27 – 512 MHz Base Station Antennas for Mobile Communications





List of available catalogues for Mobile Communication Antennas and Accessories

- 790 2200 MHz Base Station Antennas
- 27 512 MHz Base Station Antennas
- Ground-to-Air Communication Antennas

The listed catalogues are also available on CD-ROM

- Railway Communication Antennas
- 80/160 MHz Filter, Combiners, Amplifiers for Mobile Communications
- 450 MHz Filters, Combiners, Amplifiers for Mobile Communications
- 900/1800 MHz Filters, Combiners, Amplifiers for Mobile Communications

Photo on title page: 3-Sector Tetra Base Station

Catalogue Issue 09/00

All data published in previous catalogue issues hereby becomes invalid. We reserve the right to make alterations in accordance with the requirements of our customers.

Please note:

As a result of ever more stringent legal regulations and judgements regarding product liability, we are obliged to point out certain risks that may arise when products are used under extraordinary operating conditions.

The mechanical design is based on the environmental conditions as stipulated in ETS 300 019–1–4, which include the static mechanical load imposed on an antenna by wind at maximum velocity.

Extraordinary operating conditions, such as heavy icing or exceptional dynamic stress (e. g. strain caused by oscillating support structures), may result in the breakage of an antenna or even cause it to fall to the ground.

These facts must be considered during the site planning process.

The details given in our data sheets have to be followed carefully when installing the antennas and accessories.

The installtion team must be properly qualified and also be familiar with the relevant national safety regulations.



"Quality leads the way"

Being the oldest and largest antenna manufacturer worldwide, we take on every day the challenge arising from our own motto. One of our basic principles is to look always for the best solution in order to satisfy our customers.

Our quality assurance system conforms to DIN EN ISO 9001 and applies to the product range of the company: Antenna systems, communication products as well as active and passive distribution equipment.

Directional Antennas	68 – 87.5 MHz
Directional Antennas	146 – 174 MHz
Directional Antennas	360 – 512 MHz

Omnidirectional Antennas 27 – 87.5 MHz

Omnidirectional Antennas 146 – 174 MHz

Omnidirectional Antennas 370 – 470 MHz

Power Splitters

Accessories

Technical Supplement

Summary of types The articles are listed by type number in numerical order.

КАТН	REIN
Antennen ·	Electronic

Type No.	Page	Туре No.	Page	Туре No.	Page	Туре No.	Page
711 530	39	738 546	63	K 55 26 26	40	K 72 22 47	23
713 645	66	739 504	20	K 55 26 27	40	K 73 12 21	28
716 192	66	739 506	20	K 55 26 28	40	K 73 23 21	28
720 842	50	739 990	26	K 55 28 41	35	K 73 30 21	27
720 880	47	741 515	24	K 55 29 21	42	K 73 30 27	17
721 387	46	741 516	25	K 61 14 01	59	K 73 30 37	17
721 388	47	742 155	49	K 61 14 02	59	K 73 33 21	18
728 888	47	742 242	25	K 61 14 03	59	K 73 33 27	18
728 889	50	K 51 24 70 1	32	K 61 14 04	59	K 73 33 37	18
731 291	21	K 51 24 72	32	K 61 14 05	59	K 73 36 21	16
731 651	63	K 51 25 40 2	34 + 38	K 61 33 11	66	K 73 51 21	29
732 574	59	K 51 25 42 1	34 + 38	K 61 33 21	66	K 75 11 21	45
733 677	63	K 51 26 2	39	K 61 33 3	66	K 75 15 21 1	46
733 678	63	K 51 26 20 2	39	K 61 33 4	66	K 75 15 22 1	46
733 679	63	K 51 26 40 12	33	K 62 55 21	54	K 75 16 21 1	47
733 680	63	K 51 26 40 22	33	K 62 55 41	54	K 75 16 22 1	47
733 695	60	K 51 26 41 1	33	K 62 56 21	54	K 75 16 23 1	47
736 831	44	K 51 26 42 1	33	K 62 56 41	54	K 75 16 37	48
737 003	45	K 52 07 21	14	K 62 57 21	54	K 75 29 21	51
737 299	44	K 53 17 41	9	K 62 57 41	54		
737 398	66	K 53 18 21	13	K 63 20 22 1	55		
737 973	64	K 53 19 21	12	K 63 20 22 7	55		
737 975	64	K 53 19 41 1	8	K 63 20 23 1	55		
737 976	64	K 53 19 42 1	8	K 63 20 23 7	55		
738 049	19	K 55 16 21 1	41	K 63 20 24 1	55		
738 050	22	K 55 16 22 1	41	K 63 20 24 7	55		
738 440	65	K 55 16 23 1	41	K 72 22 41	23		

Antennen · Electronic

KATHREI

Kathrein's antenna family for the frequency range 27 – 512 MHz is characterized by a great number of various designs. These designs have all been specially developed and adapted to suit the requirements of security services, private radio systems, ERMES, TETRA, TETRAPOL, trunking systems, NMT 450 MHz and GSM 450 MHz networks.

All our antennas are noted for their high quality and reliable materials.

The metal parts of Kathrein antennas are all grounded and they are earthed by using the available mounting materials. Thus a reliable function is guaranteed.



Eurocell directional antenna



Directional antenna, logarithmic-periodic





XPol directional antenna



68 – 87.5 MHz

Туре		Туре No.	Frequency Range	Height	Input	Max. Power	Page
Yagi 75 162°	3 dB	K 53 19 41 1	68 – 80 MHz	2000 mm	N female	1300 Watt	8
Yagi 75 162°	3 dB	K 53 19 42 1	74 – 87.5 MHz	2000 mm	N female	1300 Watt	8
Yagi 75 120°	6 dB	K 53 17 41	68 – 87.5 MHz	2380 mm	N female	100 Watt	9

Gain ref. $\lambda/2$ dipole

Broadband Yagi antenna made of hot-dip galvanized steel

Yagi 75 162° 3dB

Туре No.	K 53 19 41 1	K 53 19 42 1			
Input	N female	N female			
Frequency range	68 – 80 MHz	74 – 87.5 MHz			
VSWR	< '	1.5			
Gain (ref. ^λ / ₂ dipole)	3 (dB			
Impedance	50	Ω			
Polarization	Suitable for horizontal	or vertical polarization			
	by re-alignement of the	e attachement bracket.			
Max. power	1300 Watt (at 50 °C a	ambient temperature)			
Weight	12	kg			
Wind load	260 N (at	150 km/h)			
Max. wind velocity	180	km/h			
Packing size	2154 x 798 x 132 mm				
Height	approx. 2000 mm				
Distance dipole / mast	approx. ?	approx. 1200 mm			
Material:	Hot-dip galvanized stee	I.			
	All screws and nuts: Sta	ainless steel.			
Mounting:	On masts from 60 - 115	5 mm diameter, clamps			
	supplied.				
Grounding:	All metal parts of the antenna including the				
	mounting kit are DC gro	ounded.			
	The inner conductor is o	coupled capacitively.			
Please note:	The antenna is partly di	smantled for easy			
	dispatch.				









4-element Yagi antenna, large bandwidth

Yagi 75 120° 6dB

Туре No.	K 53 17 41		
Input	N female		
Frequency range	68 – 87.5 MHz		
VSWR	< 1.4		
Gain (ref. λ/2-Dipol)	6 dB		
Impedance	50 Ω		
Polarization	Vertical		
Max. power	100 Watt (at 50 °C ambient temperature)		
Weight	22 kg		
Wind load	510 N (at 150 km/h)		
Max. wind velocity	180 km/h		
Packing size	2424 x 2118 x 182 mm		
Height	approx. 2380 mm		
Yagi length	approx. 2030 mm		
Material:	Hot-dip galvanized steel.		
	All screws and nuts: Stainless steel.		
Mounting:	On masts from 60 – 115 mm diameter,		
-	clamps supplied.		
Grounding:	All metal parts of the antenna including the mounting kit are DC grounded.		



Radiation patterns at different frequencies:



Horizontal 69 MHz



Horizontal 77 MHz



Vertical 69 MHz



Vertical 77 MHz





Horizontal 86 MHz

Vertical 86 MHz



146 – 174 MHz

Туре	Туре No.	Frequency Range	Height	Input	Max. Power	Page
Yagi 150 170° 3 dB	K 53 19 21	146 – 174 MHz	1060 mm	N female	560 Watt	12
Yagi 150 118° 4 dB	K 53 18 21	146 – 174 MHz	1100 mm	N female	380 Watt	13
Yagi 150 63° 8.5 dB	K 52 07 21	146 – 174 MHz	1022 mm	N female	250 Watt	14

Gain ref. $\lambda/2$ dipole

Broadband Yagi antenna made of hot-dip galvanized steel

Yagi 150 170° 3dB

Туре No.	K 53 19 21
Input	N female
Frequency range	146 – 174 MHz
VSWR	< 1.4
Gain (ref. ^λ /2 dipole)	3 dB
Impedance	50 Ω
Polarization	Suitable for horizontal or vertical polarization
	by re-alignement of the attachement bracket.
Max. power	560 Watt (at 50 °C ambient temperature)
Weight	6.5 kg
Wind load	145 N (at 150 km/h)
Max. wind velocity	200 km/h
Packing size	1124 x 816 x 92 mm
Height	approx. 1060 mm
Yagi length	approx. 650 mm
Material:	Hot-dip galvanized steel. All screws and nuts: Stainless steel.
Mounting: 0	Dn masts from 60 – 125 mm diameter, clamps supplied.
Grounding: /	All metal parts of the antenna including the mounting kit are DC grounded.





Radiation Pattern in E-plane



Radiation Pattern in H-plane

Broadband Yagi antenna made of hot-dip galvanized steel

Yagi 150 118° 4dB

Туре No.	K 53 18 21			
Input	N female			
Frequency range	146 – 174 MHz			
VSWR	< 1.3			
Gain (ref. $\lambda/2$ dipole)	4 dB			
Impedance	50 Ω			
Polarization	Suitable for horizontal or vertical polarization by re-alignement of the attachement bracket.			
Max. power	380 Watt (at 50 °C ambient temperature)			
Weight	7.5 kg			
Wind load	170 N (at 150 km/h)			
Max. wind velocity	200 km/h			
Packing size	1112 x 92 x 904 mm			
Height	approx. 1100 mm			
Yagi length	approx. 750 mm			
Material:	Hot-dip galvanized steel.			
	All screws and nuts: Stainless steel.			
Mounting:	On masts from 60 – 125 mm diameter,			
	clamps supplied.			
Grounding:	All metal parts of the antenna including the mounting kit are DC grounded.			





