



DIB-R5 family

Top class TETRA base stations

The DIB-R5 family offers top class TETRA base stations. Hytera base stations stand for reliable radio coverage and efficient communication; always and anywhere. Customers from the various fields of mission-critical communication rely on the power of the DIB-R5, not least because of its unbeatable efficiency. Hytera base stations demonstrate their strengths in all scenarios where uncompromising availability, efficiency and high-speed data are a must.



Highlights of the DIB-R5 family

Reliable radio coverage and efficient communication

Reliable, safe operation

The DIB-R5 family is perfectly equipped for your mission-critical communication. It offers excellent failure safety and data security. All important modules can be configured redundantly and are easily hot-swappable.

Multiple connections to the network, operation at two switching nodes in different locations and sophisticated local fallback operation are just some of the functions that ensure reliable operation in any imaginable situation. All security-related features, such as authentication and encryption, remain available without restriction. Accept no compromises. We don't either.

Optimum investment thanks to maximum radio coverage

Demand no less than the maximum return on your investment! Thanks to their unique design, Hytera base stations optimize radio coverage and allow larger work areas to be covered by the network. This also allows a reduction in the number of base stations required to cover a certain area. The DIB-R5 intelligently combines market-leading transmitting power with the highest receiving sensitivity. The intelligent 3-way receiver (diversity) also optimizes the base station radio characteristics.

Flexible where it matters most

The base stations can be configured in various ways, providing the customer with the best solution to suit their needs. Sites under heavy load can be equipped with up to four control channels (CCH) to provide additional capacity for signaling, text messaging or location updates. Optimized cell re-selection, even in underground areas or inside buildings, calls for synchronous operation. The DIB-R5 also supports synchronization via the IP network, without satellite-based systems (GNSS). This reduces the installation costs in building supply and in underground objects (e.g. tunnel).

High performance data applications

The DIB-R5 family corresponds to the latest specification of the TETRA standard and offers TETRA Enhanced Data Services (TEDS) as part of TETRA Release 2. The base stations are prepared for TEDS channel bandwidths of up to 150 kHz. This makes them the ideal choice for integrated high performance data applications. The sophisticated system design also allows for a later upgrade to TEDS.

Keeping our eye on the cost

The exceptionally low Total Cost of Ownership (TCO) is due, in part, to the low operating costs. A comprehensive remote maintenance capability (including configuration and updates) and hot-swappable components support the low-maintenance concept. Indeed, with the lowest power consumption in the market and its multitude of energy-saving functions, Hytera has set new standards in terms of the efficiency of base stations.

Optimum properties and functions

- Perfect radio coverage: Highest transmitting power in the market
- Optimum reception: Maximum sensitivity and triple diversity
- Maintenance-friendly operation: Component monitoring, sophisticated jamming detection, remote parameter configuration, including frequency change and software updates
- Maximum failure safety: Multilevel redundancy design
- Efficient network architecture: Also supports distributed switching architecture without central nodes
- Smart security: Fallback operation with complete scope of functions
- Trouble-free service: Modules are easily accessible and can be easily replaced during operation
- Pioneering TETRA: developed in compliance with TETRA Release 2 of the European Telecommunication Standards Institute (ETSI)



The high performance base station

DIB-R5 advanced

The DIB-R5 advanced is the high performance variant of the DIB-R5 family. It has a modular design and supports various antenna coupling systems. This means it can easily meet all the customer's requirements. Based on capacity requirements, the DIB-R5 advanced can support up to eight TETRA carriers for up to 47 communication channels.

- Minimal Total Cost of Ownership (TCO)
- Remote configuration, maintenance and SW updates
- No "single-point-of-failure"
- Easy expansion of carrier capacity
- Maximum radio coverage
- Compatible with almost any antenna system
- Maximum expansion stage for TETRA carriers

The flexible base station

DIB-R5 compact

The DIB-R5 compact is a flexibly configurable, compact base station. Its low space requirement and the ability to fit into a standard 19" equipment rack make it suitable for a wide range of applications. A frequency-agile hybrid combiner reduces the number of antenna required. Its small size and low weight facilitates transport to the site and installation, and makes the DIB-R5 compact the ideal choice for use in events and functions.

