

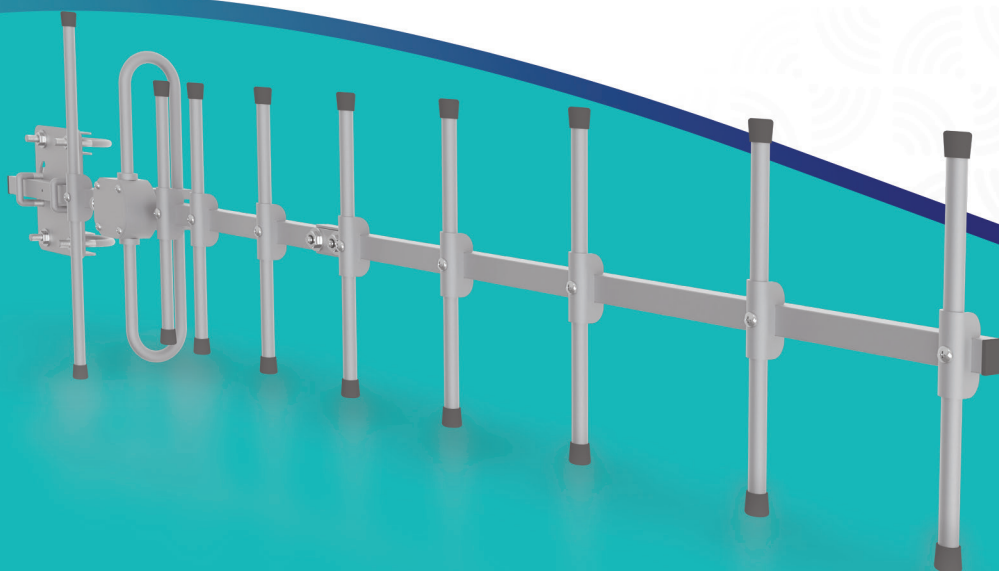


UHFVHF

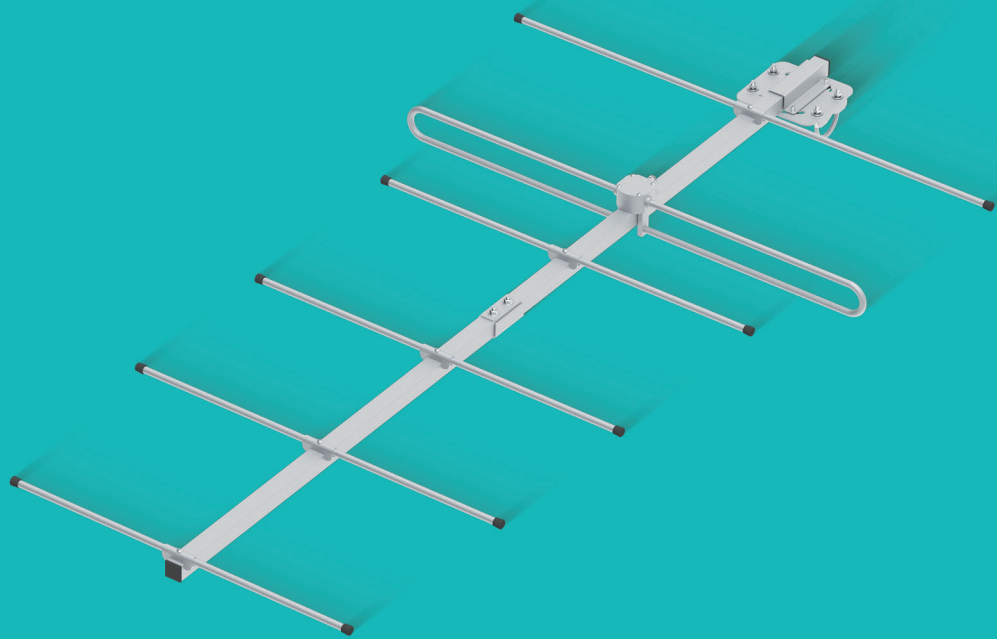
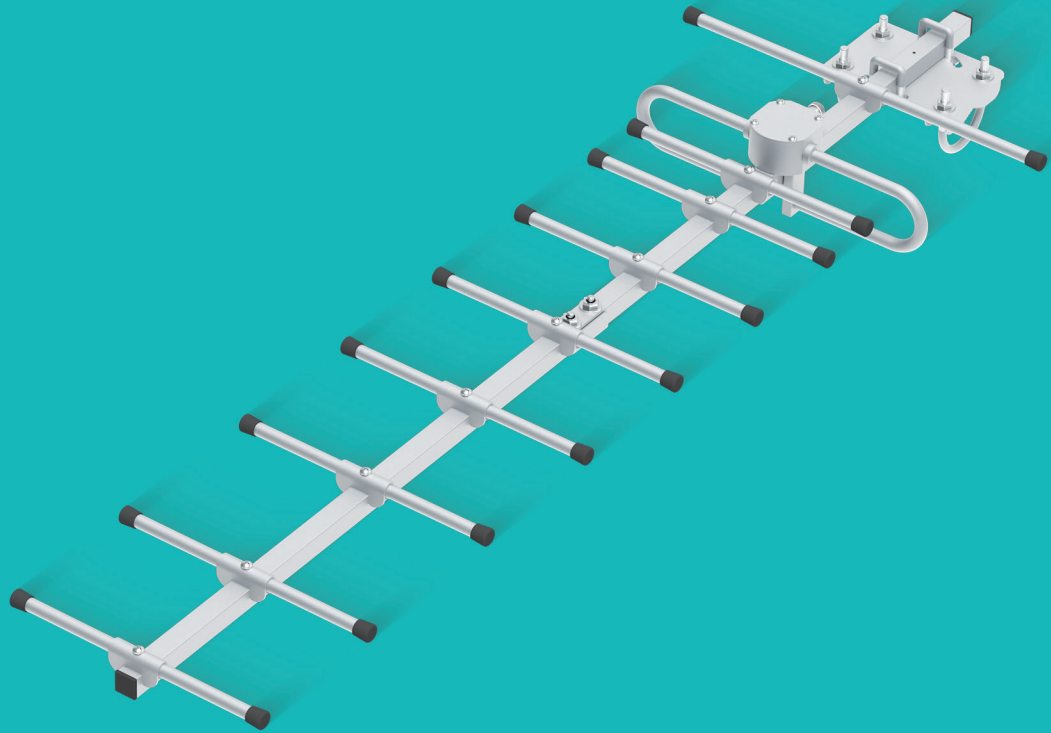
ULTRA HIGH FREQUENCY
VERY HIGH FREQUENCY

CATALOG

V 2.0.0







VHF & UHF Antenna

شرکت فراموج سازان ارتباطات پارسیان با بیش از یک دهه سابقه درخشان در حوزه فناوری‌های مخابراتی، به‌عنوان یکی از شرکت‌های دانش‌بنیان برتر این حوزه شناخته می‌شود. این مجموعه از سال ۱۳۹۱ فعالیت خود را آغاز کرده و با تکیه بر دانش فنی و تجهیزات مدرن، به تولید و توزیع آنتن‌های مخابراتی و تجهیزات رادیویی با نام تجاری فاز (PHASE) در باندهای فرکانسی HF، VHF، UHF، GHz، Microwave پرداخته است. همچنین، تولید رادیوهای باند 5GHz تحت برند RAYABOX و توزیع برندهای مطرحی مانند Mikrotik و Mimosa نیز در زمره خدمات این شرکت قرار دارد.

محصولات این مجموعه در بازه فرکانسی 60MHz تا 38GHz تولید شده و مطابق با استانداردهای ملی و بین‌المللی عرضه می‌شوند. این شرکت با دریافت پروانه بهره‌برداری از وزارت صمت، پروانه عرضه خدمات از سازمان تنظیم مقررات و ارتباطات رادیویی و مجوزهای معتبر دیگر، جایگاه خود را در صنعت مخابرات تثبیت کرده است. تمامی محصولات این شرکت دارای گارانتی ۱۸ ماهه می‌باشد و همراه با خدمات پس از فروش و پشتیبانی فنی مستمر ارائه می‌شوند. کارخانه شرکت در شهرک صنعتی اصفهان و دفتر مرکزی آن در استان اصفهان قرار دارد. استفاده از محصولات این مجموعه در پروژه‌های شرکت ملی نفت، گاز، برق و... نشان‌دهنده کیفیت و اعتماد بالای مشتریان به این مجموعه است. این شرکت با تمرکز بر نوآوری، بومی‌سازی فناوری‌های مخابراتی و امکان سفارشی سازی محصولات، آماده همکاری با تمامی سازمان‌های دولتی و خصوصی برای توسعه ارتباطات پیشرفته در ایران می‌باشد.



فهرست محصولات

VHF (Very High Frequency)

YAGI

- Yagi - 1 Element **7**
- Yagi - 2 Element **8**
- Yagi - 3 Element **9**
- Yagi - 4 Element **10**
- Yagi - 6 Element **11**

VHF (Very High Frequency)

DIPOLE ARRAY

- 4 Dipole **15**
- 4 Dipole Heavy **16**

VHF (Very High Frequency)

OMNI

- Omni 5dBi **19**
- Omni 6.5dBi **20**
- Omni 8dBi **21**

UHF (Ultra High Frequency)

YAGI

- Yagi - 1 Element **25**
- Yagi - 3 Element **26**
- Yagi - 4 Element **27**
- Yagi - 6 Element **28**
- Yagi -10 Element **29**
- Yagi -16 Element **30**

UHF (Ultra High Frequency)

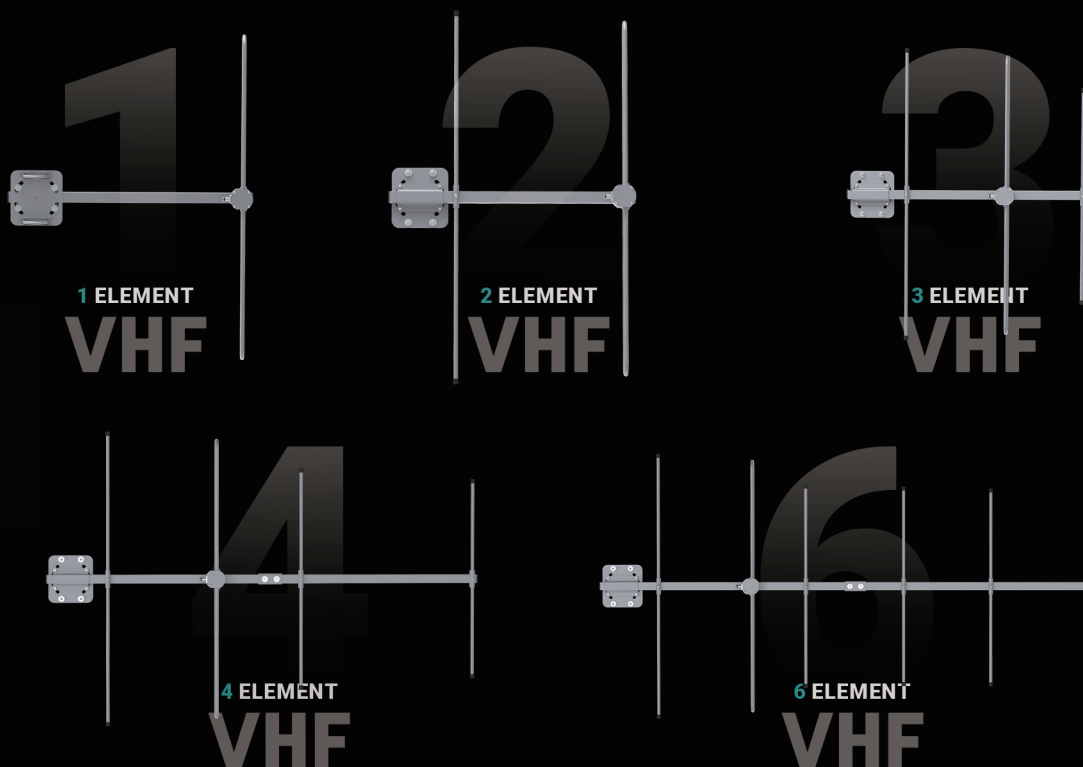
OMNI

- Omni 5dBi **34**
- Omni 8.5dBi **35**
- Omni 11dBi **36**



YAGI

Very High Frequency



ویژگی این محصولات

کابل کشی تو کار آنتن

برگشت سیگنال بسیار پایین

بدنه آنتن از جنس آلومینیوم آلیاژی

کانکتور از نوع N-TYPE-FEMALE

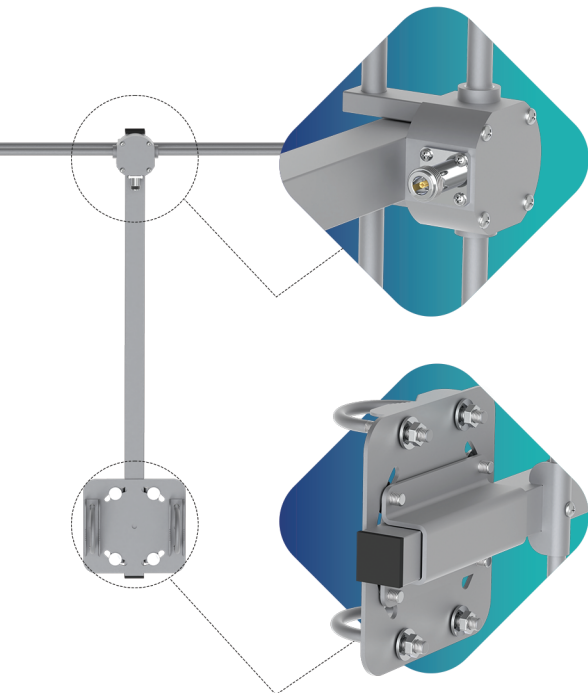
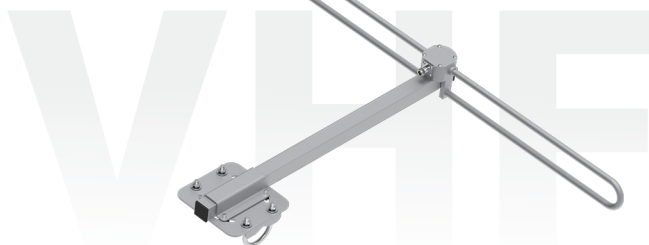
امکان تغییر زاویه عمودی پایه تا ± 15 درجه

