



AXELL DIGITAL CONNECT

ADX – PBE Axell’s New Digital Distributed Antenna System

Digital CPRI Optical Fibre Transport System



Supporting Public Safety and Cellular Networks

pbeaxell.com





Introduction

PBE Axell is a global manufacturer and systems integrator of electronic safety products, data and communication infrastructure, and electrical power systems, serving a wide range of clients across multiple end markets. With over 50 years of experience and 600+ staff in 16 global locations, PBE can be relied upon to provide support when and where required.

Introducing ADX

PBE Axell's new digital distributed antenna system.

ADX offers flexible and customised solutions for active DAS, addressing the coverage and capacity demands of public safety, cellular, and private networks.



Burj Khalifa - In-building coverage project

Scalability

Supports an evolving number of applications & services without compromising performance.

Support

PBE Axell provides the complete solution from design, manufacture, installation, commissioning and ongoing support.

Future-Proof

Network infrastructure that adapts and accommodates technological advancements.

Sustainability

Reduced operational costs whilst contributing to environmental sustainability efforts.

Bespoke Solutions

Tailored network solutions to meet specific operational needs and challenges.

Cost-Effective

Reliable wireless connectivity that aligns with budgetary constraints and financial goals.

Monitoring & Control

Local and remote monitoring to maximise critical network availability.

Distributed antenna systems (DAS) provide confined space infrastructure for Public Safety, Cellular and Private Networks.

Public Safety

Dubai Metro - Metro coverage project



Connectivity for emergency services within building and infrastructure.

Cellular

One World Trade Center - In building coverage



In building cellular networks for multiple operators.

Private Networks

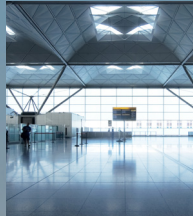
Shangri-La Hotel - In building coverage



Private and secure communication networks; civil, industrial and government.

Transportation

- Railways
- Metros
- Tunnels
- Airports



Outdoor

- Tourist sites
- City centres



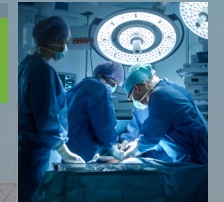
In-Building (IBS)

- Offices
- Shopping centres
- Oil and gas



Healthcare

- Hospitals
- Emergency response



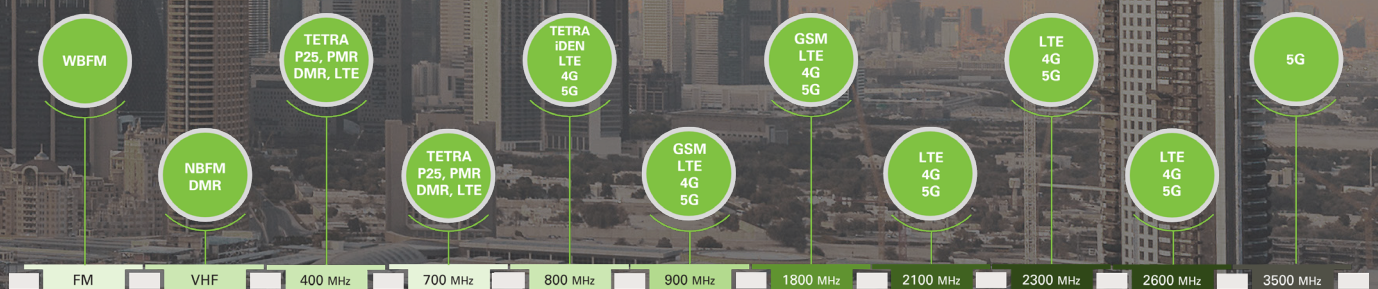
Hospitality

- Hotels
- Conference
- Exhibition halls



Campus

- Stadiums
- Universities
- Colleges



Public Safety

Connectivity for emergency services within building & infrastructure

When an emergency presents itself, reliable communication infrastructure is crucial for first responders and emergency services. Mission-critical communications provide users with the ability to keep their teams informed & connected, enabling them to conduct their response effectively and safely.

