



DAB(+) Solutions

Kathrein Umbrella Solution for your Digital Radio



BROADCAST

KATHREIN



Information about KATHREIN Broadcast

As of 1st June 2019, KATHREIN SE's (formerly KATHREIN-Werke KG) business unit "BROADCAST" will be transferred to KATHREIN Broadcast GmbH (limited liability company).

From 1st June 2019, the new company data are:

KATHREIN Broadcast GmbH

Ing.-Anton-Kathrein-Str. 1, 3, 5, 7

83101 Rohrdorf, Germany

Tax Payer's ID No.: 156/117/31113

VAT Reg. No.: DE 323 189 785

Commercial Register Traunstein: HRB 27745



Riegelsberg-Schoksberg, Germany

Key features of Digital Audio Broadcasting (DAB)

- A valid digital standard since the 1990s
- Coded OFDM for multipath resistance
- Quasi noise-free and distortion free sound quality
- Low bit-error rates with relatively low transmission power compared to FM

Why to go for DAB?

- It is a boost in number of possible programs. Even more so with DAB+
- Perfect sound quality
- Quo vadis FM? Switch-offs are scheduled for many countries
- DAB(+) is your digital radio for the 21st century

What are the needs for DAB(+) systems?

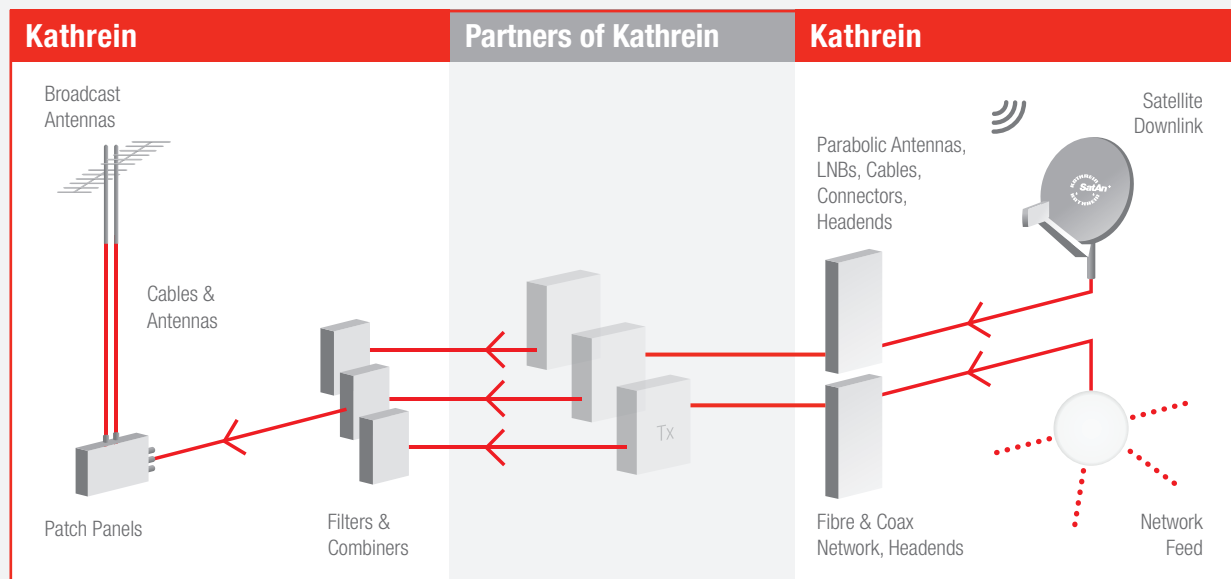
- Broadband transmission systems, due to frequent changes of channel assignments
- Power and voltage persistency for several channels
- Several mid power stations for area-wide coverage

Why DAB(+) instead of data streaming?

- You do not get charged per Bit of information
- You reach as many people as possible at one instance
- Your broadcasted data rate depends on your content, not on the number of listeners
- You have a way of independent distribution

DAB Umbrella Solution

> The Kathrein DAB umbrella solution for your digital radio



What is the Kathrein DAB umbrella solution?

