature phase.**
- **Stripline construction**
- **Compact and light weight**

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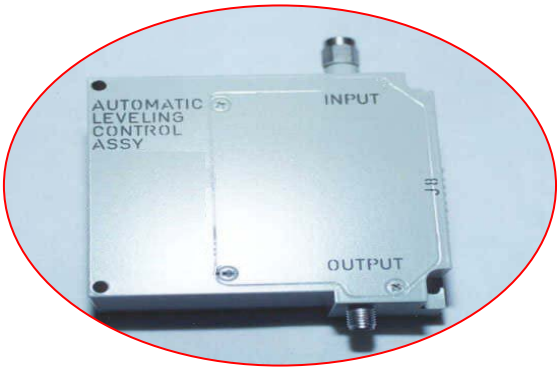
MICROWAVE COMPONENTS

-

(Automatic Leveling Control)

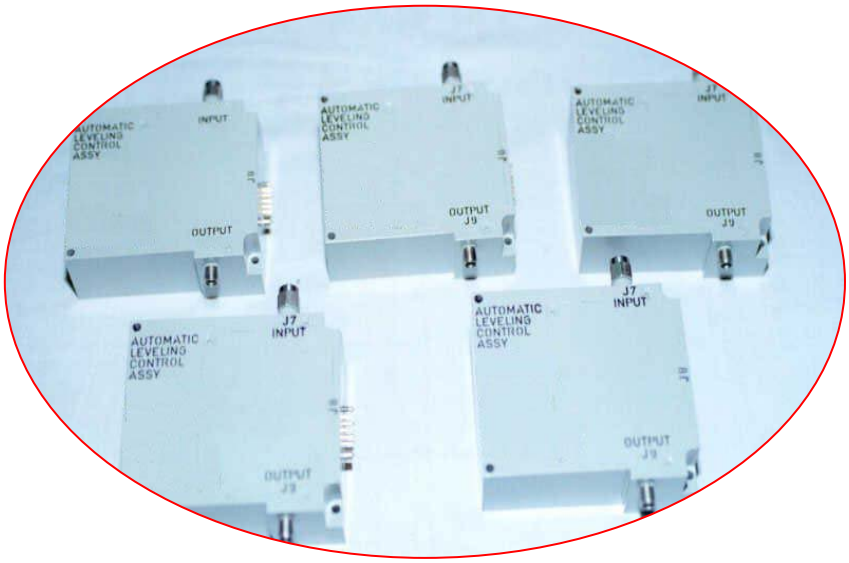
GENERAL FEATURES



- **The Automatic Leveling Control Assembly is an X – band strip line microwave circuit, operating over the frequency range of 8.5 to 9.6 GHz**

REQUIREMENT

- **Frequency range** 8.5 – 9.6 GHz
- **V.S.W.R. (IN – OUT)** $\leq$ 1.4 : 1
- **Insertion loss** $\leq$ 3 dB
- **RF level input** 100 – 200 mW
- **Isolation** $\geq$ 20 dB
- **Leveling set range**
  - **100 mW input** +17 dBm to 5 dB
  - **200 mW input** +20 dBm to 5 dB



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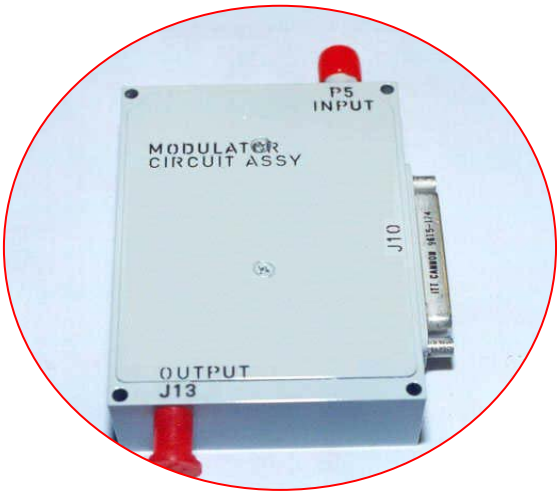
MICROWAVE COMPONENTS

