IP2AIR
Solutions

ADVANCED SOLUTIONS FOR SMART COMMUNICATIONS

IP2AIR

Bridge VHF/HF

MEXICO

IP2AIR is an advanced solution for professional two-way radios developed by ICOM FRANCE.

The IP2AIR solutions enhances your experience of radio by bringing new functionalities.

✓ **ADVANCED SOLUTION**

IP2AIR solutions transforms a simple radio network in an advanced network with a full set of functionalities designed by and for professional.
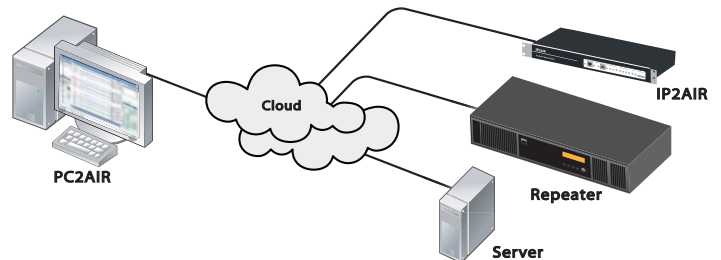
✓ **SCALABLE SOLUTION**

IP2AIR solutions is highly scalable to offer the user only what is needed and not be embarrassed by unwanted functionalities.

✓ **OPEN SOLUTION**

IP2AIR solutions is designed for ICOM equipment but it can be connected to almost all radio devices available on the market.

✓ **THE SOLUTION IS COMPOSED OF THE FOLLOWING ELEMENTS:**

- IP2AIR : a radio/IP controller board
- PC2AIR : a software connected to the IP2AIR. PC2AIR can work as stand-alone software or as a client software. In client/server mode, PC2AIR gets all parameters and data from the server.

PC2AIR
Cloud
IP2AIR
Repeater
Server

RADIO   DISPATCHER   FLEET   PHONE APP   BRIDGE

TRACKING   PHONE   TRUNK   LINK   GUARD TOUR

http://www.ip2air.com
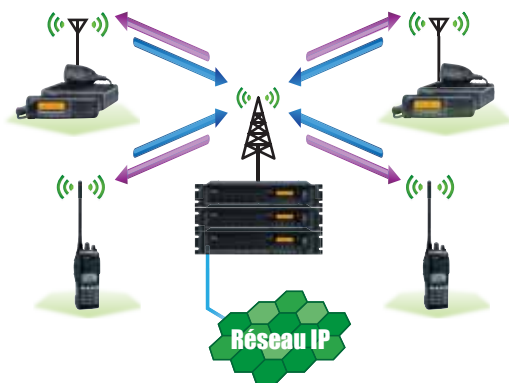
IP2AIR
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dPMR

dPMR stands for "digital Private Mobile Radio" and it is an open standard digital radio protocol published by the European Telecommunications Standards Institute (ETSI). dPMR utilizes 6.25kHz narrowband FDMA technology with the AMBE+2™ voice codec that offers many forms of voice and data applications.
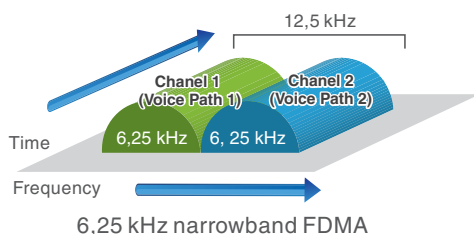
dPMR RANGE OF FUNCTIONAL LEVELS:

Mode 1 Direct peer-to-peer mode
Mode 2 Conventional repeater mode
Mode 3 Centralized trunked mode

Réseau IP

6.25KHZ NARROWBAND FDMA TECHNOLOGY

IDAS dPMR radios only use 6.25kHz per channel.

12,5 kHz

Chanel 1 (Voice Path 1)   Chanel 2 (Voice Path 2)

Time   6,25 kHz   6, 25 kHz

Frequency

6,25 kHz narrowband FDMA

SELECTIVE CALL AND GROUP CALL

IDAS dPMR radios allow you to call individual or group users.