مقاوم در برابر صاعقه (DC GROUND)

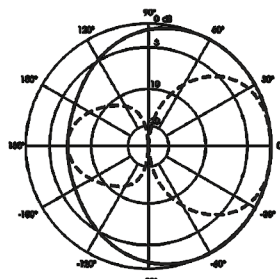
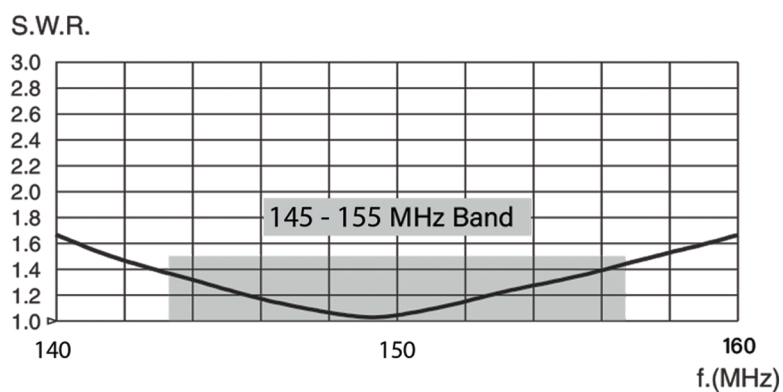
پایه آنتن (MOUNT KIT) از جنس آهن با روکش مقاوم در برابر زنگ زدگی

امکان اتصال پایه آنتن به دکل از سایز لوله 10 الی 60 میلی متر

محدوده ی فرکانسی 20 مگاهرتز با قابلیت سفارشی سازی

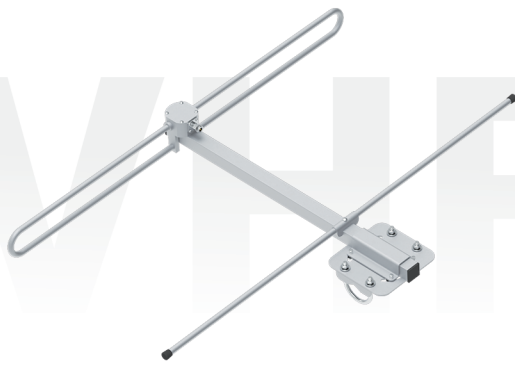


TYPICAL S.W.R. RESPONSE



Product Model	VHF 1 ELEMENT
Type	Yagi Antenna
Frequency Range	136 - 174 MHz
Impedance	50 Ω
Polarization	Vertical / Horizontal
Max Gain	4dBi
Mechanical Pan/Tilt	±15°
S.W.R. in Bandwidth	≤ 1.2:1
Max Power	50 Watts
Lightning Protection	DC Ground
Single Unit Dimension	700 × 980
Operating Temperature	-40C° to +80C°
Wind Resistance	180/150 km/h
Weight	net: 2.1 kg
Bandwidth	20 MHz
H plane beamwidth@-3dB	245°
E plane beamwidth@-3dB	85°
Connector	Female Ntype / PL 259
Materials	Aluminium & Iron

1
ELEMENT

**Product Model****VHF 2 ELEMENT****Type**

Yagi Antenna

Frequency Range

136 - 174 MHz

Impedance50 Ω **Polarization**

Vertical / Horizontal

Max Gain

5.2dBi

Mechanical Pan/Tilt $\pm 15^\circ$ **S.W.R. in Bandwidth** $\leq 1.2:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Single Unit Dimension

650 x 980

Operating Temperature -40°C to $+80^\circ\text{C}$ **Wind Resistance**

180/150 km/h

Weight

net: 2.6 kg

Bandwidth

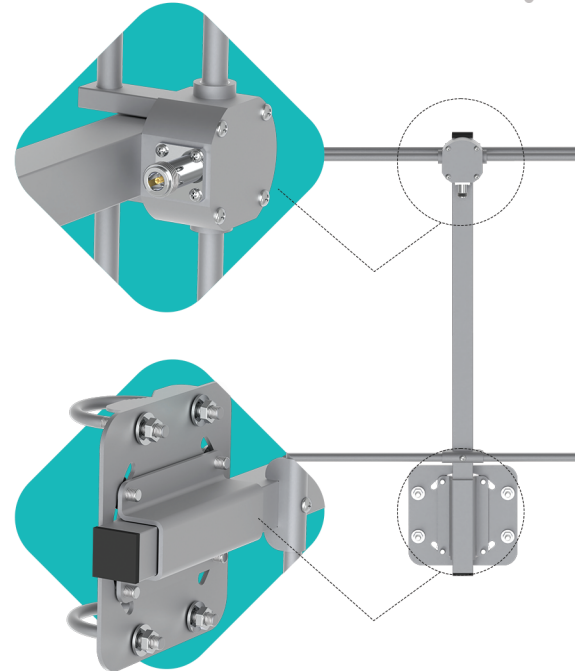
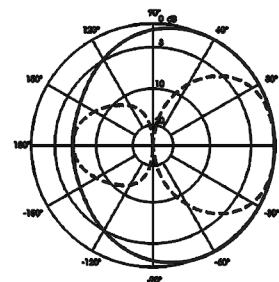
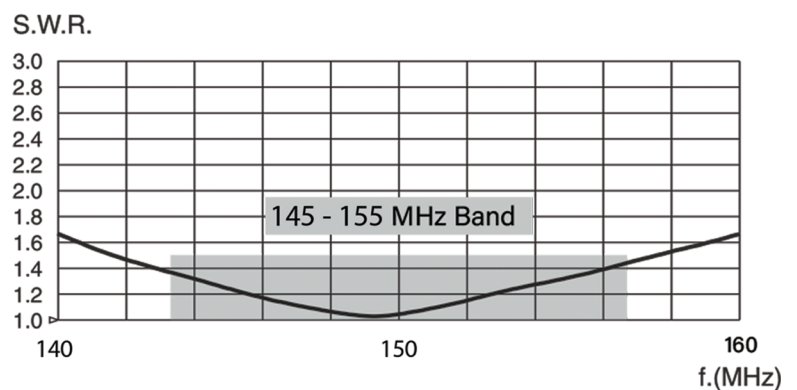
20 MHz

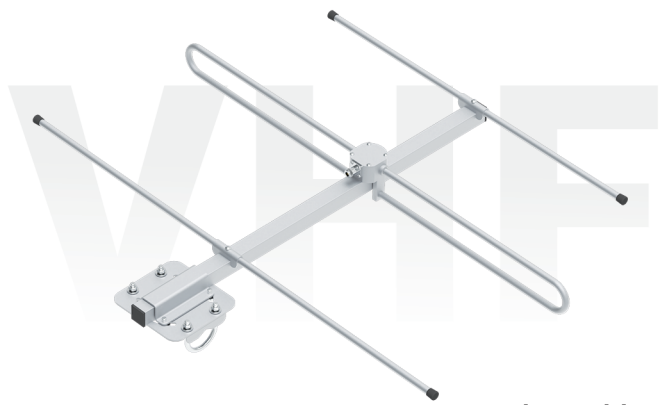
H plane beamwidth@-3dB 165° **E plane beamwidth@-3dB** 75° **Connector**

Female Ntype / PL 259

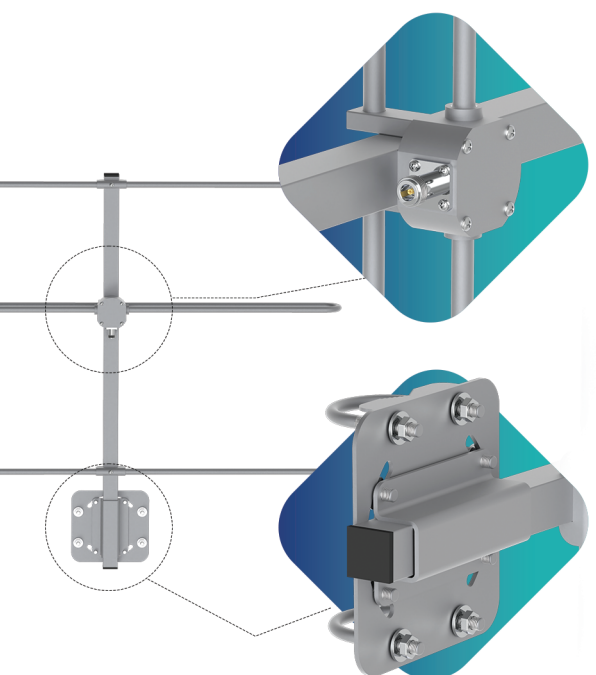
Materials

Aluminium & Iron

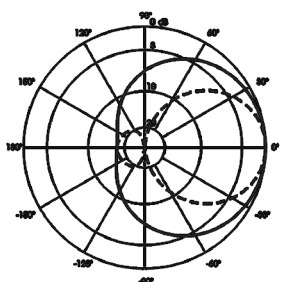
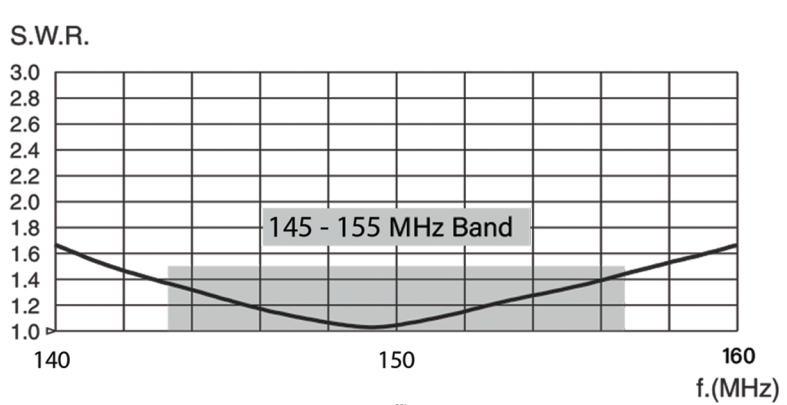
**TYPICAL S.W.R. RESPONSE****2****ELEMENT**



VHF



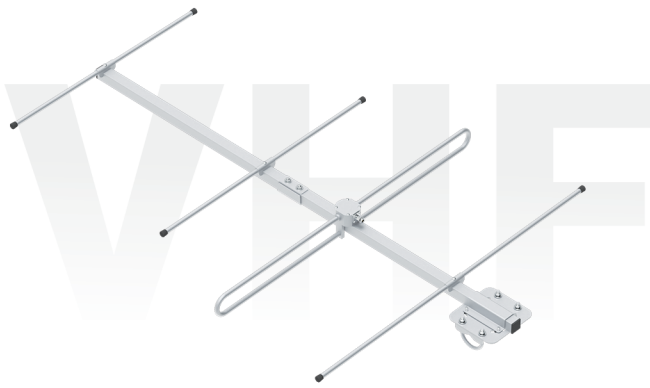
TYPICAL S.W.R. RESPONSE



- Product Model**
VHF 3 ELEMENT
- Type**
Yagi Antenna
- Frequency Range**
136 - 174 MHz
- Impedance**
50 Ω
- Polarization**
Vertical / Horizontal
- Max Gain**
7dBi
- Mechanical Pan/Tilt**
 $\pm 15^\circ$
- S.W.R. in Bandwidth**
 $\leq 1.2:1$
- Max Power**
50 Watts
- Lightning Protection**
DC Ground
- Single Unit Dimension**
820 x 980
- Operating Temperature**
 -40°C to $+80^\circ\text{C}$
- Wind Resistance**
140 /150 km/h
- Weight**
net: 2.7 kg
- Bandwidth**
20 MHz
- H plane beamwidth@-3dB**
 130°
- E plane beamwidth@-3dB**
 70°
- Connector**
Female Ntype / PL 259
- Materials**
Aluminium & Iron

3
ELEMENT

9

**Product Model****VHF 4 ELEMENT****Type**

Yagi Antenna

Frequency Range

136 - 174 MHz

Impedance50 Ω **Polarization**

Vertical / Horizontal

Max Gain

8.5dBi

Mechanical Pan/Tilt $\pm 15^\circ$ **S.W.R. in Bandwidth** $\leq 1.2:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Single Unit Dimension

1305 x 980

Operating Temperature -40°C to $+80^\circ\text{C}$ **Wind Resistance**

140 / 150 km/h

Weight

net: 3.6 kg

Bandwidth

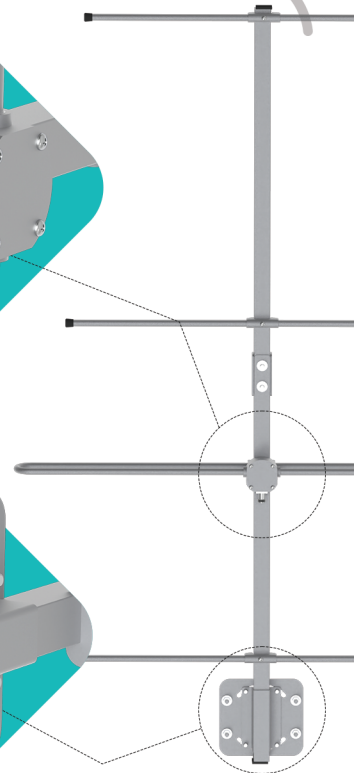
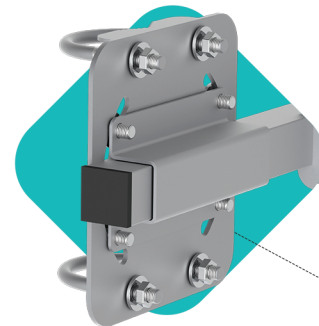
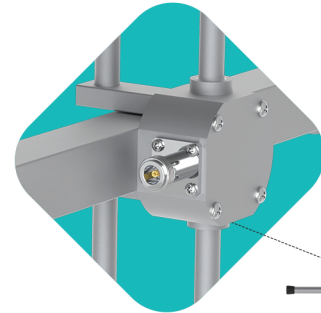
20 MHz

