

SMARTEQ™
■■■■■ WIRELESS

Mobile Antennas for Car and Portalities



68 – 174 MHz

(4 m band, 2 m band, PMR services)

380 – 470 MHz

(70 cm band, NMT 450, trunking systems, TETRA)

810 – 2170 MHz

(35 cm band, GSM 900, Natel C, NMT 900, AMPS, DoCoMo, PCN/GSM 1800, PCS, DCS 1800/1900, UMTS)

Antennas for portable radio sets

(68 – 470 MHz)

Accessories

coupler, cable, adapter

Frequency Overview for Mobile Radio Communication

4 m band	68 – 87.5 MHz
Aircraft radio VHF	108 – 136 MHz
2 m band	146 – 174 MHz
Aircraft radio UHF	225 – 380 MHz
TETRA (Terrestrial Trunked Radio)	380 – 400 MHz
450 MHz frequency range	400 – 470 MHz
Trunking system	410 – 430 MHz
Chekker	410 – 430 MHz
Modacom	410 – 430 MHz
Mobitex	410 – 430 MHz
NMT 450	450 – 470 MHz
AMPS	824 – 896 MHz
DoCoMo	810 – 958 MHz
GSM 900	890 – 960 MHz
NMT 900	890 – 960 MHz
Natel C	890 – 960 MHz
TACS	890 – 950 MHz
ETACS	872 – 950 MHz
PCN / GSM 1800	1710 – 1880 MHz
DCS 1800	1710 – 1880 MHz
GPS	1575.42 ± 1.023 MHz
PCS	1850 – 1990 MHz
DCS 1900 / GSM 1900	1850 – 1990 MHz
UMTS	1900 – 2170 MHz

Which type no. for which frequency?

Type No.	4-m band	2-m band	380 – 410 MHz	410 – 430 MHz	440 – 470 MHz	890 – 960 MHz	1710 – 1880 MHz	GPS 1575 MHz	1900 – 2170 MHz	Car radio	Page
K50 464	X	X								X	20
K50474041	X	X								X	13, 14, 15, 20
K50484031	X	X									19, 20, 53
K50484041	X	X								X	16, 19
K50494	X	X								X	19
K50534	X	X								X	15
K50544	X	X								X	16
K50552031	X	X	X		X					X	15, 16, 23, 24
K5065421	X										13
K5065422	X										14
K5112401	X	X									18
K51164	X	X									18
K5139235		X									47
K 70 55 64						X	X		X		44
K 70 57 21 04 1			X	X						X	23
K 70 57 21 9				X						X	23
K 70 57 23 04 1					X					X	24
K 70 57 23 9					X					X	24
K 70 77 20 3		X	X	X	X	X				X	17, 25, 26
K 70 77 21				X							25
K 70 77 23					X						26
K 70 78 21				X						X	25
K 71 16 20 11				X	X						28
K 71 16 21				X	X						28
K 71 32 26				X	X						49
K 71 32 29				X	X						49
K 71 53 21 6				X							50
K 71 53 23 6					X						50
K 71 53 23 9					X						50
726 131		X								X	17
726 556					X						48
726 637		X								X	17
731 247				X							48

General Information and Notes

How to find your antenna?

In this catalogue, the antennas are listed according to frequency ranges and, within a range, according to product families:

- Roof mount antennas (for example "EuroLine", slanted antenna)
- Stick-on antennas ("Screenfix")
- Magnet mount antennas
- Rear mount antennas
- Caravan antennas

Technical information

1. Tuning

- Some of the mobile antennas for cars have to be tuned to match the operating frequency. Instructions on tuning are to be found in the mounting instructions of the antenna. We recommend the usage of a measuring instrument for the fine-tuning of the matching of the antenna.
- Narrow-band antennas, are marked by three dots which specify the frequency range, for example 143 ... 174 MHz. They have to be tuned.
- Broadband antennas are marked by a hyphen which specifies the frequency range, for example 450 – 470 MHz. They do not need to be tuned.

2. Impedance

- The standardized impedance for mobile radiocommunication is 50 Ω.

3. Maximum load (if not indicated otherwise):

68–87.5MHz	146–174 MHz	400–470 MHz	790–960 MHz	1700–1900 MHz	1900–2170 MHz
100 W	80 W	50 W	30 W	10 W	2 W

(at 50 °C ambient temperature)

4. The car antennas featured in this catalogue are designed for vehicles with metal body-work. If the electrical counterweight for the antenna is missing, then a piece of metal, metal foil or metal mesh of approx. 1 x 1 wave-length, e. g. 0.7 m x 0.7 m for the 70 cm bandwidth, can be used as a substitute. Durable and good-quality earth contact is of great importance for ensuring trouble-free operation. The antenna bases are generally designed for metal thicknesses of up to 1.5 mm. All antennas and also the special antenna bases for each type of vehicle are supplied with comprehensive installation instructions.