DIGITAL / ANALOGUE MIXED MODE OPERATION

IDAS dPMR radios have built-in CTCSS/DTCS, 5-Tone signalings and can receive both analogue and digital mode signals on a single channel.

MIX MODE   ANALOGUE   DIGITAL

DATA COMMUNICATION

IDAS dPMR radios provide status call, short data messages and GPS position data with voice communication.

dPMR INTEROPERABILITY

dPMR is designed to be a multi-vendor system. Each manufacturers must comply with ETSI.

DIGITAL SIGNAL COVERAGE

IDAS dPMR digital audio provides static noise free, stable audio for longer until the fringes of the communication range.

BATTERY LIFE

In the FDMA system, it could be possible to transmit at reduced power, which in turn conserves battery life and thus can prolong radio use time.

http://www.ip2air.com

IP2AIR Solutions

DISPATCHER

The dispatcher module monitors all the radio traffic over IP and offers various professional functionalities to simplify the task of the dispatcher.

VOICE AND DATA OVER IP

IP2AIR dispatcher integrates voice and data over IP. It is easy to use, highly customizable and supports single-site or multi-site operations.

TRAFFIC MANAGEMENT

PC2AIR Dispatch centers can monitor large amounts of traffic.
A mute function helps the dispatcher to focus on a specific voice. Each channel keeps a record of its latest event.

MIXED MODE: ANALOGUE /DIGITAL

PC2AIR supports digital as well as analogue channels. A friendly interface allows you to know exactly which mode is being used on each channel.

SUPPORT FOR ALL TYPES OF EQUIPMENT:

All types and all brands of radios can be connected to the IP2AIR : dPMR base station, DMR base station, repeater, HF transceiver, Avionics equipment, VHF marine.

MULTIPLE USER PROFILE

Multiple users can be issued with their own password and usernames to allow them to save their own individual profile settings and screen layouts. This also allows the administrator to identify which user was at the dispatch terminal at what time allowing for a user history.

IP2AIR
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FLEET MANAGEMENT

The fleet management module monitors and manages subscribers both in Analogue and Digital mode. It can be setup as independent software or in a client-server mode for bigger networks.

CLIENT/SERVER

The PC2AIR can be used as an independent applications, or as a client solution. In client-server mode, all data is stored and administrated through a smart web interface.

AUTOMATIC REGISTRATION SYSTEM (ONLINE/OFFLINE)

Fleet management module provides a registration services that informs the dispatcher of the presence of subscribers. The registration service informs the dispatcher if a subscriber is online and stores the last channel used by the subscriber in order to simplify the dispatch/subscriber interface process and make best use of the bandwidth.
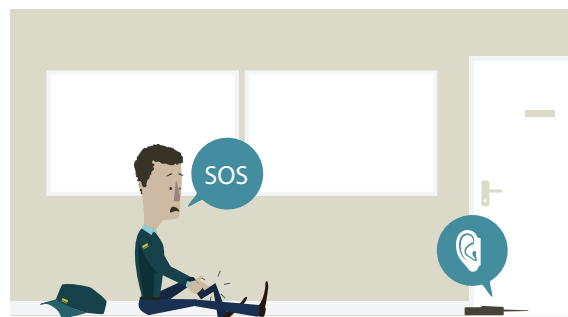
TEXT MESSAGING

The dispatcher can send and receive text messages from a single contact or a group.

EMERGENCY ALARM

The centralized Alarm module receives manual or automatic man-down lone-worker alarms. The dispatcher is immediately informed and the channel that has received the alarm is automatically selected. If the subscriber has a radio equipped with GPS, the tracking windows focus on his position.

E-MAIL GATEWAY

The fleet management module has the capacity to send email directly from the contact list.

AMBIENCE LISTENING

In case a user is not answering a call, the dispatcher can remotely open the microphone of its radio to check if everything is all right.

RADIO CHECK

The dispatcher can check the status of a radio to ensure it's under the radio coverage.