Radiation Pattern in H-plane

Broadband aluminum Yagi antenna (11 elements)

Yagi 150 63° 8.5dB

Туре No.	K 52 07 21		
Input	N female		
Frequency range	146 – 174 MHz		
VSWR	< 1.5		
Gain (ref. $\lambda/2$ dipole)	8.5 dB		
Impedance	50 Ω		
Polarization	Suitable for horizontal or vertical polarization by re-alignment of the attachment brackets.		
Max. power	250 Watt (at 50 °C ambient temperature)		
Weight	10 kg		
Wind load	235 N (at 150 km/h)		
Max. wind velocity	180 km/h		
Packing size	1954 x 186 x 162 mm		
Height	approx. 1022 mm		
Yagi length	approx. 1910 mm		
Material:	Antenna: Weather-resistant aluminum. All screws and nuts: Stainless steel.		
Mounting:	On masts from 60 – 105 mm diameter, by means of supplied mounting kit.		
Grounding:	All metal parts of the antenna, including the mounting kit, are DC grounded. The inner conductor is coupled capacitively.		
Please note:	The antenna is partly dismantled for easy dispatch.		





Radiation Pattern in E-plane



Radiation Pattern in H-plane



360 – 512 MHz

Туре			Туре No.	Frequency Range	Height	Input	Max. Power	Page
Panel 420/45) 63°	9 dBi	K 73 36 21	406 – 512 MHz	493 mm	N female	500 W	16
Panel 390/42) 65°	11 dBi	K 73 30 37	380 – 430 MHz	992 mm	7-16 female	500 W	17
Panel 420/45) 67°	12 dBi	K 73 30 21	400 – 512 MHz	992 mm	N female	620 W	17
Panel 420/45) 67°	12 dBi	K 73 30 27	400 – 512 MHz	992 mm	7-16 female	840 W	17
Panel 390/42) 65°	14 dBi	K 73 33 37	380 – 430 MHz	1983 mm	7-16 female	500 W	18
Panel 420/45) 68°	15 dBi	K 73 33 21	400 – 512 MHz	1983 mm	N female	620 W	18
Panel 420/45) 68°	15 dBi	K 73 33 27	400 – 512 MHz	1983 mm	7-16 female	1030 W	18
Panel 45) 110°	13 dBi	738 049	440 – 470 MHz	2574 mm	7-16 female	500 W	19
Panel 390/42) 115°	8.5 dBi	739 504	380 – 430 MHz	974 mm	7-16 female	500 W	20
Panel 390/42) 115°	11.5 dBi	739 506	380 – 430 MHz	1934 mm	7-16 female	500 W	20
Panel 420/45) 120°	9 dBi	731 291	400 – 470 MHz	992 mm	7-16 female	500 W	21
Panel 45) 200°	11 dBi	738 050	440 – 470 MHz	2574 mm	7-16 female	500 W	22
LogPer 420/45) 67°	10.5 dBi	K 72 22 41	406 – 512 MHz	353 mm	N female	300 W	23
LogPer 420/45) 67°	10.5 dBi	K 72 22 47	406 – 512 MHz	353 mm	7-16 female	300 W	23
XPOL-Panel								
380-50) 65°	12 dBi	741 515	380 – 500 MHz	992 mm	2 x 7-16 female	500 W	24
380-50) 65°	15 dBi	741 516	380 – 500 MHz	1983 mm	2 x 7-16 female	500 W	25
380-43) 68°	14.5 dBi 6°T	742 242	380 – 430 MHz	2000 mm	2 x 7-16 female	500 W	25
LogPer 450/90) 68°	10.5 dBi	739 990	400 – 512 MHz	353 mm	7-16 female	100 W	26
	60°	11.5 dBi		824 – 960 MHz				
LogPer 420/45) 87°	9 dBi	K 73 23 21	406 – 512 MHz	400 mm	N female	500 W	27
Corner 390/42) 44°	11 dBi	K 73 12 21	360 – 490 MHz	500 mm	N female	180 W	28
/45)							
Helix 420/45) 33°	12 dBi	K 73 51 21	400 – 470 MHz	718 mm	N female	500 W	29
RHCP								

Panel 420/450 63° 9dBi

Туре No.	K 73 36 21			
Input	N female			
Frequency range	406 – 512 MHz			
VSWR	< 1.4			
Gain	9 dBi			
Impedance	50 Ω			
Polarization	Vertical			
Half-power beam width	H-plane: 63° / E-plane: 63°			
Max. power	500 Watt (at 50 °C ambient temperature)			
Weight	6 kg			
Wind load	Frontal: 220 N (at 150 km/h)			
	Lateral: 100 N (at 150 km/h)			
	Rearside: 330 N (at 150 km/h)			
Max. wind velocity	200 km/h			
Packing size	603 x 567 x 282 mm			
Height/width/depth	493 / 493 / 209 mm			
Arrays:	This antenna is especially suitable as a com- ponent in arrays to achieve various radiation patterns.			
Scope of supply:	Antenna including two weather-proof covers for straight and elbow connector, but without mounting hardware.			
Material:	Dipoles and reflector screen: Weather-resistant aluminum. Radome: Fiberglass, colour: White. All screws and puts: Stainless steel			
Attachment:	Use clamps K 61 14 0 for tubular mast dia- meters of 40 – 521 mm (see the "Mounting Hardware" part of this catalogue).			
Ice protection:	Due to the very sturdy antenna construction and the protection of the radiating system by the radome, the antenna remains operational even under icy conditions.			
Grounding:	All metal parts of the antenna including the mounting kit are DC grounded. The inner conductor is capacitively coupled.			





Horizontal Pattern



Vertical Pattern

Panel 390/420 65° 11dBi |Panel 420/450 67° 12dBi

K 73 30 37	K 73 30 21	K 73 30 27
7-16 female	N female	7-16 female
380 – 430 MHz	400 – 5	12 MHz
< 1.5	< 1	1.2
11 dBi	12	dBi
	50 Ω	
	Vertical	
H-plane: 65°	H-plan	ie: 67°
E-plane: 36°	E-plan	e: 33°
500 Watt	620 Watt	840 Watt
(at 50 °	C ambient temp	erature)
	12 kg	
Frontal:	500 N (at 1	50 km/h)
Lateral:	220 N (at 1	50 km/h)
Rearside	e: 715 N (at 1	50 km/h)
	200 km/h	
10	62 x 562 x 274 n	nm
99	92 / 492 / 190 mi	m
This antenna is e	especially suitabl	e as a com-
	7-16 female 380 – 430 MHz < 1.5 11 dBi H-plane: 65° E-plane: 36° 500 Watt (at 50 ° Frontal: Lateral: Rearside 100 99	7-16 female N female $380 - 430 \text{ MHz}$ $400 - 5$ < 1.5

This antenna is especially suitable as a component in arrays to achieve various radiation patterns.

Scope of supply: Antenna including two weather-proof covers for straight and elbow connector, but without mounting hardware.

Material: Radiators: Silver-plated copper. Reflector screen: Weather-resistant aluminum. Radome: Fiberglass, colour: Grey. All screws and nuts: Stainless steel.

Attachment: Use clamps K 61 14 0 .. for tubular mast diameters of 40 – 521 mm (see the "Mounting Hardware" part of this catalogue).

> Due to the very sturdy antenna construction and the protection of the radiating system by the radome, the antenna remains operational even under icy conditions.

Grounding:

Ice protection:







Horizontal Pattern



910

Mounting Dimensions

0 16:

K 73 30 2.

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125

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K 73 30 37

850

K 73 33 37

Horizontal Pattern

KATHREIN Antennen · Electronic

Panel 390/420 65° 14dBi | Panel 420/450 68° 15dBi

Туре No.	K 73 33 37	K 73 33 21	K 73 33 27
Input	7-16 female	N female	7-16 female
Frequency range	380 – 430 MHz	400 – 5	12 MHz
VSWR	< 1.5	< '	1.2
Gain	14 dBi	15	dBi
Impedance		50 Ω	
Polarization		Vertical	
Half-power beam width	H-plane: 65°	H-plar	ie: 68°
	E-plane: 20°	E-plan	ie: 17°
Max. power	500 Watt	620 Watt	1030 Watt
	(at 50 S	C ambient temp	erature)
Weight	Encodel	19 kg	50 l /l.)
wind load	Frontal:	1100 N (at 1	50 km/n)
	Lateral:	440 N (at 1	50 km/n)
Max wind valuation	Rearside	2: 1540 N (at 1:	50 Km/n)
Nax. wind velocity	20	100 KIII/II 22 x 562 x 274 m	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Packing Size	20	02 X 002 X 2/4 1	
Height/width/depth	15	63 / 465 / 190 11	
Arrays:	This antenna is e	especially suitable	e as a com-
	ponent in arrays	to achieve vario	us radiation
	patterns.		
Coore of eventua	Antone circlustin		
Scope of supply:	Antenna Includin	g two weather-p	roor covers
	nor straight and e	ano	but without
	mounting natuwa	are.	
Material	Padiators: Silver	-plated conner	
Material.	Reflector screen	· Weather-resist	ant aluminum
	Radome: Fibera	ass colour Gre	
	All screws and n	uts: Stainless ste	el.
Attachment:	Use clamps K 6	1 14 0 for tubu	ar mast dia-
	meters of 40 - 5	21 mm (see the	"Mounting
	Hardware" part o	of this catalogue)	
Ice protection:	Due to the very	sturdy antenna c	onstruction and
	the protection of	the radiating sys	stem by the
	radome, the ante	enna remains op	erational even
	under icy conditi	ons.	
Grounding	All metal parts of	f the antonno inc	luding
Grounung.	the mounting bit	and the inner co	nductor
	are DC arounder		
	are Do grounder	J.	
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K 73 33 2.