- Minimal Total Cost of Ownership (TCO)
- Remote configuration, maintenance and SW updates
- No "single-point-of-failure"
- Easy expansion of carrier capacity
- Maximum radio coverage
- Space-saving, flexible installation in 19" rack
- Low weight
- Integrated hybrid combiner

The "anywhere" base station

DIB-R5 outdoor

The DIB-R5 outdoor is the ultra compact variant for use outdoors or in particularly harsh environments. It guarantees minimum operating costs with reliable radio coverage.

The Outdoor base station has a maintenance-free, space-saving design and can be installed on walls, antenna masts or in tunnels. Thanks to its market-leading low power consumption and passive cooling, it is ideal for use in areas where power supply is critical or where there is a need for battery-based, portable base station solutions.

- Minimal Total Cost of Ownership (TCO)
- Very easy to install and maintain
- Cost saving; no equipment room required
- Market-leading energy efficiency
- Protection class IP65



Technical data of the DIB-R5 family

General data			
	DIB-R5 advanced	DIB-R5 compact	DIB-R5 outdoor
Frequency range	380 – 470 MHz (Rx/Tx) 806 – 821 MHz (Rx) 851 – 866 MHz (Tx)	380 – 430 MHz (Rx/Tx) 806 – 821 MHz (Rx) 851 – 866 MHz (Tx)	380 – 430 MHz (Rx/Tx) 450 – 470 MHz (Rx/Tx) 806 – 825 MHz (Rx) 851 – 870 MHz (Tx)
Carriers / channels (maximum)	12 carriers = 48 channels (3 equipment racks)	2 carriers = 8 channels	2 carriers = 8 channels
Nominal power supply	48 V _{DC} 110/230 V _{AC} 50 to 60 Hz	48 V _{DC} 110/230 V _{AC} 50 to 60 Hz	48 V _{DC}
Power consumption RF transmit power Top of Cabinet (TOC)	4 carrier cavity combiner 485 W at 6 W HF 1215 W at 25 W HF	2 carriers without combiner 230 W at 6 W HF 560 W at 50 W HF	< 55 W at 10 W (1 carrier) < 110 W; 85 W typical at 10 W (2 carriers) < 75 W at 20 W (1 carrier) < 150 W; 105 W typical at 20 W (2 carriers)
Synchronization options GNSS = Global Navigation Satellite System	No synchronization With GNSS (GPS, Beidou, Glonass) PTP (Precision Time Protocol)	No synchronization With GNSS (GPS, Beidou, Glonass) PTP (Precision Time Protocol)	No synchronization With GNSS (GPS) PTP (Precision Time Protocol) – availab- le in future versions of the product
Transceiver redundancy	✓	✓	✓ (two units required)
Controller redundancy	✓	✓	✓ (two units required)
Distributed switching controller functi- on and local gateways (API, SIP,...)	✓	✓	✓

Transmitter and receiver			
	DIB-R5 advanced	DIB-R5 compact	DIB-R5 outdoor
Combiner options	Without combiner Auto-tuned cavity Hybrid	Without combiner Hybrid	Without combiner
Maximum transmitting power (antenna socket) $\pi/4$ DQPSK QAM	Without combiner 50 W 20 W (TEDS) Auto-tuned cavity 25 W 10 W (TEDS) Hybrid 10 W 4 W (TEDS)	Without combiner 50 W 20 W (TEDS) Hybrid 10 W 4 W (TEDS)	20 W
Transmitting power at transceiver $\pi/4$ DQPSK	80 W	80 W	20 W
Reception	Triple diversity	Triple diversity	Dual diversity
Static sensitivity	Typically: -120 dBm (BER 4 %)	Typically: -120 dBm (BER 4 %)	Typically: -120 dBm (BER 4 %)
Dynamic sensitivity	-113 dBm (TU 50 [TCH 7.2, BER 4 %])	-113 dBm (TU 50 [TCH 7.2, BER 4 %])	-113 dBm (TU 50 [TCH 7.2, BER 4 %])

Environmental conditions and mechanical data			
	DIB-R5 advanced	DIB-R5 compact	DIB-R5 outdoor
Dimensions (W x H x D)	600 x 1200 x 600 mm	450 x 640 x 540 mm	426 x 250 x 167 mm (Mast) 426 x 250 x 135 mm (Wall)
Weight) depending on the configuration	120 to 175 kg per rack *)	60 to 80 kg per rack *)	approx. 9 kg
Protection against dust and moisture	IP20	IP20	IP65
Operating temperature	-30 °C to +55 °C	-30 °C to +55 °C	-30 °C to +60 °C -40 °C to +60 °C (continuous operation)



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