5. Common technical terms for connectors and adapters:

- connector (m) marks a male connector type
 plug (f) marks a female connector type

General Information and Notes

Warnings



Caution

For safety reasons magnet mount antennas should only be fixed onto a parked vehicle. Otherwise, the antenna could come off when your vehicle suffers a sudden impact (even at low speed)!



Caution

We recommend to remove the whip of the antenna each time before you enter a car-wash in order to avoid damages to the vehicle and to the antenna!



Caution

The tip protection of the whip always must be mounted for safety reasons. Replace any missing tip protection immediately.

Car radio AM/FM reception

In many cases the mobile car antenna can be used simultaneously as an AM/FM reception antenna. This avoids drilling a second bore hole into the car body work. In any case an additional frequency coupler is required for the connection of the two sets. Generally, we recommend a minimum length of whip of 500 mm for VHF reception and a minimum length of whip of 800 mm for the reception of long, medium, short and ultrashort waves.

Information on broadcasting reception capability is given for each antenna.

Product families

Please note that the whips of the different product families cannot be interchanged!

Euroline antennas

The Euroline family uses the antenna base K 70 77 20 3 (Ord. No. 510 006), which can be combined with whips from 144 up to 960 MHz. This enables an easy changing of the frequency range or exchanging with a combined whip without having to change the antenna base.

Low-noise whips are available for all frequencies except of the 2 m band.

Slanted roof mount antennas

The family of slanted roof mount antennas uses the antenna base 737 692 (Ord. No. 510 261). This base can be exchanged with the factory-mounted broadcasting reception antenna and can be mounted into a standard square hole.

Rear mount antennas

A rear mount antenna is the classic type of a built-in antenna.

Simultaneous operation of radio communication and broadcasting reception is always possible. The two sets then have to be connected to a coupler.

General Information and Notes

Screenfix® antennas

The stick-on antennas of the *Screenfix®* family can be applied to all vehicle screens up to a thickness of 6 mm. Please take care that the screens do not have vaporized metallic coatings and that the heating wires or broadcasting reception antennas which may be integrated in the screen do not cross the so-called coupling area. Best electrical performance is obtained if the antenna is mounted as close as possible to the upper edge of the screen. The antenna can be removed from the screen and reinstalled.

Magnet mount antennas

The magnet mount antennas are designed for the temporary operation of a radio set in a vehicle. They should not remain mounted permanently (please note the warnings!).

As the bases of K 51 16 4, K 51 17 2, K 71 17 21 and K 71 17 23 vary in electrical features, the whip of one of these antennas cannot be used together with a base of a different antenna.

58 – 300 MHz

4 m band / 2 m band / PMR services



Roof mount antennas
Magnet mount antennas
Rear mount antennas

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Roof Mount Antenna

74 ... 87.5 MHz



K 50 65 42 1

- Antenna for duplex operation.
- Cable clamping connection.

Type No. K 50 65 42 1 Ord. No. 510 329	74.215 – 77.655 MHz/ 84.015 – 87.455 MHz, 0 dB gain (ref. to quarter-wave whip), length 1010 mm (must not be changed).
Connection	Clamping device for a cable RG 058 within the tuning case.
Maximum load	20 W (at 50 °C ambient temperature)
Tuning	By means of two trimmers the antenna can be fine-tuned to optimum voltage standing wave ratio in the given frequency range.
Location of mounting	Car roof with 30 – 50 cm Distance to the rear end of the roof.
Mounting hole	In bore hole 12 mm diameter.
Built-in depth	12 mm
Max. diameter at base	38 mm
Material	Whip and spring: Stainless steel. Swivel-joint parts: Chromium-plated brass. Tuning case: Nickel-plated brass. Base: Weather resistant plastic.
Contents of delivery	Whip, base, tuning box.
Components	Type No. (Ord. No.)
Whip	K 50 47 40 41 (510 300)

Roof mount antenna

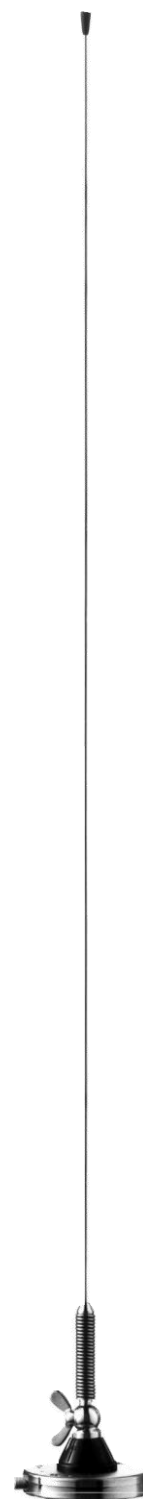
74 ... 87.5 MHz

KATHREIN

Antennen · Electronic

- Antenna for duplex operation.
- Connection M11 x 1.

