

*Challenging Communication Boundaries*



# *DX-Altus*

*Reaching New Heights in Radio  
Dispatch & Interoperability for  
Mission Critical Communications*





# DX-Altus

**S**mart, Flexible, Reliable and Future-proof. The DX-Altus digital radio dispatch system is built on Omnitronics' successful and industry standard IPR technology. Together with Alto dispatch software, DX-Altus reaches new heights in digital radio dispatch and interoperability.

DX-Altus is a culmination of years of experience in providing reliable, digital radio management solutions to a range of market sectors including government agencies, public safety organisations, transport, utilities, mining and oil & gas corporations.

## Key Features:

- Interoperability with protocols such as DMR, P25, Tetra, SIP, PMR and dPMR able to run on one network.
- User-friendly, customisable touch-screen GUI, Alto
- Text and Status Messaging
- Individual and Group Calling
- Emergency Management
- Rapid Recall
- Location Services/GPS
- Canned Voice
- SIP Telephony
- Workgroups
- Security Encryption
- Redundancy, soft degradation and reliability provided through dedicated server with modular architecture
- Real-time diagnostics with SNMP
- Easily Expandable and Future-Proof
- Remote Monitoring
- Browser based, Remote Configuration of all functions through one central controller





## Interoperability

Whether your organisation is running DMR, P25, Tetra, NXDN, Analog PMR, MPT or a combination of these, it doesn't matter.\* The DX-Altus is compatible with a range of different protocols. In fact, multiple protocols can work together on the one system. The advanced range of DRG Digital Radio Gateways translate voice and data into the same language, meaning differing radios and protocols will all be able to connect to the one network. Users are no longer restricted in their choice of protocol nor need to convert their entire network in one swoop. True interoperability is now within reach.

This provides organisations with a number of benefits:

- Upgrades and changes to new radio protocols can be done without changing dispatch systems
- Phased Upgrades
- Ability to choose protocol most appropriate for each region or function
- Flexibility

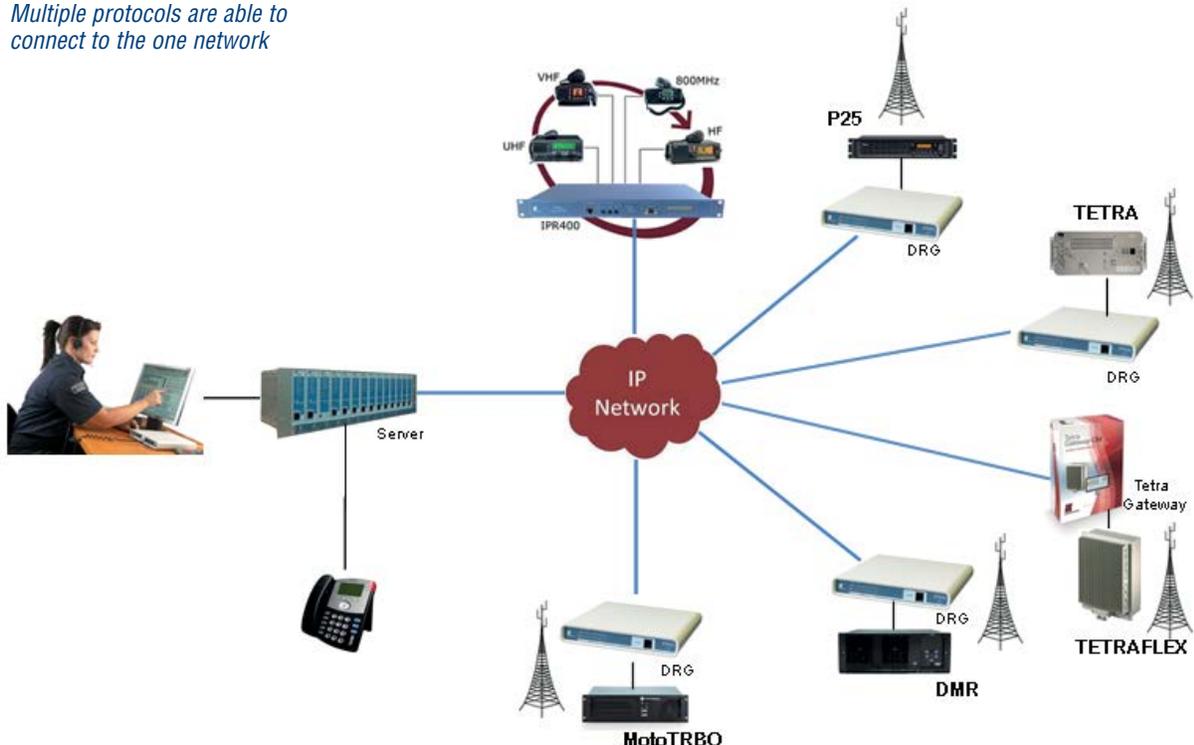
DX-Altus supports a variety of interfaces to radio networks:

- Ethernet
- USB
- RS-232
- Tone signaling

The system supports both standards-based and proprietary protocols.