Eurocell Panel Antenna

KATHREIN Antennen · Electronic

Panel 450 110° 13dBi

Туре No.	738 049
Input	7-16 female
Frequency range	440 – 470 MHz
VSWR	< 1.5
Gain	13 dBi
Impedance	50 Ω
Polarization	Vertical
Front-to-back ratio	> 18 dB
Half-power beam width	H-plane: 110° / E-plane: 15°
Max. power	500 Watt (at 50 °C ambient temperature)
Weight	12 kg
Wind load	Frontal: 460 N (at 150 km/h)
	Lateral: 300 N (at 150 km/h)
	Rearside: 1020 N (at 150 km/h)
Max. wind velocity	200 km/h
Packing size	2702 x 272 x 160 mm
Width/height/depth	2574 / 258 / 103 mm
Material:	Radiator: Silver plated copper. Reflector screen: Weather-resistant aluminum. Radome: Fiberglass, colour: Grey. All screws and nuts: Stainless steel.
Attachment:	See the "Mounting Hardware" part of this catalogue.
Ice protection:	Due to the very sturdy antenna construction and the protection of the radiating system by the radome, the antenna remains operational even under icy conditions.
Grounding:	All metal parts of the antenna including the mounting kit and the inner conductor are DC grounded.







Horizontal Pattern



15° ₽ Vertical Pattern 12° elektr. downtilt 737 439

Eurocell Panel Antenna



Panel 390/420 115° 8.5dBi | Panel 390/420 115° 11.5dBi

Туре No.		739 504	739 506
Input		7-16 f	emale
Frequency range		380 - 4	30 MHz
VSWR		< '	1.5
Gain		8.5 dBi	11.5 dBi
Impedance		50	Ω
Polarization		Ver	tical
Front-to-back ratio		> 18	3 dB
Half-power beam v	vidth	H-plane: 115°	H-plane: 115°
		E-plane: 33°	E-plane: 18°
Max. power		500 Watt (at 50 °C a	imbient temperature)
Weight		4.5 kg	9 kg
Wind load	Frontal:	160 N (at 150 km/h)	340 N (at 150 km/h)
	Lateral:	100 N (at 150 km/h)	220 N (at 150 km/h)
F	Rearside:	360 N (at 150 km/h)	750 N (at 150 km/h)
Max. wind velocity		200	km/h
Packing size		1102 x 272 x 160 mm	2062 x 272 x 160 mm
Height/width/depth		974 / 258 / 103 mm	1934 / 258 / 103 mm
Material:		Radiator: Copper, tin-pla Reflector screen: Weathe Radome: Fiberglass, col All screws and nuts: Stai	ted. er-resistant aluminum. our: Grey. nless steel.
Attachment:		See the "Mounting Hards catalogue.	ware" part of this
Ice protection:		Due to the very sturdy at the protection of the radi radome, the antenna ren under icy conditions.	ntenna construction and ating system by the nains operational even
Grounding:		All metal parts of the ant the mounting kit and the are DC grounded.	enna including inner conductor







Vertical Pattern 739 504



Directional Antenna

KATHREIN Antennen · Electronic

Panel 420/450 120° 9dBi

Type No.		731 291
Input		7-16 female
Frequency range	40	00 – 470 MHz
VSWR		< 1.5
Gain		9 dBi
Impedance		50 Ω
Polarization		Vertical
Front-to-back ratio		> 22 dB
Half-power beam width	H-plane	: 120° / E-plane: 50°
Max. power	500 Watt (at 5	0 °C ambient temperature)
Weight		9 kg
Wind load	Frontal:	500 N (at 150 km/h)
	Lateral:	220 N (at 150 km/h)
	Rearside:	715 N (at 150 km/h)
Max. wind velocity		200 km/h
Packing size	1062	2 x 562 x 274 mm
Height/width/depth	992	: / 492 / 190 mm
Scope of supply:	Antenna including for straight and elb mounting hardware	two weather-proof covers ow connector, but without e.
Material:	Dipole system: Bra Reflector screen: V Radome: Fiberglas All screws and nut	ass and copper. Weather-resistant aluminum. ss, colour: White. s: Stainless steel.
Attachment:	Use clamps K 61 1 meters of 40 – 521 Hardware" part of	14 0 for tubular mast dia- I mm (see the "Mounting this catalogue).
Ice protection:	Due to the very stu the protection of th radome, the anten under icy condition	urdy antenna construction and ne radiating system by the na remains operational even ns.
Grounding:	All metal parts of the mounting kit ar are DC grounded.	he antenna including nd the inner conductor





Mounting Dimensions





Eurocell Panel Antenna



Panel 450 200° 11dBi

Туре No.	738 050
Input	7-16 female
Frequency range	440 – 470 MHz
VSWR	< 1.5
Gain	11 dBi
Impedance	50 Ω
Polarization	Vertical
Front-to-back ratio	> 18 dB
Half-power beam width	H-plane: 200° / E-plane: 15°
Max. power	500 Watt (at 50 °C ambient temperature)
Weight	14 kg
Wind load	Frontal: 530 N (at 150 km/h)
	Lateral: 390 N (at 150 km/h)
	Rearside: 1020 N (at 150 km/h)
Max. wind velocity	200 km/h
Packing size	2702 x 272 x 160 mm
Height/width/depth	2574 / 258 / 103 mm
	(460 mm incl. subreflector)
Material:	Radiator: Copper, tin-plated.
	Reflector screen: Weather-resistant aluminum.
	Radome: Fiberglass, colour: Grey.
	All screws and nuts: Stainless steel.
Attachment:	See the "Mounting Hardware" part of this catalogue.
Ice protection:	Due to the very sturdy antenna construction and the protection of the radiating system by the radome, the antenna remains operational even under icy conditions.
Grounding:	All metal parts of the antenna including the mounting kit and the inner conductor are DC grounded.







Vertical Pattern



LogPer 420/450 67° 10.5dBi

Туре No.	K 72 22 41	K 72 22 47
Input	N female	7-16 female
Frequency range	406 - 5	512 MHz
VSWR	< '	1.4
Gain	10.5	dBi
Impedance	50	Ω
Side-lobe suppression	> 25 dB at 44	0 – 512 MHz
	> 20 dB at 40)6 – 440 MHz
Polarization	Either horizor	ntal or vertical
	by relocating	two clamps
Half-power beam width	H-plane: 67°	/ E-plane: 53°
Max. power	300 Watt (at 50 °C a	mbient temperature)
Weight	9	ka
Wind load (at 150 km/b)	Horizontal: Fronta	I 55 N lateral 90 N
	Vertical: Fronta	l 55 N, lateral 440 N
Max wind velocity	180	km/h
Packing size	1172 x 372	x 225 mm
Width/beight/depth	1153 / 353	/ 180 mm
Wathheightaeptil	1100 / 000	
Arrays:	Several antennas can be the gain and to produce very high side-lobe supp	e combined to increase radiation patterns with ressions.
Scope of supply:	Antenna with weather pr straight connectors.	otective casing for
Material:	Radiator and mounting k Radome: Fiberglass, col All screws and nuts: Stai	it: Aluminum. our: Grey. nless steel.
Attachment:	To tubular masts of 48 – using supplied clamps.	115 mm diameter
Ice protection:	Due to the very sturdy at the protection of the radi radome, the antenna ren under icy conditions.	ntenna construction and ating system by the nains operational even
Grounding:	All metal parts of the ant the mounting kit and the are DC grounded.	enna including inner conductor





Radiation Patteri in H-plane



Radiation Pattern in E-plane

Directional Antenna – Dual Polarization



Two independent systems for +45° and -45° polarization

XPol Panel 380-500 65° 12dBi

Туре No.	741 515
Input	2 x 7-16 female
Connector position	Rearside
Frequency range	380 – 500 MHz
VSWR	< 1.5
Gain	12 dBi (430 – 500 MHz)
	11.5 dBi (380 – 430 MHz)
Impedance	50 Ω
Polarization	+45°; –45°
Front-to-back ratio, copolar	> 25 dB
Half-power beam width	± 45° polarization
	Horizontal: 65°, vertical: 36°
Isolation	> 30 dB
Max. power	500 Watt (at 50 °C ambient temperature)
Weight	8 kg
Wind load	Frontal: 550 N (at 150 km/h)
	Lateral: 220 N (at 150 km/h)
	Rearside: 715 N (at 150 km/h)
Max. wind velocity	200 km/h
Packing size	1062 x 562 x 274 mm
Height/width/depth	992 / 492 / 190 mm
Material:	Radiators: Tin-plated copper
	Reflector screen: Weatherproof aluminum.
	Radome: Fiberglass, colour: Grev.
	All screws and nuts: Stainless steel
Ice protection:	Due to the very sturdy antenna construction and
	the protection of the radiating system by the
	radome, the antenna remains operational even
	under icy conditions.
Grounding:	The metal parts of the antenna including
croanding.	the mounting kit and the inner conductors
	are DC grounded.





+45%-45° Polarization





24

Directional Antenna – Dual Polarization



Two independent systems for +45° and -45° polarization

XPol Panel 380-500 65° 15dBi | XPol Panel 380-430 68° 14.5dBi 6°T

Туре No.	741 516	742 242		/
Input	2 x 7-16	5 female		2
Connector position	Real	rside		
Frequency range	380 – 500 MHz	380 – 430 MHz		
VSWR	< '	1.5		
Gain	15 dBi (430 – 470 MHz)	14.5 dBi		
	14.5 dBi (380 – 430 MHz)			
Impedance	50	Ω		
Polarization	+45°;	-45°		
Front-to-back ratio, copolar	> 25	5 dB		
Half-power beam width	±45° pol	arization	1850	
	Horizontal: 65°	Horizontal: 68°		
	Vertical: 18°	Vertical: 18°		
		Downtilt: 6°	250	
Isolation	> 30) dB		
Max. power	500 Watt (at 50 °C a	mbient temperature)		
Weight	19	kg		
Wind load	Frontal: 1100	N (at 150 km/h)		
	Lateral: 440	N (at 150 km/h)		
	Rearside: 1540	N (at 150 km/h)		
Max. wind velocity	200	km/h		
Packing size	2060 x 562	2 x 274 mm		
Height/width/depth	2000 / 492	2 / 190 mm	1000	
				6
Material:	Radiators: Tin-plated cop	oper.		11
	Reflector screen: Weather	erproof aluminum.		
	Radome: Fiberglass, col	our: Grey.		
	All screws and nuts: Stai	nless steel.		
Ice protection:	Due to the very sturdy an	ntenna construction and		
	the protection of the radi	ating system by the		
	radome, the antenna ren	nains operational even		
	under icy conditions.			
Grounding:	The metal parts of the ar	ntenna including		
	the mounting kit and the	inner conductors		
	are DC grounded.			