TRACKING

The tracking module show the position and address of subscribers equipped with GPS radios.
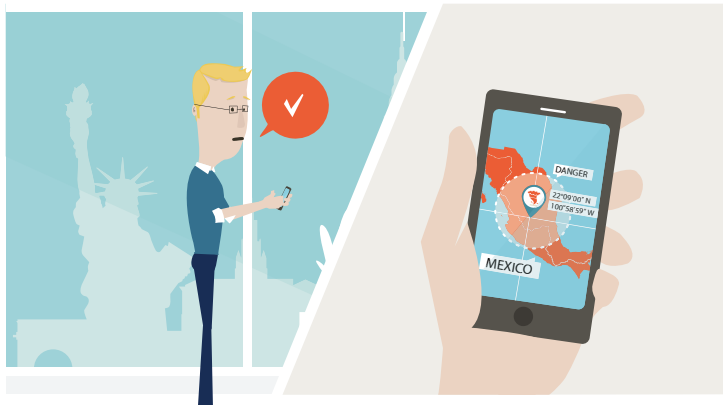
IP2AIR
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PHONE APP

The IP2AIR phone app uses GSM and 3G network to offer voice over IP and enable connection of smart phones all over the world to a radio network.

SUPPORT FOR ANALOGUE AND DIGITAL (dPMR) VOIP CALL

The App allows the user to communicate over IP with radios in analogue or in digital (dPMR). A smart talk back functions automatically selects the mode of communication and reverts back to its default setting once the app has cleared down.
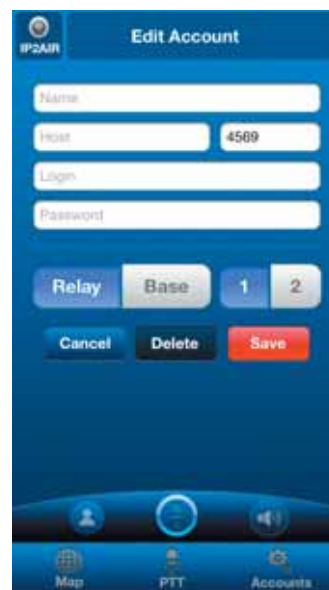
SUPPORT OF IOS AND ANDROID

The IP2AIR app support either IOS or Android smartphone.

REAL TIME TRACKING

The IP2AIR smart phone app collects data positions of users and localizes their position on a map.

EASY TO CONNECT:

Few parameters are needed to connect a smartphone at any IP2AIR in the world.

http://www.ip2air.com

All stated specifications are subject to change without notice or obligation 10/2013 V1
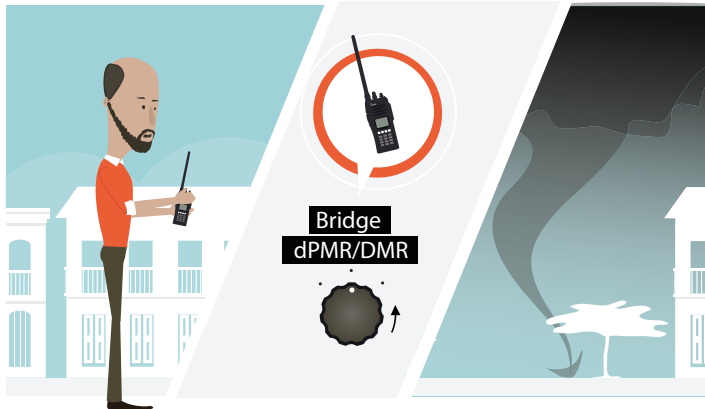
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BRIDGE

The bridge module offers unified communications for interoperability between all kinds of radio network.

BRIDGE VHF AND HF NETWORK
The bridge module allows a VHF network and HF station to bridge together easily.

