

# Simoco Xd

## Tier III Trunked Radio Solution



Simoco Xd is a simple and scalable DMR system, ideal for organisations catering for a handful of users on a single site, or thousands operating over a wide geographical area.

Simoco's Tier III trunking solution is available as a new system or a software upgrade to an existing Simoco Xd Tier II conventional system.

Simoco Wireless Solutions has gone further than anyone else in exploiting the capabilities of IP, to deliver a DMR solution that is scalable, flexible and efficient with a low cost of ownership.

Fully standards compliant, with a cloud based distributed architecture; Simoco's DMR solution does not rely on centralised hardware that would add to cost and reduce resilience. Simoco Xd does not rely on proprietary arrangements for routing traffic which can be inefficient and limiting in the absence of a genuine control channel.

Simoco Wireless Solutions offers its customers expertise as a systems integrator, able to design, build and maintain complex radio networks including terminals, infrastructure and applications. This can form a key component of a wider unified communications systems.

Simoco Wireless Solutions have strictly adhered to the ETSI DMR - Digital Mobile Radio Tier III standard, delivering high functionality without resorting to developing proprietary protocols. This provides guaranteed interoperability and avoids the single manufacturer lock-in found with many other DMR products.

The key principle behind DMR trunking is the use of a 'control channel' on each radio site. Radio terminals 'listen' to the control channel, which enables the infrastructure to manage traffic channels efficiently. Channels are allocated from the available pool on demand, ensuring that critical system resources are available when required.

Simoco Xd is an end-to-end solution with an industry standard open interface, supporting full integration with a wide range of applications and network management tools. Simoco Xd Tier III trunked radio takes mobile radio beyond basic voice calls. The system supports text messaging, alarms, location based services, voice recording and a wide range of third party applications, transforming it from a radio system into a full communication system.

# Always connected



The key concept of Simoco Xd Tier III trunked is that the infrastructure manages the system resources available to ensure an optimal level of service for the user. Radio users are able to seamlessly roam between radio sites providing them with end-to-end communication for voice and data anywhere on the network.

## **Spectrum efficiency for high-power communications**

Simoco Xd is fully compliant with the DMR standard, which defines two-slot TDMA in a 12.5 kHz channels, providing two voice and/or data channels in a single Base Station Repeater. This optimises use of scarce frequency spectrum and enables reuse of existing allocations to provide feature rich digital communication.

DMR's enhanced range allows improved coverage compared with other TDMA standards, which reduces overall cost of infrastructure and enables a smooth migration from existing analogue radio systems.

## **Interoperability**

Simoco Xd delivers highly resilient, cost effective networks without resorting to developing proprietary protocols. With Tier III trunking, Simoco Xd can provide guaranteed interoperability

and avoid single manufacturer lock-in, which is often not the case with other DMR products. Additionally, Simoco Xd implements the DMRA standard AIS protocol in its SDG600 AIS Gateway to enable standards based interfacing with third party applications.

## **Full flexibility with voice and data dispatch**

Simoco Xd Tier III trunking applications offer a core suite of products including voice and data dispatch, location based services, network management and voice recording. All of our applications are connected using IP and therefore can be deployed anywhere in the world.

## **Intelligent Management System**

Simoco Xd Tier III trunked has network management and monitoring tools built in to allow administrators to track system performance, ensuring that operational efficiency is kept at an optimum level.

## **Resilient and cost-efficient distributed architecture**

Completely distributed architecture to provide maximum reliability and resilience at minimum cost, providing value both in terms of initial investment and ongoing maintenance.

## **Simple and scalable trunking system**

Regardless of system size Simoco Xd Tier III trunked provides easy and efficient communications with high end features including remote network management, applications connectivity and full subscriber management control.



## **Standards Compliant**

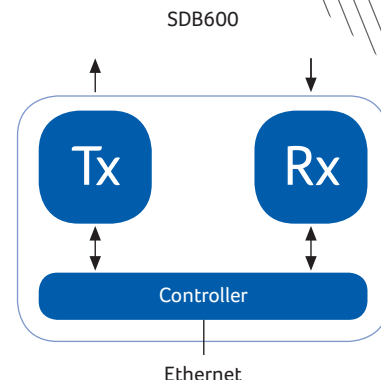
As a key member of the DMR Association, Simoco Wireless Solutions is committed to the ETSI DMR standards. With a strong heritage in MPT1327, Simoco Wireless Solutions are ideally positioned to leverage DMR as the natural digital replacement for analogue MPT systems.

The ETSI DMR Tier III trunked standard is targeted at users who require spectral efficiency, advanced voice features and integrated data services in licensed bands for high-power communications. ETSI DMR Tier III specifies two-slot TDMA in 12.5 kHz channels.



# A Fully Integrated Approach Over Distributed Architecture

The core component of Simoco Xd Tier III trunked is the SDB600 Base Station Repeater which is a fully integrated RF base station and trunked site controller in a single unit. The characteristics of the TDMA digital technology deliver two logical channels in a single 12.5 kHz carrier, which provides a completely encapsulated two channel trunked system in a single box.