741 516: +45%-45° Polarization





742 242: +45%-45° Polarization



Logarithmic-periodic Directional Antenna



LogPer 450/900 68/60° 10.5/11.5dBi

Туре No.	739	990
Input	7-16	female
Frequency range	440 – 512 MHz	824 – 960 MHz
VSWR	<	1.4
Gain	10.5 dBi	11.5 dBi
Impedance	50	Ω
Polarization	Ver	tical
Half-power beam width	H-plane: 68°	H-plane: 60°
	E-plane: 54°	E-plane: 48°
Front-to-back ratio	> 23 dB	> 25 dB
Max. power	100 Watt (at 50 °C a	ambient temperature)
Weight	9	kg
Wind load (at 150 km/h)	Horizontal: Fronta	al 55 N, lateral 90 N
	Vertical: Fronta	al 55 N, lateral 440 N
Max. wind velocity	180	km/h
Packing size	1172 x 372	2 x 225 mm
Length/width/depth	1160 / 350) / 170 mm
Material:	Radiator and mounting k Radome: Fiberglass, col All screws and nuts: Sta	kit: Aluminum. Jour: Grey. inless steel.
Attachment:	To tubular masts of 48 – using supplied clamps.	115 mm diameter
Ice protection:	Due to the very sturdy a the protection of the radi radome, the antenna rer under icy conditions.	ntenna construction and lating system by the nains operational even
Grounding:	All metal parts of the and the mounting kit and the are DC grounded.	tenna including inner conductor





Logarithmic-periodic Broadband Antenna



• Very small wind load

LogPer 450 87° 9dBi

Туре No.	K 73 23 21
Input	N female
Frequency range	406 – 512 MHz
VSWR	< 1.3
Gain	9 dBi
Impedance	50 Ω
Side-lobe suppression	> 28 dB at 440 – 512 MHz
	> 21 dB at 406 – 512 MHz
Polarization	Vertical
Half-power beam width	H-plane: 87° / E-plane: 62°
Max. power	500 Watt (at 50 °C ambient temperature)
Weight	8.3 kg
Wind load	Frontal: 54 N (at 150 km/h)
	Lateral: 150 N (at 150 km/h)
	Rearside: 80 N (at 150 km/h)
Max. wind velocity	180 km/h
Packing size	914 x 482 x 482 mm
Width/height/depth	860 / 400 / 400 mm
Scope of supply:	Antenna with weather protective casing for straight connectors.
Material:	Radiator: Weather-resistant aluminum. Radome: Fiberglass, colour: White. Mounting kit: Hot-dip galvanized steel. All screws and nuts: Stainless steel.
Attachment:	To tubular masts of 60 – 115 mm diameter using supplied clamps.
Ice protection:	Due to the very sturdy antenna construction and the protection of the radiating system by the radome, the antenna remains operational even under icy conditions.
Grounding:	All metal parts of the antenna including the mounting kit and the inner conductor are DC grounded.





Vertical Pattern

Typical side-lobe suppression



Corner-reflector Antenna



Corner 390/420/450 44° 11dBi

Гуре No.	K 73 12 21
nput	N female
Frequency range	360 – 490 MHz
VSWR	< 1.5 (360 – 490 MHz)
	< 1.3 (400 – 470 MHz)
Gain	11 dBi
Impedance	50 Ω
Polarization	Vertical
Half-power beam width	H-plane: 44° / E-plane: 67°
Max. power	180 Watt (at 50 °C ambient temperature)
Weight	2.8 kg
Wind load	140 N (at 150 km/h)
Max. wind velocity	150 km/h
Packing size	842 x 524 x 187 mm
Height/width/depth	500 / 1155 / 577 mm
Scope of supply:	Antenna with weather protective casing for straight connectors, mounting kit included.
Material:	Radiator and reflector: Weather-resistant
	aluminum.
	Mounting U-bold: Stainless steel.
	All screws and nuts: Stainless steel.
Attachment:	To tubular masts of 30 – 54 mm diameter using supplied U-bolts.
Special features:	The antenna is partly dismantled for easy dispatch.
Grounding:	All metal parts of the antenna including the mounting kit and the inner conductor are DC grounded.



Horizontal Pattern



Vertical Pattern

• Circular polarization

Helix 420/450 33° 12dBi

Туре No.	K 73 51 21	
Input Frequency range Polarization VSWR Gain	N female 400 – 470 MHz right handed circular (RHCP) < 1.2 12 dB (ref. to the circularly polarized isotropic antenna)	
Impedance Max. power Weight Wind load Max. wind velocity Packing size Reflector diameter Length / tube diameter	50 Ω 560 Watt (at 50 °C ambient temperature) 12 kg 450 N (at 150 km/h) 200 km/h 1684 x 388 x 277 mm 718 mm 1540 / 204 mm	
Scope of supply:	Antenna with weather protective casing for straight connectors, mounting kit included.	
Material:	Antenna: Copper band helix in protective fiber- glass tube, colour: Grey. Reflector screen: Weather-resistant aluminum. Attachment construction: Hot dip galvanized steel. All screws and nuts: Stainless steel.	
Attachment:	To tubular masts of 60 – 125 mm diameter using supplied U-bolts.	
Grounding:	All metal parts of the antenna including the mounting kit and the inner conductor are DC grounded.	
Please note:	The reflector screen is made of two parts and can be removed for transport.	



¢

Mounting Instructions



Relative field strength in mid-band



27 – 87.5 MHz

Туре	Туре No.	Frequency Range	Height	Input	Max. Power	Page
Groundplane 0 dB	K 51 24 72	27 61 MHz	4330 mm	UHF female	500 Watt	32
Groundplane 0 dB	K 51 26 41 1	68 – 80 MHz	1690 mm	N female	75 Watt	33
Groundplane 0 dB	K 51 26 42 1	74 – 87.5 MHz	1570 mm	N female	75 Watt	33
Half-wave dipole 0 / 0.5 dB	K 51 25 42 1	74.2 – 77.7 MHz + 84 – 87.5 MHz 167.5 – 174 MHz	1880 mm	2 x N female	2 x 10 Watt	34
Half-wave dipole 2 dB for mast diameter						
60 – 115 mm	K 55 28 41	68 – 87.5 MHz	1750 mm	N female	230 Watt	35

Gain ref. $\lambda/2$ dipole

Omnidirectional Antenna

KATHREIN Antennen · Electronic

Tunable Fiberglass-Groundplane-Antenna. DC grounded.

			_			
Type No.	Antenna	K 51 24 72				
	Spare radials	K 51 24 70 1				1
Input		UHF female				
Frequency i	range	27 61 MHz				
Gain (ref. λ /	′2 dipole)	0 dB				
Impedance		50 Ω				
Polarization	1	Vertical			1	1
Max. power		500 Watt (at 50 °C ambient temperature)			1	1
Weight *		1.6 kg				
Wind load *		110 N (at 150 km/h)			1	
Max. wind w	velocity	135 km/h		4		
Packing size	е	2704 x 136 x 100 mm				
Radiator ler	ngth	max. 2510 mm			7	
Length of ra	adials	max. 2510 mm	_	/		
* for max. ar	ntenna length					
Material:		Radiator and radials: Fiberglass with im-				× /
		bedded stranded copper wire.				
		Base: Aluminum.				/
		Mounting U-bolt and all screws and nuts:				
		Stainless steel.			_	_
Mounting:		The antenna can be attached in two ways				
0		with the supplied mounting kit:				
		1. On the tip of a tubular mast of				
		40 – 54 mm diameter (connecting cable				
		2 Laterally at the tip of a tubular mast of				
		20 - 54 mm diameter (connecting cable		2	~9	9 9
		runs outside the mast).				
						L L
Tuning:		By cutting radiator and radials to length in				
5		accordance to the mounting instructions.				
		6				
Grounding:	:	All metal parts of the antenna including the		C 4 A		
U U		mounting kit are DC grounded.				
				90,	000	000
				On the tip of	On the tip of a	On the tip of a Laterally at the
				tubular mas	tubular mast	tubular mast tubular



Vertical Pattern

Standing Wave Ratio (VSWR) Examples of matching at various frequencies





Broadband groundplane antenna with fiberglass radials.

Туре No.	Antenna Spare radials	K 51 26 41 1 K 51 26 40 12	K 51 26 42 1 K 51 26 40 22		
	opare radials	101204012			
Input		N fei	male		
Frequency ran	ge	68 – 80 MHz	74 – 87.5 MHz		
VSWR		< 1	1.5		
Gain (ref. $\lambda/2$ d	ipole)	0 0	βB		
Impedance		50	Ω		
Polarization		Verl	lical		
Max. power		75 Watt (at 50 °C ar	mbient temperature)		
Weight		1.8 kg	1.6 kg		
Wind load		70 N	65 N		
		(at 150	50 km/h)		
Max. wind velo	ocity	200) km/h		
Packing size		1114 x 132	x 112 mm		
Radiator length	า	747 mm	680 mm		
Length of radia	als	1053 mm	970 mm		
Material:		Radiator: Stainless stee Radials: Fiberglass with copper wire. Base: Aluminum. Mounting U-bolt and all Stainless steel.	el. h imbedded stranded l screws and nuts:		
Mounting:		 The antenna can be att with the supplied mount 1. On the tip of a tubula 40 - 54 mm diamete runs inside the mast) 2. Laterally at the tip of 20 - 40 mm diamete runs outside the mast 	tached in two ways ting kit: ar mast of er (connecting cable). a tubular mast of er (connecting cable st).		
Side mounting	g at a mast:	See catalogue part "Teo	chnical Supplement".		
Grounding:		All metal parts of the ar mounting kit are DC gro	antenna including the		



Horizontal Pattern



Vertical Pattern



On the tip of a tubular mast



Laterally at the tip of a tubular mast

1

Rugged two-range groundplane antenna with fiberglass radials.

