

Challenging Communication Boundaries



Dispatch Solutions for
VoIP Networks



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THE POWER OF VOIP & SIP TECHNOLOGIES

Voice over IP (VoIP) technology is expanding the capabilities of two-way radio communication services through Local Area Networks (LAN) and Wide Area Networks (WAN). VoIP has enabled the implementation of a decentralised radio infrastructure that is flexible, provides a lower cost of ownership and facilitates improved interoperability.

The benefits of using VoIP for radio communications have been greatly enhanced through the introduction of the Session Initiation Protocol (SIP). The adaptation of SIP into the world of land mobile radio has opened the door for new and innovative interfacing, dispatch and interoperability solutions. This powerful and widely accepted protocol is the preferred method of designing and operating modern radio communications networks.

SIP is commonly used in the VoIP telephone world for creating, modifying, and terminating sessions with one or more users.

SIP can be used to create two-party, multi party or multicast sessions and is based on an RFC standard from the Internet Engineering Taskforce. It is now considered the number one protocol due to its simplicity, flexibility and ease of use, and is fast becoming the common language in the convergence of voice and data applications.

Providers of Radio Over IP technology are standardising on SIP because it enables the real time configuration of audio connections between VoIP gateway products, including consoles. In effect this creates distributed audio bridges and dispatch systems that can be controlled from remote locations in real time. Omnitronics has carefully combined SIP with other technologies that have been specifically tailored for Land Mobile Radio. This includes RTP/RTCP and our proprietary digital audio conferencing technology. Together, these enable VoIP connections to remote radios to be established and managed.

Omnitronics produce a range of VoIP & SIP Dispatch Solutions:

Head Office



Operators can connect to radio networks via either:

