

# XPT Digital Trunking

Decentralized and Cost-Effective Digital Trunking Solution



- Trunking without the Need for a Dedicated Control Channel
- Economical and Practical Digital Upgrade Solution
- Large Capacity and Easy Migration of Infrastructure



# Overview

Hytera's XPT (Extended Pseudo Trunking) is a digital trunking system that delivers up to 16 times the capacity of analog conventional mobile radio systems; a more cost-effective solution that allows customers to increase capacity without using a dedicated control channel. The system can easily migrate from Tier-II DMR by applying an upgrade license to the RD982S repeaters and connecting them via a layer-2 switch.

## Applications

- Hotel
- Manufacturing
- Education
- Property Management
- SMR Operator
- Stadium
- Hospital



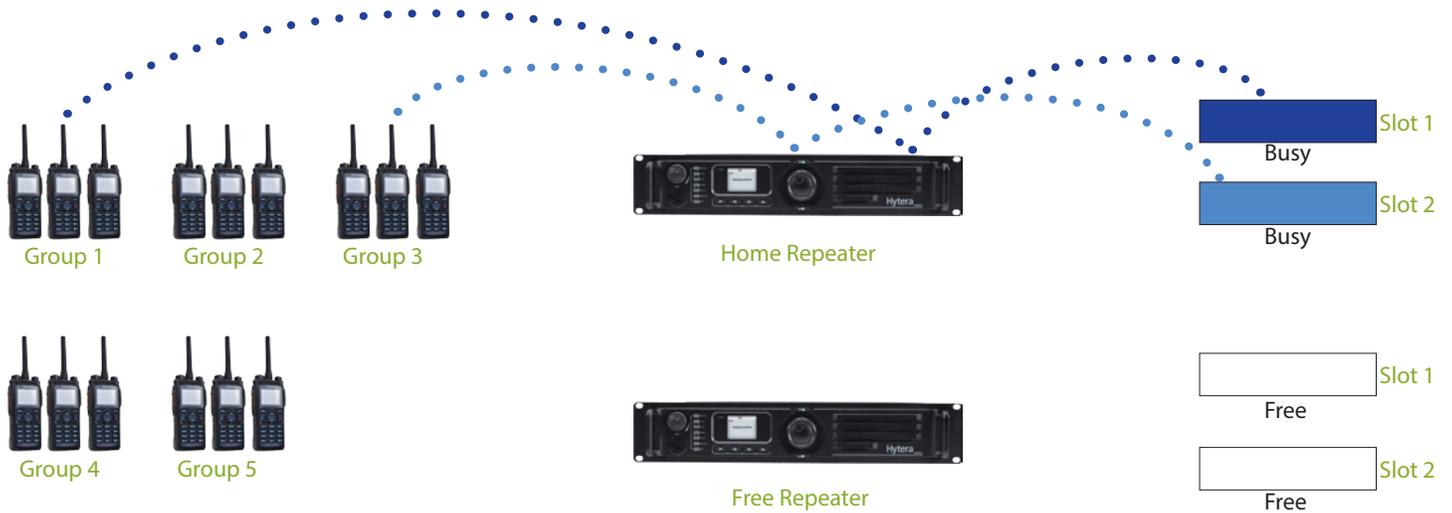
# What is XPT?

XPT (Extended Pseudo Trunk) is a scalable digital trunking solution that allows you to increase the capacity of an existing conventional DMR system by simply upgrading the current RD982S repeater and DMR radios. XPT connects a larger number of users with voice and data turning your conventional DMR System into a virtual trunking system. XPT will now allow multiple users from various departments faster access to the system, this can increase productivity, enhance customer service and provides better dispatching to security personnel responding to emergencies.