BRIDGE UHF AND VHF NETWORK
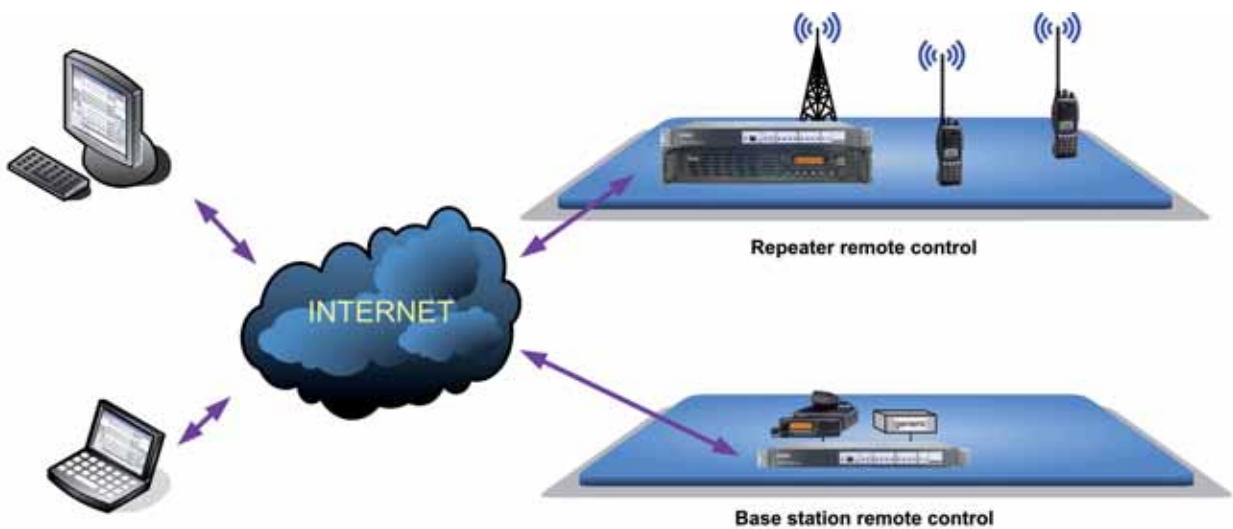The Bridge module allows a VHF and UHF radio network to bridge easily.

BRIDGE dPMR AND DMR NETWORK
The bridge allows dPMR radios and DMR radios to bridge easily.

RADIO COVERAGE EXTENSION:
Connect together two base stations to rapidly extend the coverage of a radio network without using a repeater.

Repeater remote control

INTERNET

Base station remote control

http://www.ip2air.com

IP2AIR Solutions

TRACKING

MEXICO

The tracking module monitors, tracks and logs the location and movement of subscribers. The dispatcher can monitor and be informed on the position of a single contact or group.

MONITOR A USER OR A GROUP OF USERS

The tracking module allows tracking of a single user or a group of users on a map. Handheld and mobile equipped with GPS can be configured to transmit their GPS data at pre-programmed intervals, on demand and in case of an emergency.

SUPPORTED MAPS

The tracking module supports various kind of maps including Google map, Open street map and Bing map.

OFF LINE MODE

Maps information can be stored on the PC2AIR in order to work offline.

GPS INFORMATION

The direction and speed of a user is displayed on the map wether the user is on foot or in a vehicle as long as their radio has GPS installed.

CUSTOMIZING OBJECTS ON THE MAP

The dispatcher can customize a map by adding or subtracting objects as he/she sees fit.

GEO-FENCING

The dispatcher can define zones on a map. The dispatcher can be informed if a user enters or leaves a zone and depending on the configuration an alarm can be launched.

LOCATION HISTORY

In client / server mode, all data positions of a user are stored and can be replayed by the dispatcher.

http://www.ip2air.com

IP2AIR

Solutions

PHONE PATCH

The IP2AIR phone patch module links landline and mobile phones with two-way radios. Staff that do not carry a two-way radio can still contact the radio users.

SETUP A CALL IN ANALOGUE MODE
Analogue radios using DTMF can set up a phone call.

SETUP A CALL IN dPMR
dPMR radios take benefit of digital to setup either a private call or a group call.