- SIP Phone



- 960SIP Dispatch Console



- VoIP Dispatch GUI



Central Region



South West Coast Region

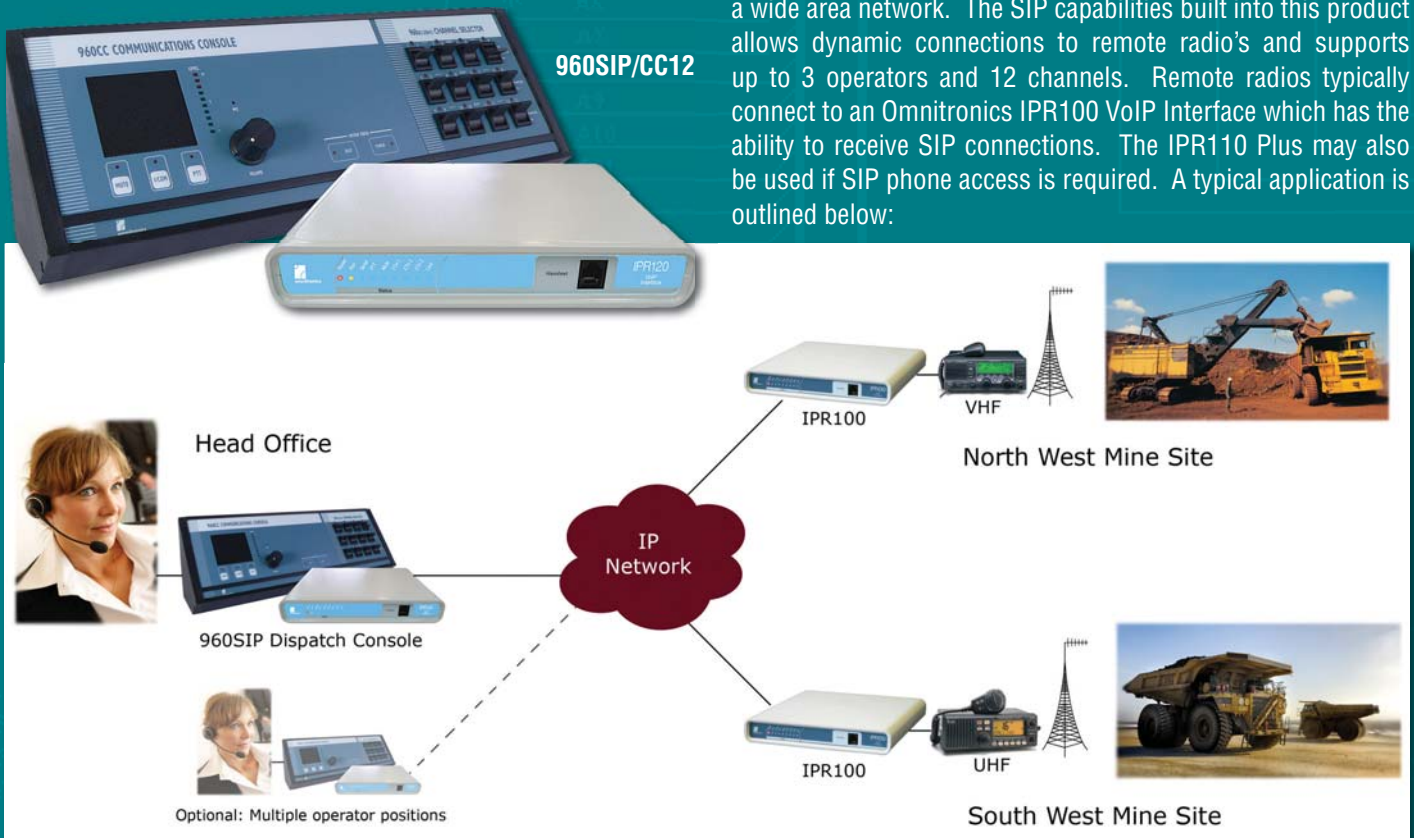


Northern Region

960SIP DISPATCH CONSOLE

“Robust console solution allowing easy access to radio communications using your IP network”

Omnitronics has expanded its radio dispatch products to include SIP technology. The Omnitronics 960SIP Dispatch Console is an integrated solution suited to organisations requiring a reliable, easy to use console for frequent access to a wide area network. The SIP capabilities built into this product allows dynamic connections to remote radio's and supports up to 3 operators and 12 channels. Remote radios typically connect to an Omnitronics IPR100 VoIP Interface which has the ability to receive SIP connections. The IPR110 Plus may also be used if SIP phone access is required. A typical application is outlined below:



Key Features:

- > “Selected” and “Monitored” audio is available through front panel switches
- > Transceivers are connected to the IP network using IPR100 VoIP adaptors (these devices have the ability to receive SIP connections)
- > Supports UHF, VHF, Marine band and Air band radios
- > Operators can also speak with each other using Intercom

Advantages:

- > Easy access to a decentralised radio network using VoIP and SIP technology
- > Easy to install and begin using straight away
- > Simple channel selection via 3-way switches with foreground and background audio selection
- > Operators can access and share one or more radio transceivers
- > Multiple console positions with intercom available if required

Suitable Applications:

Ideal for small to medium sized operations looking for an easy to

use, robust console for frequent access to a de-centralised radio network.

SIP Selectors

The 960SIP Dispatch Console can be customised to suit your needs. Choose from either a 6 or 12 channel SIP Selector and various dispatch consoles are available including a 960CC or 960CSD depending on your SELCALL & DTMF requirements. Handsets are also available upon request if the console is not required, contact an Omnitronics sales representative for further information.