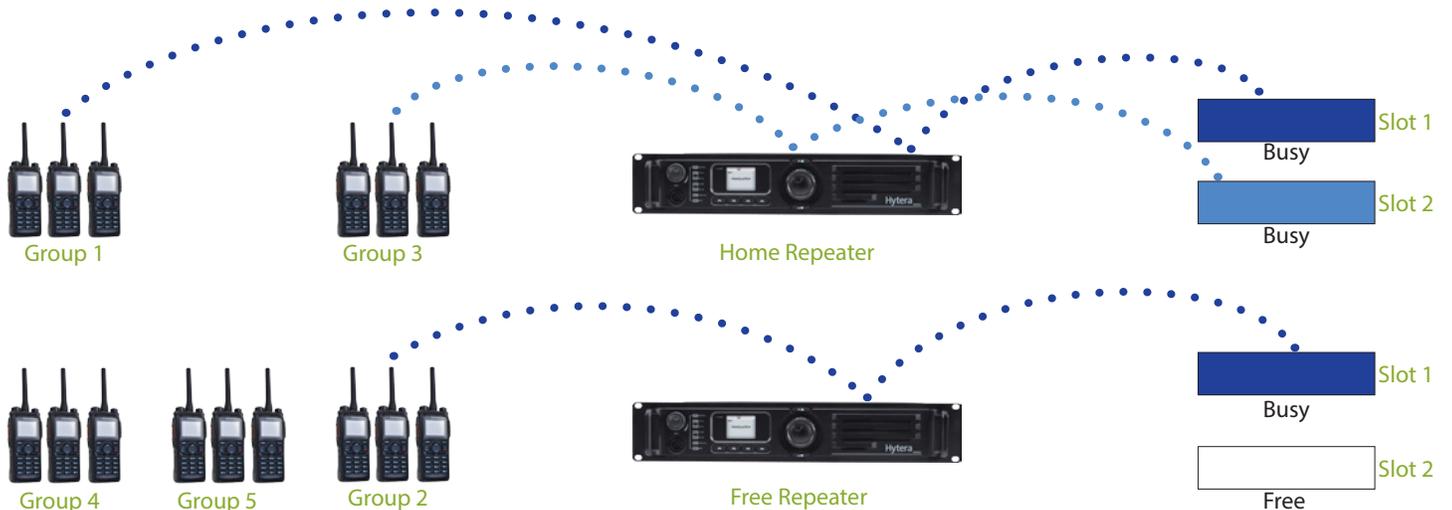
XPT Allows the radio to scan time slots on the repeater and dynamically choose an open time slot to initiate a call. Less wait time is used than those who are fixed to a specific time slot. In typical systems it is not uncommon for repeaters to be busy while others remain unused, this is where XPT Digital Trunking comes into action. The XPT system broadcasts the availability of channels throughout every repeater ensuring the user will have a guaranteed channel to initiate a call.

Within the XPT system, groups of radios will be allocated to a "home repeater". When the home repeater is idle all calls will be made through this repeater. When the home repeater is busy the XPT system will automatically and dynamically assign a "free repeater", which temporarily provides available channels to initiate a call. Once the home repeater has an available resource the groups of radios will switch back to it. This process is repeated on the system to ensure instant communications with no interruptions or constant busy signals, no designated control channel is needed in this process. The same process works with group or all calls, all radios are moved to a single repeater, freeing up the other repeaters for use, even if the radios on the call are assigned to other repeaters.

## When the home repeater is busy.



## The radio / group is moved to the free repeater to initiate a call.



# XPT Digital Trunking System

## XPT Extended Pseudo Trunking

### Key Elements

- **Better Channel Utilization**  
Based on the XPT protocol, the channels for voice and data can be extended up to 16 with mere software upgrade. Each channel can be customized to transmit voice and data or transmit data only.
- **No Dedicated Control Channel**  
There is no control channel in XPT and no license required for continuous transmitting. All channels can be used as traffic channels.
- **Fast Deployment & Easy Configuration**  
This system is easily deployed and configured since it is based on repeaters connected via a layer-2 switch. An easy migration from DMR Tier-II to XPT is provided by purchasing a license to upgrade the RD982S repeaters on the system. The subscribers would also need to be upgraded in firmware to enable the XPT feature. The available subscriber radios for the XPT Digital Trunking System are the PD6, PD7, X1, MD6, and MD7 Series.
- **Channel Capacity**  
The channel capacity of XPT system is 8 times as large as Hytera digital conventional communication system and 16 times as large as a conventional analog system.
- **Emergency Alarm**  
When an emergency call is activated by a radio, it will trigger an alarm that is sent to a defined radio or group of users in the XPT system.