IP2AIR SIP CLIENT
The IP2AIR has a SIP client built in and is able to connect to multiple IPBX lines.
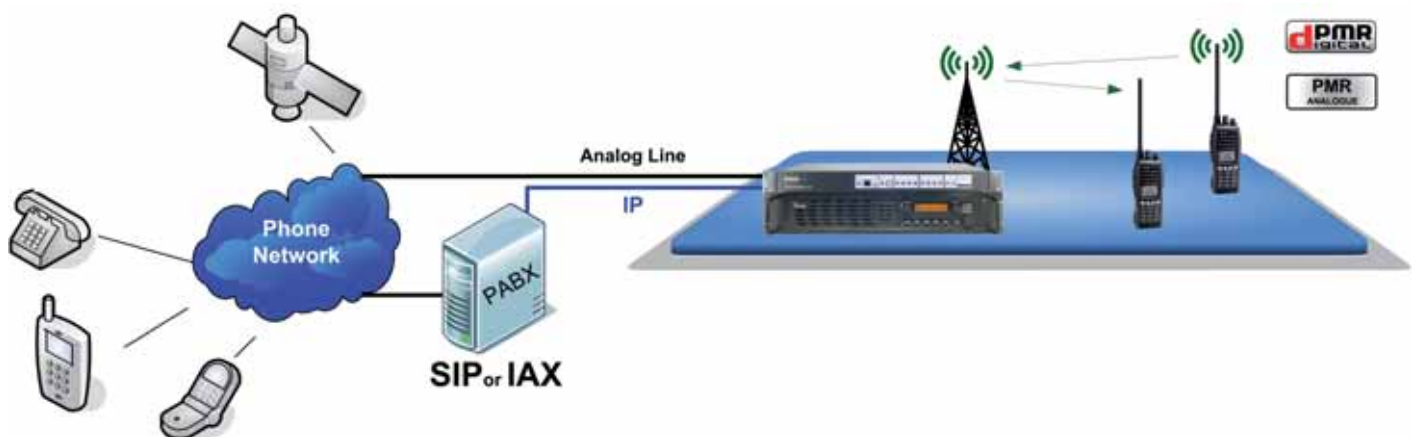
POTS LINE
A pots line connector is directly available on the IP2AIR to offer connection for simple analogue phone line.

REDUNDANCY
When the SIP line is unavailable the POTS line can automatically be used for redundancy.

PC2AIR SIP CLIENT
The PC2AIR has a built in SIP client than can be connected to IPBX servers to allows Dispatchers to use a single interface for all communications.
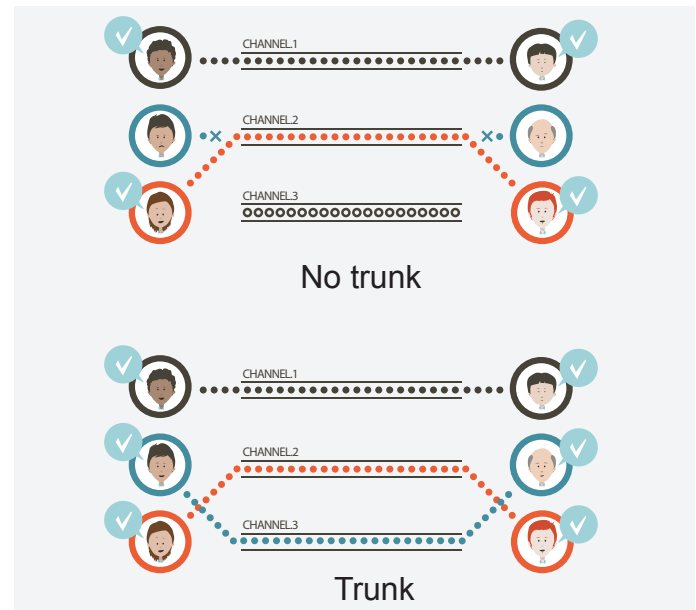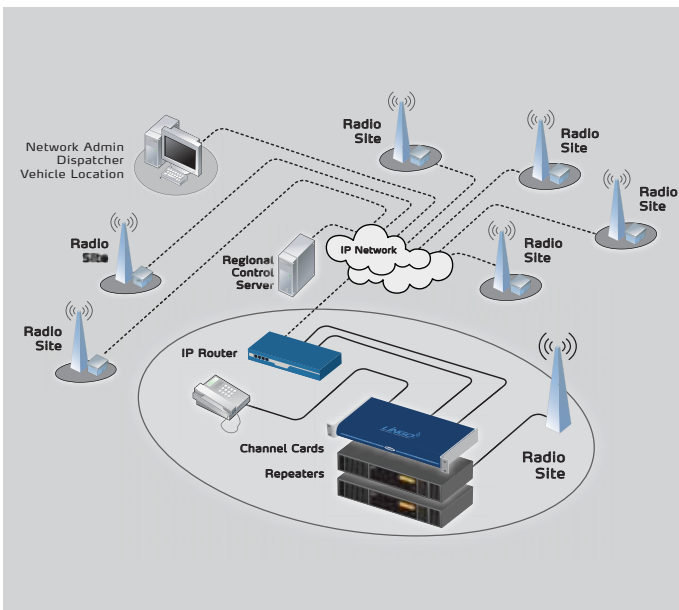
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EASY TRUNK