-

Modulator Circuit Assembly

GENERAL FEATURES

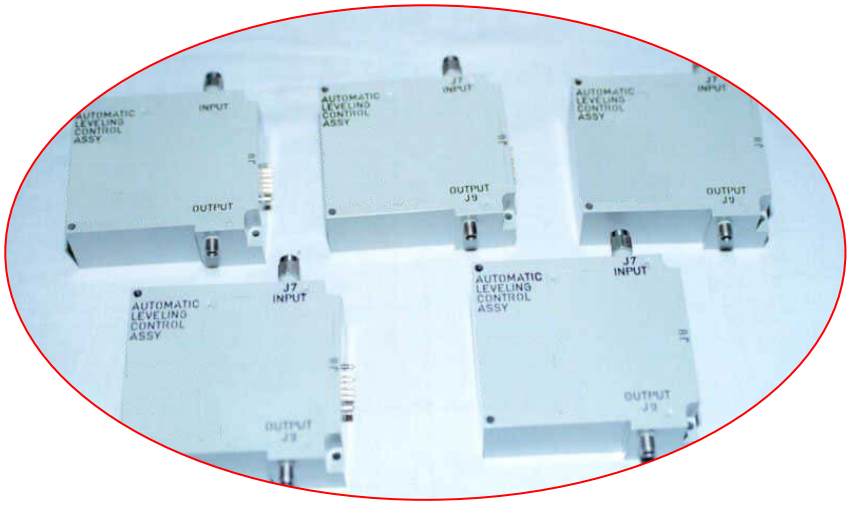


- **The Modulator Circuit Assembly is an X – band strip line microwave circuit that operates over the frequency range of 8.5 to 9.6 GHz.**

  The circuit contains two 20 dB directional coupler, two pin diode switches and three pin diode attenuators.

REQUIREMENT

• **Frequency range**	8.5 – 9.6 GHz
• **V.S.W.R. (IN – OUT)**	$\leq$ 1.7 : 1
Insertion loss (at 9 GHz)	
- **primary path loss**	8.5 dB max +/- .5
- **secondary path loss fixed coupler**	38 +/- 2 dB
• **S1 and S2 switching**	
- **turn on , 50 % level**	$\leq$ 50 ns
- **turn off , 50 % level**	$\leq$ 50 ns
- **switch atten. high loss state**	$\geq$ 85 dB



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MOBILE ANTENNAS

-

Receiving Antenna System for 1÷26 GHz frequency band

GENERAL FEATURES

- **Frequency range**
  A - 1÷18 GHz
  B - 18÷26 GHz

- **Polarization selection capability vertical or horizontal by remote control**
- **Feeding element : Log-Periodic Antenna (A) and Horn (B)**
- **Broad Band low noise amplifier selectable by remote command**
- **Mechanical tilting along elevation plane by electrical control (rotation along azimuth plane upon request)**
- **Control Box with digital display and remote control capability (RS 232, optional)**

Description

The receiving antenna SAMA " RFT – 0118 " or " RFT – 0126 " has a parabolic reflector with 60 – 90 – 120 – 150 – 180 cm diameter fed by a Log-Periodic element, operating in the frequency band 1-18 GHz, for the frequency band 18-26 GHz we use an piramidal horn.
Such feeders has been designed for a proper illumination of reflector.
Feeder support can be rotated by means of a suitable electrical control, in order to select automatically horizontal or vertical polarization.
The feeder support contains also a broadband amplifier (optional), selectable by means of a proper switch on electrical command.
Supporting elements can be peployable upon request, for an easy shipment of assembly.
Parabolic reflector is mounted on a suitable support whose movement is electrically controlled ; such a system permits antenna tilting in elevation from 0° to 90°.
Angular position along elevation plane is indicated by a digital display on the control box.
As option, azimuth control for 0° to 360° angular range is available upon request.

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MOBILE ANTENNAS

Options

- **Antenna is delivered with Control Box for polarization selection and connecting cable (15 meter long)**

The following options are available upon request:

- **Broadband amplifier (1 – 18 GHz and 18 – 26 GHz) with typical gain of 22 dB and NF = ≤ 4 dB**
- **Electrical motor for 0° to 90° tilting in elevation, with control box and digital display**
- **Electrical motor for 0° to 360° azimuth scan**
- **RS – 232 interface for motors control, polarization and amplifier selection by PC**
- **Low loss RF coaxial cable**

Control Box has a 19" standard cabinet and is well suited to drive motor for elevation tilting

It includes the connecting cable and permits polarization and amplifier selection.