H plane beamwidth@-3dB 100° **E plane beamwidth@-3dB** 65° **Connector**

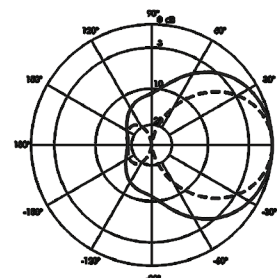
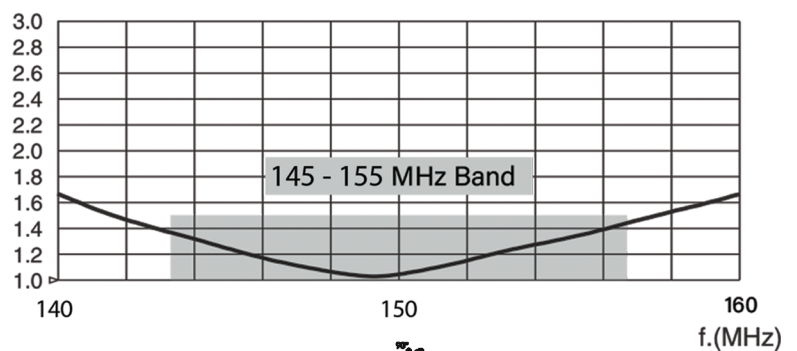
Female Ntype / PL 259

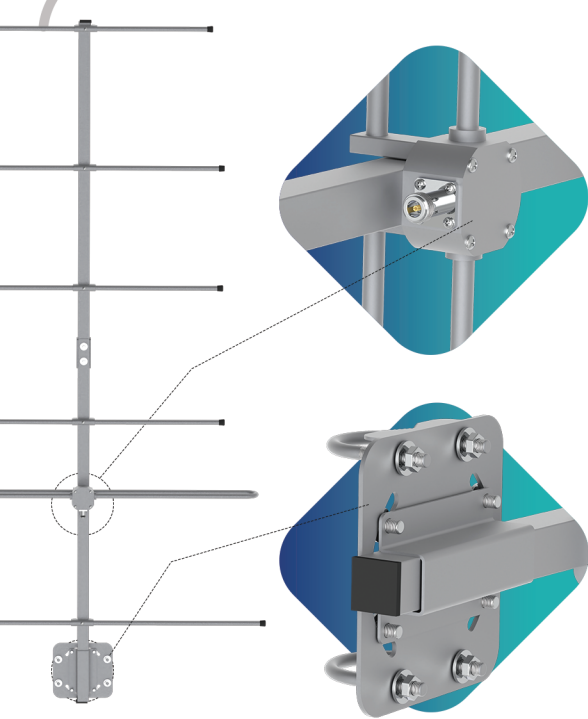
Materials

Aluminium & Iron

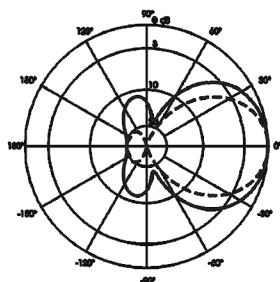
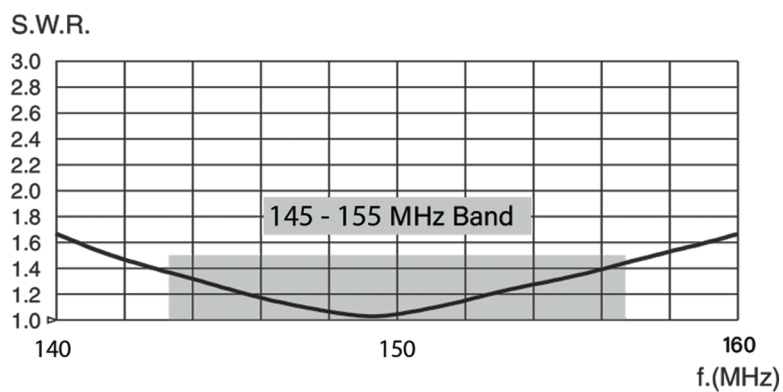
**TYPICAL S.W.R. RESPONSE**

S.W.R.

**4****ELEMENT**

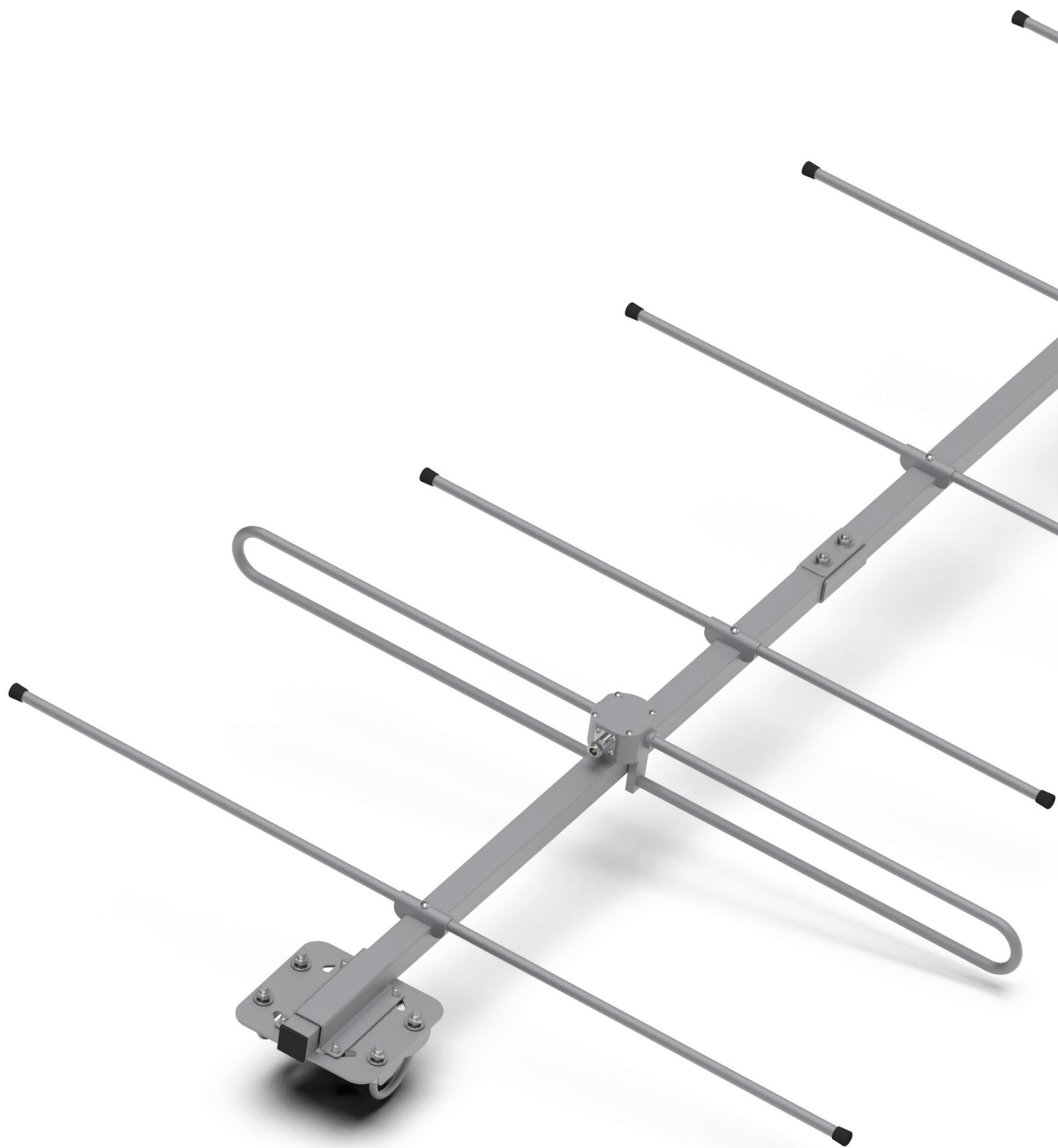


TYPICAL S.W.R. RESPONSE



Product Model	VHF 6 ELEMENT
Type	Yagi Antenna
Frequency Range	136 - 174 MHz
Impedance	50 Ω
Polarization	Vertical / Horizontal
Max Gain	10dBi
Mechanical Pan/Tilt	±15°
S.W.R. in Bandwidth	≤ 1.2:1
Max Power	50 Watts
Lightning Protection	DC Ground
Single Unit Dimension	1840 × 980
Operating Temperature	-40C° to +80C°
Wind Resistance	180/150 km/h
Weight	net: 3.6 kg
Bandwidth	20 MHz
H plane beamwidth@-3dB	75°
E plane beamwidth@-3dB	55°
Connector	Female Ntype / PL 259
Materials	Aluminium & Iron

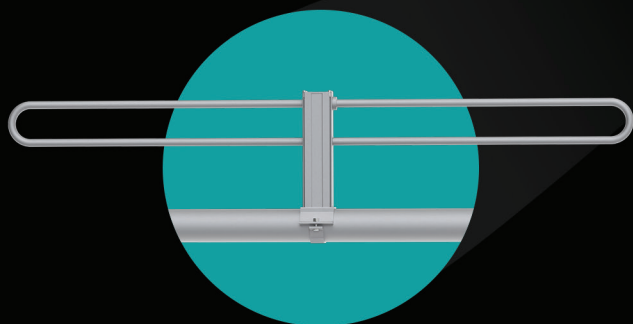
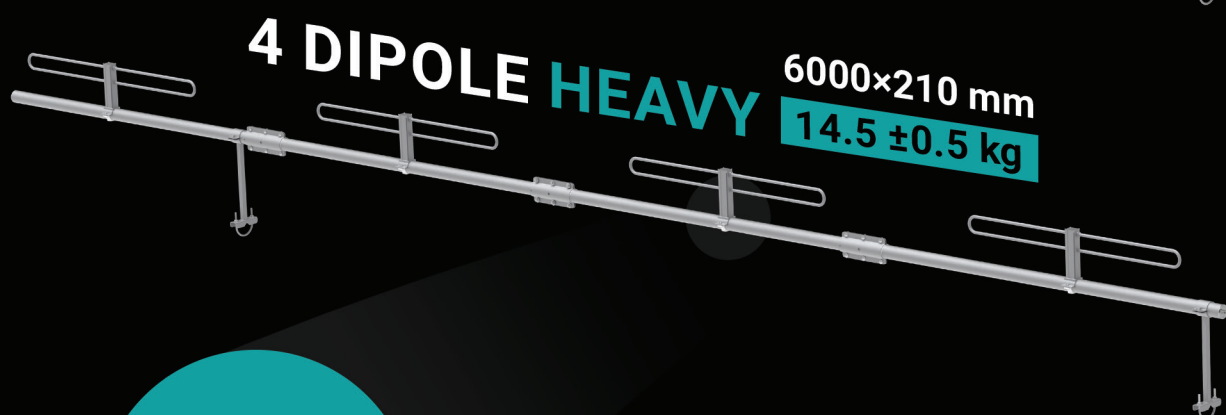
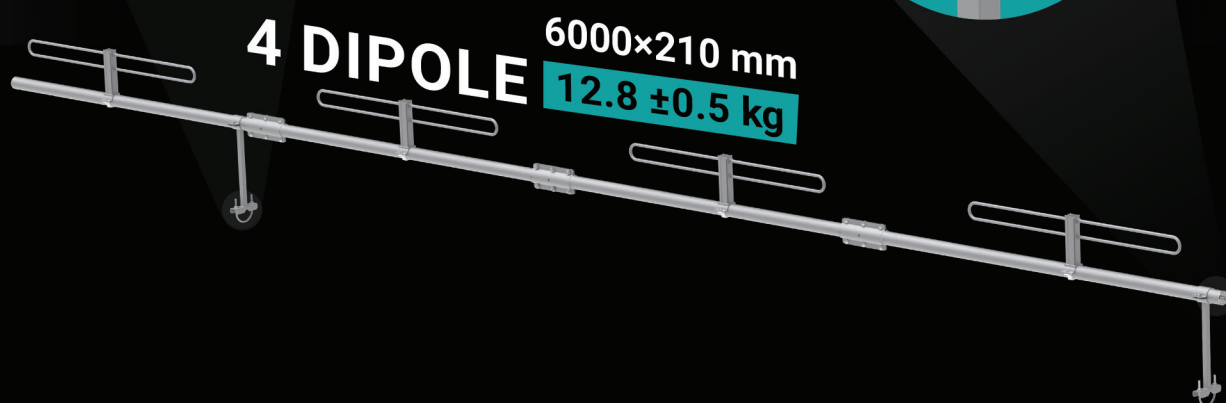
6
ELEMENT

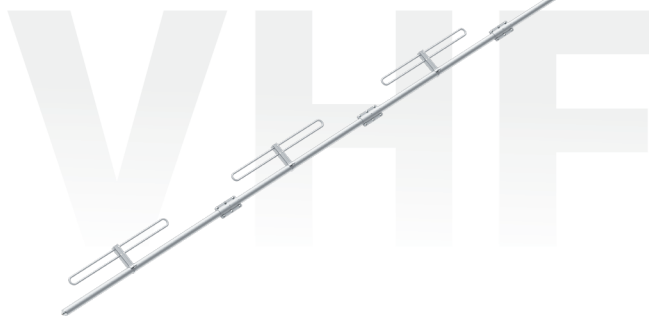
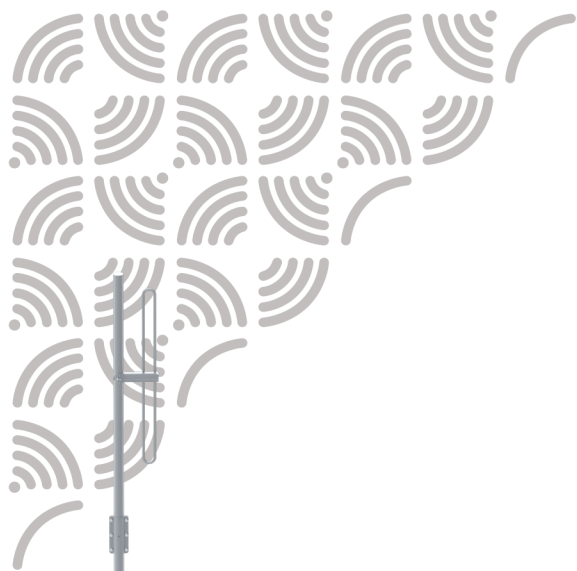




