



## UMTS Portfolio

### UMTS Antenna Line Products from the World's largest Antenna Supplier



- Outstanding XPol and VPol technology
- External or integrated RET components
- Multi-band versions for up to 5 bands

**KATHREIN**

Antennen · Electronic



## Wideband Antennas (Single or double unit)

---

- Single unit: 1710-2200 MHz
- Double unit: 1710-2180/  
1710-2180 MHz

### Features:

- XPol and XXPOL technology
- 33°/45°/65°/88°  
half power beam widths
- With adjustable, fixed or  
no electrical downtilt
- Optional upgrading to a remote  
electrical tilt version by using a  
separate remote control unit
- Available with integrated remote  
electrical tilt components (Remote  
Control Unit, Smart Bias Tee)
- Antenna installation with connector  
position on top or bottom

With Kathrein's wide-band antennas the active frequency range is extended to 1710-2200 MHz. The antennas are suitable for operation in all three nets as GSM 1800, CDMA 1900 (PCS) and UMTS which can lead to a considerably reduced number of antennas needed by network operators. In case of double unit versions, two identical antennas are integrated into one radome for independent downtilting.



---

**KATHREIN**

Antennen · Electronic



# Dual-band Antennas

---

- 806-960/1710-2180 MHz

A further reduction in the number of antennas and an improvement of the optical impact is possible by using our meanwhile second generation dual-band antennas.

All the current world-wide mobile communication networks can be served simultaneously using only one antenna per cell.

Due to the wide frequency range of the highband system the dual-band antennas are also suitable for triple-band application. For this purpose a wide range of combiner products is available.

## Features:

- XXPol technology
- 65°/88° half power beam widths
- Versions with integrated combiner
- Antenna installation with connector position on top or bottom
- With and without adjustable electrical downtilt for both frequency ranges separately
- Optional upgrading to a remote electrical tilt version by using a separate remote control unit



---

**KATHREIN**

Antennen · Electronic



# Triple-band Antennas

---

- 3-unit version  
806-960/1710-2180/1710-2180 MHz
- 2-unit version with internal filters  
806-960/1710-1880/1920-2170 MHz

## Features:

- XXXPol technology
- 65° half power beam widths
- With adjustable electrical downtilt for three different frequency ranges separately
- Optional upgrading to a remote electrical tilt version by using a separate remote control unit
- Enlarged downtilt range

Kathrein's unique antenna technology combines three different frequency ranges installed into just a single radome.

With Kathrein's triple-band antennas, containing two radiating systems and integrated filter components, the mechanical dimensions are only slightly larger than those of a pure GSM 900 antenna.

You can also choose Kathrein's triple-band antennas made up of three radiating systems. This offers the possibility of using just one antenna for CDMA 800/GSM 900, GSM 1800/CDMA 1900 (PCS) and UMTS.



---

**KATHREIN**

Antennen · Electronic



# Multi-band Combiners

---

Kathrein offers a wide range of co-siting filter and combiner solutions for CDMA 800/GSM 900, GSM 1800/CDMA 1900 (PCS) and UMTS.

## Features:

- Suitable for co-siting purposes
- Reduces infrastructure costs
- Enables feeder sharing
- Suitable for indoor or outdoor applications
- Available as a single unit, or for XPol antennas, as a double unit
- Can be used as a combiner or in reciprocal function
- DC by-pass function between all ports
- Wall or mast mounting
- Low insertion loss
- High isolation
- DC stop available as accessory
- Versions with built-in DC stop, built-in lightning protection and high input power



Dual-band Combiner  
806-960 MHz/  
1710-2170 MHz



Dual-band Combiner  
1710-1880 MHz/  
1920-2170 MHz



Triple-band Combiner  
880-960/1710-1880/  
1920-2170 MHz

---

# KATHREIN

Antennen · Electronic





# Double Tower Mounted Amplifier (DTMA)

---

## Features:

- UMTS full-band double dual-duplex tower mounted amplifier
- UMTS narrow-band double dual-duplex tower mounted amplifier
- Double unit for easy use with XPol antennas, XXPoI antennas and any other antenna types
- AISG capability, including RET (Remote Electrical Tilt) support, or CWA (Current Window Alarming), or both standards combined
- Excellent noise figure, low insertion loss, various gain performances available
- Additional radome for optimal weather protection



Kathrein's DTMA can minimize initial investments and speed up roll-out since fewer sites are needed and higher degree of flexibility with the site location is possible.

