



**EXCERA**  
Innovate to Succeed

## DMR SIMULCAST SYSTEM

- ◆ Digital and analog conventional simulcast system
- ◆ 32 base stations with one pair of frequency points
- ◆ Soft-switch and full IP technology
- ◆ Centralized control units, easy for deployment and maintenance



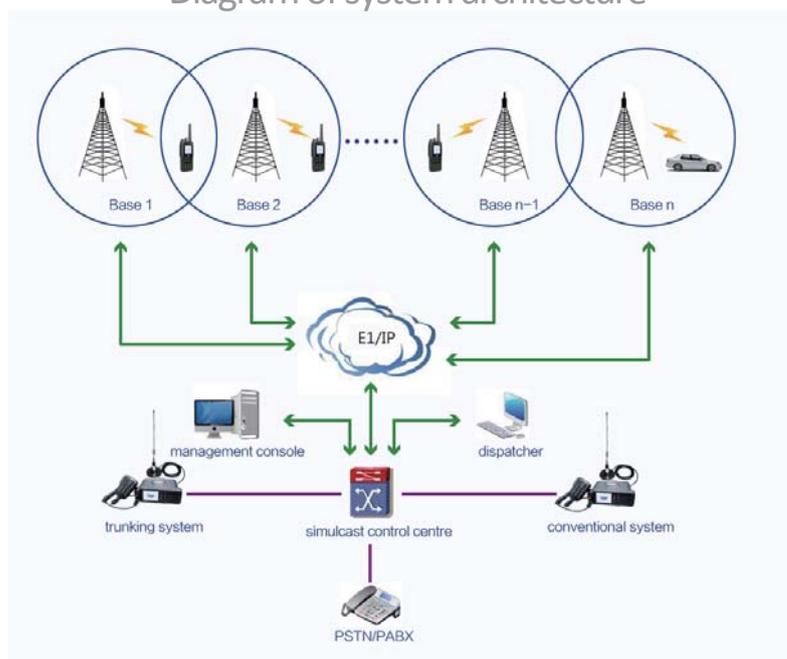


## System Overview

EXCERA simulcast system is a broadcasting system with the same frequency based on DMR conventional system. This system is compatible with analog conventional simulcast system, supporting audio and data functions. The system supports a maximum of 32 base stations per control centre, and each carrier supports 2 communications simultaneously via 2 timeslots. The system adopts digital processing including audio transponding, digital switching, digital delay correcting, and successfully solved some key technological problems about same-frequency and same-phase in conventional simulcast system, all of these make EXCERA simulcast system has many prominent technical advantages, such as good voice quality, high security, low delay of communication. The system has good compatibility and expandability supporting landline calling, interconnection with trunking network, smart conventional access and data services.

## System Architecture

Diagram of system architecture



- In the whole of network with same frequency, the system adopts a transmitting frequency, and the mobile user can roam seamlessly between base stations, do not need to change the channel, the ongoing communication can continue normally during handover.
- The system networking is very flexible, using E1/IP link to connect simulcast control center to base stations, and it can provide redundant backup control center.
- The system has high compatibility and expandability. Via some special interfaces, it can interconnect with public telephone network, mobile conventional network, analog trunking network and digital trunking network which can form a large scale communication network.

## System Features

- DMR and analog conventional mode.
- Extensible 32 simulcast base stations per control centre.
- Multiple simulcast areas , and interconnect with different areas .
- Real time Voting:Voice selecting technology in overlap area, the system selects a best voice frame through realtime voting.
- Centralized control centre , conventional controller and simulcast controller are centralized in one center, each simulcast base station with only RF components which is easy for maintenance.
- Digital transceiver with large LCD developed independently, modular and compact design, digital and analog mode, high reliability and stability .
- E1/IP interface.
- Automatically measure transmission delay , accurate to  $1\mu\text{s}$  .



## System Components



Simulcast base station

- Tranceiver
- Tranceiver
- Clock distributor
- Splitter
- Combiner



Simulcast control centre

- Dispatching unit
- Recording unit
- Simulcast controller
- Clock distributor

## Main Technical Indexes And Parameters

Standard compliance	ETSI DMR
Operation mode	Digital and analog conventional mode
Clock synchronization	Self-synchronization,GPS synchronization
Simulcast base station transmit frequency error	<1Hz@350MHz
Minimum field strength for Selecting	<1db
Simulcast base station selecting time	<1ms
Simulcast base station selecting frequency	<1/s, Configurable
Simulcast base station modulation error	<1db
link delay precision	<1 $\mu$ s
Link delay testing method	Automatic measurement or manual configuration
Audio delay	<200ms
Maximum number of base stations	32, Extensible



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