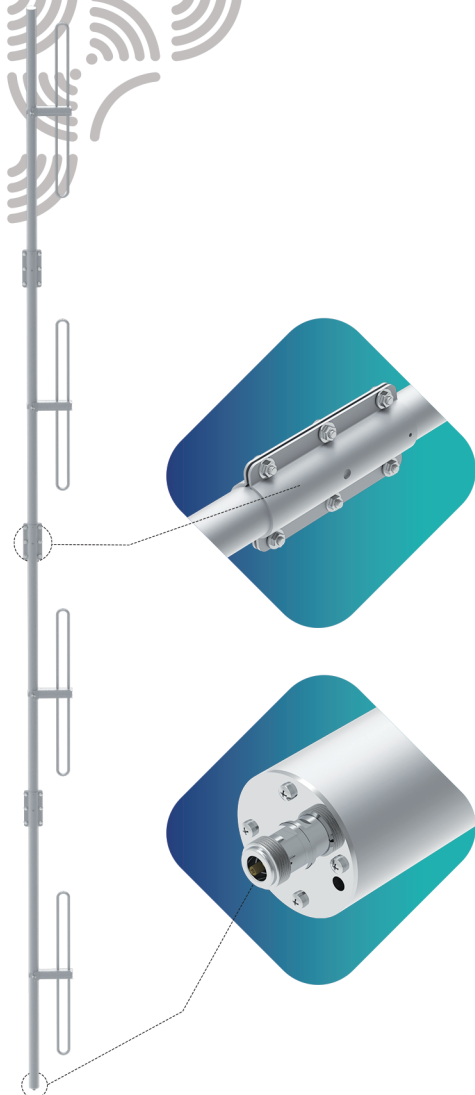
4 DIPOLE

Very High Frequency

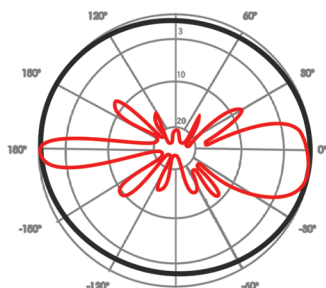
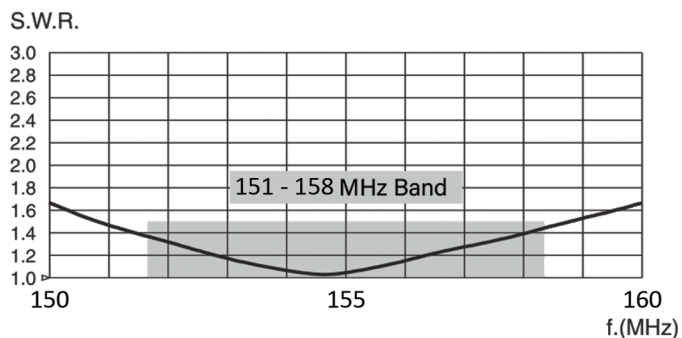




VHF



TYPICAL S.W.R. RESPONSE

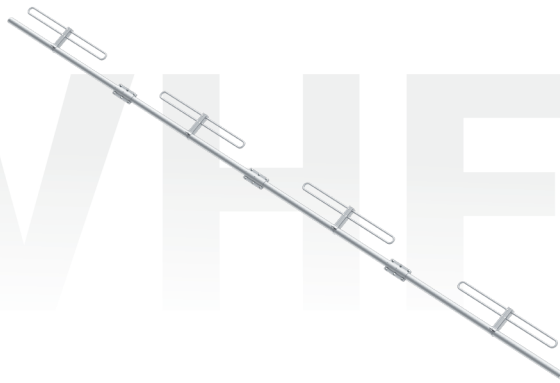


Product Model	4 DIPOLE
Type	Dipole Array
Frequency Range	136 - 174 MHz
Impedance	50 Ω
Polarization	Vertical
Max Gain	6dBi
Mounting	Tower Mount
S.W.R. in Bandwidth	$\leq 1.2:1$
Max Power	50 Watts
Lightning Protection	DC Ground
Single Unit Dimension	6000 $\times$ 210
Operating Temperature	-40C° to +80C°
Wind Resistance	150/100 km/h
Weight	net: 12.8 kg
Bandwidth	10 MHz
H plane beamwidth@-3dB	360°
E plane beamwidth@-3dB	85°
Connector	Female Ntype / PL 259
Materials	Aluminium & Iron

4
DIPOLE



15

**Product Model****4 DIOLE****HEAVY****Type**

Dipole Array

Frequency Range

136 - 174 MHz

Impedance50 Ω **Polarization**

Vertical

Max Gain

6dBi

Mounting

Tower and Top Mount

S.W.R. in Bandwidth $\leq 1.2:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Single Unit Dimension

6000 x 210

Operating Temperature -40°C to $+80^{\circ}\text{C}$ **Wind Resistance**

200/150 km/h

Weight

net: 14.5 kg

Bandwidth

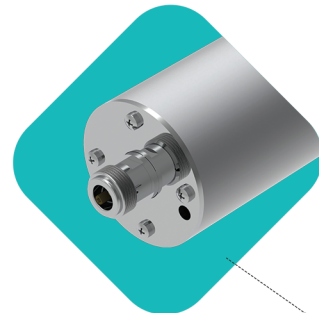
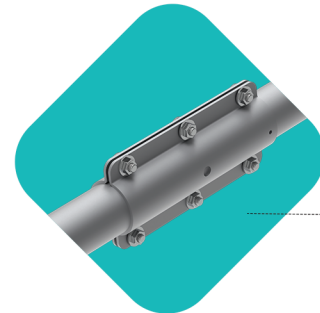
10 MHz

H plane beamwidth@-3dB 360° **E plane beamwidth@-3dB** 85° **Connector**

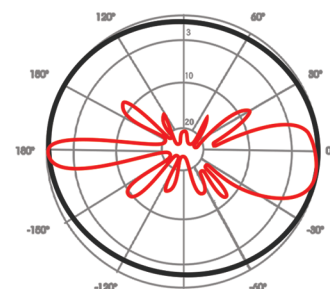
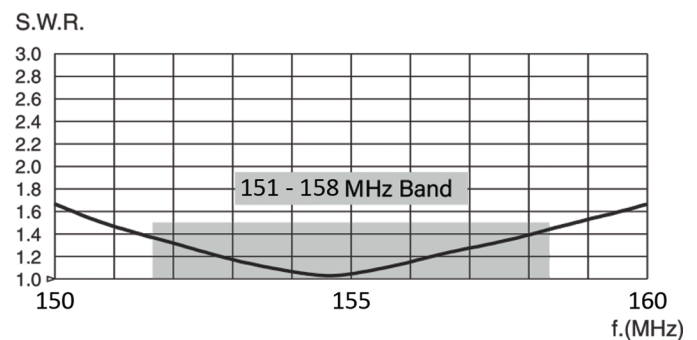
Female Ntype / PL 259

Materials

Aluminium & Iron



TYPICAL S.W.R. RESPONSE

**4**

DIPOLE



OMNI

Very High Frequency

VHF-OMNI 5.6

130 kg
METERS



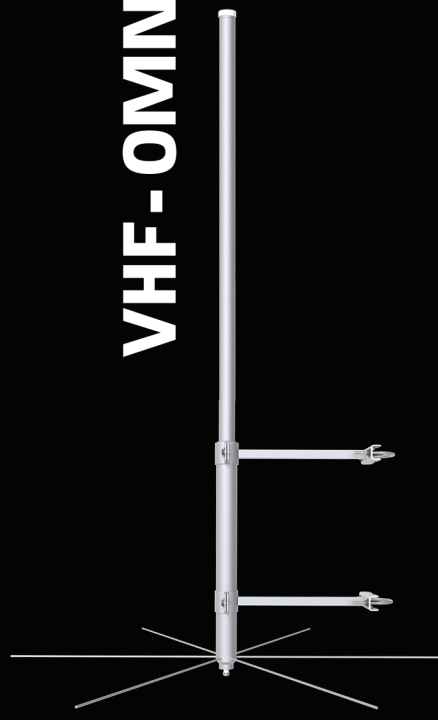
VHF-OMNI 4.5

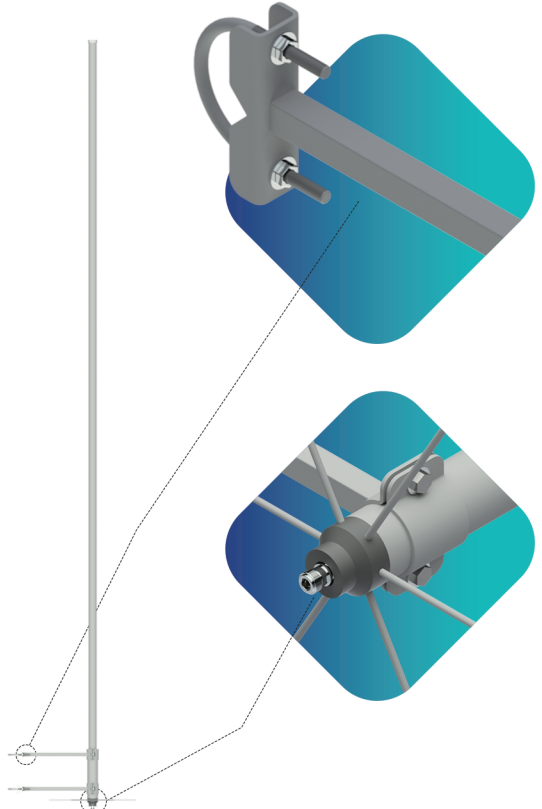
6.5 kg
METERS



VHF-OMNI 3.5

4.0 kg
METERS





Product Model
OMNI DIRECTIONAL 5 dBi

Construction
White FRP Radome Aluminium Mount Section

Frequency Range
136 - 174 MHz

Impedance
50 Ω

Polarization
Vertical

Max Gain
5dBi

Mechanical Pan/Tilt
 $\pm 15^\circ$

S.W.R. in Bandwidth
 $\leq 1.5:1$

Max Power
50 Watts

Lightning Protection
DC Ground

Antenna Height
3.5 Meters

Operating Temperature
 -40°C to $+80^\circ\text{C}$

Wind Resistance
180/150 km/h

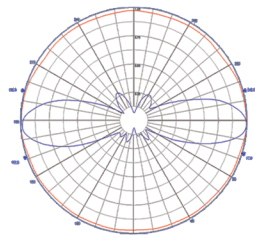
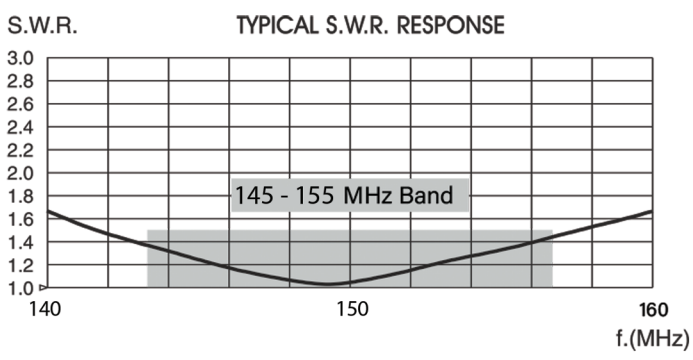
Weight
net: 4 kg

Bandwidth
20 MHz

H plane beamwidth@-3dB
 360°

E plane beamwidth@-3dB
 32°

Connector
Female Ntype



5 DBI



VHF

OMNI

Product Model

OMNI DIRECTIONAL 6.5 dBi

Construction

White FRP Radome Aluminium Mount Section

Frequency Range

136 - 174 MHz

Impedance

50 Ω

Polarization

Vertical

Max Gain

6.5dBi

Mechanical Pan/Tilt

$\pm 15^\circ$

S.W.R. in Bandwidth

$\leq 1.5:1$

Max Power

50 Watts

Lightning Protection

DC Ground

Antenna Height

4.5 Meters

Operating Temperature

-40°C to $+80^\circ\text{C}$

Wind Resistance

180/150 km/h

Weight

net: 6.5 kg

Bandwidth

20 MHz

H plane beamwidth@-3dB

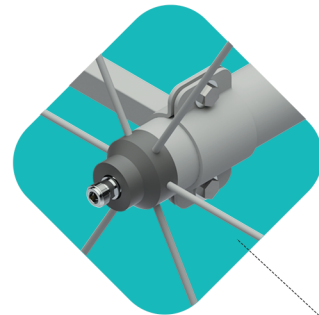
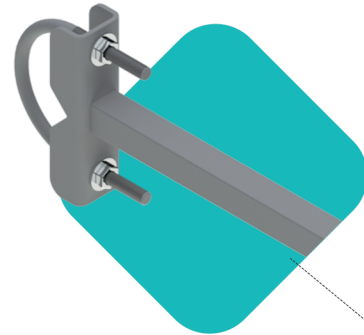
360°

E plane beamwidth@-3dB

26°

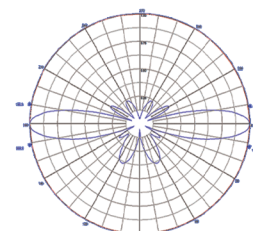
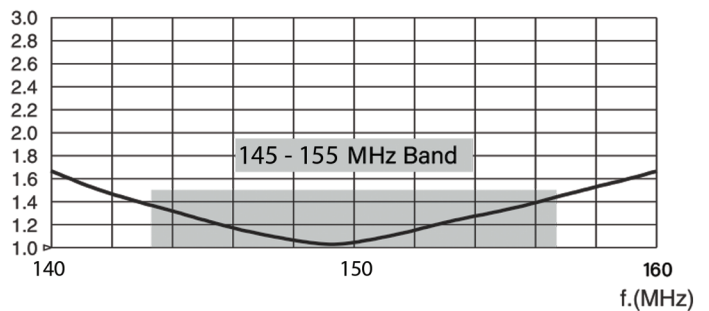
Connector

Female Ntype



S.W.R.