ADX DAS System - Advanced, user-friendly remote control & supervision

ADX offers a comprehensive product portfolio for public safety, including off-air repeaters and fibre radio remote units. Main features include:

- Standalone off-air repeaters, or master units with integrated off-air repeaters.
- Extensive options available regarding frequency, output power, and enclosure types.
- BTS redundancy.
- Digital CPRI optical fibre.
- Up to 32 RRU's per digital optical master unit.
- Star, chain, ring, and hybrid topologies.
- Optional HUB for network expansion.
- Optional mixture of bands in one enclosure.



Cellular

In building cellular networks for multiple operators

In today's digital environment, reliable wireless connectivity is vital for businesses, organisations, and individuals. Traditional wireless networks often encounter difficulties in ensuring consistent coverage and signal strength, particularly in large buildings with complex structures. With the increasing global prevalence of 5G technology, there is a shared expectation for mobile services that offer faster speeds, improved coverage, and higher quality communications with availability anytime and anywhere.

ADX DAS System - Advanced, user-friendly remote control & supervision

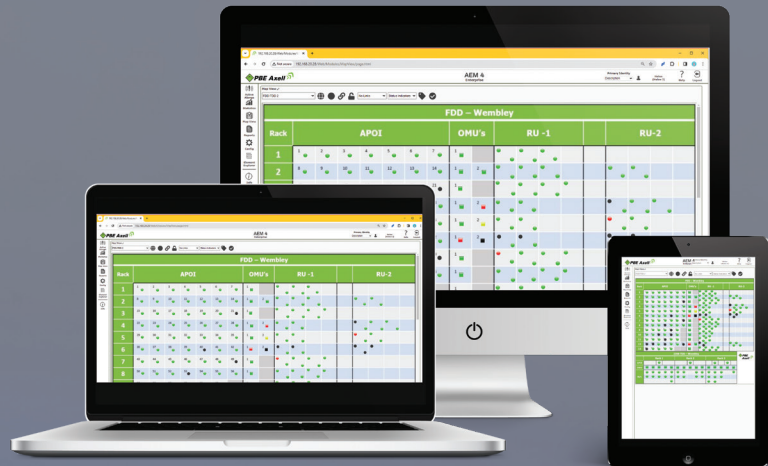
ADX offers a wide range of products for cellular coverage, including off-air repeaters, on-board repeaters, and fibre radio remote units.

- Single band or multiple bands in one enclosure.
- Supports SISO and MIMO configurations.
- Low, medium, and high power variants.
- Up to 64 RRU's per digital optical master unit with additional CPRI HUBs.
- Standard single-mode fibre based on CPRI protocol, supporting star, chain, ring, and hybrid topologies.
- Compact Active Antenna Units (AAU's) with innovative Power-over-Fibre (PoF) option.
- Wall and rack mount options.



AEM - Active Element Manger

- Supports up to 20,000 network elements and up to 20 consecutive users.
- Multiple communication methods including SNMP, Telnet, and dial-up modems.
- Auto-discovery of new elements.
- Support for IP based equipment includes both static and dynamic IP addressing.
- Logical & geographical maps.



Support Services

- Extended warranty
- Priority repair service
- Exchange
- Equipment 3rd line support
- AEM software update
- AEM licensing
- AEM 3rd line support

Engineering Services

- System design
- Site survey
- FAT
- Installation
- Commissioning
- SAT
- Bespoke documentation
- Maintenance
- System health check
- Engineers site visit (fault finding)
- Training
- Project management

Network Monitoring (NOC)

- Dedicated monitoring service
- Bespoke contract
- Equipment 3rd line support
- 24/7 on call service (telephone support)
- 24/7 monitoring