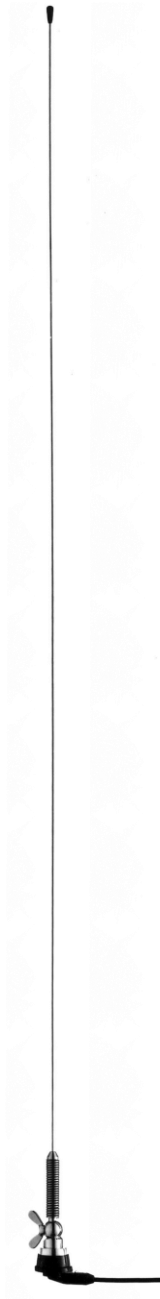
Type No. K 50 65 42 2 Ord. No. 510 330	74.215 – 77.655 MHz/ 84.015 – 87.455 MHz, 0 dB gain (ref. to quarter-wave whip), length 1025 mm (must not be changed).
Connection	M11 x 1
Maximum load	20 W (at 50 °C ambient temperature)
Tuning	By means of two trimmers the antenna can be fine-tuned to optimum voltage standing wave ratio in the given frequency range.
Location of mounting	Car roof with 30 – 50 cm Dis- tance to the rear end of the roof.
Mounting hole	In bore hole 12 mm diameter.
Built-in depth	16 mm
Max. diameter at base	38 mm
Material	Whip and spring: Stainless steel. Swivel-joint parts: Chromium-plated brass. Tuning case: Nickel-plated brass. Base: Weathering resistant plastic.
Contents of delivery	Whip, base, tuning box.
Accessories	Connector M11 x 1: K 62 10 0 for RG 213 K 62 05 5 minicrimp adapter
Components	Type No. (Ord. No.)
Whip	K 50 47 40 41 (510 300)



K 50 65 42 2

Roof Mount Antenna

62 ... 300 MHz / Car radio AM/FM



K 50 53 4

Type No. K 50 53 4
Ord. No. 510 314

With spring, 62 ... 300 MHz,
0 dB gain (ref. to quarter-wave
whip),
supply length 1285 mm

Connection

Fixed cable RG 058-PE,
5 meters long, without radio set
connector.

Maximum load

100 W
(at 50 °C ambient temperature)

Tuning

By shortening the whip (please
note mounting instructions).

Mounting

In bore hole (24 mm diameter)
from the external side of the car
body.

Built-in depth

14 mm

Max. diameter at base

38 mm

Material

Whip and spring: Stainless steel.
Swivel-joint parts:
Chromium-plated brass.
Base: Weather resistant plastic.

Contents of delivery

Whip, base with cable, philips
screw.

Components

Whip
Base

Type No.	(Ord. No.)
K 50 47 40 41	(510 300)
K 50 55 20 31	(510 142)

Roof mount antenna

64 ... 300 MHz / Car radio AM/FM

Type No. K 50 54 4 Ord. No. 510 317	Without spring, 64 ... 300 MHz, 0 dB gain (ref. to quarter-wave whip), supply length 1235 mm	
Connection	Fixed cable RG 058-PE, 5 meters long, without radio set connector.	
Maximum load	100 W (at 50 °C ambient temperature)	
Tuning	By shortening the whip (please note mounting instructions).	
Mounting	In bore hole (24 mm diameter) from the external side of the car body.	
Built-in depth	14 mm	
Max. diameter at base	38 mm	
Material	Whip and spring: Stainless steel. Swivel-joint parts: Chromium-plated brass. Base: Weather resistant plastic.	
Contents of delivery	Whip, base with cable, philips screw.	
Components	Type No.	(Ord. No.)
Whip	K 50 48 40 41	(510 304)
Base	K 50 55 20 31	(510 142)



Type No. 726 637 Ord. No. 510 280	144 ... 300 MHz 0 dB gain (ref. to quarter-wave whip), supply length 550 mm
Connection	Minicrimp (male)
Tuning	By shortening the whip (please note mounting instructions).
Maximum load	80 W (at 50 °C ambient temperature)
Mounting	Into bore hole 18 ⁺¹ mm diameter from the external side of the car body. Into bore hole 14 – 19 mm diameter from the inner side of the car body.
Built-in depth	13 mm
Max. diameter at base	32 mm
Material	Metal parts are made of brass and stainless steel. All visible parts are black chromium-plated.
Contents of delivery	Whip, base, antenna wrench.
Components	Type No. (Ord. No.)
Whip	726 131 (510 279)
Base	K 70 77 20 3 (510 006)