TYPICAL S.W.R. RESPONSE



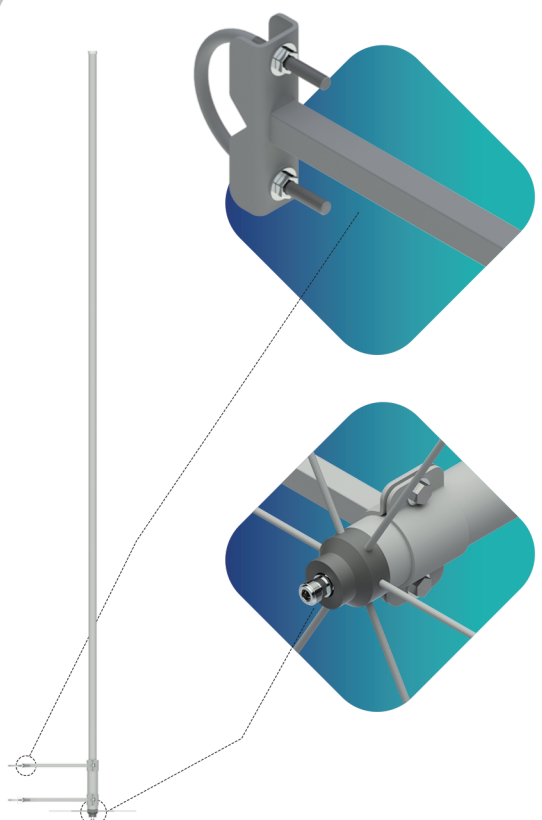
6.5
DBI



VHF



21



Product Model
OMNI DIRECTIONAL 8dBi

Construction
White FRP Radome Aluminium Mount Section

Frequency Range
136 - 174 MHz

Impedance
50 Ω

Polarization
Vertical

Max Gain
8dBi

Mechanical Pan/Tilt
 $\pm 15^\circ$

S.W.R. in Bandwidth
 $\leq 1.5:1$

Max Power
50 Watts

Lightning Protection
DC Ground

Antenna Height
5.6 Meters

Operating Temperature
 -40°C to $+80^\circ\text{C}$

Wind Resistance
200/150 km/h

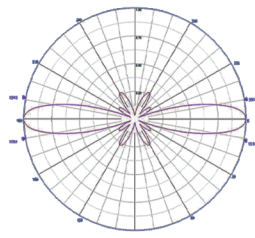
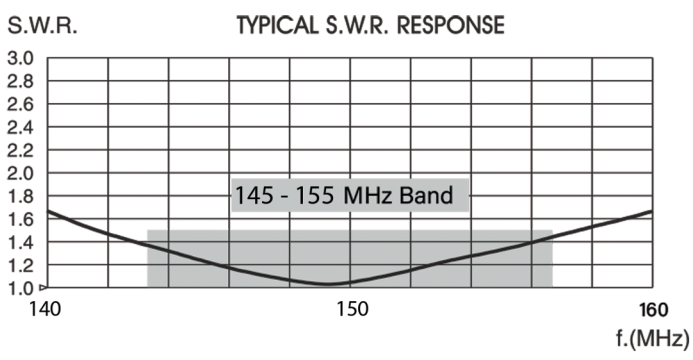
Weight
net: 13 kg

Bandwidth
20 MHz

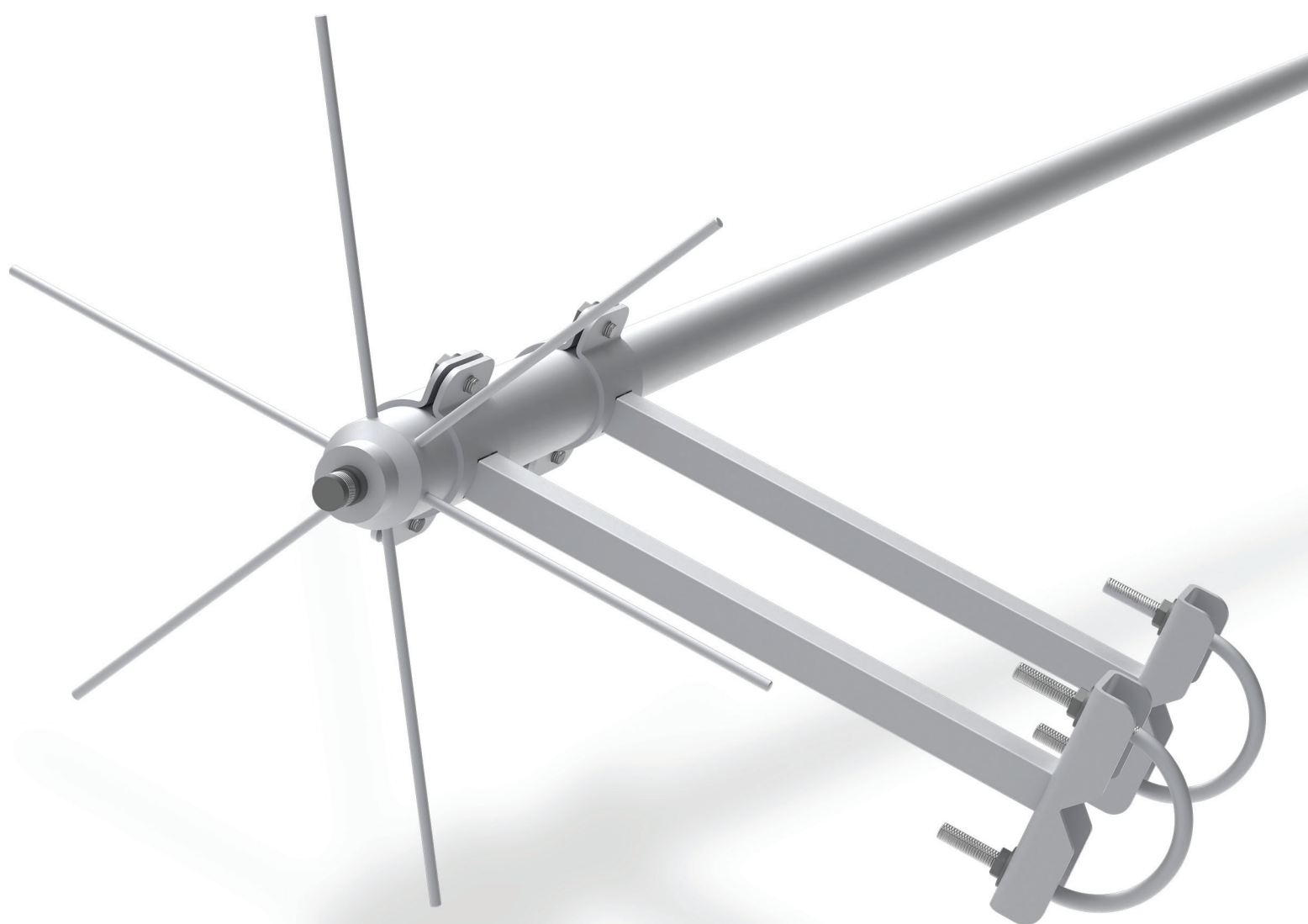
H plane beamwidth@-3dB
 360°

E plane beamwidth@-3dB
 16°

Connector
Female Ntype



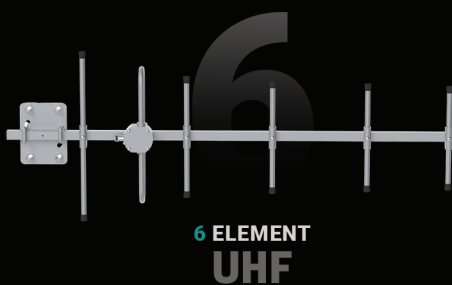
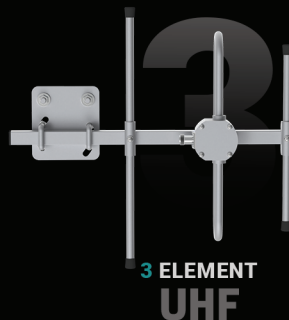
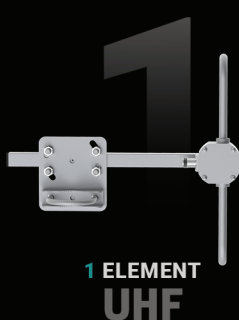
8
DBI





YAGI

Ultra High Frequency



ویژگی این محصولات

برگشت سیگنال بسیار پایین

کابل کشی تو کار آنتن

بدنه آنتن از جنس آلومینیوم آلیاژی

کانکتور از نوع N-TYPE-FEMALE

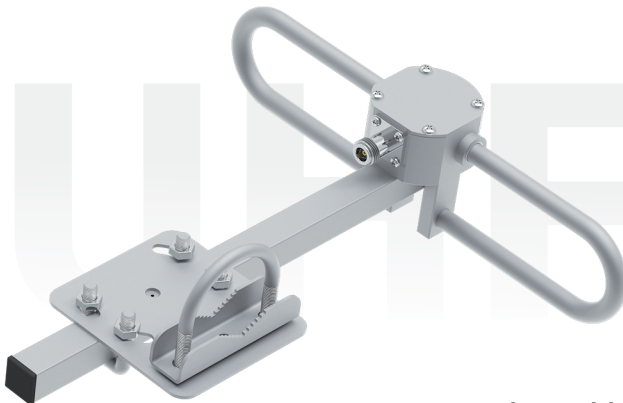
امکان تغییر زاویه عمودی پایه تا ± 15 درجه

مقاوم در برابر صاعقه (DC GROUND)

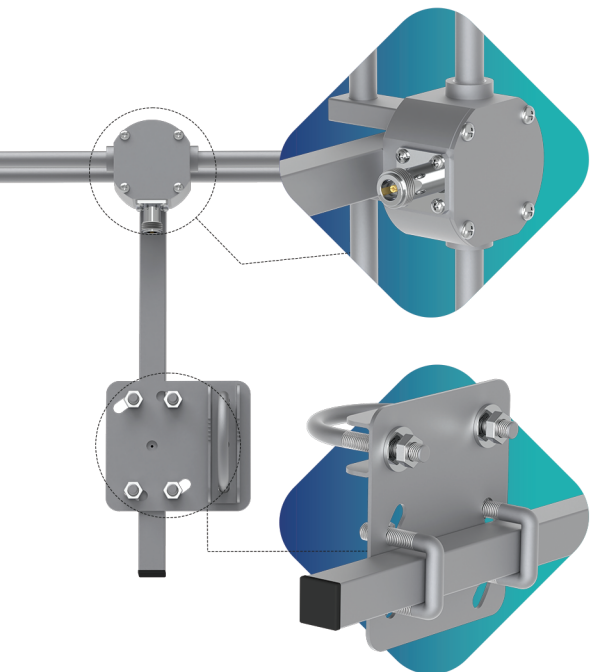
پایه آنتن (MOUNT KIT) از جنس آهن با روکش مقاوم در برابر زنگ زدگی

امکان اتصال پایه آنتن به دکل از سایز لوله 10 الی 60 میلی متر

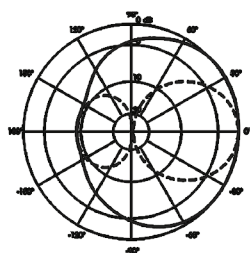
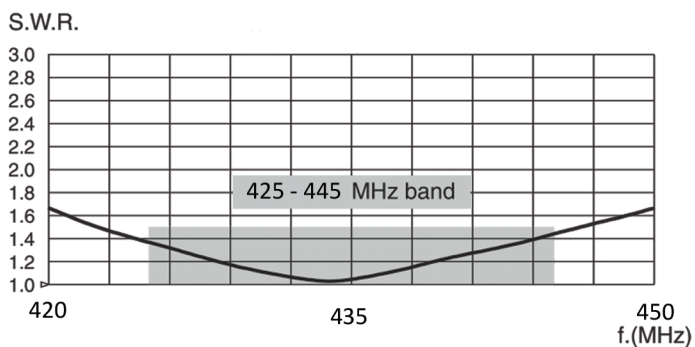
محدوده ی فرکانسی 20 مگاهرتز با قابلیت سفارشی سازی



UHF



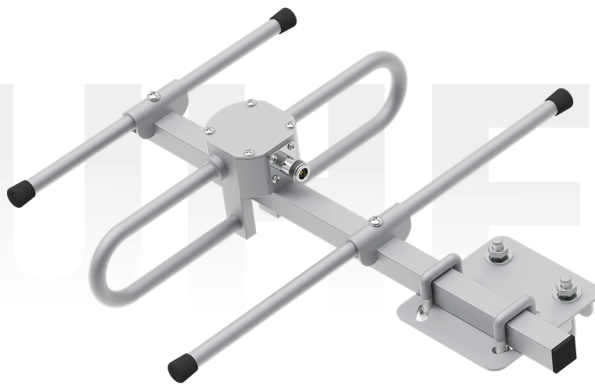
TYPICAL S.W.R. RESPONSE



Product Model
UHF 1 ELEMENT
Type
Yagi Antenna
Frequency Range
350 - 470 MHz
Impedance
50 Ω
Polarization
Vertical / Horizontal
Max Gain
4.5dBi
Mechanical Pan/Tilt
±15°
S.W.R. in Bandwidth
≤ 1.2:1
Max Power
50 Watts
Lightning Protection
DC Ground
Single Unit Dimension
350 × 380
Operating Temperature
-40C° to +80C°
Wind Resistance
180/150 km/h
Weight
net: 0.8 kg
Bandwidth
20 MHz
H plane beamwidth@-3dB
200°
E plane beamwidth@-3dB
68°
Connector
Female Ntype / PL 259
Materials
Aluminium Alloy and UV-Resistant Polymer

1
ELEMENT

25

**Product Model****UHF 3 ELEMENT****Type**

Yagi Antenna

Frequency Range

350 - 470 MHz

Impedance50 Ω **Polarization**

Vertical / Horizontal

Max Gain

7dBi

Mechanical Pan/Tilt $\pm 15^\circ$ **S.W.R. in Bandwidth** $\leq 1.2:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Single Unit Dimension