\*The list of compatible protocols is changing all the time. Contact a Sales Representative for the list of currently supported protocols.

*Multiple protocols are able to connect to the one network*



# The Power of Radio over IP

By utilising Radio over IP (RoIP), organisations have been able to rapidly improve the flexibility, reliability and reach of their radio networks. By using existing IP networks, RoIP provides organisations with the ability to easily set up their radio infrastructure to include remote radios and operator positions, to connect to phones and for remote configuration and monitoring.

## Remote Radios

The DX-Altus supports a mixture of local and IP-remote radios. By using Radio over IP, multiple radio repeater sites can be established at great distances, even on opposite sides of the globe, but still be connected to the one network.

## Remote Operator Access

Remote operator positions can also be added to the one network. Furthermore, portable consoles are able to be used and connected to the network where IP access is available.

## Phone Access

Omnitronics' Radio over IP technology supports Session Initiation Protocol (SIP). This allows equipment such as IP phones and PBX's to interoperate on the radio network.

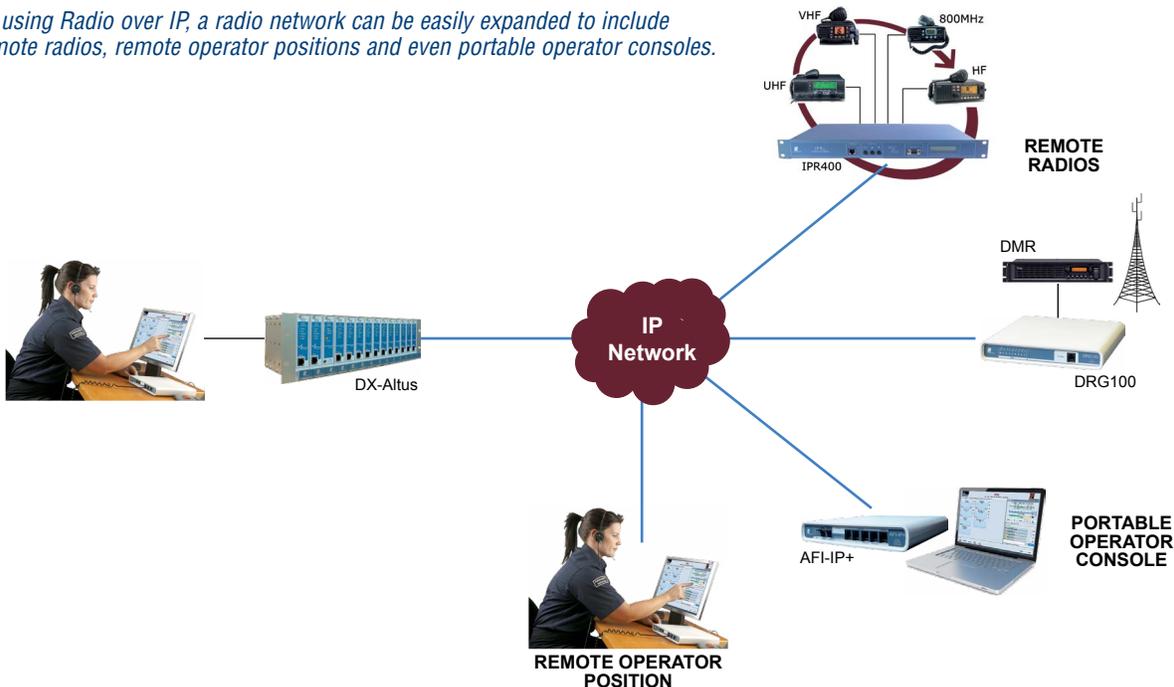
## Remote Configuration and Monitoring

Administrators and technicians are able to access all Omnitronics' IP equipment remotely over the IP network for configuration and monitoring. Administrators can remotely access the single, centralised controller through a web browser to configure all functions. In addition, the DX-Altus and other IP devices support a range of web based diagnostic functions. Administrators have the ability to remotely monitor the health of the system in real time using SNMP and other protocols. A number of diagnostic reports are available to assist with future planning.