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MOBILE ANTENNAS

-

(Automatic Tracking Telemetry Antenna System)

AVIOLINK
RECEIVING ANTENNA TRACKING SYSTEM

GENERAL DESCRIPTION

The Aviolink System is a receiving equipment with a rotating antenna, which tracks an airplane, helicopter, ship, or any vehicle for remote surveillance. The vehicle to be tracked transmit its position with a GPS receiver linked to the on-board video transmitter. This signal is received by the Aviolink unit which computes the required tracking angle using a GPS installed in the antenna. Using a 10W transmitter, coverage up to 50 Km with broadcast-quality video can be received, and up to 100 Km with digital compression. The antenna assembly uses a squared cosecant shaped reflector, with a narrow beam in azimuth. The elevation coverage of a sector from 0 to 10 degrees above horizon remains constant over the operating band. Full 360 degrees coverage is assured without cable wrap, thanks to a rotating joint. A low-noise amplifier is provided, and switched on when a certain distance (programmable) is reached. The control unit can be completely remote controlled, so receiving installations does not require human operators. System is available in a radomized version (shown in the photo), and in an open-version, suitable for shelter installations.

System components:

- *Antenna Control Unit (ACU), left-side*
- *Antenna Assembly, with parabolic reflector, LNA assembly, azimuth drive, antenna electronics box, GPS receiver.*
- *In the background the fiberglass radome.*

Open-version installed in a mobile shelter

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MOBILE ANTENNAS

ANTENNA SYSTEM

Frequency range (other bands available on request)	**2.4 – 2.7 Ghz**
Polarization (E)	**Vertical**
Antenna gain	**> 25 dB**
Beamwidth, -3 dB Azimuth Elevation	 **8 ° deg** **10 ° deg**
Sidelobes	**< 15 dB**
LNA noise figure	**< 1 dB @ 2.5 GHz**
LNA Gain	**> 35 dB @ 2.5 GHz**
Max tracking speed	**10 deg/sec**
Azimuth position resolution	**0.1 deg**
Mating connectors	**RF: type-N (F)** **Control: MIL-C 10 pin (F)**
Antenna GPS sensor	**Sirf 12 channel – NMEA**
Radome	**Fiberglass.** **IP65 compliant**
Dimensions	**120 cm (H), 130 cm (Dia)**
Weight	**60 Kg.**

CONTROL UNIT

Processor	**80386 (40 MHz)**
Control loop	**Digital/analog servo system**
GPS Position data sampling	**1 sec**
Position Interpolator	**100 msec**
Antenna tracking sampling speed	**20 msec**
Display update	**100 msec**
Datalink	**NMEA 0183, 4800 bps.**
Signal interfaces	**RS-232**
Antenna assy power supply	**28 Vdc, max 2 A**
Dimensions, weight	**Rack 19", 2U.** **Depth 40 cm.** **max 10 Kg**
Power	**220 Vac – 100 VA max** **(option 115 Vac)**

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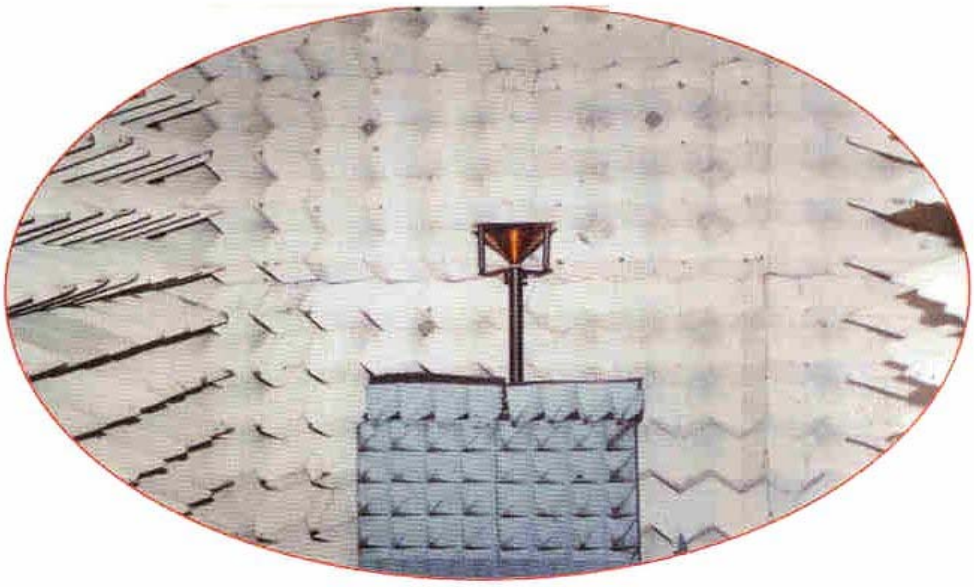