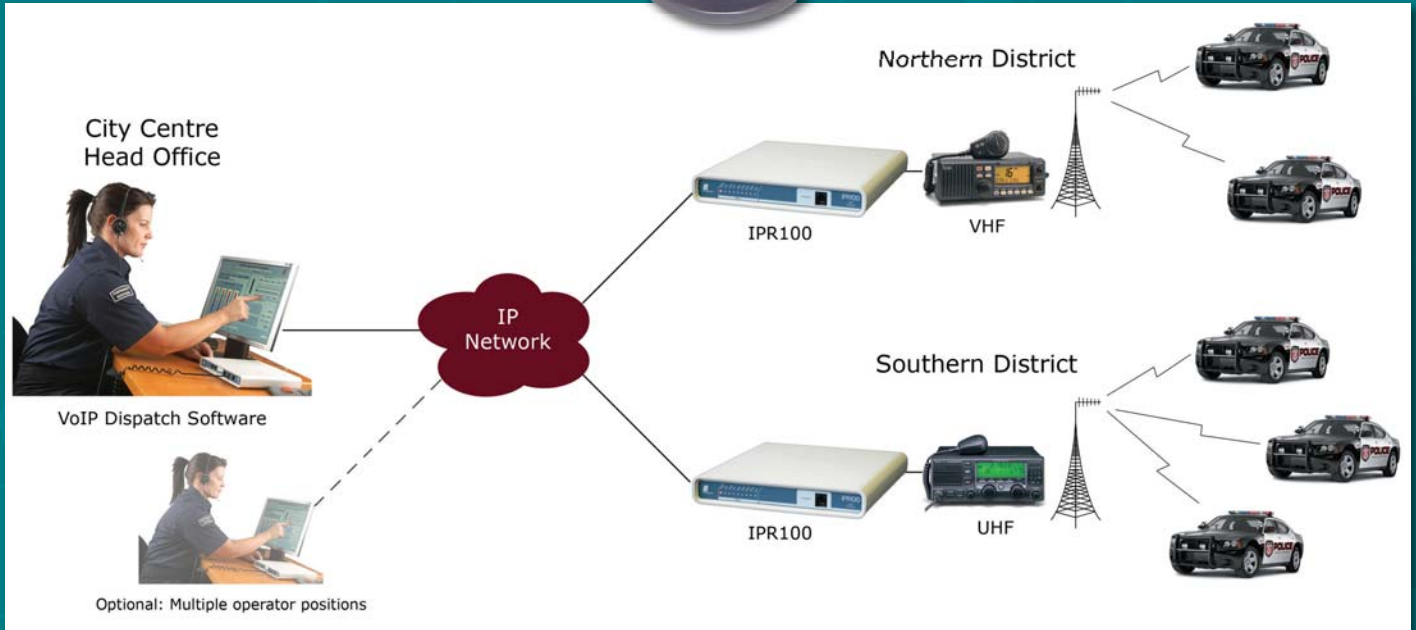
VOIP DISPATCH SOFTWARE

“Conveniently access radio networks over IP using your existing PC”

This system works in a similar way to the 960SIP Dispatch Console, however this device is PC controlled. The intercom and PTT buttons are controlled on the touch screen and the microphone and audio capabilities are built into the PC.



Communications paths are controlled by the console operator and each radio user can talk with the operator on demand. The recommended number of operator positions is 3 however this may be increased depending on the level of activity and available bandwidth.



Key Features:

- > Easy to use PC touch screen
- > Simple one-to-many connections using SIP
- > Transceivers are connected to the IP network using either IPR100's or IPR110 Plus'. Supports UHF, VHF, Marine band and Air band radios

Advantages:

- > Conveniently access a decentralised radio network using VoIP and SIP technology
- > Easy to install and begin using straight away
- > No additional hardware required, run from an existing PC
- > Multiple console positions with intercom available if required
- > Foreground and background audio selection
- > Operators can access and share one or more radio transceivers

Suitable Applications:

Ideal for small to medium sized operations looking for an easy to use, PC based system for frequent access to a decentralised radio network.



>>> Dispatch Solutions for *VoIP Networks*

IPR110 PLUS – ADVANCED VOIP & SIP GATEWAY



“Powerful VoIP gateway allowing connection to and from SIP phones and PBX’s”

The IPR110 Plus – Advanced VoIP & SIP Gateway is changing the way organisations communicate with their radio networks. The IPR110 Plus is used for two main purposes:

1. Providing radio network coverage to SIP phone users
2. Extending telephone coverage to rugged or difficult locations that are best accessed through wireless communications

The gateway enables users to connect to remote radio networks from their existing office based SIP compatible PBX systems and, at the same time, it gives users of two-way radios the ability to dial SIP phones or telephone extensions from the field.

The engineering team at Omnitronics carefully crafted some unique features into the IPR110 Plus including the ability to configure DTMF or SELCALL (5-Tone) tone sequences to manage connections and control radio functions. Radio users can establish a phone call by keying a pre-set DTMF or SELCALL sequence. On the radio side, the status of a SIP call, whether incoming or outgoing, is translated into familiar tones for the radio user.

The IPR110 Plus also includes a Channel (frequency) Change mode. This enables a remote operator with a DTMF keypad to change the frequency of the attached radio. Channel change occurs via the serial port. For example, an operator with a SIP phone can establish a connection to a radio then change the channel on that radio.

These VoIP & SIP gateways are perfect for public safety organisations, mine sites, construction, refineries, hospitals, local councils and any organisation requiring occasional access to a radio network using SIP.

Key Product Features:

- > DTMF speed dialling
- > Simple one to one connections using SIP
- > In-built RS-232 channel (frequency) change capabilities
- > Multicasting
- > Voice Activity Detection (VAD) with silence suppression