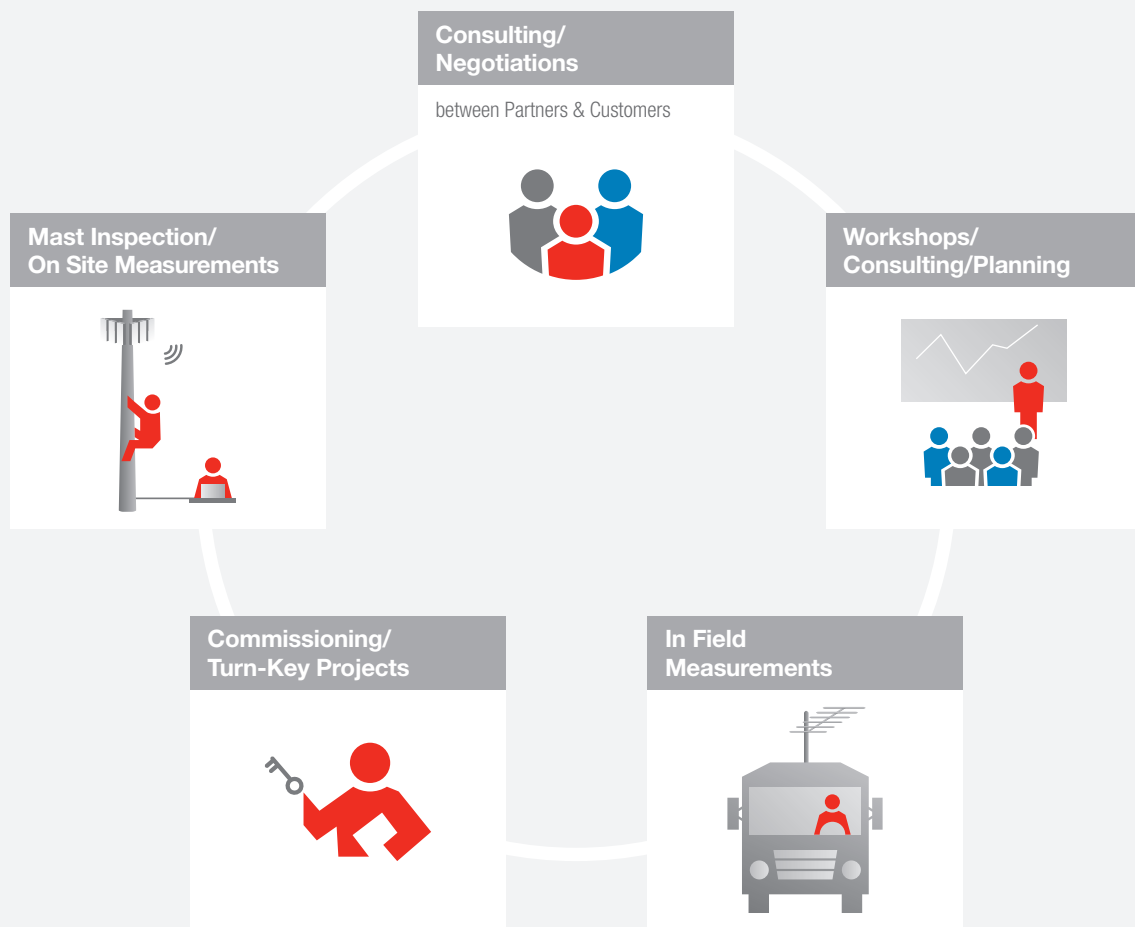
- Technologies for signal broadcast:
 - Broadband antenna systems
 - Side and topmount broadcast antennas
 - Filters and combiners from Kathrein broadcast division and partners
- Technologies for signal input:
 - Coax/fibre headends for network access to transmitters
 - Parabolic antennas, amplifiers, cables, headends for satellite downlinks
 - Transducer electronics

Why to go for a Kathrein DAB system?

- Decades of experience in broadcast engineering
- Long life cycles and persistent mechanics
- Broadband product portfolio
- All products for broadcasting and signal input available at Kathrein
- Long-term relationship to partners (e.g. transmitters, rigging)
- Systems in all scales: From small log periodic to high performance glass-fibre cylinder systems

More than just Antennas – Kathrein Services

> Kathrein guides your project



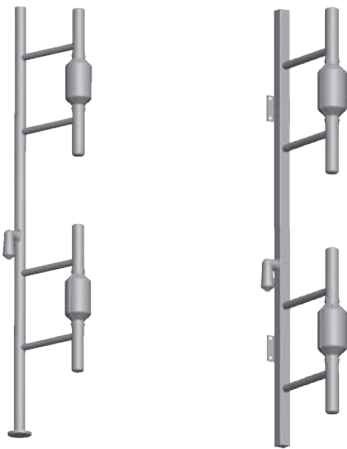
Why go with Kathrein services?