726 637

Magnet mount antenna

58 ... 300 MHz

KATHREIN

Antennen · Electronlc

Type No. K 51 16 4 Ord. No. 510 351	58 ... 300 MHz, 0 dB gain (ref. to quarter-wave whip), supply length 1380 mm
Connection	Cable RG 058-PE 4 meters long
Tuning	By shortening the whip (please note mounting instructions).
Maximum load	80 W (at 50 °C ambient temperature)
Mounting	By attaching the antenna to a steel surface of at least 1 m ² extension that should be as even as possible. Magnetic adhesive force: Approx. 200 N.
Max. diameter at base	95 mm
Material	Whip: Stainless steel. Swivel-joint parts: Chromium-plated brass. Magnetic base in shock-resistant plastic housing. Neoprene protection cover for the adhesive surface of the magnetic base.
Contents of delivery	Whip, base, cable, protection cover.
Components	Type No. (Ord. No.)
Whip	K 51 12 40 1 (510 349)
Protection cover	K 66 01 2 (510 156)



Use of antenna on stationary vehicle:
The magnet may lift off from vehicle even at slow speed collision.



K 51 16 4

Rear mount antenna

64 ... 300 MHz / Car radio AM/FM



K 50 49 4

Type No. K 50 49 4
Ord. No. 510 307

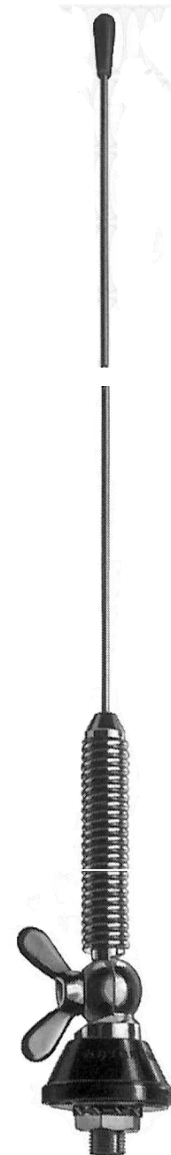
without spring, 64 ... 300 MHz,
0 dB gain (ref. to quarter-wave
whip),
supply length 1225 mm

Connection	M11 x 1
Maximum load	100 W (at 50 °C ambient temperature)
Tuning	By shortening the whip (please note mounting instructions).
Mounting	In bore hole 12 mm diameter.
Built-in depth	32 mm
Max. diameter at base	38 mm
Material	Whip and spring: Stainless steel. Swivel-joint parts: Chromium-plated brass. Base: Weather resistant plastic.
Contents of delivery	Whip, base, connector.
Components	Type No. (Ord. No.)
Whip	K 50 48 40 41 (510 304)
Base	K 50 48 40 31 (510 303)
Connector	K 62 05 1 (510 132)

Rear mount antenna

62 ... 300 MHz / Car radio AM/FM

Type No. K 50 46 4 Ord. No. 510 298	with spring, 62 ... 300 MHz, 0 dB gain (ref. to quarter-wave whip), supply length 1275 mm
Connection	M11 x 1
Maximum load	100 W (at 50 °C ambient temperature)
Tuning	By shortening the whip (please note mounting instructions).
Mounting	In bore hole 12 mm diameter.
Built-in depth	32 mm
Max. diameter at base	38 mm
Material	Whip and spring: Stainless steel. Swivel-joint parts: Chromium-plated brass. Base: Weather resistant plastic.
Contents of delivery	Whip, base, connector.
Components	Type No. (Ord. No.)
Whip	K 50 47 40 41 (510 300)
Base	K 50 48 40 31 (510 303)
Connector	K 62 05 1 (510 132)



K 50 46 4

Multiline antenna

Telephone GSM900/1800, GPS and 68–300 MHz



- Multi-functional antenna with active GPS function and Extension option with TETRA/2m radiator.
- Power supply for GPS via phantom feed.

Type no. 506 10004
Order no. 506 10004

GSM900/1800 antenna

Frequency range
Gain (typical)
VSWR transmit/receive
Impedance
Max. power

890 – 960 / 1710 – 1880 MHz
0 dB (ref. quarter-wave whip)
≤ 2.0
50 Ω
GSM900: 8 W
GSM1800: 2 W
(at 20 °C ambient temperature)
Minicrimp (FME) pin

Cable connection

GPS antenna / amplifier

Frequency range
Antenna gain (90° elevation)
Axial ratio (90° elevation)
Polarization
Amplifier gain (20 °C)
Noise figure (20 °C)
Impedance
VSWR
Supply voltage

1575.42 ±1.0 MHz
5 dBi
3 dB
Circular RHCP
Typ. 30 dB (LNA and patch)
Typ. 1.95 dB
50 Ω
≤ 1.5
3.0 to 5.0 V (phantom power via the center conductor)
SMA (pin)

Cable connection

Optional radiator

Max. length
Max. loading
Impedance
Frequency range
Cable connection

1120 mm
25 W
50 Ω
68 – 600 MHz
Minicrimp (FME) socket

Dimensions

L x W x H
Downtilt (optional radiator)
Installation depth
Drill hole for mounting

108 mm x 80 mm x 60 mm
90°
14 mm
19 mm diameter

Starting torques

SMA – plug
FME/SMB – plug
Fastening nut

0.9 Nm
2.0 Nm
7.0 Nm



Remove optional radiator before entering car wash systems!

