



## LTE 800/UMTS 900 (850) Products

LTE 800/UMTS 900 (850)  
Antennas, Filters,  
Combiners and Amplifiers  
from the World's largest  
Antenna Supplier

- Multi-system
- Site-sharing
- Re-farming
- MIMO

- New solutions for easy upgrade
- 100% tested VSWR and IM-performance
- Special mechanical strength

**KATHREIN**

Antennen · Electronic



# LTE 800/UMTS 900 (850) Products

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## Low-band XPol Antennas

### LTE 800/GSM 900/UMTS 900 (850)

- ▶ All existing low-band XPol antennas cover UMTS 900, the majority UMTS 850
- ▶ All modern panels will be upgraded step-by-step to the enlarged frequency range for LTE 800
- ▶ Types supporting GSM 900, UMTS 900 (850) and also LTE 800 are already available
- ▶ 33°/65° and 90° half-power beam widths
- ▶ Best gain values with shortest length
- ▶ 2 x 2 MIMO possible

### 2 x Panel Mounting Kit

- ▶ Existing GSM antennas may be reused
- ▶ Adding a new UMTS or LTE panel on a 2 x panel mounting kit
- ▶ Additional mechanical down-tilt possible



### Combiner




- ▶ Combination of different base stations by means of separate combiners possible



# LTE 800/UMTS 900 (850) Products

## Low-band XXPol Antennas

- ▶ Already available for UMTS 900 (850)
- ▶ Introduction of new antennas covering LTE 800 also
- ▶ Individual down-tilt for two different technologies
- ▶ 65° and 90° half-power beam widths
- ▶ Various MIMO possibilities

			
<b>Type</b>	<b>Side-by-Side</b>	<b>Dual-band</b>	<b>Side-by-Side</b>
<b>1st System</b>	GSM 900 UMTS 900 (850)	GSM 900 UMTS 900	GSM 900 UMTS 900 (850) LTE 800
<b>2nd System</b>	GSM 900 UMTS 900 (850)	LTE 800	GSM 900 UMTS 900 (850) LTE 800
<b>Optimized for</b>	Width (374 mm); Compared to 560 mm of two standard antennas	Width (299 mm); Isolation (>30 dB); Weight	Gain/Height; Isolation
<b>MIMO Possibilities</b>	2 x 2 2 x 4 4 x 4	2 x 2	2 x 2 2 x 4 4 x 4



# LTE 800/UMTS 900 (850) Products

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## Low-band/High-band XXPol Antennas

LTE 800/GSM 900/UMTS 900 (850)/  
GSM 1800/UMTS

- ▶ UMTS 900 (850) included
- ▶ Frequency range of existing antenna types are either already enlarged with LTE 800 or will soon be enlarged
- ▶ Individual adjustable down-tilt
- ▶ 65° and 90° half-power beam widths
- ▶ 2 x 2 MIMO possible





## LTE 800/UMTS 900 (850) Products

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### Low-band/Low-band/High-band XXXPol Antennas

LTE 800/  
GSM 900/UMTS 900 (850)/  
GSM 1800/UMTS

- ▶ Individual adjustable down-tilt for LTE 800 and UMTS 900 (850) and GSM 1800/UMTS
- ▶ Optimized for width (299 mm)
- ▶ 65° half-power beam widths
- ▶ 2 x 2 MIMO possible

### Low-band/High-band/High-band XXXPol Antennas

LTE 800/GSM 900/UMTS 900 (850)/  
GSM 1800/UMTS/  
GSM 1800/UMTS

- ▶ UMTS 900 (850) included
- ▶ Frequency enlargement to LTE 800 in progress  
First types already available
- ▶ Individual adjustable down-tilt
- ▶ Stacked and gain-optimized versions
- ▶ Enlargement to LTE 2.6
- ▶ 2 x 2 MIMO, 2 x (2 x 2) MIMO





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## VPol

All existing VPol Panels including GSM 900 also cover UMTS 900, the majority UMTS 850

### Directive

- ▶ LogPer also covering LTE 800
- ▶ 20°/51°/65°/120° half-power beam widths
- ▶ Fixed down-tilt

### Omnis

- ▶ Gain values 2/5/8/11 dBi
- ▶ Special strong lightning protection
- ▶ Low tip deflection
- ▶ Several dual-band versions available



### Indoor

- ▶ Indoor antennas including GSM 900 also cover UMTS 900, the majority UMTS 850 and LTE 800
- ▶ Omni and directional antennas for ceiling and wall mounting
- ▶ Diverse designs
- ▶ Very broad-band versions





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## Multiband Combiners

### Dual-band Combiners

- ▶ LTE 800/GSM 900/UMTS 900 (850)/  
GSM 1800/UMTS/LTE 2.6
- ▶ LTE 800/GSM 900



### SmartPlex Dual-band Combiners

- ▶ LTE 800/GSM 900/UMTS 900 (850)/  
GSM 1800/UMTS/LTE 2.6

### Triple-band Combiners

- ▶ LTE 800/GSM 900/UMTS 900 (850)/  
GSM 1800/UMTS



### Quad-band/Hybrid Combiners

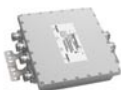
- ▶ LTE 800/GSM 900/UMTS 900 (850)/  
GSM 1800/UMTS/LTE 2.6



## Same-band/Hybrid Combiners

### Same-band Combiners

- ▶ No 3 dB insertion loss in  
Tx and Rx path



### Duplex Hybrid Combiners

- ▶ No 3 dB insertion loss in  
Tx path



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## Hybrid Combiner 2:1

- ▶ 806-960 MHz,  
including UMTS 900 (850)
- ▶ 790-2690 MHz,  
including LTE 800 and UMTS 900 (850)
- ▶ Frequency independent
- ▶ Excellent IM-performance



## Band-pass Filters



## System Components

- ▶ DC-Stops
- ▶ Attenuators
- ▶ 50  $\Omega$  Loads
- ▶ Smart Bias Tees



## DTMA

- ▶ Fullband Double Dual Duplex  
TMA/MHA for UMTS 900
- ▶ Supporting AISG as well as CWA
- ▶ 12/32 dB gain







# LTE 800/UMTS 900 (850) Products



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 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)



# The Kathrein Group

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Kathrein is an international enterprise active in antenna and communications technology. For more than 90 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?

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