



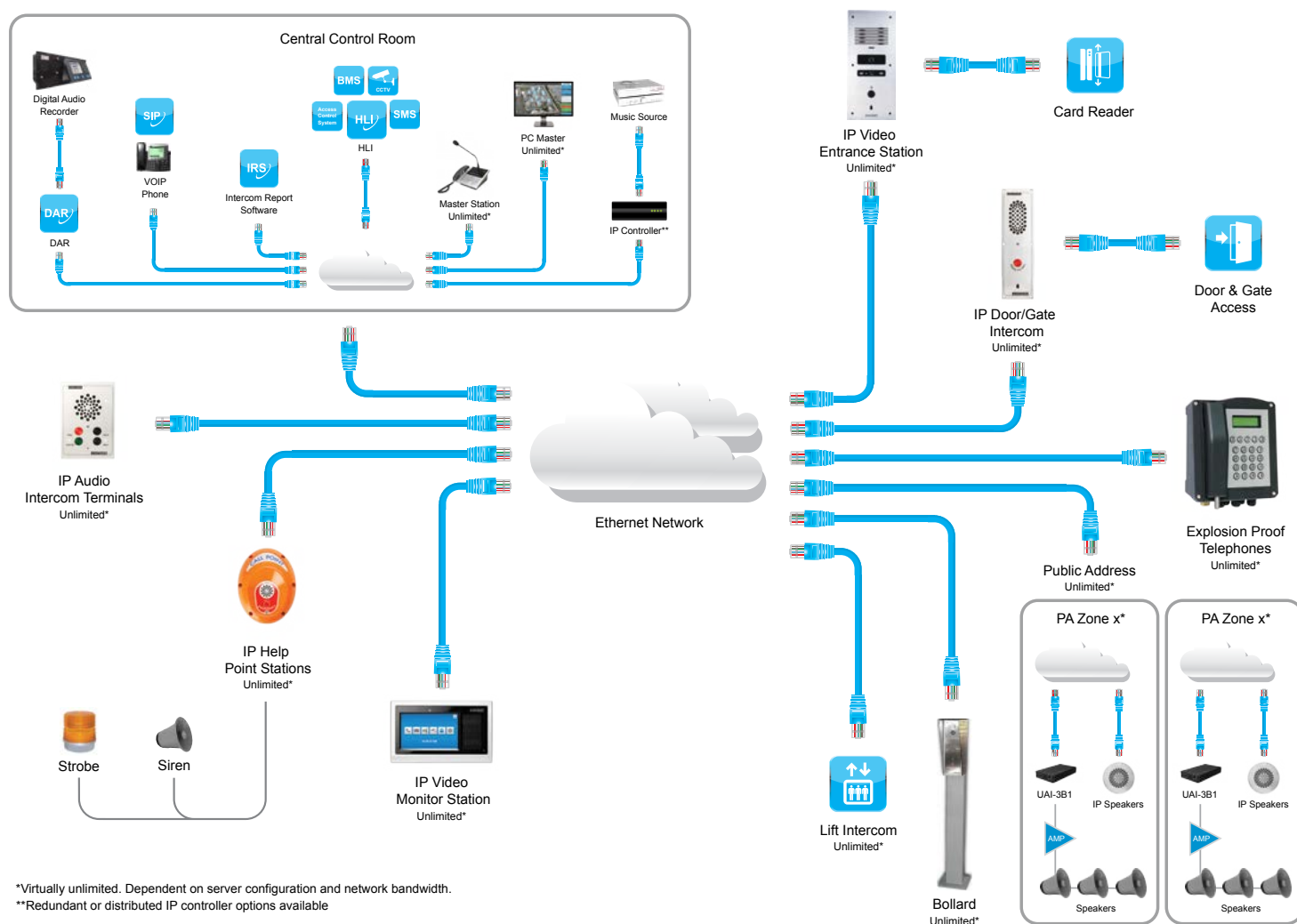
Jacques Technologies Pty Ltd

## IP Industrial Communication System

# IP INDUSTRIAL COMMUNICATION SYSTEM

Potential safety and security breaches are encountered daily by those working in an industrial work environment. From heavy-duty machinery, extreme temperatures, vandalism or theft, the dangers that can arise are endless. To ensure the safety workers in such conditions, it is essential to have a comprehensive and dependable communications and security system. Jacques offers an Integrated IP Communications System featuring intercom and public address which provides reliable and flexible communications in even the harshest environments.

## SYSTEM DIAGRAM







From mining sites, defence bases or factories, the Jacques Integrated IP Communications System maximises safety and security for all on site

## SYSTEM SUMMARY

To ensure the safety of those working at industrial sites it is essential to have a comprehensive and dependable communications and security system. A Jacques IP communication system features intercom and public address communication with the capability of integration to third party CCTV and building/security management systems and the advantage of durability and excellent voice quality suited for harsh conditions.