- Decades of expertise as turn-key project managing team
- Long-term partners for rigging and transmitter technologies
- Kathrein commissioning, mast inspections and measurements on site
- Kathrein consulting, planning and training
- Measurements in the field possible (Kathrein spectral measurement equipment)
- Negotiations with all project parties

VHF Broadband Antennas

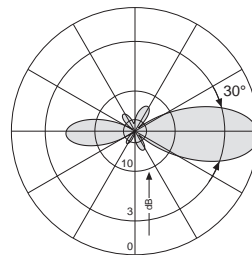
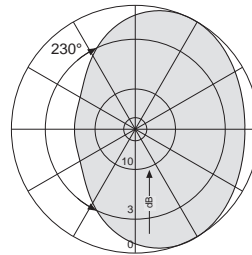
> **Dipole Antennas**

75010290, 295, 291, 296, 292, 297



For mounting at the top of masts

For side-mounting to masts

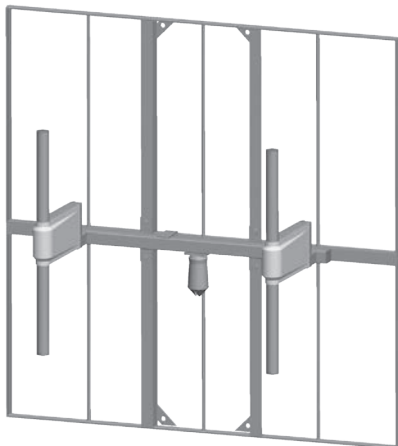


FEATURES

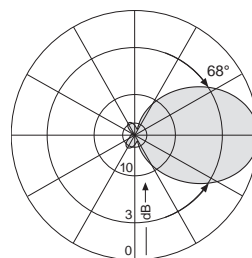
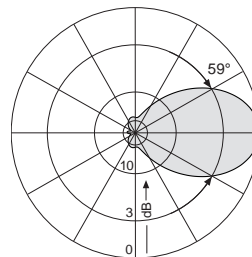
- Vertical polarisation
- Quasi-omnidirectional HRP, dependent on mast
- High power capacity
- Material of radiator: Hot-dip galvanised steel
- Quick setup, simple installation

> **Panel Antennas**

75010350, 351 and 352



Antenna panel 75010350

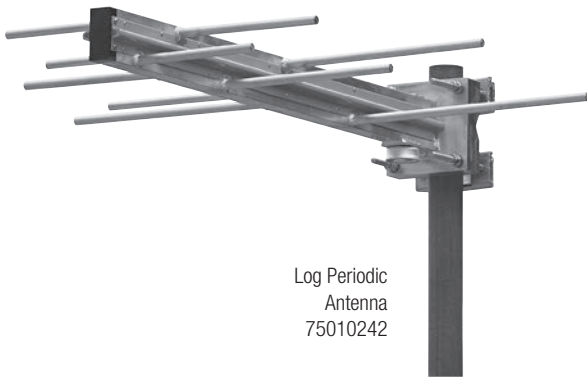


FEATURES

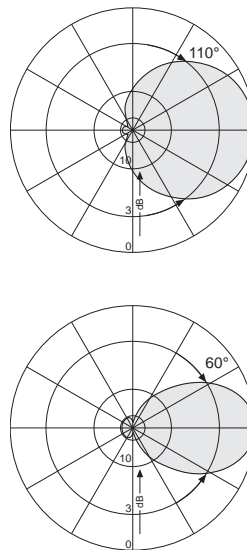
- Vertical polarisation
- Excellent tri omni-directional HRP (dents < 3 dB) or customised HRP
- Particularly suitable for square or round masts
- Material of radiator and reflector: Hot-dip galvanised steel
- Building block for classic panel antenna systems

> Log Periodic Antenna

75010242



Log Periodic
Antenna
75010242

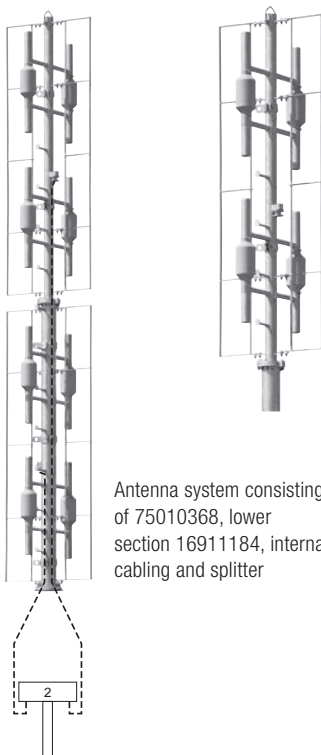


FEATURES

- Vertical or horizontal polarisation
- Directional HRP
- Low wind load
- Material of radiator: Hot-dip galvanised steel
- Ideal for transmission along highways, railways or to small towns
- Suitable also as component for systems with orthogonal/mixed polarisation