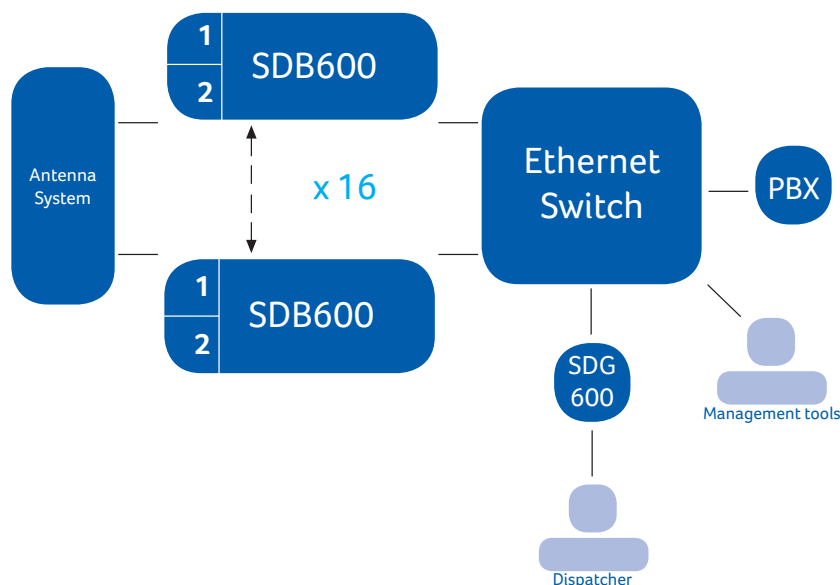


## Scalable trunking for single and multi-site systems

### Single Site Systems

The integrated Ethernet interface in every Base Station Repeater provides the IP connection to other units on the site, enabling multi-carrier systems to be deployed without any additional equipment to manage the site.

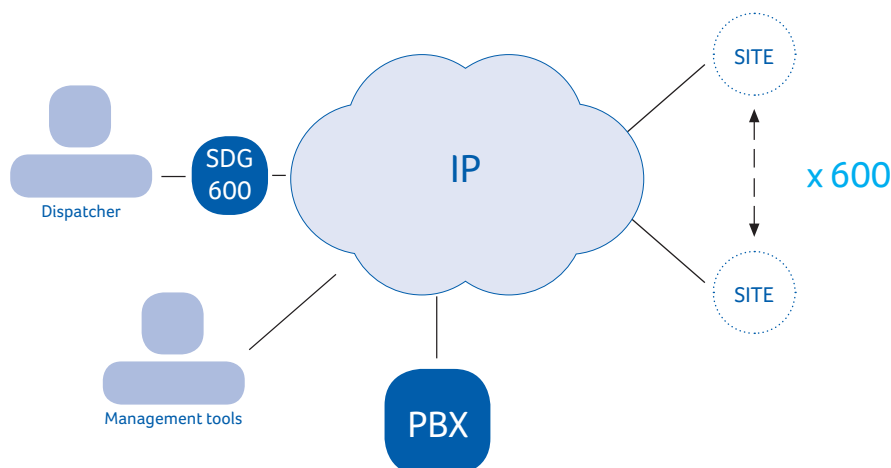
The absence of a physical site controller also means that ultimate resilience is built into every system, which has no single point of failure and multiple levels of fallback to ensure continued service is delivered to users in the event of a component failure.



// Simoco Xd Tier III trunked is capable of providing up to 16 carriers (32 logical channels) per site.

### Multi-site for wide area systems

Simoco Xd Tier III trunked systems are designed around a completely distributed architecture that enables radio sites to be networked together over an Ethernet backbone. Simoco Wireless Solutions have pioneered switchless design in professional mobile radio systems in recent years with market leading infrastructure products in MPT1327 and P25 radio systems. Simoco Xd extends these concepts with DMR trunking to enable the construction of software definable multi-site systems, which do not require any centralised switching hardware.



# Simoco Xd - Features and Functions

## Call Functions

- Call queuing
- Individual calls
- OACSU (Off Air Call Set Up) channel allocated during call setup
- FOACSU (Full Off Air Call Set Up) channel allocated when answered
- Missed call
- Group calls including late entry
- Broadcast calls
- Priority calls (normal, medium, high, highest)
- Emergency calls
- Full Duplex Telephony

## Data Management

- Short data
- Status messages
- Diversions

## Infrastructure Management

- Registration
- Authentication
- Roaming
- Stun/Revive/Kill
- Secondary control channel

## Applications

Simoco Xd Tier III trunking applications have been developed to maximise the benefits of DMR Tier III trunked radio. With all interconnections being made using IP via an industry standard Ethernet connection they transform Simoco Xd Tier III trunking from a radio system into a full communications solution.

## Infrastructure

Simoco Xd infrastructure comprises of just one single core component, the SDB600 Base Station Repeater, which can be interconnected over IP at both site and multi-site levels providing a completely scalable architecture. This delivers a unique proposition in terms of low cost and high resilience.

## Terminals

Simoco Wireless Solutions provide a range of mobile and portable radio terminals which can be deployed on Simoco Xd infrastructure and other third party systems that comply with the ETSI DMR Tier III trunking standard.

See Simoco Wireless Solutions Product Catalogue for a full list of specifications. All specifications are subject to change without prior notice. Simoco Wireless Solutions does not accept liability for any error or omission in this document.

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