Individual accessories

Description	Order no.	
(Optional radiator)		
Multiline radiator 380 – 445 MHz	506 10005	
Multiline radiator 380 ... 480 MHz colinear	506 10006	
Multiline radiator 68 ... 300 MHz	506 10007	
Cabel 5 m, SMA (socket) / SMB (socket)	507 10003	

380 – 470 MHz

TETRA / Trunking System / 70 cm band / NMT 450



Roof mount antennas
Magnet mount antennas
Rear mount antennas

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Roof mount antenna

380 ... 430 MHz / Car radio AM/FM



K 70 57 21 9

Type No. K 70 57 21 9
Ord. No. 510 173

Connection	Fixed cable RG 058, 5 meters long, without radio set connector.
Maximum load	50 W (at 50 °C ambient temperature)
Tuning	By moving the tuning disk (note mounting instructions).
Mounting	In bore hole 24 mm diameter.
Built-in depth	14 mm
Max. diameter at base	38 mm
Material	Whip: Stainless steel. Parts of the swivel-joint and tuning disk: Chromium-plated brass. Base: Weather resistant plastic.
Contents of delivery	Whip, base, allen key.
Components	Type No. (Ord. No.)
Whip	K 70 57 21 04 1 (510 172)
Base for K 70 57 21 9	K 50 55 20 31 (510 142)

Roof mount antenna

440 ... 470 MHz / Car radio AM/FM

Type No. K 70 57 23 9
Ord. No. 510 178

440 ... 470 MHz,
4 dB gain (ref. to quarter-wave
whip),
length 540 mm

Connection	Fixed cable RG 058, 5 meters long, without radio set connector.	
Maximum load	50 W (at 50 °C ambient temperature)	
Tuning	By moving the tuning disk (note mounting instructions).	
Mounting	In bore hole 24 mm diameter.	
Built-in depth	14 mm	
Max. diameter at base	38 mm	
Material	Whip: Stainless steel. Parts of the swivel-joint and tuning disk: Chromium-plated brass. Base: Weather resistant plastic.	
Contents of delivery	Whip, base, allen key.	
Accessories	For AM/FM reception the coupler K 63 27 23 (Ord. No. 510 258) is required.	
Components	Type No.	(Ord. No.)
Whip	K 70 57 23 04 1	(510 175)
Base for K 70 57 23 9	K 50 55 20 31	(510 142)



K 70 57 23 9

EuroLine antenna

406 – 440 MHz

- 4 dB gain antenna, also usable as combined whip for 406 – 440 MHz / AM/FM reception.
- 4 dB gain antenna in low-noise version.

Type No. K 70 77 21 Ord. No. 510 184	406 – 440 MHz, 0 dB gain (ref. to quarter-wave whip), length 180 mm
Type No. K 70 78 21 Ord. No. 510 756	406 – 440 MHz, 4 dB gain (ref. to quarter-wave whip), low wind-noise, length 590 mm
Connection	Minicrimp (male)
Maximum load	50 W (at 50 °C ambient temperature)
Mounting	Into bore hole 18 ⁺¹ mm diameter from the external side of the car body. Into bore hole 14 ... 19 mm diameter from the inner side of the car body.
Built-in depth	13 mm
Max. diameter at base	32 mm
Material	Metal parts are made of brass and stainless steel. All visible metal parts are black chromium-plated.
Contents of delivery	Whip, base, antenna wrench.
Special feature	Whip K 70 70 21 01 is marked with the letter „K“
Components	Type No. (Ord. No.)
Base	K 70 77 20 3 (510 006)



K 70 77 21



K 70 78 21

- Gain antenna, also usable as combined whip for 440 – 470 MHz / AM/FM reception.
- 4 dB gain antenna in low-noise version.

Type No. K 70 77 23
Ord. No. 510 003440 – 470 MHz,
0 dB gain (ref. to quarter-wave whip),
length 180 mm

Connection

Minicrimp (male)

Maximum load

50 W
(at 50 °C ambient temperature)

Mounting

Into bore hole 18⁺¹ mm diameter from the external side of the car body.
Into bore hole 14 ... 19 mm diameter from the inner side of the car body.