400 x 380

Operating Temperature -40°C to $+80^\circ\text{C}$ **Wind Resistance**

180/150 km/h

Weight

net: 1 kg

Bandwidth

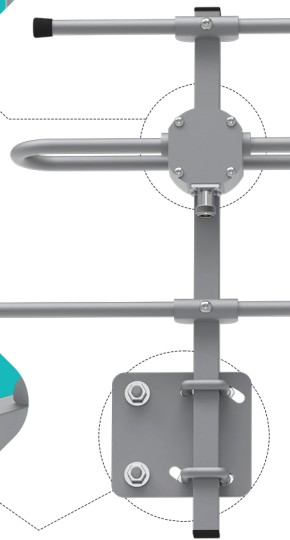
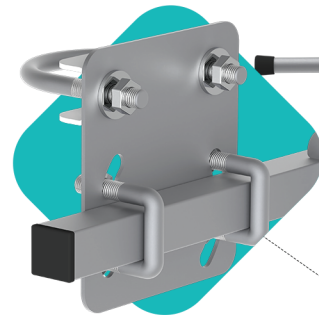
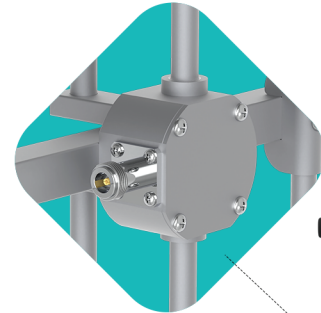
20 MHz

H plane beamwidth@-3dB 125° **E plane beamwidth@-3dB** 65° **Connector**

Female Ntype / PL 259

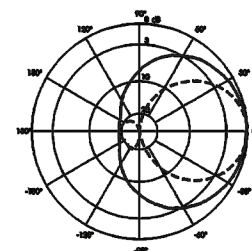
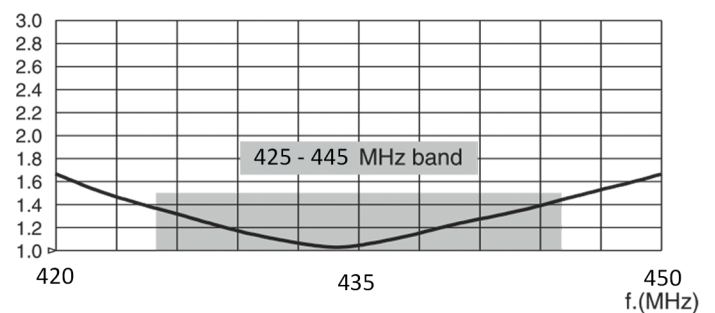
Materials

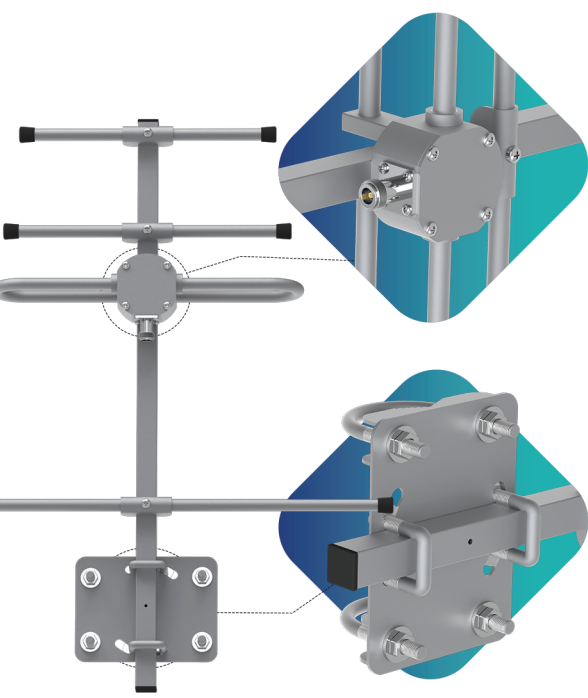
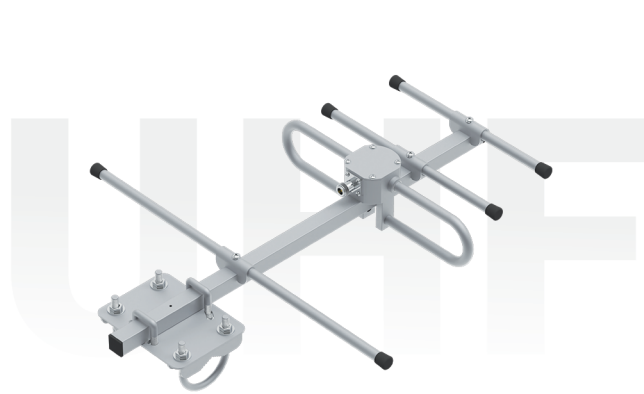
Aluminium Alloy and UV-Resistant Polymer



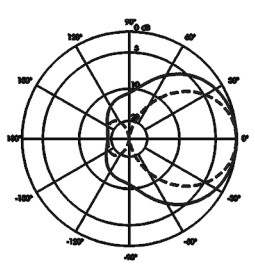
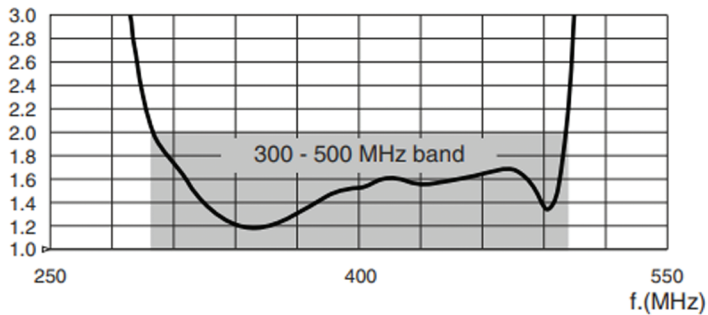
TYPICAL S.W.R. RESPONSE

S.W.R.


3
ELEMENT



TYPICAL S.W.R. RESPONSE



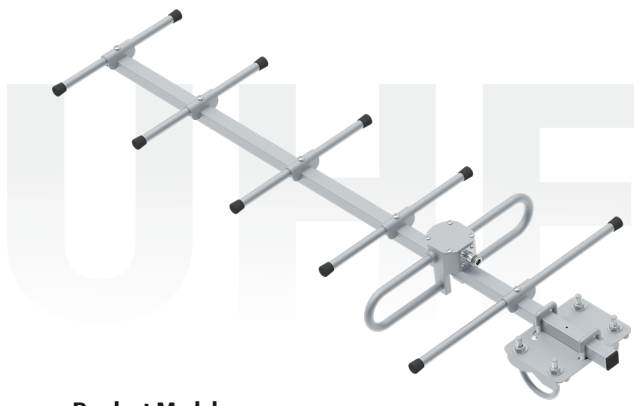
Product Model	UHF 4 ELEMENT
Type	Yagi Antenna
Frequency Range	300 - 500 MHz
Impedance	50 Ω
Polarization	Vertical / Horizontal
Max Gain	10.5dBi
Mechanical Pan/Tilt	±15°
S.W.R. in Bandwidth	≤ 1.2:1
Max Power	50 Watts
Lightning Protection	DC Ground
Single Unit Dimension	1000 × 380
Operating Temperature	-40C° to +80C°
Wind Resistance	140/100 km/h
Weight	net: 1.2 kg
Bandwidth	200 MHz
H plane beamwidth@-3dB	70°
E plane beamwidth@-3dB	55°
Connector	Female Ntype / PL 259
Materials	Aluminium Alloy and UV-Resistant Polymer

4
ELEMENT

UHF



27

**Product Model****UHF 6 ELEMENT****Type**

Yagi Antenna

Frequency Range

350 - 470 MHz

Impedance50 Ω **Polarization**

Vertical / Horizontal

Max Gain

10.5dBi

Mechanical Pan/Tilt $\pm 15^\circ$ **S.W.R. in Bandwidth** $\leq 1.2:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Single Unit Dimension

1000 x 380

Operating Temperature -40°C to $+80^\circ\text{C}$ **Wind Resistance**

140/100 km/h

Weight

net: 1.2 kg

Bandwidth

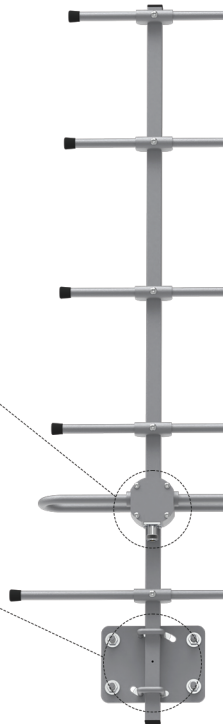
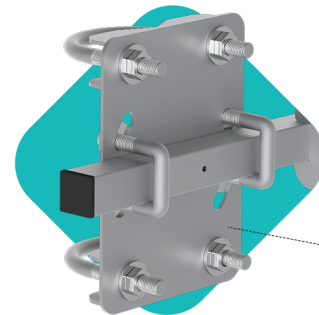
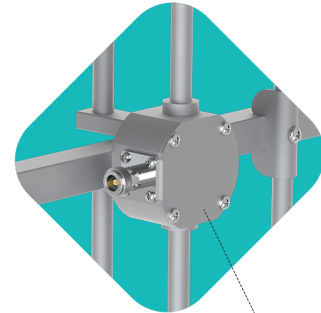
20 MHz

H plane beamwidth@-3dB 70° **E plane beamwidth@-3dB** 55° **Connector**

Female Ntype / PL 259

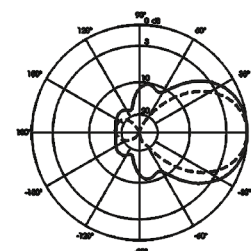
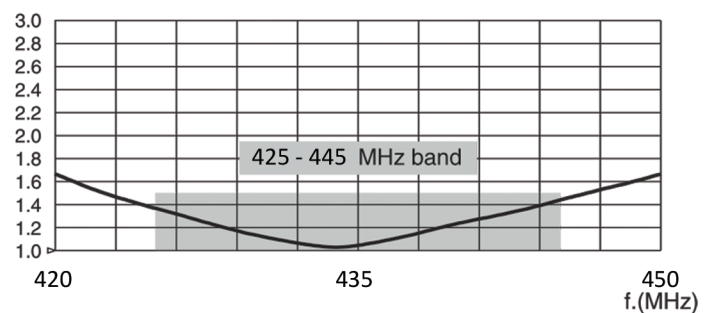
Materials

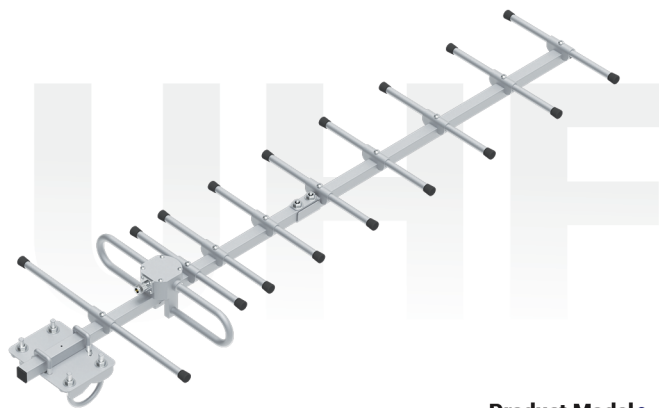
Aluminium Alloy and UV-Resistant Polymer



TYPICAL S.W.R. RESPONSE

S.W.R.


6
ELEMENT

**Product Model****UHF 10 ELEMENT****Type**

Yagi Antenna

Frequency Range

350 - 470 MHz

Impedance50 Ω **Polarization**

Vertical / Horizontal

Max Gain

14dBi

Mechanical Pan/Tilt $\pm 15^\circ$ **S.W.R. in Bandwidth** $\leq 1.2:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Single Unit Dimension1230 $\times$ 380**Operating Temperature** -40°C to $+80^\circ\text{C}$ **Wind Resistance**

140/100 km/h

Weight

net: 1.9 kg

Bandwidth

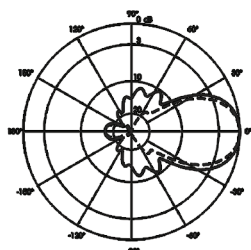
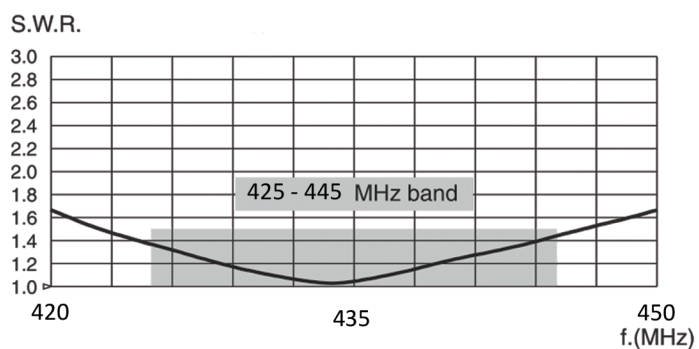
20 MHz

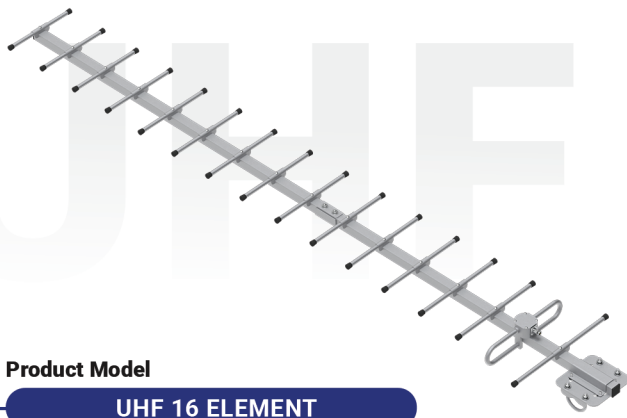
H plane beamwidth@-3dB 50° **E plane beamwidth@-3dB** 45° **Connector**