The use of Kathrein's DTMA leads to enhanced coverage and improved voice quality, resulting in fewer dropped calls and an increase in revenue.

---

**KATHREIN**

Antennen · Electronic



# Tri-Sector Pipe Antenna



## Features:

- 3 x 65° half power beam width
- Different gain types from 15.5 dBi up to 19.5 dBi
- Wideband range 3 x 1710-2170 MHz
- Adjustable electrical downtilt
- Very small external diameter
- Short, long or additional service area for installation of following components:
  - Jumper cables
  - Remote Control Units (RCU)
  - Splitters for combining the three sector patterns into one omni pattern
  - Three Double Tower Mounted Amplifiers (DTMA) as one multi-pack (AISG or CWA)
  - Three DTMA's of any manufacturers



To meet the growing demands for unobtrusive site installation, Kathrein provide a tri-sector antenna in one single fiberglass pipe. The electrical features of each sector will correspond to those as created by single antennas. With introduction of the optional additional service area all TMA's available on the market can be installed. Through the homogenous design of this antenna and the possibility of concealing other components, this new antenna system offers an optically pleasing and electrically sophisticated solution.

# KATHREIN

Antennen · Electronic



# Remote Electrical Tilt (RET) System



Network planning is becoming ever more complicated, especially with the advent of 3G. The challenge for wireless network operators is to balance coverage, capacity, call quality and costs, in order to gain maximum revenue from their network. The possibility of coverage adjustment through the vertical antenna pattern is thus a very important aspect for mobile communication planners.

Kathrein's Remote Electrical Tilt (RET) system represents the latest antenna system technology.



## RET system components:

- ▶ Central Control Unit (CCU)
- ▶ Portable Control Adapter (PCA)
- ▶ Remote Control Unit (RCU)
- ▶ DC power and signal splitter
- ▶ Control Cables
- ▶ Lightning protection device (LPD)
- ▶ Earthing clamp

## Optional:

- ▶ Bias Tee / Smart Bias Tee
- ▶ Double Tower Mounted Amplifier (DTMA)

# KATHREIN

Antennen · Electronic





# Remote Electrical Tilt (RET) System



Slimline RCU with small dimensions and daisy-chain functionality.



The Portable Control Adapter (PCA) is specially designed for portable applications and for use by installers and maintenance staff.

It is a simple device for running the RCU attached to the Kathrein base station antennas, and for adjusting the vertical electrical downtilt locally.



A GLOBAL INITIATIVE

Kathrein's overall RET System works in accordance with the AISG (Antenna Interface Standards Group) and 3GPP (3rd Generation Partnership Project) standard. With all RET components both standards are served at the same time.

## KATHREIN

Antennen · Electronic



# The Kathrein Group

---

Kathrein is an international enterprise active in antenna and communications technology. For more than 87 years our group of companies has been developing, producing and marketing a wide range of antenna systems and electronic components. Always being one step ahead in technology has ensured that Kathrein is the leading company in the world market.

## More Information?

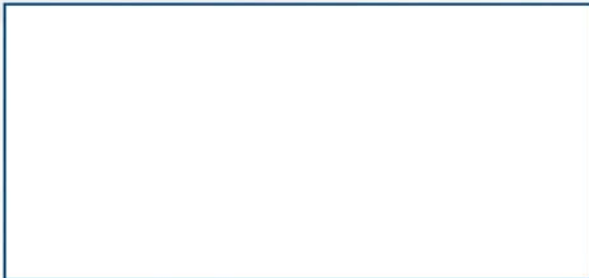
### Visit our homepage

<http://www.kathrein.de>

### Contact address

Head office  
KATHREIN-Werke KG  
Anton-Kathrein-Straße 1-3  
P.O. Box 10 04 44  
83004 Rosenheim/GERMANY  
Telephone: +49 8031 184-0  
Fax: +49 8031 184-973  
[antennas.mobilcom@kathrein.de](mailto:antennas.mobilcom@kathrein.de)

### Our representative



---

**KATHREIN**

Antennen · Electronic