Service Partners

- Certificated partners
- PBE Axell trained
- Agreed level of service



Project References

In-Building and other Coverage Projects

- Adnoc Oil & Gas Projects, UAE
- Aramco Oil Refineries, Saudi Arabia
- Bahrain Petroleum Refineries, Bahrain
- Berlin Airport, Germany
- Bundestag, Germany
- Burj Khalifa Tower, Dubai UAE
- Dulles International Airport, Washington, US
- Expo Dubai, UAE
- Fan Mile, Berlin, Germany
- Forsmark Nuclear Power Plant, Sweden
- Heathrow Airport Terminal 5, UK
- Island of Malé, Maldives
- Kuwait Petroleum Corporation Oil & Gas Platforms, Kuwait
- La Défense Paris, France
- Munich Airport, Germany
- Msheireb Doha, Qatar
- One World Trade Centre, New York, US
- Pentagon, Washington, US
- People's Palace, Bucharest, Romainia
- Police Departments, Egypt
- Reagan National Airport, US
- Royal Palaces, Oman
- Sands Resort and Casino, US
- Schiphol Airport, Amsterdam, Netherlands
- Shangri-La Hotel, London, UK
- Stuttgart Airport, Germany
- The Shard, London, UK
- Torre Diamante, Milan, Italy
- U.S. Department of Homeland Security Campus, US

Tunnel Coverage

- A3 Hindhead Tunnel, UK
- Ahmed Hamdy Tunnel, Egypt
- Botniabanan Tunnels, Sweden
- Brisbane Airport Link, Australia
- Citytunnel, Sweden
- Eurotunnel, UK & France
- Gautrain Tunnel, South Africa
- Heathrow Express, UK
- Lainzer Tunnel, Austria
- Lincoln Tunnel, US
- Mecca Tunnels, Saudi Arabia
- Munich City Tunnels, Germany

Stadium Coverage

- Anfield Stadium, Liverpool, UK
- Emirates Stadium, London, UK
- Etihad Manchester City, UK
- Maracanã Stadium, Rio, Brazil
- Millennium Stadium Cardiff, UK
- Ricoh Stadium, Coventry, UK
- St. James Park, Newcastle, UK
- Stade de France Paris, France
- Stadion an der Alten Försterei, Berlin, Germany
- The Olympic Park London, UK

Metro Coverage Projects

- Amsterdam and Rotterdam, Netherlands
- Antwerp and Brussels, Belgium
- Athens, Greece
- Atlanta, Baltimore, Dallas, Denver, Los Angeles, Pittsburgh, Portland, San Diego, San Francisco, Seattle, SE Pennsylvania, and Washington, US
- Baku, Azerbaijan
- Barcelona, Bilbao, Granada, Madrid, and Valencia, Spain
- Bangkok, Thailand
- Beijing, Chendu, Dongguan, Guangzhou, Hong Kong, Kunming, Nanjing, Shanghai, Shenzhen, Suzhou, and Wuhan, China
- Berlin, Bonn, Cologne, Dortmund, Dusseldorf, Hamburg, and Nuremberg, Germany
- Brescia and Genoa, Italy
- Budapest, Hungary
- Cairo Metro, Egypt
- Delhi, India
- Doha Metro, Qatar
- Dubai Metro, UAE
- Glasgow and London, UK
- Istanbul and Izmir, Türkiye
- Kaohsiung, Tawain
- Minsk, Belarus
- Moscow, Nizhniy Novgorod, Novosibirsk, and St Petersburg, Russia
- Oslo, Norway
- Paris, France
- Rio de Janeiro, Brazil
- Riyadh, Saudi Arabia
- Santiago, Chile
- Singapore
- Sophia, Bulgaria
- Stockholm, Sweden
- Tehran, Iran
- Valencia and Caracas, Venezuela
- Vienna, Austria
- Warsaw, Poland

On-Board Train Coverage Projects

- East Midlands Trains, UK
- High Speed 1 Link, UK
- NSB Trains, Norway
- Regina Regional Trains, Transito, X2000 Intercity, X40 Regional, X55, Sweden
- Singapore Light Rail Project
- Plus national GSM-R rollouts in Sweden, Finland, Holland, Austria, Czechia, Spain, and the UK.

PBE Group

Three separate but synergistic industrial manufacturing and value-added distribution businesses serving the infrastructure, mining, and construction industries.



ADE Power

ADE Power is a leading manufacturer of customised generator and switchgear enclosures, serving critical power infrastructure, data centres, and related markets.

ade-power.com



PBE Axell

PBE Axell is a global manufacturer and systems integrator of electronic safety products and data & communication infrastructure serving the mining, tunnelling, construction, and associated industries.

pbeaxell.com



PBE Rutherford

PBE Rutherford is a leading permanent power solutions provider and cable services manufacturer servicing the mining and infrastructure end-markets in Australia.

pberutherford.com

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