Female Ntype / PL 259

Materials

Aluminium Alloy and UV-Resistant Polymer

TYPICAL S.W.R. RESPONSE
10
ELEMENT

**Product Model****UHF 16 ELEMENT****Type**

Yagi Antenna

Frequency Range

350 - 470 MHz

Impedance50 Ω **Polarization**

Vertical / Horizontal

Max Gain

16dBi

Mechanical Pan/Tilt $\pm 15^\circ$ **S.W.R. in Bandwidth** $\leq 1.2:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Single Unit Dimension

2300x 380

Operating Temperature -40°C to $+80^\circ\text{C}$ **Wind Resistance**

140/100 km/h

Weight

net: 2.4 kg

Bandwidth

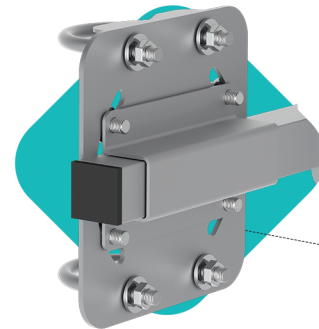
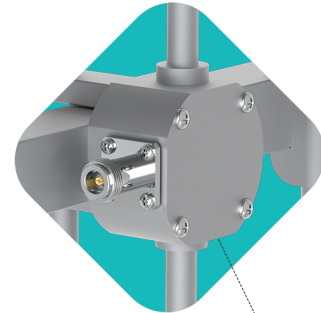
10 MHz

H plane beamwidth@-3dB 37° **E plane beamwidth@-3dB** 33° **Connector**

Female Ntype / PL 259

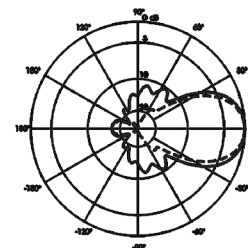
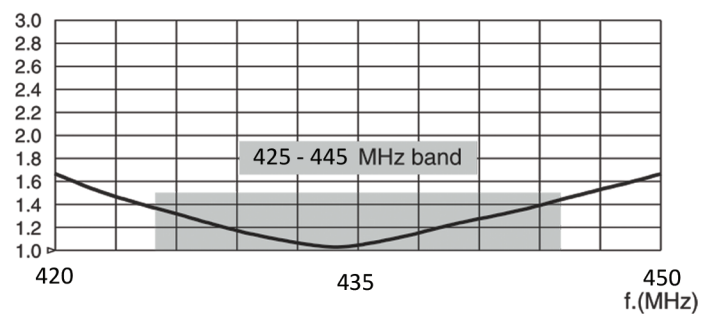
Materials

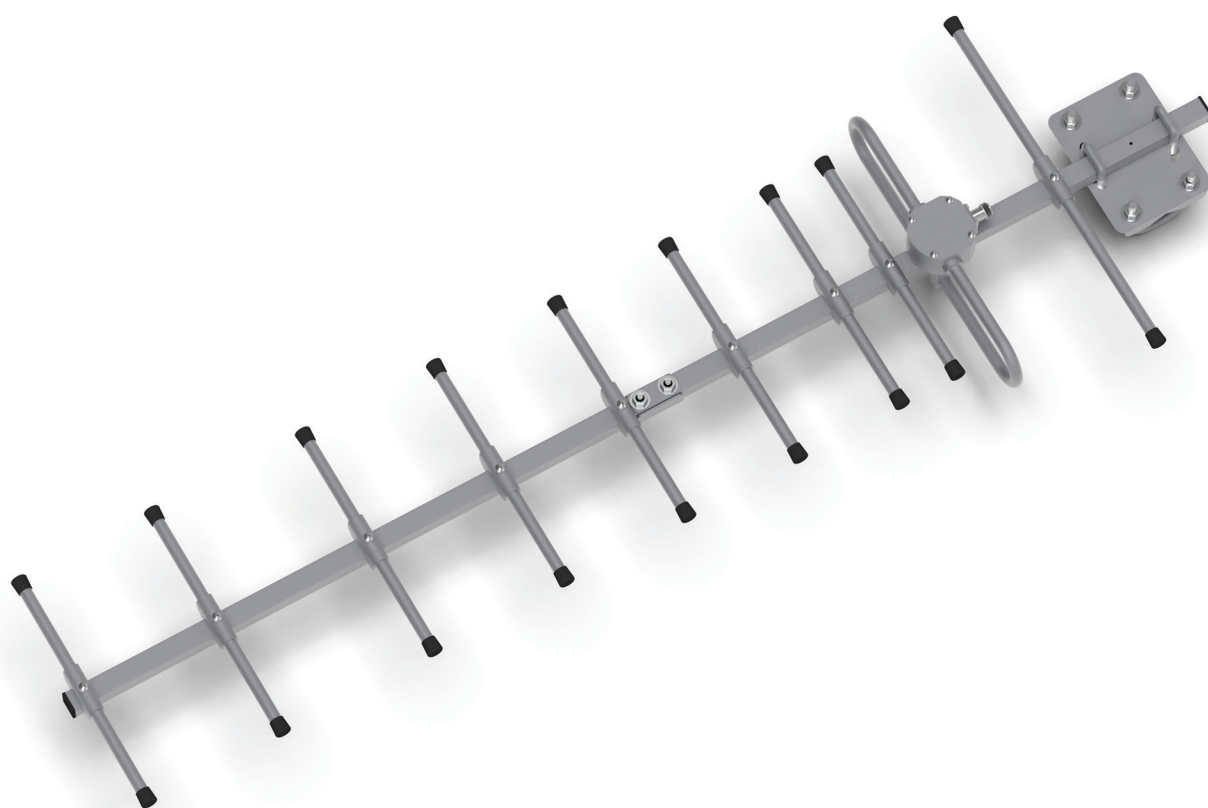
Aluminium Alloy and UV-Resistant Polymer



TYPICAL S.W.R. RESPONSE

S.W.R.


16
ELEMENT





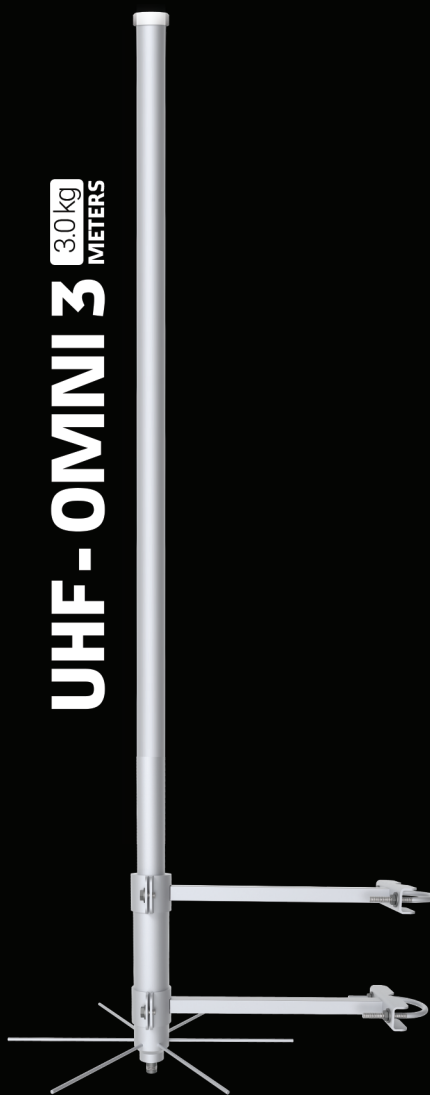
OMNI

U l t r a H i g h F r e q u e n c y

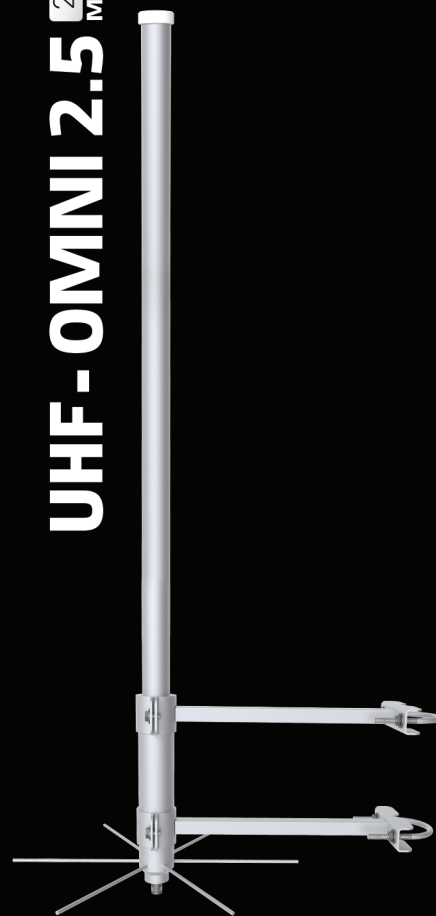
UHF-OMNI 3.5 **4.0 kg**
METERS



UHF-OMNI 3 **3.0 kg**
METERS

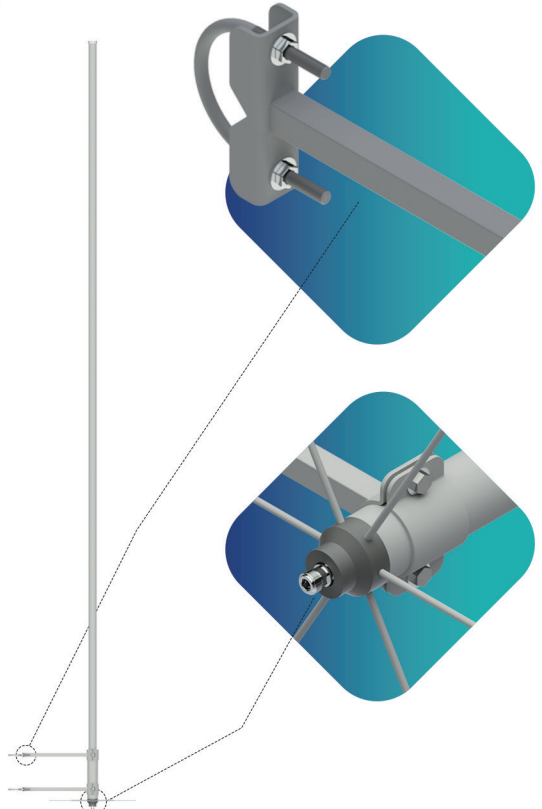


UHF-OMNI 2.5 **2.0 kg**
METERS





UHF



Product Model
OMNI DIRECTIONAL 5dBi

Construction
White FRP Radome Aluminium Mount Section

Frequency Range
350 - 470 MHz

Impedance
50 Ω

Polarization
Vertical

Max Gain
5dBi

Mechanical Pan/Tilt
 $\pm 15^\circ$

S.W.R. in Bandwidth
 $\leq 1.5:1$

Max Power
50 Watts

Lightning Protection
DC Ground

Antenna Height
2.5 Meters

Operating Temperature
 -40°C to $+80^\circ\text{C}$

Wind Resistance
200/150 km/h

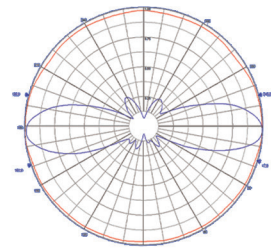
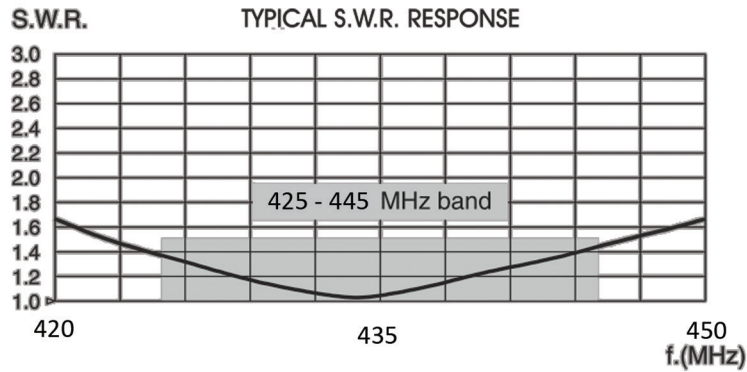
Weight
net: 4.5 kg

Bandwidth
20 MHz

H plane beamwidth@-3dB
 360°

E plane beamwidth@-3dB
 32°

Connector
Female Ntype



5 DBI



34

**Product Model****OMNI DIRECTIONAL 8.5dBi****Construction**

White FRP Radome Aluminium Mount Section

Frequency Range

350 - 470 MHz

Impedance50 Ω **Polarization**

Vertical

Max Gain

8.5dBi

Mechanical Pan/Tilt $\pm 15^\circ$ **S.W.R. in Bandwidth** $\leq 1.5:1$ **Max Power**