## SYSTEM FEATURES



### MULTI SITE

Ability for multi sites (mines, factories, defence sites) to be controlled from a central management center. Sites can be linked via Wide Area Network (WAN).



### WARNING & EVAC PA

The PA system offers PA zoning, meaning a factory can create a PA zone for each area of a site. Security administration can then easily broadcast evacuation tones, warning alarms as well as live or pre-recorded announcements to one, multiple or all PA zones.



### SUPPORTED INTEGRATION

Jacques IP communication systems integrate via high level interface to a large number of industry recognised partners. Integration with building and security, CCTV, telephony and access control systems ensure a complete security solution.



### SIP GATEWAY

SIP gateway allowing for intercom calls to be automatically transferred to external telephone systems or devices after hours ensuring calls for help and assistance are always answered.



### ENVIRONMENTAL SPECIFIC FEATURES

Mine sites, military bases, factories and oil rigs can be harsh environment so Jacques intercom terminals are built tough. The system can include bollard/access intercoms made of stainless steel and explosion proof telephones.



### RELAY MODULES

Configurable relay modules exist on intercom terminals to activate external equipment – control doors, boom gates, lights or signal CCTV camera presets.

## JACQUES ONSITE

### DEFENCE

Access intercom terminals allow admittance to authorised persons to secured areas, gates, doors and social areas following communication via intercom to a control room, where access can be granted. With the Jacques PA system communicating to all personnel on base is made easy, via alarms, tones, and both live and pre-recorded announcements. The safety within the defence site is further enhanced with intercom and public address functionality being capable of full integration to access control, CCTV and building and security management systems.

### MINING

Safety is the number one priority on mine sites. A simple accident could easily become an emergency thus increasing the importance of access to immediate help and assistance. With Jacques' Emergency Help Point Units staff can be assured access to help is always close by. Entrance and bollard intercoms provide communications between individuals and central control while the public address system provides communication to all staff onsite. Whether the mine is located above ground, below ground, in extreme heat, cold, frost or humidity the Jacques weather and vandal resistant intercoms provide reliable lines of communication. The integration of explosion proof intercoms into the Jacques system ensures reliable communication whilst denying any potential triggering of an explosion initiated by the device..




### BOLLARD

BOL-317A | 51662, BOL-320A | 51663  
BOL-330A | 51664, BOL-340A | 51665

- Suitable for HPU-5xx
- Various heights available
- Material carbon steel with Duragal™
- Powder coated, APO ripple grey finish

The Jacques system can facilitate communication between bollard intercoms, boom gate intercoms as well as car park Help Point Units which connect directly to a central security control offering help, assistance and advice





The explosion-proof phone is certified for gas and dust explosion endangered areas. It is also resistant against acids, alkalis and greases

## FACTORIES

The Jacques IP Communications System guarantees reliable with vandal and weather resistant intercoms which provide protection against intruders and manage access to secure areas, gates or doors for authorised persons. Audio communication integrated with CCTV cameras allows security to hear and see across sites ensuring the safety of personnel and stock. This is

further enhanced as audio communication together with CCTV imagery can be captured and recorded and therefore provided to the authorities in the event of an intrusion or theft. In addition, integration of access control and building and security management systems make any after-hours activity hassle-free with control from a central or remote location.



**EXPLOSION PROOF PHONE**

- Explosion proof telephone with VoIP technology for universal applications in the industry (onshore and offshore)
- Certified for gas and dust explosion endangered areas G and D
- Resistant against high temperature differences, humidity, seawater, acids, alkalis, greases, etc.
- Very robust impact resistant telephone housing (impact protection IK 09)
- Illuminated pixel-based heated LCD display
- Designed for use with gloves, V4A stainless steel keypad – 21 keys
- Steel armoured handset cord to withstand high tensile forces
- Ringing sound pressure level approx. 95 dB (A) in 1 m
- Intelligent and user-friendly menu structure
- Standard H.323, SIP, TSIP, SIPS protocols
- Power supply Power over Ethernet or external supply
- Simple connection to a single 10/100 BASE-T Ethernet LAN, RJ45



Build your industrial intercom and public address system following these simple steps



#### INDUSTRIAL SYSTEM

Begin with an Ethernet Network configured for QoS.

1

#### CONTROLLER & SOFTWARE

Choose a system controller & software packages capable of managing your system size and offer the functionality you require.

2

#### MASTER STATION

Choose your master station(s). They can make and receive intercom calls and make public address announcements.

PCC-650 | IPM-360

3

#### INTERCOM TERMINALS

Choose your intercom terminals. They call pre-defined master stations and can initiate relays within your system.