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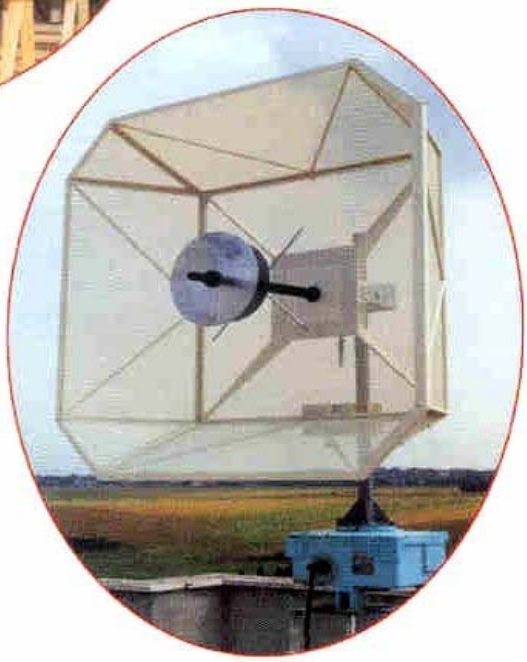
MICROONDE SAMA ANTENNE



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- **SAMA SISTEMI S.r.l. and ECOENGINEERING** propose consultancy for analysis, design, measurement and monitoring of electromagnetic pollution.

  The capability cover from low frequencies (50 Hz : high voltage lines) up to 50 GHz.

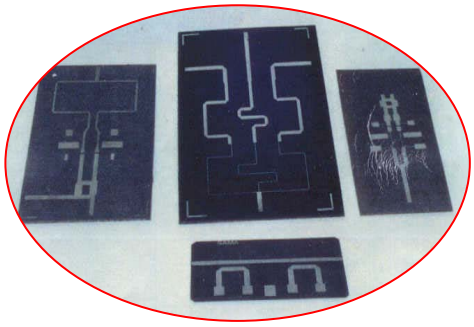
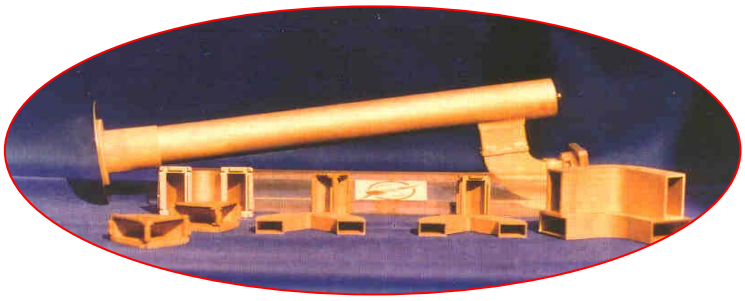
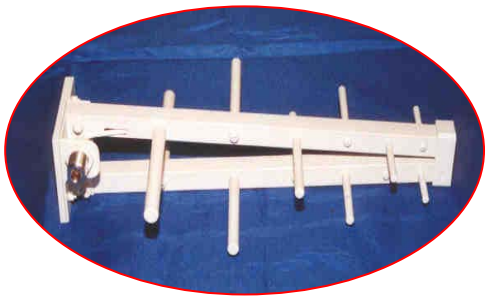
  All the potenzial electromagnetic pollution source are verified : point to point system, broadcasting source, military systems, mobile installations, industrial machines, etc…….

  We are able to certificate all the design source with respect to the local laws.

  Our consultancy and design services are offered to public administrations, companies and associations.

  Design consultancy, measurement and certifications are available also for acoustic pollutions, applicable to private or industrial areas.



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Microwave Antenna
Specifications Check List

Electrical Required

• Antenna Type (Horn, Yagi, Log, etc..)					
• Frequency Range (KHz, MHz, GHz)					
• V.S.W.R. (required)					
• Polarizzation (Linear PO - PV, circular RH - LH)					
• Axial Ration (dB)					
• Orizzontal Beam Width (°)					
• Vertical Beam Width (°)					
• Side Lobes Level (dBp)					
• F/B Ratio (dBp)		• Impedance (ohm)			
• RF Power (Watt)		• Average		• Peak	

Mechanical Required

• RF Interface Connector	
• Wave Guide	
• Mounting provisius	
• Wind operational	
• Wind survival	
• Weight max (Kg)	

Ambiental Required

• Operating Temperature (°C)	
• Vibration	

Other Informations

• Quantity required (pz)	
• Finish	
• Options	

NOTE

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Study

Application

Microwave

Antennas

CATALOG

Civil and Military Telecommunication Sistems

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