Type No.	Antenna	K 51 2	5 42 1
	Spare radials	K 51 2	5 40 2
Input		2 x N 1	female
Frequency ra	ange	74.2 – 77.7 MHz and	167.5 – 174 MHz
		84.0 – 87.5 MHz	
VSWR		< `	1.5
Gain (ref. $\lambda/2$	2 dipole)	0 dB	0.5 dB
Impedance		50	Ω
Polarization		Ver	tical
Max. power		10 Watt (at 50 °C ar	nbient temperature)
Decoupling		> 30 dB between 2 n	n band and 4 m band
Weight		2.7	kg
Wind load		90 N (at 7	150 km/h)
Max. wind ve	elocity	180	km/h
Packing size)	1160 x 120	x 110 mm
Radiator len	gth	1121	mm
Diameter		50	mm
Length of ra	dials	1003	mm
Material:		Radiator: Weather-resis	tant aluminum
		in fiberglass radome.	
		Radials: Fiberglass with	imbedded stranded
		copper wire.	
		Base: Aluminum.	
		Mounting U-bolt and all	screws and nuts:
		Stainless steel.	
Mounting		To pipes of $30 - 54$ mm	diameter by means
wounting.		of mounting kit (supplie	d) The antenna must
		be mounted in such a n	u). The antenna must
		cobles rups outside the	most
			111031.
Special feat	ures:	The radials can be fold	up.
Grounding:		All metal parts of the ar	tenna including the
-		mounting kit are DC gro	ounded.



Horizontal Pattern



Vertical Pattern

Half-wave Dipole

KATHREIN Antennen · Electronic

Offset-pattern antenna. Hot-dip galvanized steel.

Туре No.	K 55 28 41	
Input	N female	
Frequency range	68 – 87.5 MHz	
VSWR	< 1.5	
Gain (ref. $\lambda/2$ dipole)	2 dB	
Impedance	50 Ω	
Polarization	Vertical	
Max. power	230 Watt (at 50 °C ambient temperature)	
Radiation pattern	Preferred direction: Mast to radiator.	
Weight	9 kg	
Wind load	165 N (at 150 km/h)	
Max. wind velocity	200 km/h	
Packing size	1800 x 948 x 107 mm	
Dipole length	approx. 1750 mm	
Distance dipole / mast	approx. 870 mm	
Material:	Hot-dip galavanized steel.	
	Radome: Fiberglass.	
	All screws and nuts: Stainless steel.	
Mounting:	On masts from 60 – 125 mm diameter,	
	clamps supplied.	
Grounding:	All metal parts of the antenna including the	
	mounting kit are DC grounded.	
	The inner conductor is coupled capacitively.	





Vertical Pattern


146 – 174 MHz

Туре		Type No.	Frequency Range	Height	Input	Max. Power	Page
Half-wave dipol	0 / 0.5 dB	K 51 25 42 1	74.2 – 77.7 MHz + 84 – 87.5 MHz 167.5 – 174 MHz	1880 mm	2 x N female	2 x 10 Watt	38
Groundplane	0 dB	K 51 26 2	146 – 174 MHz	905 mm	cable termination	170 Watt	39
Groundplane	0 dB	711 530	146 – 174 MHz	905 mm	N female	700 Watt	39
Groundplane	0 dB	K 55 26 26	146 – 174 MHz	1085 mm	cable termination	130 Watt	40
Groundplane	0 dB	K 55 26 27	155 – 165 MHz	1042 mm	cable termination	130 Watt	40
Groundplane	0 dB	K 55 26 28	164 – 174 MHz	993 mm	cable termination	130 Watt	40
Gain Omnidir. antenna	4 dB	K 55 16 21 1	146 – 155 MHz	4830 mm	N female	500 Watt	41
Gain Omnidir. antenna	4 dB	K 55 16 22 1	155 – 164 MHz	4645 mm	N female	500 Watt	41
Gain Omnidir. antenna	4 dB	K 55 16 23 1	164 – 174 MHz	4330 mm	N female	500 Watt	41
Half-wave dipole	2 dB er						
60	– 115 mm	K 55 29 21	146 – 174 MHz	840 mm	N female	440 Watt	42

Gain ref. $\lambda/2$ dipole



Rugged two-range groundplane antenna with fiberglass radials.

Type No. Spa	Antenna re radials	K 51 25 42 1 K 51 25 40 2		
Input		2 x N f	emale	
Frequency range		74.2 – 77.7 MHz and	167.5 – 174 MHz	
		84.0 – 87.5 MHz		
VSWR		< 1	.5	
Gain (ref. $\lambda/2$ dipole	e)	0 dB	0.5 dB	
Impedance		50	Ω	
Polarization		Vert	ical	
Max. power		10 Watt (at 50 °C ar	nbient temperature)	
Decoupling		> 30 dB between 2 m	n band and 4 m band	
Weight		2.7	kg	
Wind load		90 N (at 1	50 km/h)	
Max. wind velocity		180	km/h	
Packing size		1160 x 120	x 110 mm	
Radiator length		1121	mm	
Diameter		50 r	nm	
Length of radials		1003	mm	
Material:		Radiator: Weather-resis in fiberglass radome. Radials: Fiberglass with copper wire. Base: Aluminum. Mounting U-bolt and all Stainless steel.	tant aluminum imbedded stranded screws and nuts:	
Mounting:		To pipes of 30 – 54 mm of mounting kit (supplied be mounted in such a m cables runs outside the	diameter by means d). The antenna must hanner, that the feeder mast.	
Special features:		The radials can be fold	up.	
Grounding:		All metal parts of the an mounting kit are DC gro	tenna including the ounded.	



Horizontal Pattern



Vertical Pattern



KATHREIN Antennen · Electronic

Broadband aluminum groundplane-antenna. Cable termination or connector input.

Type No.	Antenna Spare radials	K 51 26 2 K 51 26 20 2	711 530 K 51 26 20 2
Input		By means of a cable RG-213/U with termination inside antenna.	N female
Frequency ra	ande	146 – 1	′ 74 MHz
VSWR		<	1.5
Gain (ref. $\lambda/2$	dipole)	0 0	dB
Impedance	,	50	Ω
Polarization		Ver	tical
Max. power		170 Watt	700 Watt
		(at 50 °C ambie	ent temperature)
Weight		1.2	kg
Wind load		25 N (at 1	150 km/h)
Max. wind ve	elocity	200	km/h
Packing size	-	654 x 112 x 97 mm	
Radiator leng	gth	422	mm
Length of rac	dials	617	mm
Material:		Radiator and radials: W aluminum. Mounting U-bolt and all Stainless steel.	eather-resistant
Mounting:		 The antenna can be attached in two ways with the supplied mounting kit: 1. On the tip of a tubular mast of 40 – 54 mm diameter (connecting cable runs inside the mast). 2. Laterally at the tip of a tubular mast of 20 – 40 mm diameter (connecting cable runs outside the mast). 	
Side mounti	ng at a mast:	See catalogue part "Acc	cessories".
Grounding:		All metal parts of the ar mounting kit are DC gro The inner conductor is o	ntenna including the bunded. capacitively coupled.



Horizontal Pattern



Vertical Pattern



On the tip of a tubular mast



Laterally at the tip of a tubular mast

Aluminium omnidirectional antenna. Cable connection without connector.

Туре No.	K 55 26 26	K 55 26 27	K 55 26 28			
Input	Via ter	Via terminals inside antenna.				
Cable needed	RG-213/U					
Frequency range	146 – 156 MHz	146 – 156 MHz 155 – 165 MHz 164 – 174 MHz				
VSWR		< 1.4				
Gain (ref. ^λ / ₂ dipole)		0 dB				
Impedance		50 Ω				
Polarization		Vertical				
Max. power	130 Watt (at	50 °C ambient t	emperature)			
Weight		1.3 kg				
Wind load	5	0 N (at 150 km/ł	ו)			
Max. wind velocity		200 km/h				
Packing size	12	254 x 112 x 97 m	ım			
Height	1085 mm	1042 mm	993 mm			
	aluminum. Mounting U-bol Stainless steel.	t and all screws	and nuts:			
Mounting:	The antenna ca with the supplie 1. On the tip of 40 – 54 mm runs inside th 2. Laterally at th 20 – 40 mm runs outside	n be attached in d mounting kit: a tubular mast of diameter (conne- ne mast). ne tip of a tubula diameter (conne- the mast).	n two ways of ecting cable ar mast of ecting cable			
Side mounting at a mast:	See catalogue p	oart "Accessorie	s".			
Grounding:	All metal parts of mounting kit are The inner condu	of the antenna in DC grounded. uctor is capacitiv	ncluding the			



KATHREIN Antennen · Electronic



Horizontal Pattern



Vertical Pattern



On the tip of a tubular mast



Laterally at the tip of a tubular mast



Omnidirectional gain antenna in fiberglass radome. Universal mounting.

Туре No.	K 55 16 21 1	K 55 16 22 1	K 55 16 23 1
Input		N female	
Frequency range	146 – 155 MHz	155 – 164 MHz	164 – 174 MHz
VSWR		< 1.5	I
Gain (ref. $\lambda/2$ dipole)		4 dB	
Impedance		50 Ω	
Polarization		Vertical	
Max. power	500 Watt (at	50 °C ambient te	emperature)
Weight	7 kg	6.5 kg	6.5 kg
Wind load	280 N	270 N	250 N
		(at 150 km/h)	
Max. wind velocity		150 km/h	
Packing size (L)	5011 mm	4826 mm	4511 mm
Packing size (w x d)		198 x 152 mm	I
Antenna height	4830 mm	4645 mm	4330 mm
Diameter		max. 52 mm	l
Material:	Radiator: Brass Radome: Fiberg Base: Aluminum Mounting U-bolt Stainless steel.	Jlass, colour:Gre n. : and all screws	ey. and nuts:
Mounting:	 The antenna can be attached in two ways with the supplied mounting kit: 1. On the tip of a tubular mast of 65 – 105 mm diameter (connecting cable runs inside the mast). 2. Laterally at the tip of a tubular mast of 30 – 90 mm diameter (connecting cable runs outside the mast). 		
Grounding:	All metal parts of mounting kit are	of the antenna in DC grounded.	cluding the



Vertical Pattern



On the tip of a tubular mast



Laterally at the tip of a tubular mast

Half-wave Dipole

KATHREIN Antennen · Electronic

Offset-pattern antenna. Hot-dip galvanized steel.