VSL-351+ | HPU-5E

4

#### PA FUNCTIONALITY

Choose your Public Address components to achieve the required functionality.

UAL-3B1 | Amplifiers | Speakers

5

#### ACCESSORIES

Choose your accessories. They provide additional functionality to your system.

ADAM Module

+

#### OPTIONAL EXTRAS

Customisation of Graphical User Interfaces (GUI) and/or  
Integration with CCTV & Access Control Systems

# 1

## CONTROLLERS & SOFTWARE



### SYSTEM CONTROLLER MEDIUM

TCH-2MXH | 51660

- IP controller, up to 80 endpoints
- Available to administer most Jacques system software modules & interfaces
- Facilitates almost all core functions of the Jacques IP Communication System
- Supports high definition audio
- Fanless and low power consumption
- SATA hard drive



### SYSTEM CONTROLLER LARGE

JSC-5L | 51814, JSC-5L-AEC | 51815

- IP controller, large, includes JCCP server software for intercom devices to make and receive calls, more than 80 endpoints supported
- Supports high definition audio
- SATA hard drive
- Segregated air-flow design for optimal unit cooling
- Acoustic Echo Cancellation Software (JSC-5L-AEC only)

## SOFTWARE

Software modules\* manage key functionality of the system and can provide additional functionality. Choose software packages to achieve system functionality requirements.



### DAR

Echo cancellation for full duplex communication  
Interface call audio to third party recording devices (digital, SIP or analogue)  
Stream background music/entertainment through intercom devices & PA speakers



### SIP GATEWAY

Intermediate interface allowing for integration of Jacques system with compatible SIP systems & devices  
Implements RFC 3261-Core Session Initiation Protocol to transfer, convert & filter communication  
Support for bridge calling allowing a Jacques device to dial multiple SIP devices however only allowing one to answer and perform a call



### EVENT CONTROLLER

Provides simplified interfaces for the integration of external systems & products  
Feature highly configurable rules to match system events, simultaneous event triggers, alarms & offline events  
Standard handling of CCTV function



### JAS

Facilitate pre-recorded PA announcements, tones & warning alarms across a Jacques IP PA system  
Allows for the uploading of audio files for broadcast  
Built timetables of announcements, bells & tones for broadcast at allocated times to select or all PA zones  
Apply schedules to days, weeks or months according to a sites broadcast requirements

\* Selection of software modules displayed in this brochure. Visit [jacques.com.au](http://jacques.com.au) for a complete list of software

# 2

## MASTER STATIONS



### PC MASTER STATION

PCC-650WIN | 51791, PCC-650WTS | 51857

- Complete intercom call handling functions
- Complete public address functionality
  - Make live and pre-recorded announcements
  - Broadcast tones, bells & alarms
- Visual display of PA zones (unlimited number of zones depending on controller)
- Selection and playback of recorded announcements
- Diagnostics and reporting
  - Alarm notifications including device state
- Touchscreen compatible interface
- Map, grid and database views
- Upload multiple site maps to suit application/site
- Customisable layout/functions



### IP MASTER INTERCOM STATION

IPM-360 | 51516, IPM-360H | 51533

IPM-360G | 51534, IPM,360GH | 51535

- Make & receive intercom calls
- Make live & prerecorded PA announcements
- Trigger intercom relays
- Balanced audio output of mixed speaker/microphone
- audio for call recording
- Options for gooseneck, handset and headset
- Full & half duplex communication options
- Power saving mode when not in use

# 3

## INTERCOM TERMINALS



### INTERCOM TERMINAL

VSL-351+ | 51612

- Versatile IP audio intercom terminal
- Standard PoE powered (IEEE 802.3af)
- Two configurable relays
- Tamper detection & attempted device removal notification
- Automated testing of speaker & microphone
- Single call button
- Water and vandal resistant



### HELP POINT UNIT

HPU-5E2 | 51687, HPU-5E2i | 51688

- Highly visible, solid, vandal resistant call point
- Standard PoE powered (IEEE 802.3af)
- Simple 1 or 2 button operation, emergency or emergency & information calls
- Two configurable relays
- Tamper detection & attempted device removal notification
- Automated testing of speaker & microphone



# 4

## PA FUNCTIONALITY



### UNIVERSAL AUDIO INTERFACE

UAI-3B1 | 51196, UAI-3E1 | 51195

- Public address interface/zone controller
- Interface between Jacques' IP system & analogue devices such as a building's amplifier and PA system
- Connects a PA amplifier, via either balanced or unbalanced audio inputs, to the Jacques system
- Connects third party audio devices, such as a two-way radio or covert microphone, to the Jacques system

# 5

## ACCESSORIES



### ADAM RELAY MODULE

6 Channel | CE382

- 6-ch DI, 6-ch RL, Ethernet-based smart I/O for lift control in office buildings and shopping malls
- Group configuration capability for multiple module setup
- Flexible user-defined Modbus address
- Intelligent control ability by Peer-to-Peer and CGL function
- Active I/O message by data or event trigger function

The background of the entire page is a photograph of several oil pumpjacks (jackals) in an industrial setting. The pumpjacks have long, orange-colored walking beams and black metal frames. They are silhouetted against a bright sky with soft, white clouds, suggesting a sunset or sunrise. The lighting creates a warm, golden glow on the orange beams. The pumpjacks are arranged in a row, receding into the distance, creating a sense of depth.

