

The planning, construction and maintenance of complex antenna systems are our daily business. To design antenna systems perfectly for the desired application, we use numerous tools that we integrate into our CAD landscape.



Some of them, such as our Heatmap Tool or the 4D simulation of radio coverage (DMR, TETRA, DECT, LTE, 5G) we have developed ourselves and now have access to a very resilient database. This is a decisive advantage, especially for the simulation of large halls or industrial areas, as this data allows us to determine the desired coverage via the radio cell in advance and to offer it reliably. We also guarantee this in our offers.

The use of an own infrastructure, i.e. a radio cell (DMR / TETRA) has numerous technical, safety and also health advantages compared to the mere "back-to-back" operation. We therefore recommend this in many cases.

The basis for an own infrastructure is an optimally tuned antenna system.

For this purpose, we work together with various manufacturers and very gladly with the suppliers Kathrein and Procon. While we rely on Kathrein & Procom antennas for many projects, Procon delivers excellent (and very precisely tuned) coupling networks.

#### Antenna Technology and Antennas - our offer:

##### ➤ Antennas

We carry the antennas of all major manufacturers and cover almost every application. We offer 5G antennas as well as antennas for use in DMR and TETRA networks. Of course we are also happy to advise you on the use of antenna technology in your project or on the expansion of existing antenna systems.

##### ➤ Coupling networks

As already mentioned, we like to work with coupling networks of the renowned manufacturer Procom. It couples the signals of several repeaters together on one line (like a mixing console). All signal components that are not relevant are filtered out. So only the carrier frequencies get through and everything else is filtered out. Thus the repeaters react only to the carrier frequencies and not to neighboring interfering frequencies.

##### ➤ Cable

The use of low-loss antenna cables is of outstanding importance, especially with long cable lengths. We like to work with Supra Low Loss cables from different manufacturers. All cables processed by us are measured by us before and after installation. In this way we avoid unwanted attenuation during operation and can operate in DMR and TETRA radio mostly with very low output power (low power).

##### ➤ Accessories

Couplers, plugs and processing tools - together with the cables and, of course, on

#### ➤ **Lightning protection & earthing**

Effective lightning protection concepts are an indispensable "must have", especially in outdoor applications. It is not possible without. Therefore, we permanently provide for the further training of our technicians in this area. We apply DIN EN 62305-x (VOE 0185-305-x) and also impart knowledge about the conception of EMC-oriented lightning protection zones.

#### ➤ **Maintenance**

We are happy to maintain your existing antenna system. We will measure your complete system and compare it with values that we determine in advance using the antenna plan in our simulation. If no antenna plan is available, we will create one. As we also visually inspect all installed antenna cables and couplers during every maintenance, we also clean your antennas of dirt and dust during this process. This should be carried out regularly in both indoor and outdoor areas.

Our antenna technicians look forward to working with you.  
You can reach us in emergencies around the clock and 7 days a week by telephone and e-mail.  
For general advice and inquiries we would be very pleased to receive your call during our business hours: Monday to Friday from 09:00 - 18:00.

We would also be happy to demonstrate the different types of antennas at our headquarters in Berlin.

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