	K 55 29 21
Type No.	K 33 23 21
Input	N female
Frequency range	146 – 174 MHz
VSWR	< 1.4
Gain (ref. λ/2 dipole)	2 dB
Impedance	50 Ω
Polarization	Vertical
Max. power	440 Watt (at 50 °C ambient temperature)
Radiation Pattern	Preferred direction: Mast to radiator.
Weight	4.5 kg
Wind load	90 N (at 150 km/h)
Max. wind velocity	200 km/h
Packing size	864 x 598 x 87 mm
Dipole length	840 mm
Distance dipole / mast	500 mm
Motorial	List din getyonized steel
Material:	All service and muter Steinlass steel
	All screws and nuts: Stainless steel.
Mounting:	On masts of 60 – 125 mm diameter
	clamps supplied.
Grounding:	All metal parts of the antenna including the
-	mounting kit are DC grounded.



Radiation Pattern with different mast diameters:



Horizontal Pattern 60 mm diameter



Horizontal Pattern 115 mm diameter



Vertical Pattern 60 mm diameter



Vertical Pattern 115 mm diameter



370 – 470 MHz

Туре				Type No.	Frequency Range	Height	Input	Max. Power	Page
Indoor	420	360°	2 dBi	737 299	406 – 430 MHz	404 mm	cable termination	50 Watt	44
Indoor	450	360°	2 dBi	736 831	450 – 470 MHz	364 mm	cable termination	50 Watt	44
Omni	390/420	360°	2 dBi	737 003	370 – 430 MHz	552 mm	N female	100 Watt	45
Omni	420/450	360°	2 dBi	K 75 11 21	406 – 470 MHz	510 mm	N female	100 Watt	45
Omni	420	360°	5 dBi	K 75 15 21 1	406 – 430 MHz	1273 mm	N female	55 Watt	46
Omni	450	360°	5 dBi	K 75 15 22 1	440 – 470 MHz	1144 mm	N female	55 Watt	46
Omni	450	360°	5 dBi	721 387	440 – 470 MHz	1144 mm	N female	500 Watt	46
Omni	420	360°	7 dBi	K 75 16 21 1	406 – 430 MHz	2016 mm	N female	70 Watt	47
Omni	420	360°	7 dBi	728 888	406 – 430 MHz	2016 mm	7-16 female	500 Watt	47
Omni	420/450	360°	7 dBi	K 75 16 22 1	420 – 449 MHz	1975 mm	N female	70 Watt	47
Omni	450	360°	7 dBi	K 75 16 23 1	440 – 470 MHz	1868 mm	N female	70 Watt	47
Omni	450	360°	7 dBi	721 388	440 – 470 MHz	2016 mm	N female	500 Watt	47
Omni	450	360°	7 dBi	720 880	440 – 470 MHz	2016 mm	7-16 female	500 Watt	47
Omni	390	360° 7	7.5 dBi	K 75 16 37	380 – 400 MHz	2840 mm	7-16 female	500 Watt	48
Omni	450	360° 8	8.5 dBi	742 155	450 – 470 MHz	3110 mm	7-16 female	500 Watt	49
Omni	420	360°	10 dBi	728 889	406 – 430 MHz	4430 mm	7-16 female	500 Watt	50
Omni	450	360°	10 dBi	720 842	440 – 470 MHz	4175 mm	7-16 female	500 Watt	50
Offset- patterr	420/450	360°	4 dBi	K 75 29 21	400 – 470 MHz	314 mm	7-16 female	450 Watt	51



• The antenna does not require any additional groundplane.

Indoor 450 360° 2dBi

Туре No.	737 299	736 831			
Input	Cable RG 58/CU of 1 m length, grey,				
	connector is	not supplied			
Frequency range	406 – 430 MHz	450 – 470 MHz			
VSWR	< 1	.5			
Gain	2 0	lBi			
Impedance	50	Ω			
Polarization	Ver	ical			
Max. power	50 Watt (at 50 °C ambient temperature)				
Weight	0.25 kg	0.23 kg			
Mounting plate	115 x 2	25 mm			
Packing size	Foil: 650 x 130 mm				
Height/Radome dia.	404 mm/20 mm	369 mm/20 mm			
Material:	Radiator: Brass. Radome: Fiberglass, colour: White. Mounting plate: Aluminum.				
Mounting:	a) Single-hole mounting surface of up to 10 m	(12 mm diameter) on m thickness.			
	b) On surfaces of more to by means of mounting scope of delivery.	than 10 mm thickness, g plate included in the			
Grounding:	All metal parts of the ant conductor are DC ground	enna including the inner ded.			

a)



Omnidirectional Antenna



Omni 450 360° 2dBi

Туре No.	737 003	K 75 11 21	
Input	N female		
Frequency range	370 – 430 MHz	406 – 470 MHz	
VSWR	< '	1.5	
Gain	2 0	dBi	
Impedance	50	Ω	
Polarization	Ver	tical	
Max. power	100 Watt (at 50 °C a	mbient temperature)	
Weight	1 kg	0.8 kg	
Wind load	20 N (at	, 150km/h)	
Max. wind velocity	200	km/h	
Packing size	112 x 97 x 654 mm	112 x 97 x 614 mm	
Height	552 mm	510 mm	
Material:	Radiator: Brass. Radome: Fiberglass, dia. 21 mm, colour: Grey. Base: Aluminum. Mounting U-bolt and all screws and nuts: Stainless steel.		
Mounting:	 The antenna can be attached in two ways with the supplied mounting kit: 1. On the tip of any tubular mast of 40 – 54 mm dia. (connecting cable runs inside the mast). 2. Laterally at the tip of any tubular mast of 20 – 54 mm dia. (connecting cable runs outside the mast). 		
Grounding:	All metal parts of the antenna including the		



Vertical Pattern



Omnidirectional Antenna



Omni 450 360° 5dBi

Туре No.	K 75 15 21 1	K 75 15 22 1	721 387		
Input	N female N female				
Frequency range	406 – 430 MHz	440 – 4	70 MHz		
VSWR		< 1.5			
Gain		5 dBi			
Impedance		50 Ω			
Polarization		Vertical			
Max. power	55 Watt (at 50	55 Watt °C ambient tempera	500 Watt ature)		
Weight		1.2 kg			
Wind load	40 N (at 150 km/h)	35 N (at 1	50 km/h)		
Max. wind velocity	200 km/h	200	km/h		
Packing size	1350 x 110 x 100 mm	1250 x 110	x 100 mm		
Antenna height	1273 mm	1144	mm		
Material:	Radiator: Brass. Radome: Fiberglass, dia. 21 mm, colour: Grey.				
Base: Aluminum.					
	Mounting U-bolt and	all screws and nuts	: Stainless steel.		
Mounting:	The antenna can be attached in two ways with the supplied mounting kit:				
	 On the tip of any tubular mast of 40 – 54 mm dia. (con- necting cable runs inside the mast). 				
	2. Laterally at the tip dia. (connecting of	o of any tubular mas cable runs outside th	t of 20 – 54 mm e mast).		
Grounding:	All metal parts of the antenna including the inner conductor are DC grounded.				





Omni 450 360° 7dBi

Type No. N female	K 75 16 21 1	K 75 16 22 1	K 75 16 23 1	721 388	
7-16 female				720 880	728 888
Input	406 – 430 MHz	420 – 449 MHz	440 – 470 MHz	440 – 470 MHz	406 – 430 MHz
Gain			7 dBi		
VSWR			< 1.5		
Impedance			50 Ω		
Polarization			Vertical		
Max. power		70 Watt		500	Watt
		(at 50 °	C ambient temp	erature)	
Weight	1.6 kg	1.6 kg	1.5 kg	1.6	kg
Wind load (at 150 km/h)	60 N	60 N	55 N	60	N
Max. wind velocity			200 km/h		
Packing size		11	2 x 97 x 2124 m	nm	
Antenna height	2016 mm	1975 mm	1868 mm	2016	6 mm
watenal.	Radiator: Brass. Radome: Fiberglass, dia. 21 mm, colour: Grey. Base: Aluminum. Mounting U-bolt and all screws and nuts: Stainless steel.				
Mounting:	 The antenna can be attached in two ways with the supplied mounting kit: 1. On the tip of any tubular mast of 40 – 54 mm dia. (connecting cable runs inside the mast). 2. Laterally at the tip of any tubular mast of 20 – 54 mm dia. (connecting cable runs outside the mast). 				
Grounding:	All metal parts of ductor are DC g	of the antenna ir prounded.	ncluding the inne	r con-	









• Maximum power: 500 Watt.

• Grounding cross section: 22 mm² copper.

Omni 450 360° 7.5dBi

Туре No.	K 75 16 37			
Input	7-16 female			
Frequency range	380 – 400 MHz			
VSWR	< 1.5			
Gain	7.5 dBi			
Impedance	50 Ω			
Polarization	Vertical			
Max. power	500 Watt (at 50 °C ambient temperature)			
Weight	8 kg			
Wind load	200 N (at 150 km/h)			
Max. wind velocity	200 km/h			
Packing size	3316 x 148 x 112 mm			
Antenna height	2840 mm			
Material:	Padiator: Conner and brass			
Material.	Radome: Fiberglass dia 51 mm colour: Grey			
	Base: Aluminum			
	Mounting kit screws and puts: Stainless steel			
	would not serve and huts. Stainless steel.			
Mountina:	The antenna can be attached laterally at the tip			
3	of any tubular mast of 50 – 94 mm diameter			
	(connecting cable runs outside the mast).			
	(
Grounding:	The antenna is DC grounded via a copper tube			
	having a cross-sectional area of 22 mm ² .			
	The inner conductor is capacitively coupled.			



Vertical Pattern





• Grounding cross section: 22 mm² copper.