Jacques continues to be involved in many interesting and prestigious large scale projects in Australia, New Zealand, the Middle East, South Africa and South East Asia. We are continuing to expand our international reach, providing integrated IP communication systems across the globe.



## SYSTEM SPECIFICATIONS

### SYSTEM CAPACITY

Intercom Stations	Unlimited*
Master Stations	Unlimited*
Stored Announcements	Unlimited*
Call Queue Size	Unlimited*
Groups	Unlimited*
Simultaneous Conversations	Unlimited*
Audio Communication Between any endpoint	Yes +
Auxiliary Channels	16 (typically up to 4 live captured sources)

### AUDIO CHARACTERISTICS

Frequency Response	200 Hz - 7 kHz $\pm$ 3 dB
Transmission Format	Real-Time Transport Protocol (RTP) Streaming
Digital Audio Format - Voice	A-law compressed PCM 16 kHz sampling rate
Audio Streaming Bandwidth	128 kb/s one way, 256 kb/s full duplex
Acoustic Echo Cancellation	Yes

### VIDEO CHARACTERISTICS

Multi-Standard Video Codec	MPEG-4 part 2, simple profile; H.264 baseline profile; H.263 part 3
Video Streaming Bandwidth	500 kb/s - 6 Mb/s

### CALL HANDLING

Call Topologies	Intercom/hierarchical/peer/public address/zoned
Call Priorities	256 priority levels
Call Features (Basic)	Auto-answer, hold, forward, diversion, directory, group call, caller-ID, bridged call appearance
Call Features (Specialised)	Isolate nuisance callers, covert monitor, dynamic group call, stored announcements, master call, remote mode, priority queuing, selective answer of call waiting

### NETWORK

Addressing	TCP/IP IPV4, static or dynamic (DHCP)
Interface Media	IEEE 802.3 10/100 Mb/s Ethernet
Standards	IEEE802.1P LAN Layer 2 prioritisation IEEE802.1Q Virtual LAN RTP - Real-Time Transport Protocol (RFC3550/3551) TOS - IPV4 Type of Service (RFC791) DTMF - RTP payload for DTMF digits (RFC2833) Multicast - IP Multicasting (RFC1112) Diffserv - Differentiated Services (RFC2474/2475) NTP - Network Time Protocol (RFC1305) IGMPv2 - Internet Group Management Protocol v2 (RFC2236) DHCP - Dynamic Host Configuration Protocol (RFC1531)

### CABLING

Power Input/Ethernet	4 pair UTP CAT-5/5e/6, multi-strand, 24 AWG - max. 100m
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\*Dependent on server configuration and network bandwidth

+Dependent on system configuration and permissions granted



Jacques is proud to have completed many national and international industrial projects.

## PROJECT REFERENCES

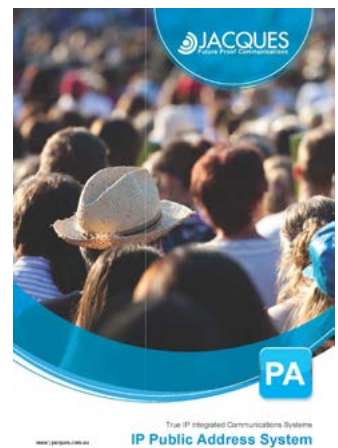
### AUSTRALIA

- Air Services Australia - multiple sites
- Australia Pacific LNG - multiple sites
- BHP Mine Sites - Western Australia
- Karratha gas terminal
- PNBS national banknote site
- Port Bonython Santos Refinery
- Tindal RAAF base - Northern Territory

### INTERNATIONAL

- Daleel Petroleum - UAE
- Musandam Gas Plant - Oman
- Qatar Foundation off site warehouse and distribution centre
- Petronas Oil and Gas plant - Malaysia
- Southern Industrial and Logistics Clusters - Malaysia
- Keppel Seghers Tuas Incineration Plant - Singapore
- Pulau Tekong - Singapore

## ADDITIONAL RESOURCES



**JACQUES**  
Future Proof Communications

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