Hytera

Hytera DIB-R5 TETRA Base Station

Ensure efficient critical communication with TEDS capability

The most widely used member of the ACCESSNET-T® IP family is the Base Station DIB-R5 with unique features which is proposed for the ACCESSNET-T® IP TETRA network.

Leading edge TETRA Release 2 and TEDS capability makes the DIB-R5 most attractive for all scenarios where availability and high-speed-data capability are a must.

DIB-R5

ACCESSNET®-T IP

Digital Integrated Base Station

Reliable radio coverage is the most important basis for a mission-critical radio system. The DIB-R5 provides top-of-class radio performance and supports redundant operation without a single point of failure.

Compliant to the latest TETRA Release 2 specification including sophisticated QAM modulation techniques and TETRA Enhanced Data Service (TEDS), the DIB-R5 is not only the right choice for building up a voice-centric TETRA network, but also for the realisation of high performance integrated data-applications.

DIB-R5 advanced

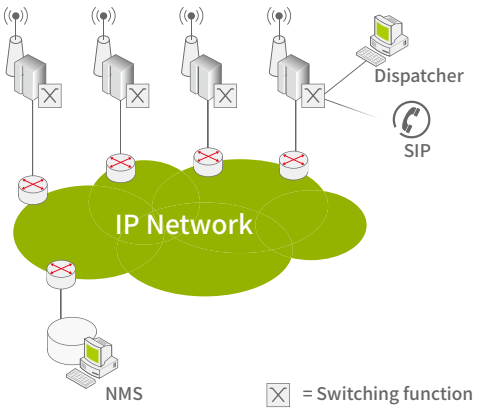
The DIB-R5 advanced base station equipped with Motor tuned cavity combiner has a modular and flexible design. Main components are the Channel Units (transceivers), the Base Station Control Unit, the power supply and the RF splitting and filtering equipment.

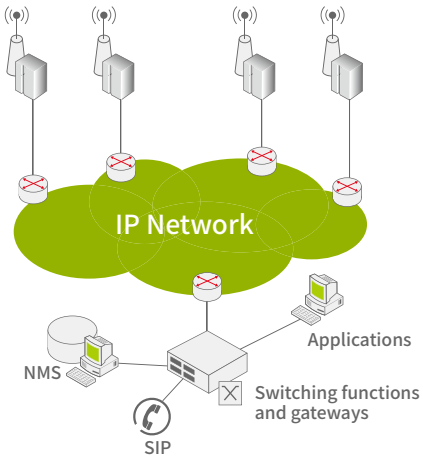
Based on capacity requirements, one up to four Channel Units can be placed in one rack. A capacity of up to twelve carriers can be supported with two extension racks.

DIB-R5 compact

The DIB-R5 compact is a more compact 2-carrier version with an integrated hybrid combiner. With very small floor space and the ability to fit into a standard 19" rack, installation costs are reduced and the transport to a site is simplified.

Key Facts





TETRA Enhanced Data Service (TEDS) capability

ACCESSNET®-T IP supports Integrated Voice and Data services from the beginning. Many mission-critical data applications have already been realized with ACCESSNET®-T IP.

Today, we perceive more demanding data applications requiring higher data throughput. TEDS is our answer to this requirement and it is fully supported by the DIB-R5 family.

With adaptive QAM multi-carrier modulation, the air interface dynamically adapts to a changing radio environment and uses the available spectrum most efficiently.

With a radio channel bandwidth of 50 kHz, a gross bit rate of up to 150 kbit/s and a user data rate of about 80 kbit/s considering overhead and strong error correction are achieved. The DIB-R5 is already prepared for a channel band-width of up to 150 kHz to support even higher data rates.

The DIB-R5 Channel Units (transceivers) can be configured to support both TETRA 1 PSK modulation for voice as well as TETRA 2 QAM modulation for TEDS.

This simplifies spare part handling and allows a later upgrade to TEDS.

Reliability

If the DIB-R5 should be isolated from the rest of the network, it still provides most of its features in local fallback mode. Especially security-related features like authentication and air interface encryption are supported.

All modules can be duplicated and are hot-swappable. Each base station supports transmission link redundancy and can be connected to two switching nodes.

Sites under heavy load can be equipped with up to four control channels (SCCH) to provide additional capacity for signalling, text messaging or location update.

RF performance

The DIB-R5 supports 3-way receiver (Rx) diversity and highest sensitivity to optimize the base stations radio characteristics and to reduce the number of base stations required to cover a certain area. Different RF distribution system configurations are supported including motor tuned cavity combiner allowing remote frequency change. With its high output power of 25W PSK modulated with cavity combiner at the antenna connector, reliable coverage is ensured.

Up to four RF carriers are supported in one rack and up to twelve carriers with two extension racks (for DIB-R5 advanced)

Multi synchronisation

The DIB-R5 can operate with GPS-/Galileo-/Glonass/Beidou-based synchronisation, but also a permanent operation without satellite-based synchronisation sources is supported. This allows a reliable operation even in underground areas or within buildings without the need of using an antenna for the reception of a satellite signal.

Key facts

- 25 W TETRA 1/PSK and 10 W TEDS/QAM at the antenna connector
- Transceiver can be programmed to support either TETRA 1/PSK or TEDS/QAM
- 25 kHz/50 kHz/100 kHz/150 kHz RF radio bandwidth for TETRA Enhanced Data Service (TEDS)
- Sophisticated RF distribution system with 3-way diversity
- Motor tuned cavity combiner for DIB-R5 advanced
- Remote software upgrade
- Operation without GNSS with PTP precision time
- Full redundancy option (controller, transceiver, power supply)
- Operation temperature range - 30 °C to + 55 °C
- Supports distributed switching architecture without central nodes
- Full-functional fallback operation
- All configuration parameters can be set remotely
- Sophisticated jamming detection
- Hot-swap capability for controller and transceiver module

Specifications

General Properties	Transmit Power at top of cabinet	Cavity: 44 dBm Switched combiner[4]: 40 dBm Switched combiner[2+2]: 44 dBm High power: 47 dBm
	Diversity Reception	1-3 Diversity
	Rx Sensitivity at top of cabinet	Static: -120 dBm (BER 4 %) Dynamic: -113 dBm (TU 50 [TCH 7.2, BER 4 %])
	Synchronisation	GNSS (Global Navigation Satellite System) PTP (Precision Time Protocol) for operation without GNSS
	Connection to backbone	IP
	Antenna connector	7/16 socket
	Power Input	110/230 VAC 48 VDC

Environmental Conditions	
Operating Ambient Temperature	- 30 °C to + 55 °C
Storage temperature range	- 40 °C to + 70 °C

DIB-R5 advanced	Dimensions(W x H x D)	600mm x 1200mm x 600mm
	Weight	Max. 161 kg(per rack)
	Power Consumption	4 Carriers: 585 W(Typical)/1500W(Max.)
	Combiner options	Cavity combiner Switched Combiner High Power

DIB-R5 compact	Dimensions(W x H x D)	450mm x 640mm x 540mm
	Weight	60-80kg
	Power Consumption	2 Carriers: 325 W(Typical)/900W(Max.)
	Combiner options	Hybrid combiner Switched Combiner High Power

All Specifications are tested according to applicable standards, and subject to change without notice due to continuous development.

Hytera
Respond & Achieve

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