Trunk communications provide network access to many clients by sharing a single set of lines or frequencies instead of providing them individually thus creating a much more efficient and affective network.

dPMR MODE 3 TRUNK

dPMR Mode 3 trunk can offer multiple channel and multiple site trunked radio networks. This ensures optimum use of the spectrum and optimum density of radio traffic.
The management of the radio network starts from the authentication of radios that wish to connect. Calls are then setup by the infrastructure when both parties have responded to the call request ensuring optimum use of the radio resource.

SCANNING TRUNK

IP2AIR offers scanning trunk. All radios on a site listen to a free channel which can accept call requests. When a request is received, that channel takes the call and all the other radios move to another free channel. Once the call has finished, all the radios involved in the call move to the free channel with the other waiting radios until they are called upon forcing the remaining radios to move once again to a free channel.

Network Admin
Dispatcher
Vehicle Location

Radio Site

Regional Control Server

IP Network

IP Router

Channel Cards

Repeaters

Radio Site

CHANNEL.1

CHANNEL.2

CHANNEL.3

No trunk

CHANNEL.1

CHANNEL.2

CHANNEL.3

Trunk

IP2AIR
Solutions

LINK

MEXICO

Once the network has been configured each group within the network can be linked together for immediate communications for an indeterminable amount of time.

GLOBAL LINK

INTERNET

PEER TO PEER LINK

HAND HELD LINK ESTABLISHMENT
Links can be established directly from authorized Handheld to allow field operation.

ESTABLISHED LINK IN ANALOGUE OR DIGITAL (dPMR)
Links can be established in digital (dPMR) or in analogue (5 tones).

MULTIPLE NETWORKS
Establishing links between multiple networks while at the same time keeping administration rights of your own network.
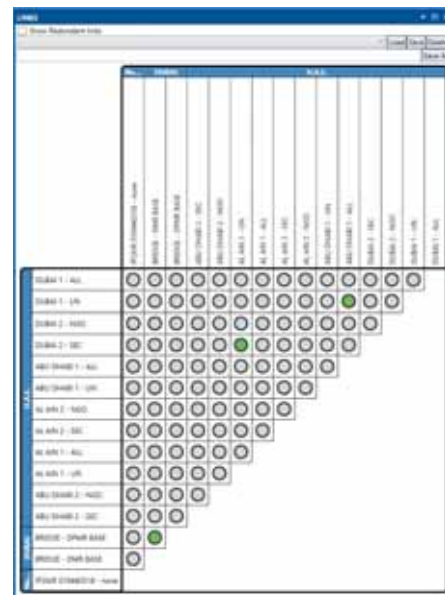
SIGNALLING
Supports analogue signalling (5 tones) and digital signalling (dPMR)
Once the link is established it can be used to link analogue radio or digital radio (dPMR). The link relays voice, data and signalling.

