DAMM Outdoor System
BS421

The DAMM Outdoor System is the most user-friendly, flexible and cost-effective TETRA infrastructure system available. With its high reliability and unique design it is the ideal solution for mission-critical communications.

Applications and Gateways DAMM and third-party applications will run using the same user-friendly interface. You can use TETRA over LTE or Wi-Fi with the DAMM TetraFlex PTT app.

Full network flexibility

The DAMM Outdoor System is scalable and can handle sites of any size – from one-site solutions with local coverage to large-scale multisite solutions, using any combination of outdoor and indoor DAMM base stations. Together with the intelligent DAMM TetraFlex software, simple and smooth site expansion is possible, even while in operation.

The 100% IP-based technology provides full architectural network flexibility with all network components connected in a single state-of-the-art infrastructure without a central switch.

This product is part of our single-technology portfolio, but can be fully integrated into any of our multi-technology products.

Easy to install - anywhere

Plug-and-play simplicity enables easy setup and fast deployment. With its IP65 protection the DAMM Outdoor System is ideal for installation in harsh environments. A compact design enables direct mounting on antenna masts, buildings and towers, reducing feeder loss and installation costs considerably, while also providing an ideal solution for rapid, vehicle-based deployment.

Secure and failure tolerant

Featuring full support for battery backup as well as redundant controllers, power supplies and carriers, DAMM Outdoor Systems meet your highest requirements for reliability. The intelligent decentralized architecture replicates information to all sites in the network, avoiding any single-point of failure.

Unlimited application integration

DAMM TetraFlex is supplied with Application Gateways for easy access to the Application Programming Interface (API), Packet Data Gateways and Voice Gateways, allowing you straight-forward development of customer-designed applications or integration to existing telephone systems and control room equipment.

As an independent TETRA infrastructure provider DAMM base stations are IOP certified for full compatibility with all TETRA terminals, providing you with the option to freely choose your favourite terminal brand.

Wide range of advanced software tools

The DAMM TetraFlex system is available with a wide range of application software such as Voice and Data Log System, Dispatcher, Group Bridge and a comprehensive Network Management tool including subscriber management and network performance statistics.

Key specifications

The DAMM Outdoor System consists of the Base Station Transceiver (BS421) together with the Service Box (SB421) containing the base station controller and the power supply. The system is pre-installed with the DAMM TetraFlex Software package.

DAMM TetraFlex System – default settings

Function	No.
Organizations max.	1000
Profiles max.	10000
Subscribers max.	150000
Nodes max.	999
Voice GW connections max.	32

Function	No.
Application GW connections max.	20
Application GW streams max.	100
Application GW streams (client) max.	32
Log Servers max.	25
Terminal GW connections max.	10

Only default settings. Can be expanded on request.

Base Station Transceiver BS421
Frequency bands

	300MHz Band			400MHz Band		800MHz Band
RX	300-310MHz	350-360MHz	380-390MHz	410-420MHz	450-460MHz	805-825MHz
TX	336-346MHz	360-370MHz	390-400MHz	420-430MHz	460-470MHz	850-870MHz
BW	10MHz	5MHz	5MHz	5MHz	5MHz	14MHz

For Russia 412-417/422-427 MHz band is available. Other frequencies on request.

Transmitter and receiver
- TX power at antenna connector:
  0.5W to 10W TETRA remotely adjustable
- RX sensitivity with diversity, static: -121dBm
- RX sensitivity without diversity, static: -118dBm
- RX sensitivity with diversity, dynamic: -118dBm
- RX sensitivity without diversity, dynamic: -112dBm
- Receiver diversity: Dual as standard
- Built-in duplexer:
  Combines TX and RX to one antenna
- Redundancy: Hot standby
- Synchronization: Internal or external with GPS

Antenna connections
- Antenna set-up:
  One antenna per carrier, minimum two antennas for diversity
- GPS antenna:
  One GPS antenna per carrier
  Active (+5VDC) or passive

Service Box SB421
Base Station Controller
- Max. distance SB421 – BS421: 100 m.
- One SB421 controls four and powers two BS421s
- Redundancy: Hot standby

		BS421	SB421
Power	Input voltage	-48VDC (galvanic isolated)	100-240VAC or -48VDC
	Power consumption	75W at 10W TETRA	20W
	Optional internal battery		4 x 12VDC 7Ah
	Optional external battery		4 x 12VDC

Note: An external Battery Pack BP421 is available as an option, to extend operation time on power failure. The BP421 is charged via SB421, and ready for outdoor installation.
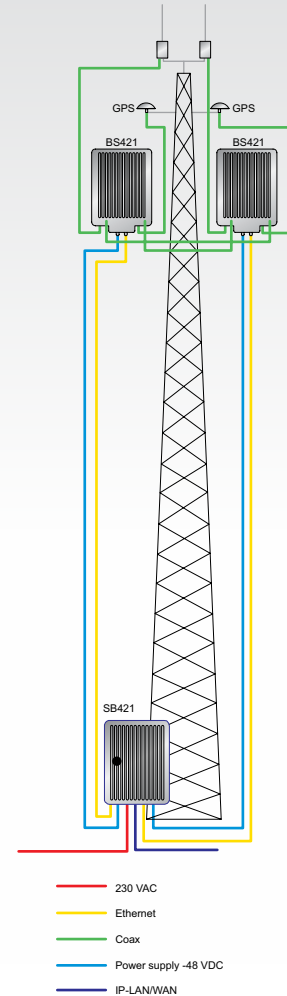
		BS421	SB421
Mechanical	Dimensions (HxWxD)	333 x 246 x 165mm	375 x 283 x 215mm
	Weight	9kg	9kg*
	Wind area	0.08sqm	0.10sqm
	Operating temperature	-25°C to +55°C*	
	Storage temperature	-40°C to +85°C	
	Encapsulation	IP65	
	Lightning protection	Internal	

* Specification without internal battery
Specifications subject to change without notice
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DAMM TetraFlex outdoor solutions

- 230 VAC
- Ethernet
- Coax
- Power supply -48 VDC
- IP-LAN/WAN

Standards and approvals
- TETRA Specification, EN 300 394-1 v. 3.1.1; please refer to DAMM TetraFlex feature list
- IOP Certification; please refer to www.tandcca.com for details
- DS/EN ISO 9001:2008, DS/EN ISO 14001:2004, DS/OHSAS 18001:2008 DS/EN 50121-4:2006

Note: Compatibility tests with TETRA terminals are maintained by DAMM for newest SW updates.