VPol Omni 450 360° 8.5dBi

Туре No.	742 155
Input	7-16 female
Connector position	Bottom
Frequency range	450 – 470 MHz
VSWR	< 1.5
Gain	8.5 dBi
Impedance	50 Ω
Polarization	Vertical
Max. power	500 Watt (at 50 °C ambient temperature)
Weight	8 kg
Radome diameter	51 mm
Windload	220 N (at 150 km/h)
Max. wind velocity	180 km/h
Packing size	3371 x 188 x 102 mm
Height	3110 mm
Matarial	Padiator: Coppor and brass
Material.	Radome: Fiberglass, colour: Grey
	Base: Weather-proof aluminum
	Mounting kit screws and nuts: Stainless steel
	Mounting hit, solows and hats. Stamoss steel.
Mounting:	The antenna can be attached laterally at the
-	tip of any tubular mast of 50 – 94 mm diameter
	(connecting cable runs outside the mast).
Crounding	The entenne is DC grounded via a serie of the
Grounding:	here a constraint and the second seco
	The inner conductor is coupled capacitively



Vertical Pattern



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• Maximum power: 500 Watt.

Omni 450 360° 10dBi

Туре No.	728 889	720 842
Input	7 – 16 female	7 – 16 female
Frequency range	406 – 430 MHz	440 – 470 MHz
VSWR	< '	1.5
Gain	10	dBi
Impedance	50	Ω
Polarization	Ver	tical
Max. power	500 Watt (at 50 °C a	mbient temperature)
Weight	7 kg	6.5 kg
Wind load	240 N (at 150 km/h)	230 N (at 150 km/h)
Max. wind velocity	150	km/h
Packing size	4600 x 198	8 x 152 mm
Antenna height	4430 mm	4175 mm
Material:	Radiator: Brass. Radome: Fiberglass, dia colour: Grey. Base: Alum Mounting U-bolt and all s Stainless steel.	. 30 – 52 mm, inum. screws and nuts:
Mounting:	 The antenna can be atta with the supplied mountin 1. On the tip of any tubu dia. (connecting cable 2. Laterally at the tip of a 30 – 90 mm dia. (connecting side the mast). 	ched in two ways ng kit: lar mast of 65 – 105 mm runs inside the mast). any tubular mast of necting cable runs out-
Grounding:	All metal parts of the ant conductor are DC ground	enna including the inner ded.



Vertical Pattern





Laterally at the tip of a tubular mast

On the tip of a tubular mast



- Side-mounted half-wave dipole with variable antenna-to-mast distance.
- Depending on the distance of the radiator from the mast edge and also on the mast diameter, various radiation patterns can be achieved.

Offset-Pattern 420/450 360° 4dBi

Туре No.	K 75 29 21
Input	N female
Frequency range	400 – 470 MHz
VSWR	< 1.5
Gain	approx. 4 dBi
Impedance	50 Ω
Polarization	Vertical
Max. power	450 Watt (at 50 °C ambient temperature)
Weight	1.6 kg
Wind load	40 N (at150 km/h)
Max. wind velocity	200 km/h
Packing size	880 x 330 x 100 mm
Antenna height	314 mm
Material:	Radiator: Hot-dip galvanized steel. Horizontal support pipe: Stainless steel. Mount: Aluminum. Tightening band and all screws and nuts: Stainless steel. Feedpoint radome: Fiberglass.
Attachment:	To tubular masts of 60 – 320 mm diameter using supplied stainless steel tightening band (20 mm wide, 0.8 mm gauge).
Special features:	The distance from tubular mast to radiator is adjustable from 170 – 580 mm. Detailed information see Catalogue part "Technical Supplement"
Grounding:	All metal parts of the antenna including the inner conductor and the supplied mounting hardware are DC grounded.





Radiation pattern depending on the distance A (edge of pipe mast to dipole).

Summary of Power Splitters



75 MHz

Туре		Type No.	Frequency Range	Height	Input	Max. Power	Page
2-way Splitter	75 MHz	K 62 55 41	68 – 88 MHz	950 mm	N female	960 Watt	54
3-way Splitter	75 MHz	K 62 56 41	68 – 88 MHz	1055 mm	N female	960 Watt	54
4-way Splitter	75 MHz	K 62 57 41	68 – 88 MHz	1195 mm	N female	960 Watt	54

150 MHz

Туре		Туре No.	Frequency Range	Height	Input	Max. Power	Page
2-way Splitter	150 MHz	K 62 55 21	146 – 174 MHz	530 mm	N female	680 Watt	54
3-way Splitter	150 MHz	K 62 56 21	146 – 174 MHz	630 mm	N female	680 Watt	54
4-way Splitter	150 MHz	K 62 57 21	146 – 174 MHz	730 mm	N female	680 Watt	54

450 MHz

Туре		Туре No.	Frequency Range	Height	Input	Max. Power	Page
2-way Splitter	450 MHz	K 63 20 22 1	380 – 512 MHz	409 mm	N female	500 Watt	55
2-way Splitter	450 MHz	K 63 20 22 7	380 – 512 MHz	409 mm	7-16 female	1000 Watt	55
3-way Splitter	450 MHz	K 63 20 23 1	380 – 512 MHz	409 mm	N female	500 Watt	55
3-way Splitter	450 MHz	K 63 20 23 7	380 – 512 MHz	409 mm	7-16 female	1000 Watt	55
4-way Splitter	450 MHz	K 63 20 24 1	380 – 512 MHz	409 mm	N female	500 Watt	55
4-way Splitter	450 MHz	K 63 20 24 7	380 – 512 MHz	409 mm	7-16 female	1000 Watt	55

For outdoor and indoor use. 2-way Splitter 75 3-way Splitter 75

4-way Splitter 75

Туре No.	K 62 55 41	K 62 56 41	K 62 57 41		
Connector (female)		Ν			
Max. power	960 W				
	(at 50 °C ambient temperature)				
For connecting antennas	2	3	4		
Frequency range		68 – 88 MHz			
VSWR		< 1.1			
Impedance	50 Ω				
Insertion loss	< 0.05 dB				
Length L	950 mm	1055 mm	1195 mm		

For outdoor and indoor use.

2-way Splitter 150 3-way Splitter 150 4-way Splitter 150

Туре No.	K 62 55 21	K 62 56 21	K 62 57 21		
Connector (female)	N				
Max. power	680 W				
	(at 50 °C ambient temperature)				
For connecting antennas	2	3	4		
Frequency range		146 – 174 MHz			
VSWR		< 1.1			
Impedance	50 Ω				
Insertion loss	< 0.05 dB				
Lenth L	530 mm	630 mm	730 mm		

Material:

Protective case on the antenna side: Aluminum. Weather protectition on the equipment side: UV-resistant Elastomere. Transformation line: Aluminum and brass. All parts with protectition varnish.

Mounting:

On tubular masts of 60 – 320 mm dia. OD by means of non-corrosive clamp-strap (1020 x 20 x 1 mm, supplied). Transformers with a total length of over 700 mm are delivered with a supporting clamp.



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Example for 2-way antenna splitter



Example for 4-way antenna splitter



For outdoor and indoor use. 2-way Splitter 390/420/450 3-way Splitter 390/420/450 4-way Splitter 390/420/450

Туре No.	K 63 20 22 1	K 63 20 22 7	K 63 20 23 1	K 63 20 23 7	K 63 20 24 1	K 63 20 24 7
Connectors (female)	N	7-16	N	7-16	N	7-16
Max. power	500 W	1000 W	500 W	1000 W	500 W	1000 W
			(at 50 °C ambie	ent temperature)		
For connecting antennas	2		3		4	
Frequency range	380 – 512 MHz					
VSWR			< '	1.1		
Impedance	50 Ω					
Insertion loss	< 0.05 dB					
Packing size	425 x 93 x 107 mm					
Max. size			409 x 82	x 82 mm		

Material:

Case: Aluminum. Inner conductor: Brass.

Mounting:

Bracket for wall mounting included in the scope of supply. For mounting to tubular masts use clamps as listed below (order separately).



K 63 20 24 7

Clamps

Туре No.	Description	Mast Diameter
734 360	2 clamps	30 – 55 mm
734 361	2 clamps	55 – 75 mm
734 362	2 clamps	75 – 95 mm
734 363	2 clamps	95 – 115 mm
734 364	2 clamps	115 – 135 mm



734 364

Accessories for Panels

Dimensions

		i or mast Diameter	Fage
Mounting hardware K 61 14 01	1.6 kg 10.2 kg	40 mm 521 mm	59

Mounting Accessories

Туре	Туре No.	Antenna Height	Downtilt Angle	Page
Downtilt	732 574	1000 mm 2000 mm	2 – 20° 1 – 10°	59 59
Downtilt	733 695	992 mm 2000 mm	0 – 22° 0 – 11°	60 60

Accessories for Eurocell Panels

Dimensions

Туре	Type No.	Weight	For Mast Diameter	Page
Mounting hardware	731 651 300 g 28 - 64 mm 738 546 1 kg 50 - 115 mm 733 677 2 kg 60 mm		63 63	
	 733 680	 5.3 kg	 521 mm	63

Mounting Accessories

Туре	Туре No.	Antenna Height	Downtilt Angle	Page
Downtilt	737 973	974 mm	0 – 21°	64
	737 975	1934 mm	0 – 11°	64
	737 976	2574 mm	0 – 8°	64
Azimuth adjustment tool	738 440		115 – 245 mm	65

Brackets

Туре	Type No.	Distance	Mast Diameter	Page
Bracket with fixed spacing	K 61 33 3	500 mm	55 – 105 mm	66
	716 192	500 mm	105 – 245 mm	66
	K 61 33 4	1000 mm	55 – 105 mm	66
	713 645	1000 mm	105 – 245 mm	66
Bracket with adjustable spacing	K 61 33 11	125 – 680 mm	20 – 54 mm	66
	K 61 33 21	125 – 680 mm	30 – 90 mm	66
	737 398	100 – 240 mm	50 – 94 mm	66

Directional Antennas Dimensions



Panels

ım
ım
ım
ım





Mounting clamps/Downtilt kit

(order separately)



Weather-proof cover for elbow and straight connectors are supplied.



Mounting Hardware for Directional Antennas with Dual-Polarization 741 515, 741 516

Mounting clamps/Downtilt kit

(order separately)

Type No. (Pair of clamps)	Suitable for pipe masts of mm diameter	Weight kg	
K 61 14 01	40 - 95	1.6	
K 61 14 02	60 - 116	1,6	
K 61 14 03	116 - 210	4.0	
K 61 14 04	210 - 380	7.2	
K 61 14 05	380 - 521	10.2	
733 695	Downtilt (to be used with a suitable		
	pair of clamps for the individual mast		
	diameterl)		

Antenna Height	Downtilt Angle
992 mm	0° – 22°
1983 mm	0° – 11°



Weather-proof cover for elbow and straight connectors are supplied.