Built-in depth

13 mm

Max. diameter at base

32 mm

Material

Metal parts are made of brass and stainless steel.
All visible metal parts are black chromium-plated.

Contents of delivery

Whip, base, antenna wrench.

Components

Type No. (Ord. No.)

Base

K 70 77 20 3 (510 006)



K 70 77 23

Multiline antenna

Telephone GSM900/1800, GPS and 380–480 MHz

- Multi-functional antenna with active GPS function and Extension option with TETRA/2m radiator.
- Power supply for GPS via phantom feed.

Type no. 506 10004
Order no. 506 10004

GSM900/1800 antenna

Frequency range	890 – 960 / 1710 – 1880 MHz
Gain (typical)	0 dB (ref. quarter-wave whip)
VSWR transmit/receive	≤ 2.0
Impedance	50 Ω
Max. power	GSM900: 8 W GSM1800: 2 W
	(at 20 °C ambient temperature)
Cable connection	Minicrimp (FME) pin

GPS antenna / amplifier

Frequency range	1575.42 ±1.0 MHz
Antenna gain (90° elevation)	5 dBi
Axial ratio (90° elevation)	3 dB
Polarization	Circular RHCP
Amplifier gain (20 °C)	Typ. 30 dB (LNA and patch)
Noise figure (20 °C)	Typ. 1.95 dB
Impedance	50 Ω
VSWR	≤ 1.5
Supply voltage	3.0 to 5.0 V (phantom power via the center conductor)
Cable connection	SMA (pin)

Optional radiator

Max. length	1120 mm
Max. loading	25 W
Impedance	50 Ω
Frequency range	68 – 600 MHz
Cable connection	Minicrimp (FME) socket


Dimensions

L x W x H	108 mm x 80 mm x 60 mm
Downtilt (optional radiator)	90°
Installation depth	14 mm
Drill hole for mounting	19 mm diameter





Starting torques

SMA – plug	0.9 Nm
FME/SMB – plug	2.0 Nm
Fastening nut	7.0 Nm



 Remove optional radiator before entering car wash systems!
Attention

Individual accessories

Description	Order no.	
(Optional radiator)		
Multiline radiator 380 – 445 MHz	506 10005	
Multiline radiator 380 – 480 MHz colinear	506 10006	
Multiline radiator 68 – 300 MHz	506 10007	
Cable 5 m SMA (socket) / SMB (socket)	507 10003	

Magnet mount antenna

410 – 470 MHz

• **Broadband antenna.**



K 71 16 2

Type No. K 71 16 21 Ord. No. 510 009	410 – 470 MHz, 0 dB gain (ref. to quarter-wave whip), length 180 mm
Connection	Fixed cable RG 058-PE, 4 meters long with Minicrimp connector.
Maximum load	50 W (at 50 °C ambient temperature)
Mounting	By attaching it to steel surfaces of at least 0.5 m ² extension that are as even as possible. Magnetic adhesion force: Approx. 100 N.
Max. diameter at base	73 mm
Material	Elastic, corrosion-resistant metal shaft in especially resistant plastic protective cover. Magnetic base in shock-resistant plastic housing with neoprene cover.
Contents of delivery	Whip, base, cable.
Components	Type No. (Ord. No.)
Whip	K 71 16 20 11 (510 114)