## Voice Recording

Simple integration with compatible Third Party Recorders.

*By using Radio over IP, a radio network can be easily expanded to include remote radios, remote operator positions and even portable operator consoles.*



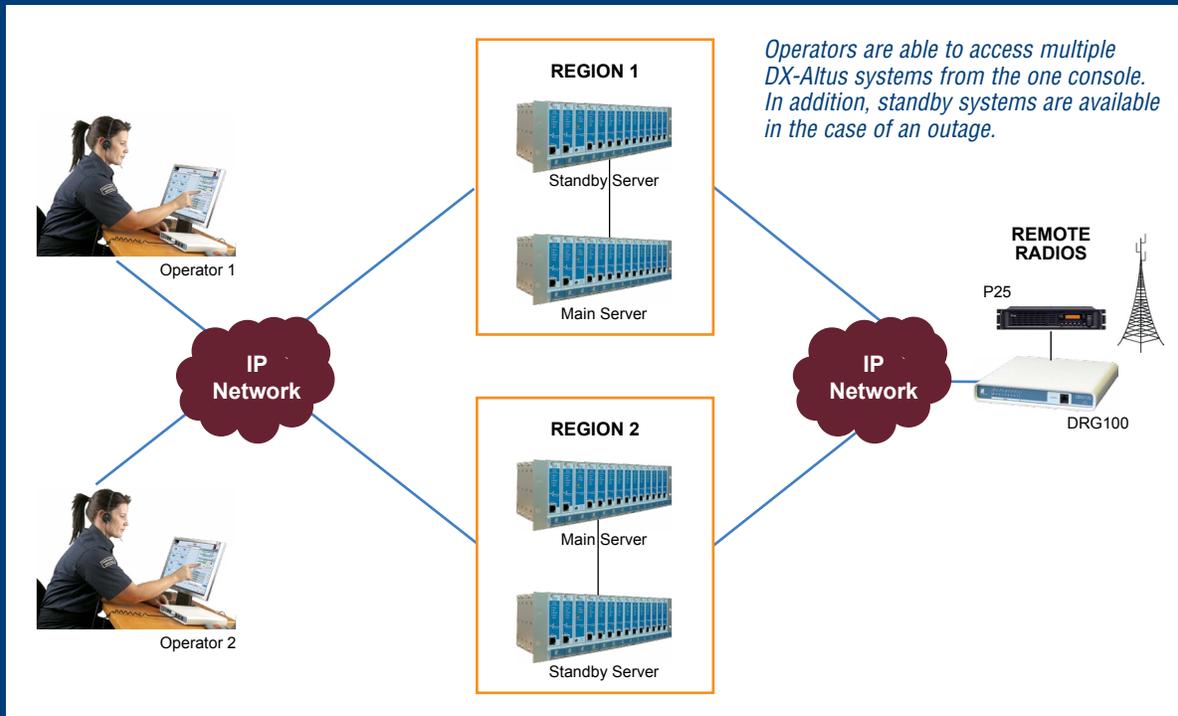
# DX-Altus

## Operator access to Multiple DX-Altus Systems

In larger organisations, it is common to run different dispatch systems for different regions. However, the same operators may require access to a number of these networks. The DX-Altus has the functionality for operators to select the network they require access to, whether it be local or remote.

## Future-Proof

RoIP also makes it possible to easily adapt to future needs. Sites can easily be added to the system where there is IP access. In addition, the interoperability of the DX-Altus means that if organisations change protocols and adapt to future technology changes, the whole system does not need to be replaced.



## Reliability and Redundancy

DX-Altus is built on Omnitronics' philosophy of modular system architecture, a key aspect of reliability. By using a dedicated server, DX-Altus avoids many of the downfalls of a PC infrastructure. The product life for the DX-Altus is significantly greater than that of the average PC. In addition, the system is not fallible to common PC problems such as viruses.

DX-Altus takes reliability even further by providing complete redundancy. Firstly, using a modular approach allows failed modules to be hot-swapped for new ones. In addition, dual redundant systems enable seamless changeover between systems in the event of an outage. For organisations that cannot afford any communications downtime, this feature is invaluable and provides complete peace of mind.





# DX-Altus

## Alto

Alto, the face of the DX-Altus, is a user-friendly, customisable GUI. Administrators can choose which functions they wish to include on the system and what operators can and can't see, right down to the button size and colour. Enhanced touch screen functionality including one-touch controls compliment the program's ability to reduce information overload on the user via contact lists and filtering.