50 Watts

Lightning Protection

DC Ground

Antenna Height

3 Meters

Operating Temperature -40°C to $+80^\circ\text{C}$ **Wind Resistance**

180/150 km/h

Weight

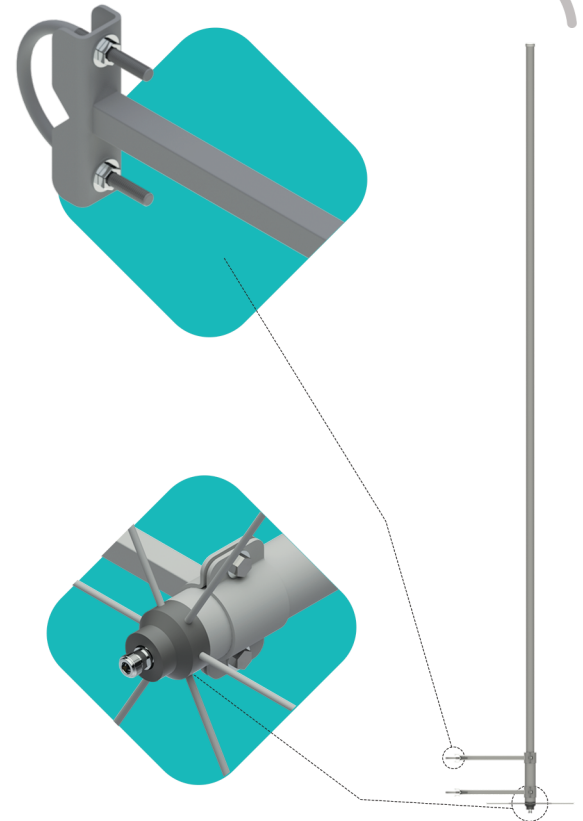
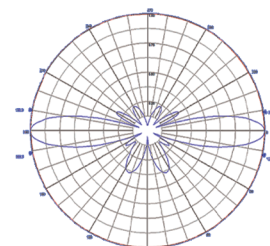
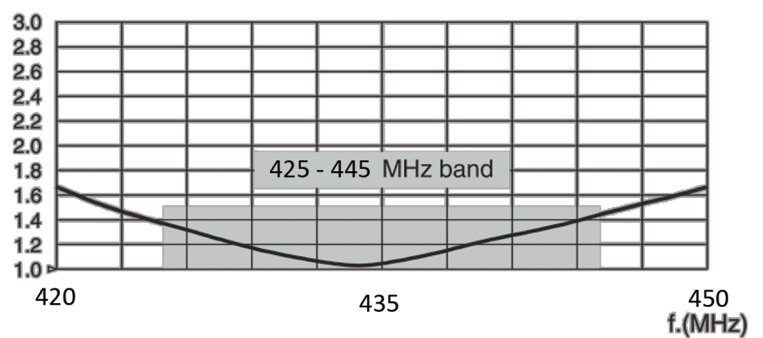
net: 5.8 kg

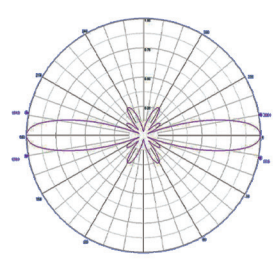
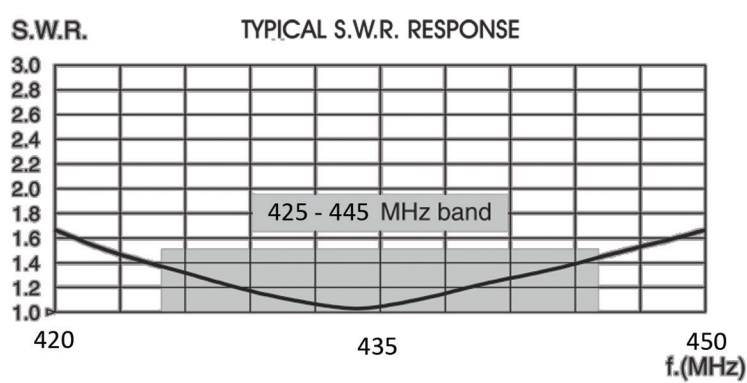
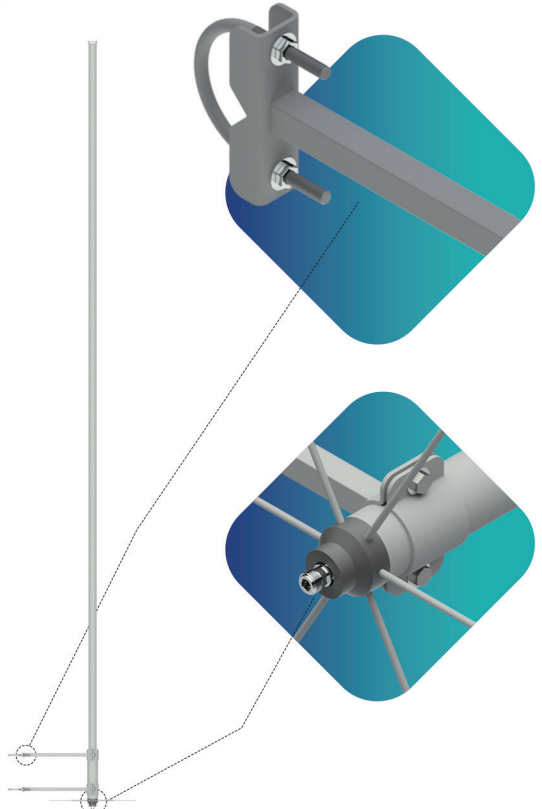
Bandwidth

20 MHz

H plane beamwidth@-3dB 360° **E plane beamwidth@-3dB** 16° **Connector**

Female Ntype

**S.W.R.****TYPICAL S.W.R. RESPONSE****8.5
DBI**



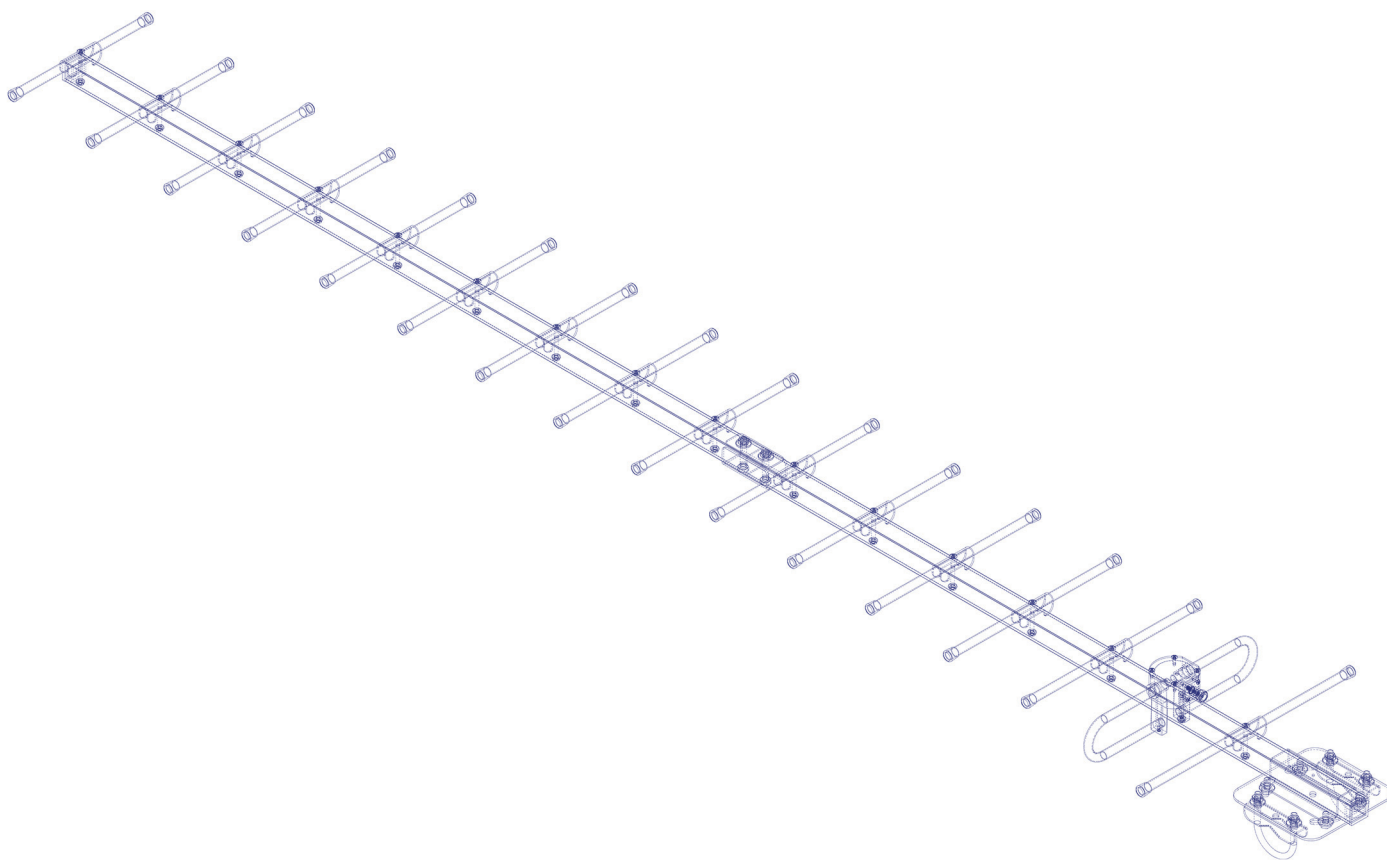
- Product Model**
OMNI DIRECTIONAL 11dBi
- Construction**
White FRP Radome Aluminium Mount Section
- Frequency Range**
350 - 470 MHz
- Impedance**
50 Ω
- Polarization**
Vertical
- Max Gain**
11dBi
- Mechanical Pan/Tilt**
 $\pm 15^\circ$
- S.W.R. in Bandwidth**
 $\leq 1.5:1$
- Max Power**
50 Watts
- Lightning Protection**
DC Ground
- Antenna Height**
3.5 Meters
- Operating Temperature**
 -40°C to $+80^\circ\text{C}$
- Wind Resistance**
200/150 km/h
- Weight**
net: 6.5 kg
- Bandwidth**
20 MHz
- H plane beamwidth@-3dB**
 360°
- E plane beamwidth@-3dB**
 9°
- Connector**
Female Ntype

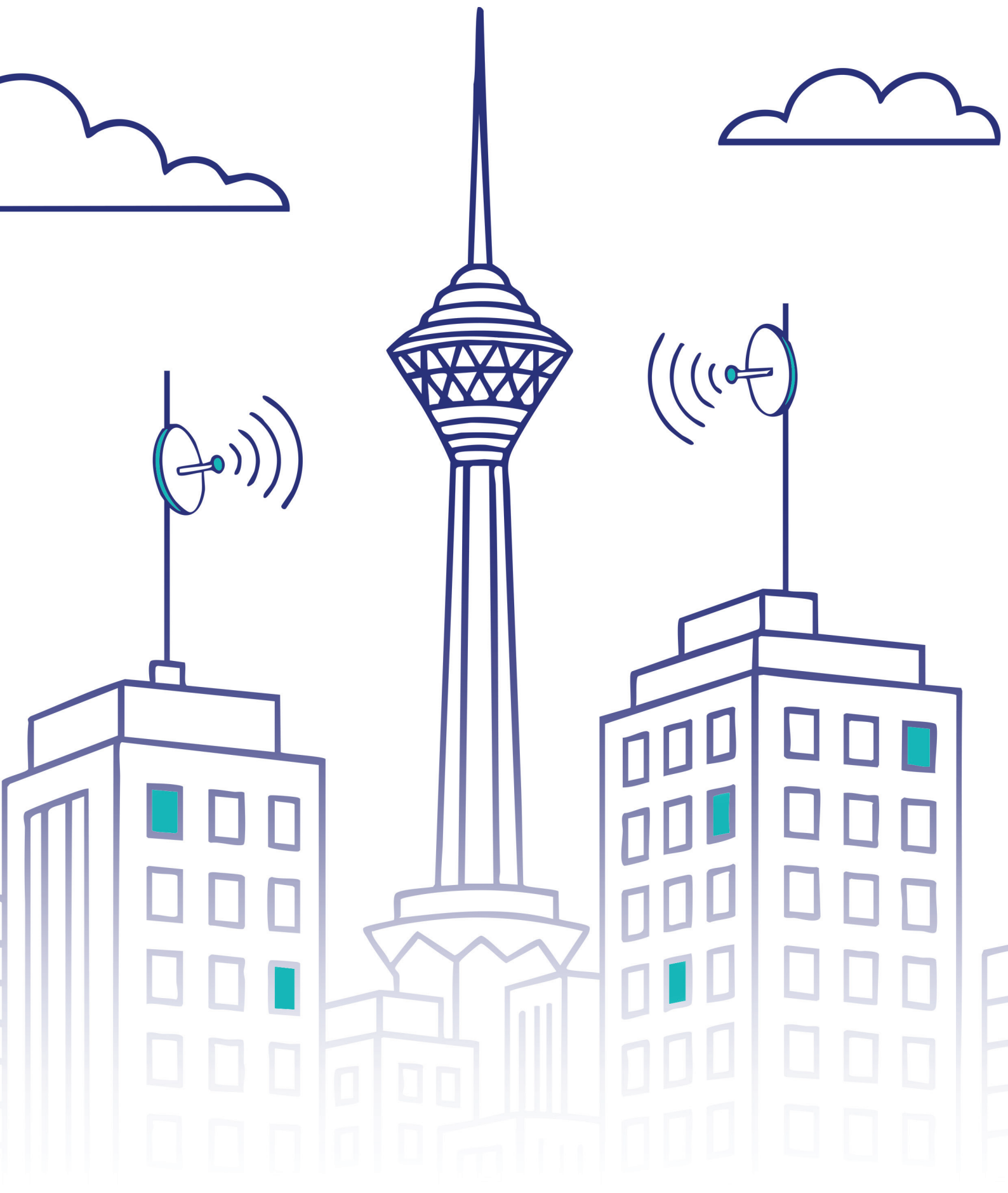
**11
DBI**

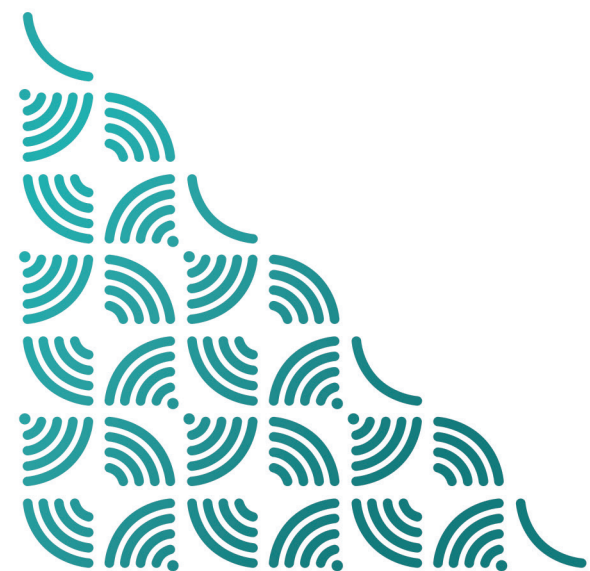
UHF



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Faramoj Sazan Ertebatat Parsian Co.

MANUFACTURER & SUPPLIER OF ANTENNAS & TELECOM EQUIPMENT



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