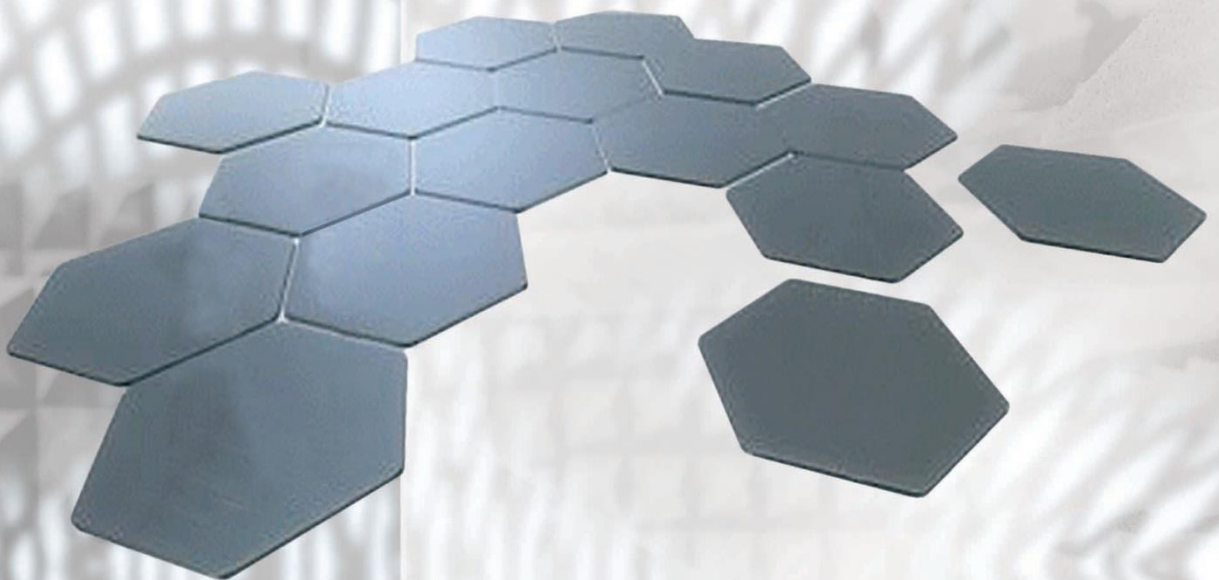


Danger

Use of antenna on stationary vehicle:
The magnet may lift off from vehicle even at slow speed collision.

810 – 2170 MHz

35 cm band / GSM 900 / Natel C / NMT 900 / DoCoMo
AMPS / PCN/GSM 1800 / PCS / DCS 1800/1900 / UMTS



Roof mount antennas
Stick-on antennas
Rear mount antennas

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Multi roof mount antenna

810 – 2170 MHz

- One antenna only for world-wide application (AMPS, DoCoMo, GSM 900/1800, PCS, DCS 1800/1900, UMTS).
- Made for future technologies, UMTS operation included.
- Excellent omni-directional pattern.
- Ultra broadband design with no tuning necessary.



K 70 55 64

Type No. K 70 55 64
Ord. No. 510 934

Frequency range

AMPS	824 – 896 MHz
DoCoMo	810 – 958MHz
GSM 900	890 – 960 MHz
GSM 1800	1710 – 1880 MHz
GSM 1900	1850 – 1990 MHz
UMTS	1900 – 2170 MHz

typ. 0 dB gain (ref. to quarter-wave whip), length 89 mm

Connection

Minicrimp (male)

Maximum load

AMPS	3 W
DoCoMo	0.8 W
GSM 900	8 W
GSM 1800	2 W
GSM 1900	2 W
UMTS	2 W

(at 50 °C ambient temperature)

Mounting location

Car roof recommended

Mounting

Into bore hole 18⁺¹ mm diameter from the external side of the car body.
Into bore hole 14 ... 19 mm diameter from the inner side of the car body.

Built-in depth

12 mm

Max. diameter at base

32 mm

Antenna length

89 mm

Material

Weather resistant plastic parts; all visible metal parts are black chromium-plated.

Contents of delivery

Whip, base, antenna wrench.

Accessories

Ord. No. 510 964

Spare whip

Multiline antenna

Telephone GSM900/1800, GPS and 380–480 MHz

- Multi-functional antenna with active GPS function and Extension option with TETRA/2m radiator.
- Power supply for GPS via phantom feed.

Type no. 506 10004
Order no. 506 10004

GSM900/1800 antenna

Frequency range	890 – 960 / 1710 – 1880 MHz
Gain (typical)	0 dB (ref. quarter-wave whip)
VSWR transmit/receive	≤ 2.0
Impedance	50 Ω
Max. power	GSM900: 8 W GSM1800: 2 W
	(at 20 °C ambient temperature)
Cable connection	Minicrimp (FME) pin

GPS antenna / amplifier

Frequency range	1575.42 ±1.0 MHz
Antenna gain (90° elevation)	5 dBi
Axial ratio (90° elevation)	3 dB
Polarization	Circular RHCP
Amplifier gain (20 °C)	Typ. 30 dB (LNA and patch)
Noise figure (20 °C)	Typ. 1.95 dB
Impedance	50 Ω
VSWR	≤ 1.5
Supply voltage	3.0 to 5.0 V (phantom power via the center conductor)
Cable connection	SMA (pin)

Optional radiator

Max. length	1120 mm
Max. loading	25 W
Impedance	50 Ω
Frequency range	68 – 600 MHz
Cable connection	Minicrimp (FME) socket

Dimensions

L x W x H	108 mm x 80 mm x 60 mm
Downtilt (optional radiator)	90°
Installation depth	14 mm
Drill hole for mounting	19 mm diameter

Starting torques

SMA – plug	0.9 Nm
FME/SMB – plug	2.0 Nm
Fastening nut	7.0 Nm



Remove optional radiator before entering car wash systems!