Alto runs on a Windows 7 or Windows 8 PC with the choice of touchscreen or keyboard operation.



## System Components

### Server

The DX-Altus server consists of a number of modules. This means that the system architecture is configurable to an organisation's unique needs. Three main modular components are included:

1. The SCU (System Control Card) collects configuration parameters from the operators and initiates all the system control and switching functions. The SCU is remotely configurable through a web browser.
2. IPE (Voice over IP interface) connects to Operator Consoles, Radios and SIP PBX's
3. TMU (Tape Monitor Interface)

### AFI-IP+

The AFI-IP+ is the interface between the server and operator. It is a VoIP based device that communicates with both the server and the PC. The device provides a number of options for receiving and transmitting audio. They include multiple headsets, external speakers, desk microphone, Omnitronics 960 handset, rapid recall and PABX handset. Provision is also made for a foot switch PTT operation. In addition, switches for "all call" intercom and PTT are incorporated on the front panel.

Acoustic Shock Protection is also a key feature of the AFI-IP+. This feature ensures that high volume shrieks or loud buzzes caused by interference and third party radio equipment are eliminated. This enables a constant safe level of audio to operators so that hearing is not impaired or damaged over the long term.

### DRG Range

The DRG range of digital radio gateways operate as an interface between Omnitronics' dispatch solutions and digital radios such as MotoTRBO, DMR, P25, NXDN or Tetra. The gateways translate voice and data into Omnitronics' proprietary CCP protocol, meaning differing radios and protocols will all be able to connect to the one network. The range includes DRG's designed to address the needs of both Tier II (Conventional) and Tier III (Trunked) Radios.

### IPR-100/IPR-400

The IPR-100 and IPR-400 provide IP gateways to analog radio (PMR). The IPR-100 provides connection to a single analog radio, the IPR-400 supports four radios.

### Advanced GPS Service

The Advanced GPS Service expands on the standard GPS functionality of the DX-Altus by adding full-featured asset tracking and reporting. The service is designed to run on a Microsoft Server and provides the interface between GPS-equipped radios and the GPS application using a hosted or self-hosted map server.

### PLI

The Phone Line Interface provides either a 4-channel or 8-channel PSTN interface for the system, allowing a connection to 2-wire telephone lines. The PLI works in conjunction with the LIU.



## Specifications

### Server

Format	3-RU, 19 inch rack with dual redundant controllers (SCU)
Operating Temperature	0 to 40 degrees C; Temperature Controlled Environment (A/C) Recommended
Maximum module capacity	36 per server + 2 SCU's
Maximum Operators	32 per server
Operating System	Real-time Mission Critical (RTEMS)
Architecture	Embedded Coldfire
Network Interface	10/100Mbit Ethernet
Maximum Servers	3
Maximum Channels	168

### SCU

Power	200mA @ 12V
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### IPE

Power	200mA @12V
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### TMU

Power	50mA @ 12V
Recorder Interface	Balanced 600-Ohms
Activity Indicator	Open collector output
Output Level	-20 to +4 dBm

### LIU

Power	300mA @ 12V
Radio Interface	8-Way US modular 4-wire E&M; 600 Ohms.
Input Level	-30 to +6 dBm
Output Level	-26 to +6 dBm

### AFI

Power	250mA @ 12V (AFI-IP+)
Interface	Ethernet (VoIP)
Receiver Distortion	<1%
Transmit Distortion	<0.8%
Number of Speakers	2 (left and right)
Microphone Input Range	-45 to 0 dBm.
Number of audio interfaces	1 x desk mic, 1 x handset, up to 4 x headsets (2 wireless)
PTT Control	Foot Switch, Front Panel, Desktop Microphone or Headset
Frequency Response	50 Hz to 3.5kHz

### Alto Dispatch GUI

OS	Windows 7, Windows 8, Windows 8.1
PC requirements	Dual Core i3/i5 3.0GHz; 4GB RAM; Sound card; 10/100Mbit Ethernet; USB; 15 Inch Touch Screen

### IPR-100/400

Power	200mA (IPR-100) or 400mA (IPR-400) @ 12V
Codec	G.711, G.726 or GSM
Radio Interface	8-Way US modular 4-wire E&M; 600 Ohms
Input Level	-30 to +6 dBm
Output Level	-26 to +6 dBm

### DRG-100/200i

Power	700mA (100) or 400mA (200i) @ 12V AMBE+2
Radio Codec	G.711, G.726 or GSM
Radio over IP Codec	10/100Mbit Ethernet; USB Host
Interfaces	

Note: Specifications are subject to change without notice



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