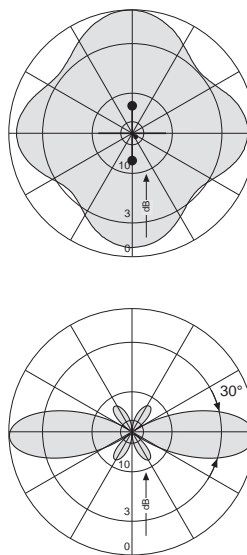
> For Top-mount

75010365, 366, 367, 368, 75919999, 75920058 and 75919936



Omnidirectional
transmitting antenna
for top-mount
installation Type
75010365

Antenna system consisting
of 75010368, lower
section 16911184, internal
cabling and splitter



FEATURES

- Vertical polarisation
- Omnidirectional horizontal radiation pattern
- High power capacity
- Material of radiator, support tube and isolation grids: Hot-dip galvanised steel
- Two elements may be stacked for higher gain:
 - Consists of types 16911184 (lower half) and 75010365...368 (upper half), power splitter and cabling
 - Half antenna operation is possible

Solutions for Special Applications

> Hexagon in GRP cylinders

- Broadband systems in GRP cylinders
- Tailor-suited solutions
- Designed with ladder and lightning protection
- Vertical polarisation possible

Ideally combined with a UHF superturnstile antenna.
Get ready for digital radio and digital TV by one project!



Band III Hexagon

FEATURES

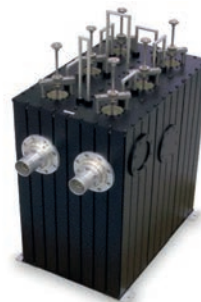
- Patents on lightning protection
- Climb through is possible
- Medium and high power
- omnidirectional pattern

Elements to Complete the Umbrella Solution

> Filters and Combiners in Band III

Kathrein quality standards in shortlist of partner articles

- Sourcing process
- Manufacturing (RoHS conform)
- Mechanical and electrical design
- Power and voltage tests/burn in



Sira filter and combiners for DAB purpose

FEATURES

- 6 or 8 poles
- Elliptical response
- Temperature compensated

> Signal input – satellite downlink

Parabolic antennas for satellite downlink

- CAS 90/124/180/23
- Mounting accessoires
- Heating for winter conditions
- Antenna gain from 38,6 dBi to 47,4 dBi
- Full range LNBs (10,70 GHz to 12,75 GHz)
- Transducers/ headends (with remote monitoring)



Professional satellite-downlinks

FEATURES

- Ice-free: heated aluminum reflector
- Multiple feeds possible
- Can be provided with adjustment service

> Signal input – cable feed

Fibre network connection

- Optical headends
- Transducers, amplifiers and splitters
- Coax/fibre transmission lines
- Remote monitoring functions



Professional fibre and coax technology

FEATURES

- Modular setup
- Automatic level: self adjusting in field

> Measurement technology

Kathrein meters

- Spectral analysis and data stream readout of Sat/TV/FM/optical signals
- For fixed or portable use
- Optional: DAB readout
- GPS module for mobile applications
- Remote monitoring



Meters for Sat/TV/FM/optical

FEATURES

- More than 28 functions handheld
- Colour 9" touch screen

> Antenna monitoring

Kathrein smart monitoring

- Monitoring of reflected power in antenna system
- Early recognition of antenna degradation
- Exact localisation of degraded components or sections
- Data logging of antenna parameters and weather conditions
- Remote monitoring



Antenna monitoring system

FEATURES

- Intuitive display of antenna state
- Efficient maintenance planning becomes possible

Kathrein Broadcast Solutions

> A long story of success



Kathrein lab,
Germany



Emmaboda,
Sweden



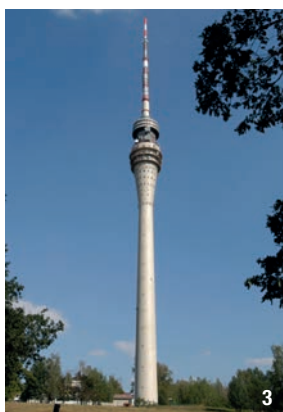
Säntis,
Switzerland

1950

2016

> DAB(+) in all scales

Kathrein DAB(+) systems are available in all scales: low to high power, side and top mount, from single dipoles up to GRP cylinders.



- 1 Side mount on Schmallenberg station
- 2 Kathrein engineer inspects a top mount DAB antenna
- 3 Large scale in Dresden: UHF DTV and VHF DAB in one GRP cylinder

References

> KATHREIN DAB/DAB+/DMB Antennas in following countries

- Belgium
- Canada
- China
- Denmark
- Finland
- Germany
- England
- Hong Kong
- Hungary
- Ireland
- Netherlands
- Latvia
- Lithuania
- Norway
- Qatar
- Singapore
- Sweden
- Switzerland
- Taiwan
- Turkey
- Turkmenistan
- Zambia

Find all references listed by
categories at our website:
www.kathrein-bca.com

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