Attention



Individual accessories

Description	Order no.	
(Optional radiator)		
Multiline radiator 380 – 445 MHz	506 10005	
Multiline radiator 380 – 480 MHz colinear	506 10006	
Multiline radiator 68 – 300 MHz	506 10007	
Cable 5m, SMA (socket) / SMB (socket)	507 10003	

Antennas for portable radio sets

68 - 470 MHz



51

- **Particularly short and elastic antenna.**
- **No sharp tips or edges.**

Type No. K 51 39 23 5
Ord. No. 510 367

163 – 174 MHz, M connector

Impedance	50 Ω
Maximum load	20W (at 50°C ambient temperature)
Polarization	Vertical
Electr. length	$\lambda/4$
Length	Approx. 160 mm
Material	Whip: Elastic metal helix in particularly resistive plastic cover.
Colour	Black

Miniflex antenna

406 – 428 MHz

440 – 470 MHz

- Very robust antenna

Type No. 731 247 Ord. No. 510 218	406 – 428 MHz, length 64 mm, approx. 22 g
Type No. 726 556 Ord. No. 510 217	440 – 470 MHz, length 61 mm, approx. 22 g
Connector	TNC
Impedance	50 Ω
Electr. length	$\lambda/4$
Maximum load	20W (at 50°C ambient temperature)
Material	Metal helix extrusion-coated. Connector: Black chromium-plated.



731 247
726 556

Multiflex antenna

400 – 470 MHz

- Slim and highly elastic antenna
- No sharp tips or edges



K 71 32 25

Type No. K 71 32 26 Ord. No. 510 194	TNC connector
Type No. K 71 32 29 Ord. No. 510 195	BNC connector
Frequency range	400 – 470 MHz
Impedance	50 Ω
Maximum load	20W (at 50°C ambient temperature)
Polarization	Vertical
Electr. length	$\lambda/4$
Weight	35 g
Maximum length	165 mm
Material	Elastic whip in particularly resistive plastic cover. Connector: Black chromium plated brass (for Ord. No. 510 194)
Colour	Black

Gainflex antenna

406 – 430 MHz

440 – 470 MHz

- Shortened half-wave antenna
- Decoupled from the radio set
- 4 dB Gain

Type No. K 71 53 21 6 Ord. No. 510 076	406 – 430 MHz, TNC connector, length 330 mm, approx. 55 g, without joint
Type No. K 71 53 23 6 Ord. No. 510 079	440 – 470 MHz, TNC connector, length 300 mm, approx. 50 g, without joint
Type No. K 71 53 23 9 Ord. No. 510 081	440 – 470 MHz, BNC connector, length 300 mm, approx. 50 g, without joint
Impedance	50 Ω
Gain	4 dB (ref. to quarter-wave whip)
Maximum load	20W (at 50°C ambient temperature)
Swivelling range of the joint	Continuous $\pm 125^\circ$
Material	Highly elastic, corrosion-proof metal shaft in particularly resistive black plastic cover. Connector: Black chromium- plated brass. Insulant: Polycarbonate.



K 71 53 23 6

Accessories

Coupler, cable, adapter



61

Minicrimp adapter HF connectors M11 x 1 Minicrimp connecting cable

Minicrimp adapter

Type No. **K 62 05 5**
Ord. No. 510 241

M11 x 1 / Minicrimp (m)



Connector with thread M11 x 1 for coaxial cable

Type No. **K 62 05 1**
Ord. No. 510 132
For cable RG058

Angle connector
M11 X 1 with clamp



Minicrimp connecting cable

RG 058-PE

Attenuation per meter 900 MHz: 0.55 dB, 1800 MHz: 0.85 dB, 2050 MHz: 1.20 dB
(both cable ends with Minicrimp (female))



Length / mm	1470 mm	3380 mm	4280 mm	5000 mm
Type No.	K 62 24 12	K 62 24 14	K 62 24 15	K 62 24 17
Ord. No.	510 031	510 033	510 034	510 035

„Low-loss“ Cable

Attenuation per meter 900 MHz: 0.3 dB, 1800 MHz: 0.45 dB, 2050 MHz: 0.65 dB
(both cable ends with Minicrimp (female))



Length/ mm	3500 mm	5000 mm
Type No.	K 62 24 18	K 62 24 19
Ord. No.	510 259	510 260

TETRA-Antenna Whip

380 – 410 MHz

- Specially adapted to the antenna base types K 50 48 40 31

Type No. 506 10003

Frequency	380 – 410 MHz
Gain	4 dB (bez. $\lambda/4$ -whip)
Maximum load	50W (at 50°C ambient temperature)
Length	653 mm
Material	Stainless steel radiator rod Shim and joint parts made of chrome-plated brass.
Assembly	To achieve an optimal VSWR value Adjustment of the shim using the supplied Allen key: - In connection with antenna base K 50 48 40 31 to position "all the way down"
Assembly	This whip can only be used in combination with the antenna base K 50 48 40 31
Package contents	Whip, Allen key



Contacts

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