IP Link
Ethernet Copper & Optical, Wifi, VSAT
Inmarsat (B-GAN), microwave link

Link Analog and Digital
On demand or permanent

DISPATCHER RADIO ROOM LINK MANAGER
Link manager gives a global view of all existing links and the ability to manage them instantly.
Gives you the option to pre-program link configurations for future use and control the life span of existing and future links (I.e. 2 hours or 2 years).

http://www.ip2air.com

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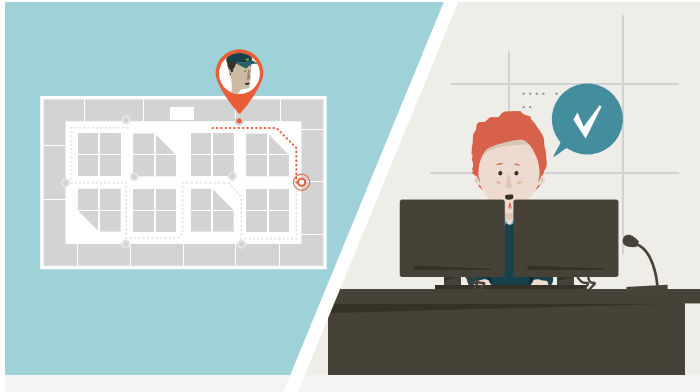**E-mail :** icom@icom-france.com

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GUARD TOUR

Providing a safe and secure environment for security personnel by combining waypoint badges and indoor / outdoor positioning.

SECURITY ROUND

Guard tour software manages and monitors security rounds through the use of waypoint badges or positioning beacons. Report information is send to guard and dispatcher in case of long delay between two check points.

INDOOR / OUTDOOR TRACKING

Guard tour software uses positioning beacons to locate users inside a building. Location can be activated for tracking or in case of alarms. The system will switch to GPS position for outdoor positioning.

RECORDER

Guard tour software records voice, text and status messages.

REPORT

Guard tour software provides relevant information for post process analysis.

TEXT MESSAGING

The guard tour software allows users and dispatcher to send text messages. The dispatcher can decide to convert text message in audio message.

VOICE OVER IP

Radio infrastructure can be installed in a separate building from the guard tour software. Voice and data will be send over IP using the IP2AIR interface.

MAN DOWN LONE WORKER

An optional board plug inside the handheld detects movement and inclination of the radios. An alarm is send when the radio meets the parameter defined.

http://www.ip2air.com

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afaq
ISO 9001
Qualité
AFNOR CERTIFICATION
Qual/1997/8074

FOUNDING MEMBER OF
IQNet

IP2AIR

Technical information

HP/Mic for local radio remote

Virtual serial port for console

LED Display

SD card (Web pages, Log files,...)

Maintenance Access

Ethernet 10/100BASE-T

8 Input (Grounded)
8 Output (Open Collector)
Remote controlled by web interface

Analogue phone line

Power supply
With rugged and lockable connector

2 advanced radio connections

General	
Dimensions	19" compliant 1U Lenght:420mm Width:44mm Depth:145mm
Weight	1kg alone, 1.5kg with accessories
Temperature range	0° to +55°C
Delivered Accessories	
International power supply (100-240V 50/60Hz) with most countries plug adaptor	
USB, Ethernet and phone cables	
Kit for desktop mounting	
Electrical specifications	
Power supply	10V to 20V DC
Current drain (standard configuration)	500mA (never more than 2A)

Radio connections	
2 full duplex audio lines	
Input impedance	>10kOhm
Output low-impedance	~50Ohm
Bandwidth	flat band (0.5dB) 50Hz-3kHz
Nominal level	245mV at 1kHz
Dynamic	+12dB ref before saturation, -40dB ref with SINAD > 40dB
PTT output (open collector)	
Busy input (grounding input)	
4 wires RS-232 serial port	
Analogue input	
I/O Connection	
8 output open collector	
8 input by grounding	
1 power supply output	
1 regulated +5V output (200mA)	

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