### Technical Advantages

- **Traffic Channel**  
Each Single site XPT Digital Trunking System supports up to 8 carriers and 16 calls simultaneously.
- **Data Features**  
The system integrates audio and data application, such as GPS\*, text message, telemetry\*.
- **Priority Call**  
When an all call or emergency call is being initiated it will take priority over any other call being initiated at the same time.
- **Group Call**  
A radio can make a group call only when it has been predefined in the Home repeater.
- **Remote Monitor**  
Remote diagnostic and control (RDAC) program can be combined with XPT to monitor and diagnose the performance of system.
- **Load Balance**  
When initiating a call a radio monitors all the slots of repeaters until finding an idle traffic channel so that it can make a call. If none are found the radio will queue and continue to monitor all repeaters until an open slot is found.

## Fault Tolerance

The XPT system is a distributed trunking system that can avoid interference caused by abnormal situations through fault tolerance, this allows the system to keep operating even when faults are detected.

- **Reliable Structure**  
The XPT Digital Trunking System has a multi-level fail-safe structure. This allows users to continue communicating smoothly until the equipment is serviced.
- **LAN Switch Fail**  
In the event of a LAN switch failure each repeater starts working as a two-channel trunking system.
- **Router Fallback\***  
If the system is disconnected from the router, communication will continue using the resources within each site.
- **Carrier Fail-safe**  
If a repeater is down, the remaining carriers of the system will continue to operate as a trunking system with a temporary less in capacity.

NOTE: Items with an asterisk \* will be released in a future version of XPT.



# XPT Digital Trunking System



## XPT Extended Pseudo Trunking

## Product Features

### Versatile Voice Services

- Private Call
- Group Call
- Emergency Call
- All Call
- Polite Access
- Telephone Call\*

### Supplementary Call

- Alert Call
- Remote Monitor
- Radio Enable
- Radio Disable
- Radio Check
- Emergency Alarm

### Data Operation

- TMS
- RRS / GPS\*
- Quick GPS\*
- Dedicated Data Revert\*

### Advanced Features

- Scan
- Access Limitation
- Interference Detection\*
- Fault Tolerance
- RDAC
- Encryption\*
- Roaming\*

### Dispatcher Features

- RRS / GPS\*
- OTAP \*
- PSTN / PABX\*
- Voice Recording\*

## System Components

## Compatible Products

- 1 RD982S (at least 2 and a maximum of 8 Repeaters)
- 2 Combiner Unit (COM)
- 3 Divider Unit (DIU)
- 4 Duplexer
- 5 IP Switch
- 6 Cabinet Unit
- 7 Power Supply Unit (PSU)
- 8 Ethernet Cables
- 9 Multi-Couplers

### Repeater

RD982S

### IS Series

PD792 Ex  
PD702 UL913  
PD782 UL913

### PD6 Series

PD602 / PD602G  
PD662 / PD662G  
PD682 / PD682G

### X1 Series

X1e  
X1p

### PD7 Series

PD702 / PD702G  
PD752 / PD752G  
PD782 / PD782G

### Mobile Series

MD652 / MD652G  
MD782 / MD782G



MD6 Series



PD6 Series



PD7 Series

PD792 Ex



X1 Series

MD7 Series



RD982S



20KHz / 25KHz will not be available on new equipment in the U.S. after January 1<sup>st</sup>, 2011

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