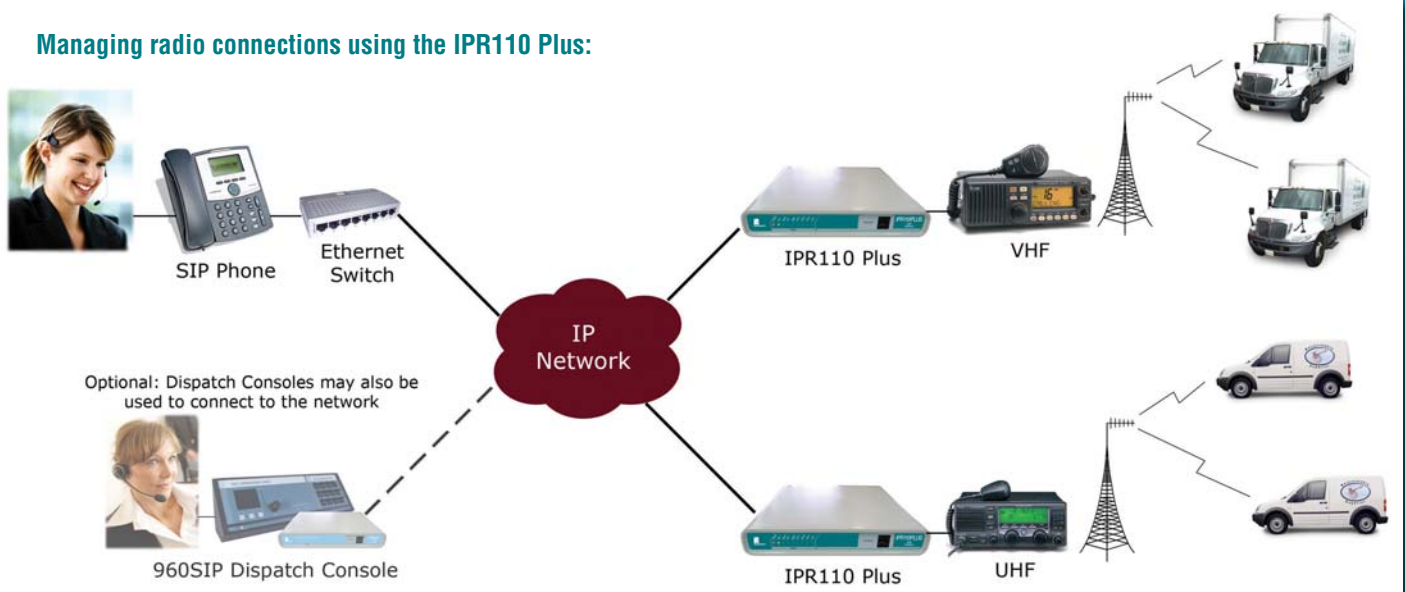
Advantages:

- > Conveniently connect to and from SIP Phones and SIP PBX’s
- > Operates like a phone system where calls are initiated by either the SIP phone or the radio user
- > Easy to install and begin using straight away with minimal training

Suitable Applications:

- > For organisations requiring occasional access to a radio network from existing SIP phones
- > Where telephone coverage needs to be extended into rugged or difficult locations that are best accessed via wireless communications.

Managing radio connections using the IPR110 Plus:



SPECIFICATIONS - IPR110 PLUS

Power

Voltage 12Vdc (11.5V to 13.8Vdc) Current 300mA

Radio Port

Number of channels 1
Connector 8-way US modular
Configuration Four wire, transformer coupled
Input Impedance 600 ohms
Output Impedance 600 ohms
Input Levels -27dBm to +4dBm (-10dBm nominal)
Output Levels -27dBm to +4dBm (-10dBm nominal)
Software level attenuation 0 to -18dB in 3dB steps
Frequency Response 300 to 3000 Hz (within 1 dB)
E-Input Lead Opto coupled @ 5 to 50Vdc. Link configurable for voltage, contact, switched ground or switched power
M-Output Lead Relay contacts limited to 30W (30Vdc or 1A). Link configurable for voltage, contact, switched ground or switched power.

Handset/console Port

Connector 6-way US modular
Configuration Two wire, balanced half-duplex
Input Impedance 50K ohms
Output Impedance 500 ohms
Input Level Range -27dBm to +4dBm (-10dBm nominal)
PTT Input Contact to 0Vdc
Busy Output +12Vdc

RS-232 Port

Number of channels 1
Connector DB9 Female (DCE)
Supported Data Rates 38400, 19200, 9600, 4800, 2400, 1200 baud

Network Interface

Connector 8-way RJ45
Interface 10 BASE-T or 100 BASE-TX Ethernet with autodetect
Protocol Multicast RTP
Vocoders G.711, G.726 ADPCM, GSM (13Kbps)

Front Panel Indicators

System Power OK, CPU RUN, VoIP Link OK
RS-232 Activity
Radio Port PTT output active, COS input active
Ethernet 10Mbps/100Mbps, Link Active, Activity

Physicals & Environmental

Style Desk mount
Weight 0.7 kg
Dimensions 220mm(W) x 35mm(H) x 230mm(D)
Operating Temperature 0 to 60 degrees C

Note. Specifications are subject to change without notice.



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