Downtilt kit 733 695



٩

Eurocell Panels Antenna Dimensions



Eurocell Panels

А	974 mm	1934 mm	2574 mm
В	1030 mm	1990 mm	2630 mm
С	1070 mm	2030 mm	2670 mm



Mounting Configurations Eurocell Panels















Mounting Hardware Eurocell Panels Clamps



Antenna Height: 2574 mm





Mast dia.	Type No.	Distance a	Weight appr.	Units p 2574 mm	per antenna 974 – 1934 mm
28 – 64 mm	731 651	22 – 30 mm	0.33 kg	3 x	2 x
50 – 115 mm	738 546	19 – 24 mm	1.0 kg	3 x	2 x
60 – 115 mm	733 677	117 – 124 mm	2.0 kg	3 x	2 x
116 – 210 mm	733 678	146 – 160 mm	2.6 kg	3 x	2 x
210 – 380 mm	733 679	148 – 168 mm	4.0 kg	3 x	2 x
380 – 521 mm	733 680	150 – 175 mm	5.3 kg	3 x	2 x

731 651	738 546	733 677 733 680
³ 0000 10000 10000	Real Providence	



Antenna Height: 974 mm – 1934 mm

Antenna Height: 2574 mm

Use the downtilt kit together with the clamps (see page 63).



Downtilt angle

Antenna Height	Downtilt angle	Туре No.	Weight
974 mm	0° – 21°	737 973	approx. 2.8 kg
1934 mm	0° - 11°	737 975	approx. 2.8 kg
2574 mm	0° - 8°	737 976	approx. 5.3 kg

Mounting a downtilt kit enlarges the spacing between mast and antenna by 84 mm.

Eurocell A-Panel / Eurocell Panel / Eurocell F-Panel Accessories Azimuth Adjustment Tool



Type No. 738 440

Precise azimuth adjustment for mast mounted antennas can easily be achieved by using the azimuth adjustment tool.



Instruction:

- Use a map to work out the angle between the designed antenna azimuth and target (church, building, mountain peak).
- Set this angle on the scale of the adjustment tool.
- Place the adjustment tool onto the antenna and tighten the clamping device.
- Use the telescope to aim at the target object, if necessary, use elevation compensation.
- Then rotate the antenna until the target object appears in the telescope.
- * Observe the position of the stopper when fitting the azimuth adjustment tool.

Accessories Stand-off Brackets

When mounted to the tip of a mast, the antennas described in this catalogue radiate horizontally in a circular fashion. However, they can also be mounted laterally to a mast by using an extension bracket. Depending on the spacing and the mast diameter, various types of radiation patterns can be achieved.

(For further information please see the "Technical Support" part of our catalogue on pages 70 and 71.)

Bracket with fixed spacing Type No. K 61 33 3 716 192 K 61 33 4 713 645 Weight 7 kg 3.2 kg 2 kg 8.5 kg Distance A: 500 mm 1000 mm Suitable for antennas with a 215 N (at 150 km/h) 85 N (at 150 km/h) maximum wind load of Suitable for antennas with mounting kit to pipe masts of 20 - 54 mm diameter. Attachment By means of mounting kit (supplied) to pipes of 55 mm – 105 mm – 55 mm – 105 mm – 105 mm 265 mm 105 mm 265 mm diameter Material Hot-dip galvanized steel. Wind load 36 N (at 150 km/h) 60 N (at 150 km/h)



Bracket with adjustable spacing A

Implementation	Stand-off	Double s	stand-off
	fig. A	fig. B	fig. C
Туре No.	K 61 33 11	K 61 33 21	737 398
Weight	6.6 kg	13.7 kg	6 kg
Distance A: min. max.	125 680	mm mm	100 mm 240 mm
Suitable for	antennas w	rith mounting kit to pi	pe masts of
	20 – 54 mm	30 – 90 mm	50 – 94 mm
	diam	neter	diameter
Attachment	By means of	mounting kit (supplie	d) to pipes of
	55 mm –	105 mm	40 – 105 mm
	diam	neter	diameter
Material	Hot-dip galvanized steel.		
Wind load	45 N	100 N	65 N
	(at 150 km/h)	(at 150 km/h)	(at 150 km/h)





Double Bracket

245 mm

1 30 x 4

Pipe

70 x 4 mm

free length 250 mm

30 x 4

fig. C

100 to

240 mm

- 4

2

1

b= 4



Summary of Technical Supplement



Туре	Page
Antenna Systems with Panels K 52 32 2	68
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Antenna Gain, VSWR / Reflected power	73
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Solid insulated RF Cables	75
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Antenna Systems with Panels K 52 32 2..

Examples for radiation patterns at 160 MHz



Arrangement	Horizontal Radiation Pattern	Technical Data		
		Spacing A	100 % rel. field strength corresponds to a gain* of	
		O.5 m 2.0 m 2.0 m 4.0 m Required components with conr 2 antennas K 52 32 21, 2 junctio 1 antenna transformer K 62 55	1 bay 2 bays 5.4 dB 8.4 dB 5.2 dB 8.2 dB 5.4 dB 8.4 dB 5.4 dB 8.4 dB 5.4 dB 8.4 dB a. N female (without mounting on cables K 62 21 3, 21	_ g kits):
A > 2		Spacing A	100 % rel. field strength corresponds to a gain* of	
		O.7 m 0.7 m 1.4 m 2.0 m Required components with conr 2 antennas K 52 32 21, 2 junctio 1 antenna transformer K 62 55 3	1 bay 2 bays 4.8 dB 7.8 dB 5.5 dB 8.5 dB 6.1 dB 9.1 dB n. N female (without mounting on cables K 62 21 3, 21	g kits):
$ \begin{array}{c c} & & & \\ & & \\ & & \\ & \\ & \\ & \\ & \\ & $		Spacing A	100 % rel. field strength corresponds to a gain* of	
		1.4 m 2.8 m 4.0 m	1 bay 2 bays 3.3 dB 6.3 dB 4.0 dB 7.0 dB 5.0 dB 8.0 dB	_
		Required components with conn. N female (without mounting kits): 3 antennas K 52 32 21, 3 junction cables K 62 21 3, 1 antenna transformer K 62 56 21		
$\begin{array}{c} & & & \\ & &$		Spacing A	100 % rel. field strength corresponds to a gain* of	
		1.4 m 2.8 m 4.0 m	1 bay 2 bays 1.8 dB 4.8 dB 2.6 dB 5.6 dB 4.0 dB 7.0 dB	_
		Required components with conn. N female (without mounting kits): 4 antennas K 52 32 21, 4 junction cables K 62 21 3, 1 antenna transformer K 62 57 21		
		* ref. $\lambda/2$ dipole		

Vertical Radiation Pattern of the Arrangements 1,2,3 and 4

1 Bay



Vertical Radiation Pattern of the Arrangements 1,2,3 and 4

2 Bays

(Vertical spacing 0.96 λ = 1.8 m)





Array	Horizontal Radiation Pattern	Technical Data	
		Distance A 100% rel. field strenght corresponds to a gain of	
		Distance A 100% rel. field strenght corresponds to a gain of	
3 A A A A A A A A A A A A A A A A A A A		Distance A 100% rel. field strenght corresponds to a gain of 0.16 m 5.9 dBi 0.22 m 7.3 dBi 0.65 m 7.0 dBi 1.1 m 7.9 dBi	
		Distance A 100% rel. field strenght corresponds to a gain of	

Radiation Patterns for Side-mounted Omnidirectional Antennas



Examples of horizontal radiation patterns for different mast diameters where A = 0.25 λ ; 0.5 λ ; 0.75 λ . Examples also apply for antenna K 75 29 2 .



Isolation Between Two Half-wave Dipoles

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KATHRE



Isolation between two half-wave dipoles, vertically polarized and positioned vertically in line above each other on one common mast.

Isolation between two vertically polarized half-wave dipoles mounted laterally.







Isolation depends on vertical spacing A (at 450 MHz)




Antenna Gain, VSWR / Reflected power

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Antenna Gain in power ratio vs gain in dB



Voltage Standing Wave Ratio (VSWR) vs Reflected power



VSWR-reduction / Mismatch loss



Reduction of VSWR as a result of feeder cable attenuation



Mismatch loss vs VSWR



Solid insulated RF Cables



50 Ω coaxial solid-insulated RF cables

	D ₂	D2 FA	D ₂	D2 D2 D4			
Cable Type	RG 58 C/U PE	1.5/4.8	RG 213/U	RG 214/U			
Dimensions/mm							
D ₁	0.9 (19 x 0.18)	1.5 (7 x 0.75)	2.25 (7 x 0.75)	2.25 (7 x 0.75)			
D ₂	2.95	4.8	7.3	7.25			
D ₃	3.6	5.6	8.2	8.8			
D ₄	5	7.4	10.3	10.8			
Attenuation: Curve No.	3	2	1	1			
Power: Curve No.	4	5	6	6			
Weight kg/100 m	3.8	8.0	15.5	18.7			
Temperature range	- 40 °C + 70 °C						
Bending radius, min.:	$ r = 5 D_4 \text{ for fixed application} r = 10 D_4 \text{ for repeated bending} r = 20 D_4 \text{ for flexible application} $						

Cable attenuation and power rating

Values valid for 50 °C ambient temperature. Maximum allowable temperature of inner conductor 70 °C.





Flange- dia. D ₁	Hole circle dia. D ₂	Hole dia. D ₃	Groove dia. D ₄	Hole dia. D ₅	Width of groove dia. A	Flange thickness s	Number of holes	Weight	Suitable mounting screws
mm	mm	mm	mm	mm	mm	mm	n	kg	
130	100	14	80	35	6	11	4	0.99	M 12 or 1/2"
130	100	14	80	61	6	11	4	0.82	M 12 or 1/2"
190	150	18	120	61	6	14	6	2.59	M 16 or 5/8"
210	170	18	140	61	6	14	6	3.28	M 16 or 5/8"
265	225	18	200	133.5	6	19	6	5.62	M 16 or 5/8"



Flange, $D_1 = 190 \text{ mm}$

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